MCKINLEYVILLE COMMUNITY SERVICES DISTRICT

2025

URBAN WATER MANAGEMENT PLAN

Prepared by: MCSD Staff

To be adopted by the MCSD Board June 3, 2026

McKinleyville Community Services District

1656 Sutter Rd.

McKinleyville, CA 95519

Phone (707) 839-3251

Page Left Blank Intentionally

TABLE OF CONTENTS

DWR Submittal Tables

Figures

Tables

Appendices

Appendix A	AWWA Water Loss Worksheet 2020-2024
Appendix B	Risk Assessment Summary Report for MCSD
Appendix C	MCSD 2025 Consumer Confidence Report
Appendix D	Humboldt Bay Municipal Water District Water Shortage Contingency Plan Draft 2025
Appendix E	MCSD Drinking Water Emergency Response Plan 2025.
Appendix F	Humboldt County Operational Area Hazard Mitigation Plan, Volume 2 Planning Partner Annexes, McKinleyville Community Services District Annex 2025
Appendix G	MCSD Ordinance 2021-06 Water Conservation Establishing Rules and Regulations for Rationing Water During a Water Shortage Emergency and Establishing Penalties for Violations Thereof
Appendix H	Public Hearing Notice
Appendix I	60-Day Notification to Cities and County

Page Left Blank Intentionally

ABBREVIATIONS AND ACRONYMS

ADD	Average Daily Demand
AFY	Acre Feet per Year
AWWA	American Water Works Association
CDP	Census Designated Place
CIP	Capital Improvement Plan
CWC	California Water Code
DMM	Demand Management Measures
DOF	Department of Finance
District	McKinleyville Community Services District
DWR	California Department of Water Resources
ERP	Emergency Response Plan
GIS	Geographic Information Systems
GPCD	Gallons per Capita per Day
HBMWD	Humboldt Bay Municipal Water District
MDD	Maximum Daily Demand
MCSD	McKinleyville Community Services District
MG	Million Gallons
MGD	Million Gallons per Day
NOAA	National Oceanic Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PWS	Public Water System
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
WSCP	Water Shortage Contingency Plan
WWMF	Wastewater Management Facility

1. INTRODUCTION

The McKinleyville Community Services District's (MCSD or District) 2025 Urban Water Management Plan (UWMP) has been prepared in accordance with the California Water Code and California Urban Water Management Planning Act (California Water Code Division 6, Part 2.6) as amended, including amendments made per the Water Conservation Bill of 2009 (SBX7-7) and subsequent legislation such as SB 606 and AB 1668. The UWMP provides a framework for long-term water resource planning and informs the public of the District's approach to ensuring reliable and efficient water supplies to meet existing and future demands.

The data used for preparing this report comes primarily from District financial records and water system statistics reported annually to the Department of Water Resource (DWR) and State Water Resources Control Board (SWRCB). Figures relating to climate were obtained from the National Oceanic and Atmospheric Administration (NOAA). Service area population estimates for the year 2025 were developed by using Census Bureau data, California Department of Finance population estimates, and the persons-per-connection method outlined in methodology 2 of the Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use.

1.1. Executive Summary

McKinleyville Community Services District (MCSD) is a retail water supplier located in Humboldt County California with a mixture of urban and rural land uses. These land uses include urban development areas, a commercial town center, rural areas, and undeveloped forest and timber land.

The District operates a retail water distribution system and provides treated drinking water to approximately 5,835 customers. MCSD purchases wholesale treated drinking water from Humboldt Bay Municipal Water District (HBMWD), the regional supplier.

System Supplies

The HBMWD operates Ruth Reservoir about 79 miles east of the coastal areas. This reservoir impounds only about 3% of the watershed and fills at a very rapid rate in normal rainfall years. Approximately 11 MGD is delivered to the municipal/district customers and entitlement is limited by actions taken during water shortage emergencies. Of the delivered water, a peak flow rate of 2.6 MGD is committed to serve the MCSD customers.

Table 1. MCSD Annual Supply and Demand Projections.

	2030	2035	2040	2045
Water Source Supplies MG	949	949	949	949
Projected Demands MG	493	510	525	544

Water Use Current and Projected

MCSD provides potable water to the following water use sectors, single-family residential, multi-family residential, commercial, sales/transfers to another agency, institutional and government, bulk water sales, and landscape water. MCSD does not sell raw or recycled water to customers.

The 2025 Average Daily Demand (ADD) for the entire MCSD water system is 1.35 MG, the Maximum Daily Demand (MDD) is 2.52 MG. The current ADD is not expected to increase much over the next ten years due to McKinleyville getting close to full build out.

Table 2. Water use types, current and projected demands.

Use Type	Level of Treatment	2025 Volume MG	Projected 2030	Projected 2035	Projected 2040	Projected 2045
Single-Family	Drinking Water	256	260	263	266	270
Muti-Family	Drinking Water	82	91	101	111	123
Commercial	Drinking Water	35	35	36	36	36
Institutional/Government	Drinking Water	16	16	16	16	16
Transfer to Other Agencies	Drinking Water	8	8	8	8	9
Landscape	Drinking Water	6	6	2	6	6
Bulk Water Sales	Drinking Water	2	2	2	2	2
Distribution Water Loss	Drinking Water	65	75	78	80	82
	TOTAL Water Demand	**469**	**493**	**510**	**525**	**544**

The 2020 Gallons Per Capita Per Day (GPCD) for the MCSD service area is **72**. The 10-year baseline GPDC calculated in the 2015 UWMP was 114, the goal of 80% reduction (91 GPCD) by 2020 was achieved. The 2020 gross water use is 450 MG with a population of 17,190 providing a GPCD of 72. The 2020 GPDC is total water use within the service area, divided by population, and is measured in gallons.

Table 3. 2020 SBX7-7 Compliance.

2020 Gross Water Use MG	Population	2020 GPCD
450	17,190	72

Actions to Manage Demand

MCSD utilizes the following demand management measures to ensure supplies are sufficient to meet current and projected demands.

- Metering
- Conservation pricing
- Water waste prevention ordinance (MCSD Ordinance 2021-06)
- Public education and outreach
- Programs to assess and manage distribution system loss.

Water Shortage Contingency Planning

The WSCP establishes water use restrictions and prohibitions to be implemented during times of declared water shortages or declared water shortage emergencies. It establishes six levels of response actions to be implemented in times of shortage, with increasing restrictions on water

use in response to worsening drought conditions or decreasing available supplies. The MCSD Board of Directors, upon recommendation by the General Manager, shall determine and declare by resolution the stage of response action necessary. Notice of such determination shall be published in a newspaper of general circulation and shall be effective within five (5) days from the date the declaration is made.

Table 4. Water shortage contingency planning stages and reduction goals.

Stage	Demand Reduction Goals
Stage 1 – Voluntary Consideration	Up to 10%
Stage 2 – Voluntary Conservation	Up to 20%
Stage 3 – Mandatory Conservation	Up to 30%
Stage 4 – Emergency Water Shortage	Up to 40%
Stage 5 – Emergency Mandatory Rationing	Up to 50%
Stage 6 – Critical Water Shortage Emergency Rationing	Greater than 50%

Plan Adoption and Submittal

The MCSD 2025 UWMP and WSCP have been prepared in accordance with the California Water Code (CWC) and the 2025 Urban Water Management Plan Guidebook for Urban Water Suppliers. MCSD has included water use and planning data for the entire year 2025.

MCSD shall hold a public hearing prior to adopting the UWMP. MCSD provided written notice of their UWMP review and updating at least 60 days prior to the public hearing to the water wholesaler HBMWD, Humboldt County, City of Arcata.

2. PLAN PREPARATION

2.1. Basis for Preparing an UWMP

CWC 10617 defines an "urban water supplier" as a public or privately owned supplier, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet per year. CWC 10620(b) further requires that, "every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it became an urban water supplier." Urban water suppliers are required to complete an UWMP and update the plan at least every five years, on or before July 1st, in years ending in five and zero, except that the 2025 UWMP will be updated and submitted by July 1, 2026 (CWC 10621).

MCSD is a California Special Services District that operates a Public Water System (PWS), system number 1210016, with approximately 5,835 water service connections and thus is required to prepare an UWMP.

Submittal Table 2-1. Public Water System.

Submittal Table 2-1 Retail: Public Water Systems			
Has there been a change in the number of affiliated Public Water Systems since the 2020 UWMP? (OPTIONAL)			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (MG)
Add additional rows as needed			
1210016	McKinleyville Community Services District	5,835	469
	Total	5,835	469
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Table 2-3.			
NOTES: Units for Volume of Water supplied is MG			

2.2. Regional Planning

The UWMP was developed in cooperation with Humboldt Bay Municipal Water District (HBMWD), the regional wholesaler, and with other urban water suppliers who are also wholesale customers of HBMWD. Each wholesale customer shared resources and information to ensure compatible individual plans that provide a planning document for individual communities and if needed, could be merged to review regional needs. Coordinating agencies included the City of Arcata, Humboldt County Community Services Development Department Planning Division, and Humboldt Bay Municipal Water District.

2.3. Individual or Regional Planning and Compliance

MCSD and other local agencies formed a workgroup to ensure individually prepared UWMPs are comparable and compatible. Each agency dedicated to preparing their individual UWMP in a similar format to allow for ease of comparison on a regional scale. It was determined that each individual agency was in compliance with SBX7-7 and a regional approach to compliance was not necessary.

Submittal Table 2-2. Plan Identification.

Submittal Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* (select from drop down list)
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		

2.4. Reporting Years and Unit of Measure

The 2025 UWMP is reported on a calendar year basis. Water volume is volume is reported in million gallons (MG). This report includes water use and supply data from calendar year 2025.

Submittal Table 2-3. Supplier Identification.

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP * (select from drop down)	
Unit	MG
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*	

2.5. Coordination with Other Agencies and the Community

MCSD has prepared this plan in cooperation with HBMWD, the regional wholesaler, and the other regional suppliers. MCSD has provided notice to Humboldt County Planning Department, HBMWD and the City of Arcata on its intent to review and update the MCSD UWMP as required by CWC Section 10642, on April 2nd, 2026. Retail agencies, such as MCSD, are required to provide their wholesaler with projected water demand from the wholesaler for the

next 20 years, in five-year increments. Water demand projections for the next 20 years have been provided to HBMWD on April 20, 2026.

MCSD has encouraged public participation throughout the development and update of the UWMP and will provide time for public review and comment prior to plan adoption by the MCSD Board of Directors.

Submittal Table 2-4. Water Supplier Information Exchange.

Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
Add additional rows as needed
Humboldt Bay Municipal Water District (HBMWD)

MCSD has prepared this plan in cooperation with the following agencies and consultants:

- California DWR, agency;
- Humboldt Bay Municipal Water District, regional wholesaler;
- The City of Arcata, regional retailer;
- Humboldt County Planning Department, McKinleyville planning authority; and

3. SYSTEM DESCRIPTION

3.1. General Description

McKinleyville Community Services District was formed on April 7, 1970 as an independent Special Services District. Initially, the District had authority to serve water and treat sewer wastes, in 1972 the voters added street lighting powers. In 1985 the voters added parks and recreational powers. The District is governed by a five-member Board of Directors elected by McKinleyville voters. The Board meets monthly on the first Wednesday of each month to set policy, consider projects and resolve disputes. The Board's directives are implemented by the District's 29 full-time and 50 part-time employees. The District office is located at 1656 Sutter Road; just east of Central Avenue.

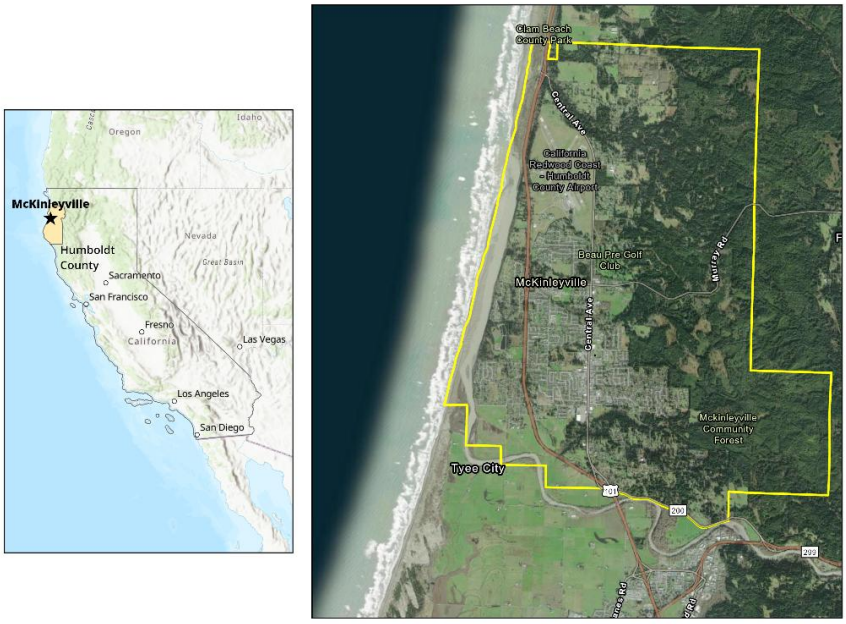
McKinleyville is a small northern California coastal community located 280 miles north of San Francisco and is part of unincorporated Humboldt County CA. The District boundary encompasses 12,616 acres ranging from North Bank Road on the south to Patrick's Creek Dr. on the north (See 3.2 Service Area and Map). The McKinleyville water system has five pressure zones, seven storage tanks (9.75MG), two booster stations and 88.51 miles of distribution mains.

MCSD service area has a mix of residential, and commercial water use customers with a small institutional/governmental sector. McKinleyville has mostly residential dwellings served by a small commercial urban area. There is a U.S. Coast Guard Air Station, Federal Courthouse, and a Regional Airport within the service area. There are no industrial zoned parcels or accounts.

3.2. Service Area Boundary Map

MCSD provides water to Public Water System number 1210016.

Figure 1. Service Area Map.



3.3. Service Area Climate

The climate for McKinleyville is coastal maritime with high humidity prevailing the entire year. There are definite rainy and dry seasons. The rainy season begins in October and continues through April, accounting for about 90% of the annual precipitation. The dry season from April through September is marked by considerable fog or low cloudiness that usually clears in the late morning giving way to sunny weather in the afternoon. Temperatures are moderate the entire year, although record highs have reached the mid 80's and record lows near 20 degrees. The usual yearly range is from lows in the mid 30's to highs in the mid 70's.

Table 5. Evapotranspiration, Precipitation and Temperature Data.

Month	Monthly Average Evapotranspiration (inches/month)	Mean Precipitation (inches)	Mean Temperature (Fahrenheit)
January	1.5	7.52	48.4
February	1.9	6.48	48.6
March	3	6.28	49
April	4	4.11	50.3
May	5.5	2.1	52.9
June	6.8	0.96	55.5
July	7.5	0.19	57.4
August	6.6	0.26	57.9
September	5	0.85	56.8
October	3.2	2.71	54.2
November	1.6	5.71	50.5
December	1.1	8.95	48
Climate data provided by Western Regional Climate Center and the National Oceanic and Atmospheric Administration. Rainfall and temperature data are for the period January 1991 to December 2020. Evapotranspiration data provided by and California Irrigation Management Information System (CIMIS) operated by the Office of Water Use Efficiency under the Department of Water Resources for the period of 2004 to 2021.			

3.4. Service Area Population and Demographics

Service area population for 2025 was developed by MCSD staff using Census Bureau data, California Department of Finance population estimates, and the persons-per-connection method outlined in Methodology 2 of the Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use. The McKinleyville CDP does not match the service area boundary therefore, Geographic Information System (GIS) data was used to determine the number of residential water service connections within the service area. The number of connections was then multiplied by 2.85 persons-per-connection (persons per connection calculated from 2020 census data and MCSD service records).

The service area population for 2025 was estimated at 16,630. This population is projected to increase slowly over the next 20 years as the MCSD service area nears full buildout. From 2020 to 2025 the number of service connections grew at an annual rate of 0.4%. The annual growth rate of 0.4% was then projected to 2045. By the year 2045 the service area population is anticipated to increase to 18,012.

Submittal Table 3-1. Water Supplier Information Exchange

Submittal Table 3-1 Retail: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050*(opt)*
	16,630	16,965	17,307	17,656	18,012	

3.5. Land Use within Service Area

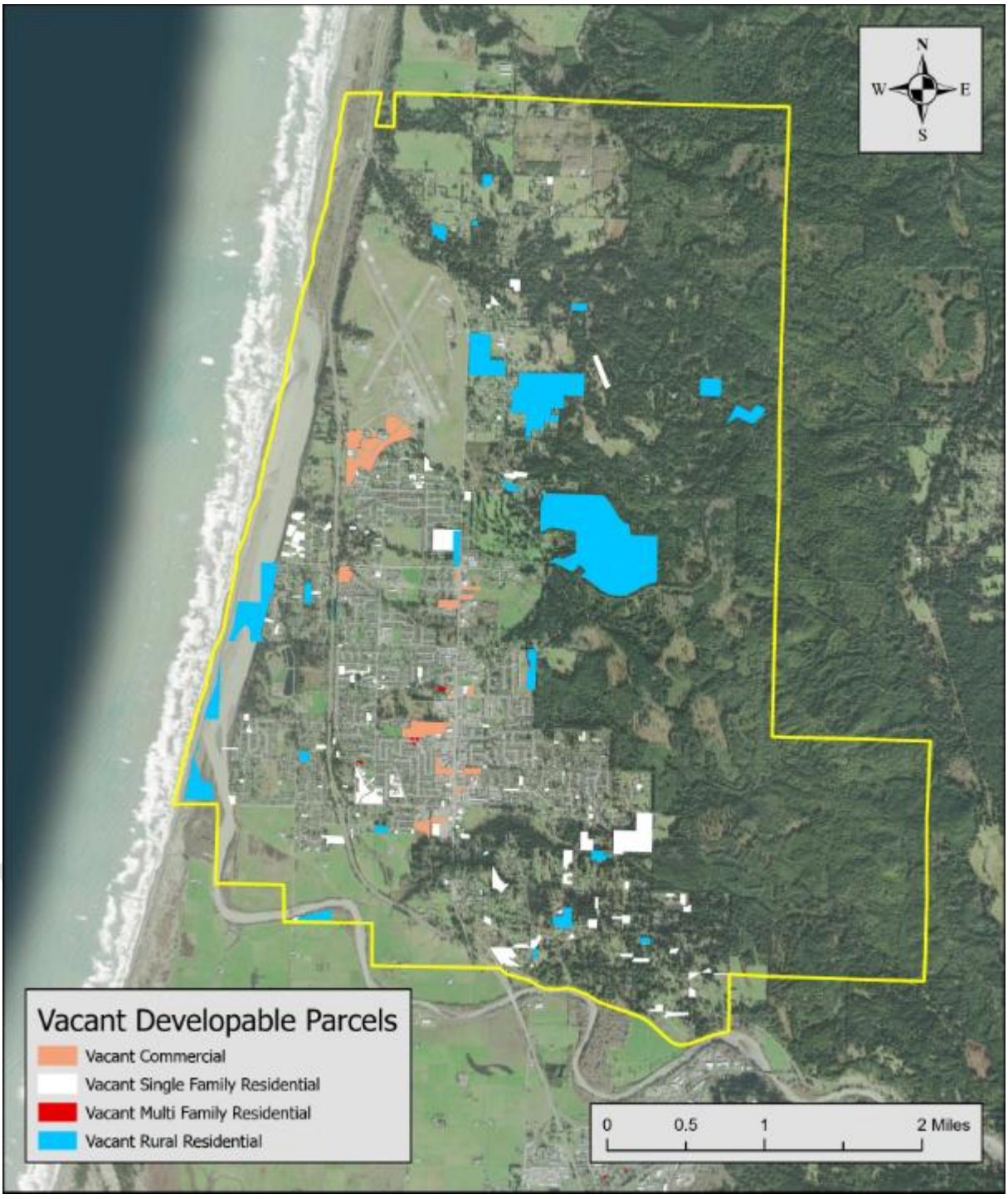
McKinleyville is a mixture of urban and rural land uses. These land uses include urban development areas, a commercial town center, rural areas, and undeveloped forest and timber land. Land use designations applied to the rural areas of McKinleyville are based on the protection of agricultural and timberland, with the concentration of new development around existing sewer, public water, and safe roads. Lands within and beyond the Urban Expansion Area are considered rural. Residential development in these rural areas is limited due to resource production.

The urban and residential areas of McKinleyville have been slowly filling in over the past 20 years. McKinleyville's service area is not expected to expand beyond the current service area boundary due to the terrain and geography of the area. There are several vacant parcels within the service area. These parcels have been reviewed by the county and have the capability to be developed in the future. The development of these parcels is not expected to have impacts on local water resources or climate considerations.

Table 6. Vacant lands within the McKinleyville service area.

Land Use Designation	Number of Parcels	Acres
Vacant Residential Single-Family	234	178.91
Vacant Residential Multi-Family	9	3.58
Vacant Rural Residential	34	507.6
Vacant Commercial	55	84.73

Figure 2. Vacant lands within the McKinleyville Service Area.



4. SYSTEM WATER USE

4.1. Non-Potable Versus Potable Water Use

MCSD provides potable water to the following water use sectors, single-family residential, multi-family residential, commercial, sales/transfers to another agency, institutional and government, bulk water sales, and non-billed water. MCSD does not sell raw or recycled water to customers.

Due to our proximity to the Pacific Ocean, the climate, and abundance of precipitation there is no demand for raw and recycled water apart from agricultural beneficial uses. The MCSD wastewater treatment facility uses a secondary disinfected treatment process which does not provide the level of treatment required for recycled wastewater use within parks or on lawns. The District does utilize reclaimed wastewater to irrigate three pastures for beneficial agricultural use to grow fodder crops (*see section 6.5 for recycled water use*).

4.2. Past Current and Projected Water Use by Sector

Past, current, and projected water uses are derived from MCSD billing records. The average daily demand (ADD) for the MCSD distribution system from 2021- 2025 is approximately 1.1 million gallons per day (MGD) (*MCSD service records*). In 2021 the ADD was the highest at 1.2 million gallons, and the lowest in 2022 with an ADD of 1 million gallons. In 2019, the ADD was 1.4 million gallons showing a slow decline in the ADD for the system over the past 6 years. This is possibly due to water savings from codes, standards, ordinances, land use plans, rate increase, water meter replacement project, and people irrigating/using less water to conserve. Over the past twenty years the McKinleyville community has converted several larger parcels, which irrigated gardens and small livestock to residential communities. The ADD is not expected to increase much over the next ten years due to McKinleyville getting close to full build out. Currently there are no plans for expansion of the service area or the annexation of additional customers. There are no future plans for industrial development within the service area.

District wide water usage was projected from 2025-2045 at a 0.4% annual growth rate. The annual growth rate of 0.4% was determined by calculating the annual growth rate of customer connections from 2021 to 2025 then applying that rate of growth to the water use total for 2025, then out to 2045.

Submittal Table 4-1. Demands for Potable Water 2025.

Submittal Table 4-1 Retail: 2025 Actual Total Uses for Potable and Non-Potable Water
Water Code Section 10631(d)(1)

Use Type	Additional Description (as needed)	2025 Actual Water Use	
Drop down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool		Level of Treatment When Delivered (OPTIONAL) Drop down list	Volume (MG)
Add additional rows as needed			
Single Family		Potable	256
Multi-Family		Potable	82
Commercial		Potable	35
Institutional/Governmental		Potable	16
Sales/Transfers/Exchanges to other Suppliers		Potable	7
Landscape		Potable	6
Other (optional)	Bulk Water Sales	Potable	2
Distribution System Water Loss		Potable	65
		Subtotal Potable	469
		Subtotal Non-Potable	0
		Total	469

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

NOTES: 2025 Water Loss calculated using MCSD Records of difference in water purchase vs water accounted for.

Submittal Table 4-2. Potable water demands projected.

Submittal Table 4-2 Retail: Total Uses of Potable, and Non-Potable Water - Projected Water Code Section 10631(d)(1)							
Use Type	Additional Description (as needed)	Projected Water Use (Report To the Extent that Records are Available)					
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		Level of Treatment When Delivered (OPTIONAL) Drop down list	2030 (MG)	2035 (MG)	2040 (MG)	2045 (MG)	2050 (opt) (MG)
Add additional rows as needed.							
Single Family		Potable	260	263	266	270	
Multi-Family		Potable	91	101	111	123	
Commercial		Potable	35	36	36	36	
Institutional/Governmental		Potable	16	16	16	16	
Sales/Transfers/Exchanges to other Suppliers		Potable	8	8	8	9	
Landscape		Potable	6	6	6	6	
Other (optional)	Bulk Water Sales	Potable	2	2	2	2	
Distribution System Water Loss		Potable	75	78	80	82	
		Subtotal Potable	493	510	525	544	0
		Subtotal Non-Potable	0	0	0	0	0
		Total	493	510	525	544	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.							

Single-Family Residential

Single-family residential customers account for 55% of the total annual usage for the year 2025. From 2016-2020 the average annual usage was 279 MG with a high of 297 MG (2020) and a low of 274 MG (2016). From 2021 to 2025 the average annual usage was 259 MG showing a decrease in annual usage from the previous 5-years. McKinleyville is a "bedroom" community and historically single-family residential customers account for most of the usage within the service area. Over the past 20 years McKinleyville has converted several acres of rural land to residential neighborhoods and is getting close to full build out. Currently there are 234 vacant single-family residential parcels within the service area. These parcels are 0.12 – 10 acres in size totaling 179 Acres. Humboldt county planning department requires a minimum lot size of 0.17 acres within the land use designations and zoning ordinances. If all vacant lots were to be developed at the highest density of 0.17 acre/lot that would generate 1,053 more single-family residential connections adding an annual usage of 53 million gallons of drinking water. This scenario generates the highest projected demand for single-family residential customers.

Single-Family Residential water usage was projected from 2025-2045 at a 0.26% annual growth rate. The annual growth rate of 0.26% was determined by calculating the annual growth rate of customer connections from 2021 to 2025 then applying that rate of growth to the water use total for 2025 then out to 2045.

Table 7. Single-Family Historic and Projected Water Use.

Historic Water Use MG	2015	2020	2025	
Single-Family	286	297	256	
Projected Water Use MG	**2030**	**2035**	**2040**	**2045**
Single-Family	260	263	266	270

Multi-Family Residential

Multi-family residential customers account for 17% of the total annual usage for the year 2025. The annual average usage for multi-family connections from 2016-2020 was 79 MG. From 2021-2025 the average annual usage for multi-family connections has increased to 82 MG. Over the past 5 years approximately 53 new multi-family units have been developed compared to 43 new units from 2016-2020. Multi-Family developments are a requirement of Humboldt County General Plan although, there are currently 9 vacant multi-family zoned parcels within the service area ranging from 0.71 acres – 0.19 acres. This sector is expected to have the most growth of any sector mainly due to the potential buildout of the town center which would add over 1000 new units, but it is difficult to put a specific date on when that may happen due to cost associated with development.

Multi-Family Residential water usage was projected from 2025-2045 at a 2% annual growth rate. The annual growth rate of 2% was determined by calculating the annual growth rate of customer connections from 2021 to 2025 then applying that rate of growth to the water use total for 2025 then out to 2045.

Table 8. Multi-Family Historic and Projected Water Use.

Historic Water Use MG	2015	2020	2025	
Multi-Family	79	81	82	
Projected Water Use MG	**2030**	**2035**	**2040**	**2045**
Multi-Family	91	101	111	123

Commercial

Commercial customers account for 7% of the total annual usage for the year 2025. MCSD has a small commercial area of shops, stores, restaurants, two small shopping centers, and a newly developed airport commercial area. The average annual usage for commercial connections from 2016-2020 was 38 MG, from 2021-2025 the average annual usage for commercial connections was 34 MG. There are currently 55 vacant commercial parcels within the service area ranging from 0.17 acres to 11 acres. Most of these vacant parcels are located at the airport business park just outside the McKinleyville urban area. Over the past 20 years several commercial businesses have come and gone, many were small shops with very little demand for drinking water. Little growth is anticipated from 2025 to 2045 even considering the availability of vacant commercial parcels and the proximity of these parcels to the McKinleyville urban area.

Commercial water usage was projected from 2026-2045 at a 0.1% annual growth rate. The annual growth rate of 0.1% was determined by calculating the annual growth rate of customer connections from 2021 to 2025 then applying that rate of growth to the water use total for 2025 then out to 2045. Connection growth in the commercial sector is slower than in the residential sectors due to limited new commercial space within the service area and very few plans to develop the vacant commercial parcels.

Table 9. Commercial Historic and Projected Water Use.

Historic Water Use MG	2015	2020	2025	
Commercial	39	40	35	
Projected Water Use MG	**2030**	**2035**	**2040**	**2040**
Commercial	35	36	36	36

Institutional / Government

Institutional government water use sector includes all water used by MCSD buildings, stations, facilities, a Coast Guard Air Station, Federal Courthouse, County Airport, two elementary schools, a middle and a high school. Institutional/Government water use accounts for 3% of the total annual usage for the year 2025. From 2016 to 2020 the lowest annual usage was 15 MG in 2018 and the highest annual usage was 18 MG in 2019. From 2021 to 2025 the average annual usage slightly decreased to 14 MG partially due to Pandemic. There has been slow growth within this sector over the past 20 years. There are currently no plans to develop or build additional facilities or parks within the service area.

Institutional/Government water usage was projected from 2025-2045 at a 0.1% annual growth rate. The annual growth rate of 0.1% was determined by calculating the annual growth rate of customer connections from 2021 to 2025 then applying that rate of growth to the water use total for 2025 then out to 2045. Connection growth in the institutional/government sector is slower than in other sectors due to limited space within the service area. Demand within this sector is not expected to increase due to the limited potential for development and the proximity to existing county institutional/government facilities.

Table 10. Institutional/Government Historic and Projected Water Use.

Historic Water Use MG	2015	2020	2025	
Institutional/Government	18	16	16	
Projected Water Use MG	**2030**	**2035**	**2040**	**2045**
Institutional/Government	16	16	16	16

Transfers to Other Agency

McKinleyville and the City of Arcata's water supply are vulnerable to natural disaster, therefore, an emergency intertie was constructed to allow for the flow of water to occur between both systems if necessary. This line remains stagnant when not in use, therefore, a 5/8-inch bypass was installed which allows the water within the intertie to turnover and maintain its chlorine residual. All water that passes through the bypass is metered and currently enters into the City of Arcata's water system from the McKinleyville system. The City of Arcata is then billed at the same wholesale price as if they were to receive the water directly from Humboldt Bay Municipal Water District (regional supplier). This transfer of water to the City of Arcata accounts for 1.5% of the total annual usage for 2025. For the calendar year 2025 the amount of water that passed through the meter from McKinleyville to Arcata was 6.9 MG or 21.18 AF (acre-feet) well below the 3000 AF to be considered a wholesale transfer. Usage for this sector is not expected to

increase considering the intertie water line is for emergency use only and the current usage is for maintaining the drinking water quality.

Transfers to other agencies water usage was projected from 2025-2045 at a 0.1% annual growth rate. The annual growth rate of 0.1% was determined by calculating the annual growth rate of customer connections from 2021 to 2025 then applying that rate of growth to the water use total for 2026 then out to 2045. Demand within this sector is not expected to increase.

Table 11. Transfers to Other Agencies Historic and Projected Water Use.

Historic Water Use MG	**2015**	**2020**	**2025**	
Transfers	4	7	7	
Projected Water Use MG	**2030**	**2035**	**2040**	**2045**
Transfers	8	8	8	9

Bulk Water Sales

Bulk water sales account for .4 % of the total annual usage for 2025. Bulk water sales have decreased significantly over the past 5-years. In 2021 the annual usage for bulk sales was 3.8 MG; in 2025 the annual usage was 1.8 MG. This decrease is likely due to a return to normal pre pandemic levels as annual usage in 2019 was 1.8 MG. Residents in the rural areas of McKinleyville have increased their water storage capabilities in response to the drought since the tracking of this sector in 2016. This sector isn't expected to grow much as McKinleyville is approaching max buildout. Since the average annual usage growth within this sector from 2019-2025 experienced no growth in usage. Therefore, predictions for 2026-2045 were estimated at a 0.1% annual growth.

Bulk water sales were projected from 2025-2045 at a .1% annual growth rate. The annual growth rate of 0.1% was determined by calculating the annual growth rate of bulk water sales from 2019 to 2025 then applying that rate of growth to the water use total for 2025 then out to 2045. Demand within this sector is expected to stay the same.

Table 12. Bulk Water Sales Historic and Projected Water Use.

Historic Water Use MG	**2015**	**2020**	**2025**	
Transfers	.469	3	2	
Projected Water Use MG	**2030**	**2035**	**2040**	**2045**
Transfers	2	2	2	2

Landscape

The landscape water use sector includes all MCSD facilities, open space irrigation, and sports sites irrigation. Landscape water use sector accounts for 1.3% of total annual usage for 2025. All landscape sites are metered and recorded through MCSD billing records. Landscape sector projections were calculated using MCSD billing records. From 2021 to 2025 landscape water use has stayed the same. In 2016 landscape water use was 6.1 MG; in 2025 landscape water use was

5.9 MG. There are several meters dedicated to landscape irrigation throughout the service area. All new subdivisions forming open space zones are required to install meters and encouraged to install drip systems and plant native plants that need little to no watering. Typically, once the landscape is established irrigation is no longer required. The District manages twenty-eight such open space zones plus the Hiller Sports Site, Pierson Park, and Larissa Park and ensures that conservation measures are met. In the previous few years only Hiller Sports Site and Pierson Park have active water usage. All the open space maintenance zones landscapes are established therefore the irrigation is no longer being used. Except for drier years contributing to an increase in water usage at Pierson Park and the Hiller Sports Site, this sector isn't expected to see much growth in the next 20 years.

Landscape water usage was projected from 2026-2045 at a 0.1% annual growth rate. The annual growth rate of 0.1% was determined by calculating the annual growth rate of landscape usage from 2021 to 2025 then applying that rate of growth to the water use total for 2026 then out to 2045. Demand within this sector is not expected to increase.

Table 13. Landscape Historic and Projected Water Use.

Historic Water Use MG	**2015**	**2020**	**2025**
Landscape	6	6	6

Projected Water Use MG	**2030**	**2035**	**2040**	**2045**
Landscape	6	6	6	6

Submittal Table 4-6. Progress Towards 2028 Water Loss Standard

Submittal Table 4-6 Retail: Progress Towards 2028 Water Loss Standard
Water Code Section 10631(d)(3)(C)

Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System? (y/n) If no, Supplier will not complete this row.	Real Water Loss					Apparent Water Loss				
		State Water Board Standard		Most Recent AWWA Water Loss Audit			State Water Board Standard		Most Recent AWWA Water Loss Audit		
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss Drop down list	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (MG)	Real Water Loss Per Unit per Day	2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (MG)	Apparent Water Loss Per Unit per Day
Add additional rows as needed.											
1210016	Yes	16.6	Gallons per Service Connection per Day (GPSCD)	6503	61.299	25.8	1.4	Gallons per Service Connection per Day (GPSCD)	6503	10.175	4.3

4.3. Characteristic Five-Year Water Use

Table 14. Characteristic Five-Year Water Use.

Characteristic 5-Year Water Supply and Demand					
Year	**2026**	**2027**	**2028**	**2029**	**2030**
Total Water Demand MG	490	491	492	493	493
Total Water Supply MG	946	946	946	946	946

4.4. Distribution System Water Losses

MCSD distribution system water losses were calculated using the American Water Works Association (AWWA) water loss reporting worksheet and were calculated for calendar year 2024. The calculated water loss (real loss) for 2024 is 72 MG (AWWA Water Loss Worksheet) (Appendix A).

Submittal Table 4-5. Water Loss Audit Reporting.

Submittal Table 4-5 Retail: Water Loss Audit Reporting **Water Code Section 10631(d)(3)(A)**		
Public Water System ID # **Reported in Table 2-1 R**	Reporting Period	Submitted to DWR Water Loss Audit Program (yes/no)
Report submittal status for all five years for each Public Water System as available. **Add rows as needed**		
	2020	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES: See Appendix A for individual water loss audit reports		

The MCSD meters **ALL** customer usage and records **ALL** water sales and uses for parks and District facilities. System leaks are infrequent and are immediately repaired. The water distribution system is only about 45 years old, and the system is kept in excellent condition. The District experiences only a few service leaks per year and very infrequent main leaks.

The District monitors our system closely and consider our response level to be more than adequate. MCSD tracks and contacts customers about unusual increases in their monthly usage and talks to them about any possible leaks and how to check their meters and plumbing.

McKinleyville Community Services District replaced all customer water meters with radio read meters from 2015 to 2017. The meters have a +/- 0.01% error factor. Replacing the meters has helped reduce water loss and continue our efforts to manage leaks and assist customers with locating leaks easier.

4.5. Estimating Future Water Savings

Due to the service areas proximity to the ocean, the local climate, and abundance of precipitation MCSD does not include future water savings into the local codes, standards, ordinances, transportation and land use plans.

4.6. Water Use for Lower Income Households

The MCSD service area falls within unincorporated Humboldt County. The Humboldt County Association of Governments (HCAOG) has prepared a Regional Housing Needs Allocation (RHNA) Plan (2019) which assessed and projected Humboldt County housing needs for 2018 to 2027. From 2014-2019, 33% of Humboldt County's housing needs were for low-income units. The RHNA determination, based on projected population and projected households for Humboldt County, indicated 547 low and very low-income housing units needed throughout the unincorporated Humboldt County area from 2018 to 2027. Vacant land zoned for multi-family low-income housing remains in short supply within McKinleyville. There are currently 9 vacant multi-family zoned parcels and limited vacant residential parcels with potential for low-income housing development within the service area. Water use for low-income households is not tracked through MCSD service records, it is included in usage for single and multi-family residential sectors. Estimated projected water use for lower-income housing units is not anticipated to be significantly different than average residential water uses in the service area.

Water use projections for low-income households were included in projected water demands for single-family and multi-family water use projections.

Submittal Table 4-3. Inclusion in water use projections.

Submittal Table 4-3 Retail: Inclusion in Water Use Projections Water Code Section 10631 (a), 10631 (d)(4)(A), and 10631 (d)(4)(B)	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) **Drop down list (y/n)**	No
If "Yes" to above: State the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found. **OPTIONAL** Suppliers may complete Optional Submittal Table 4-4 R to quantify the expected savings.	
Are Lower Income Residential Demands Included in Projections? (Refer to Appendix K of UWMP Guidebook) **Drop down list (y/n)**	Yes
OPTIONAL If the method for accounting Lower Income Residential Demands has been included, provide page number where this accounting can be found. (An example is included in Appendix K.)	
NOTES:	

4.7. Climate Change Considerations

McKinleyville is located on the California north coast where there is an abundant supply of water and the terrain is rural. The changing climate is likely to increase the need for water but reduce the supply. Rising temperatures will increase the rate at which water evaporates into the air from soils and surface waters raising the demand for irrigation of agricultural lands, lawns, and gardens. Higher temperatures and drought are likely to increase the severity, frequency, and extent of wildfires. The eastern portion of McKinleyville is heavily forested with timber land, the increased risk of wildfires would require additional storage and demand for firefighting needs. Sea level is likely to rise 8-9 inches by 2040. Though McKinleyville sits on a coastal bluff, it is still vulnerable to sea level rise. The main pump station rests at approximately 50 feet elevation along the mad river and is potentially vulnerable to seal level rise and flooding. MCSD utilized the Environmental Protection Agency (EPA) Climate Resilience Evaluation and Awareness Tool (CREAT) to develop climate scenarios and to assess climate-related risk.

5. SBX7-7 BASELINES TARGETS AND 2020 COMPLIANCE

The Water Conservation Act of 2009 (SBX7-7) requires urban retail water suppliers to achieve a 20 percent reduction in per capita water use by 2020. MCSD established its baseline and water use targets in the 2015 Urban Water Management Plan using the methodologies described in SBX7-7 guidance.

MCSD has not experienced any changes to its service area boundaries or methodology since the 2015 UWMP. Therefore, the baseline periods, population estimates, and target calculations remain unchanged and are not recalculated in this 2025 UWMP.

The 10-year baseline daily per capita water use was established at 114 gallons per capita per day (GPCD), resulting in a 2020 target of 91 GPCD.

MCSD achieved a 2020 GPCD of 72, thereby meeting and exceeding the SBX7-7 target. Supporting calculations are documented in the 2015 UWMP and remain applicable.

Submittal Table 5-1. SBX7-7 Target Progress

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress **Water Code Section 10608.40**						
☐	**Check the box if the Supplier was not an Urban Water Supplier during or before the 2020 UWMP reporting cycle. Proceed to the next table.**					
Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	**Only for suppliers that did not meet the Target in 2020** **See DWR NOTES below.**	
					Actual 2025 GPCD (From SB X7-7 Compliance Form)	Did Supplier meet the 2020 Target in 2025?
No	Individual Target	91	72	Yes		NA
DWR NOTES: **Suppliers calculating a 2025 GPCD** will need to complete and submit SB X 7-7 Compliance Tables to verify the use of SB X7-7 Methodologies. **Suppliers that were part of a merger or consolidation since 2020** see Chapter 5 and Appendix P for guidance.						
NOTES:						

6. SYSTEM SUPPLIES

Portions of Chapter 6 addressing surface water, existing and planned sources of water, and climate change impacts to water supply were provided by Humboldt Bay Municipal Water District, the regional wholesaler.

6.1. Purchased or Imported Water

The MCSD Service Area has one primary water source and one emergency inter-tie connection providing water to the distribution system. Wholesale water is purchased from Humboldt Bay Municipal Water District and delivered to the Ramey Pump Station on North Bank Rd. The water distributed by HBMWD is from the Mad River. The R.W. Mathews dam, located in Trinity County, impounds water to form Ruth Reservoir. The Mad River flows from Trinity County into Humboldt County where water is diverted at HBMWD's Essex pumping facility located approximately 75 miles downstream from the dam. MCSD does not purchase or import water from any other source.

6.2. Ground Water

MCSD does not pump any groundwater or draw surface water from any sources. The local stormwater system is separate from both the water and wastewater systems and is not currently utilized to meet local water supply demands. MCSD has no plans to explore groundwater sources.

Submittal Table 6-1. Ground water volume pumped.

Submittal Table 6-1 Retail: Groundwater Volume Pumped **Water Code Section 10631(4) and 10631(4)(c)**	
☑	Check the box if the Supplier does not pump groundwater. Proceed to the next table.

6.3. Surface Water

HBMWD has appropriative water rights permits from the State Water Resources Control Board through the year 2029 for surface water storage and diversion. HBMWD water rights permits allow it to store and divert a combined 75 million gallons a day (MGD) from the Mad River. This totals 84,000 Acre feet per year (AFY), which represents 8.5% of the average annual runoff (982,600 AFY) of the Mad River Basin for the period from 1963 to 2020 (average annual runoff data provided by USGS at Gage Station 1148100 on the Mad River near Arcata, CA).

The HBMWD operates Ruth Reservoir about 79 miles east of the coastal areas. This reservoir impounds only about 3% of the watershed and fills at a very rapid rate in normal rainfall years. Approximately 11 MGD is delivered to the municipal/district customers and entitlement is limited by actions taken during water shortage emergencies. Of the delivered water, a peak flow rate of 2.6 MGD is committed to serve the MCSD customers.

Submittal Table 6-8. Water supplies actual.

Submittal Table 6-8 Retail: Water Supplies — 2025 Actual Water Code Section 10631 (b)				
Water Supply		2025		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	**Water Type** (after treatment if treated) (OPTIONAL) **Drop Down list**	**Actual Volume**	**Total Entitlement** (OPTIONAL) See "DWR Notes" below
			(MG)	(MG)
Add additional rules as needed				
Purchased or Imported Water		Potable	469	949
		Subtotal Potable	469	949
Subtotal Non-Potable			0	0
		Total	469	949
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Total Entitlement:** e.g. Water Right, Groundwater Allocation, Contracted Amount.				

Submittal Table 6-9. Retail water supplies projected.

Submittal Table 6-9 Retail: Water Supplies — Projected Water Code Section 10631 (b)												
Water Supply			**Projected Water Supply (Report to the Extent Practicable)**									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	**Water Type** (after treatment if treated) (OPTIONAL) **Drop Down list**	**2030**		**2035**		**2040**		**2045**		**2050 (opt)**	
			Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below	Reasonably Available Volume	Total Entitlement (OPTIONAL) See "DWR Notes" below
			(MG)	(MG)	(MG)	(MG)	(MG)	(MG)	(MG)	(MG)	(MG)	(MG)
Add additional rows as needed												
Purchased or Imported Water			949		949		949		949			
Subtotal Potable			0	0	0	0	0	0	0	0	0	0
Subtotal Non-Potable			0	0	0	0	0	0	0	0	0	0
Total			949	0	949	0	949	0	949	0	0	0
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. **Total Entitlement:** e.g. Water Right, Groundwater Allocation, Contracted Amount.												

6.4. Stormwater

MCSD does not utilize stormwater to meet local water supply demands. The stormwater collection system within the MCSD service area is a standalone system managed and maintained by Humboldt County Public Works.

6.5. Wastewater and Recycled Water

MCSD owns and operates the only wastewater management facility (WWMF) for the service area. All wastewater collected is from within the MCSD service area. Due to the rural nature of McKinleyville, approximately 15% of residents within the service area are on septic systems.

The wastewater management facility is a secondary disinfected treatment process facility that consists of a collection system with 68.92 miles of collection mains, five lift stations, wastewater treatment facility, and effluent disposal and land reclamation systems. The average dry weather design flow of the treatment facility is 1.37 million gallons per day (MGD) and the wet weather peak capacity is 3.08 MGD (*MCSD Wastewater NPDES Permit*).

Submittal Table 6-2. Wastewater collected within the service area.

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2025 Water Code Section 10633(a)				
☐	Check the box if there is no wastewater collection system. Proceed to the next table.			
	Percentage of 2025 service area served by wastewater collection system (OPTIONAL)			
	Percentage of 2025 service area population served by wastewater collection system (OPTIONAL)			
Wastewater Collection			**Recipient of Collected Wastewater**	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? OPTIONAL **Drop Down List**	Volume of Wastewater Collected from UWMP Service Area 2025 (MG)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number **Drop down list**	Is WWTP Located Within UWMP Area? **Drop Down List**
Add additional rows as needed				
McKinleyville Community Services District	Metered	356	McKinleyville WWTP, Place ID 240093	Yes
Total Wastewater Received from UWMP Service Area in 2025:		356		
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Additional Guidance**. See Appendix M, Section M.21 for detailed guidance on this table.				

In accordance with the Districts National Pollution Discharge Elimination System (NPDES) permit, MCSD disposes treated wastewater to five approved locations: Mad River, lower Fischer ranch, upper Fischer ranch, Pialorsi ranch, and Hiller storm water treatment wetland and forested area. Three of the disposal locations; lower Fischer ranch, upper Fischer ranch, and Pialorsi ranch, provide seasonal agricultural irrigation for fodder crop production.
Generally, these locations are irrigated during the summer months of May to October. Due to high rainfall and river flows during the winter months, MCSD discharges directly to the Mad River. Discharge to all five approved land locations is utilized during the summer months or if the river flow is below 200 cubic feet per second (cfs). For calendar year 2025, 159 MG of recycled wastewater was utilized for beneficial agricultural irrigation.

Submittal Table 6-3. Wastewater treatment and discharge.

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area in 2025 Water Code Section 10633(a)																
☐	Check the box if no wastewater is treated or disposed of within the UWMP service area. Proceed to the next table.															
				2025 Outcomes of Treated Wastewater												
Wastewater Treatment Plant Name and Place ID Number **Drop down list**	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (OPTIONAL) **Drop down list**	2025 Volume of Wastewater Received from UWMP Service Area (As Reported in Submittal Table 6-2 R)	Total 2025 Volume of Water Treated	**Water Recycled Within UWMP Service Area** (enter data as applicable)		**Water Recycled Outside of UWMP Service Area** (enter data as applicable)		**Effluent Discharge that is not a Permitted Recycled Water Use** (enter data as applicable)		**Required Discharge for Instream Flow** (enter data as applicable)		**Delivered to Another Entity for Additional Treatment** (enter data as applicable)			
				Treatment Level **Drop down list**	Volume	Treatment Level **Drop down list**	Volume	Treatment Level **Drop down list**	Volume	Treatment Level **Drop down list**	Volume	Treatment Level **Drop down list**	Volume	Name of other entity
		(MG)	(MG)		(MG)		(MG)		(MG)		(MG)		(MG)	
Add additional rows as needed														
McKinleyville WWTP, Place ID 240093	No	356	369	Secondary, Disinfected - 23	159		-	Secondary, Disinfected - 2.2	210					
Total		356	369		159		0		210		0		0	
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **IPR:** Indirect Potable Reuse would have the treatment level of its end use requirement in the Level of Treatment drop-down. **Additional Guidance.** See Appendix M, Section M.21 for detailed guidance on this table.																
NOTES:																

Submittal Table 6-4. Recycled water direct beneficial uses within the service area.

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area Water Code Section 10633 (c)(e)										
☐	Check box if recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.									
Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL) :			McKinleyville Community Services District							
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :										
Supplemental Water Added in 2025 (volume) Include units (OPTIONAL) :										
Source of 2025 Supplemental Water (OPTIONAL) :										
Use Type Drop down list	Water Type (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025	2030	2035	2040	2045	2050 (opt)	Potential Recycled Water Use	
			(MG)	(MG)	(MG)	(MG)	(MG)	(MG)	Volume	Narrative page number (OPTIONAL)
Add additional rows as needed										
Agricultural irrigation		Used to irrigate foder crops	159	169	179	190	202		159	
		Total	0	0	0	0	0	0	0	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Additional Guidance.** See Appendix M, Section M.21 for detailed guidance on this table. **Potential recycled water use** - a description of the feasibility of these uses must be included in the narrative. **Multiple Producers:** If you have multiple recycled water producers, submit a separate table for each.										
NOTES: Annual growth rate of 1.2%										

Submittal Table 6-5. 2020 UWMP recycled water use projection compared to 2025 actual.

Submittal Table 6-5 Retail: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual Water Code Section 10633 (e)		
☐	Check the box if recycled water was not used in 2025 nor previously projected for use in 2020. Proceed to the next table.	
Use Type Drop Down list	2020 Projection for 2025	2025 Actual Use
	(MG)	(MG)
Add additional rows as needed		
Agricultural irrigation	107	159
Total	107	159
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3 **Additional Guidance.** See Appendix M, Section M.21 for detailed guidance on this table.		
NOTES:		

Due to McKinleyville's proximity to the Pacific Ocean, the climate, and the abundance of precipitation, there is little demand for recycled water within the service area. Dual systems for recycled water use would be extremely expensive and are not being considered at this time. The MCSD wastewater treatment facility produces secondary disinfected treatment that is beneficially utilized for agricultural irrigation but is not currently capable of producing high quality effluent for further recycled water use.

Submittal Table 6-6. Methods to expand future recycled water use.

Submittal Table 6-6 Retail: Methods to Encourage Future Recycled Water Use Water Code Section 10633 (f)	
☑	Check the box if the Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.

6.6. Desalinated Water

Due to the regional climate and abundance of precipitation there are no plans within the region or MCSD service area for consideration of desalinated water.

6.7. Water Exchanges and Transfers

MCSD currently does not exchange or transfer water with any other regional water suppliers. There is an emergency intertie connecting the MCSD and City of Arcata water systems that is for emergency use only. The intertie is explained in detail in section 4.2.

6.8. Future Water Projects

There are no legal, environmental, water quality, or climatic factors resulting in an inconsistent water supply in the Service Area. The Mad River water source has been very consistent and adequate water rights exist to meet demand projections for the planning period of the 2025 UWMP.

Submittal Table 6-7. Water supply projects or programs.

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs Water Code Section 10631 (f)	
☑	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Procees to the next table.

6.9. Summary of Existing and Planned Sources of Water

MCSD receives 100% of its water from HBMWD, the regional supplier. MCSD currently has no plans to explore additional sources of water.

6.10. Energy Use

Energy intensities for MCSD water supplies were calculated and reported for the calendar year 2025. Water energy intensities are reported by a total utility approach, where the total amount of energy consumed, in kilowatt-hours (kWh), is divided by the total volume of water entering the system. Volume of water is total volume for the year 2025 in million gallons. Water entering the system is metered and energy information is from Pacific Gas and Electric (PG&E) billing records. Treated drinking water is gravity conveyed to MCSD Ramey Pump Station from HBMWD. Ramy Pump Station uses energy to distribute water supplies, and place water in Cochran and Norton storage tanks. Energy is consumed at the Cochran storage location for placing water into the McClusky storage tanks and to distribute water supplies throughout the upper pressure zone, and for tele-communications and alert systems. Blake pressure zone is fed by a hydropneumatic tank that requires energy to place water into storage and for the distribution of water supplies.

A total of 469 MG entered the water system and consumed 296,950 kWh of energy providing an Energy Intensity (kWh/Volume converted to MG) of 633.

Submittal Table O1-1B. Energy use reporting table.

Optional Submittal Table O-1B: Recommended Energy Reporting - SINGLE DELIVERY PRODUCT - TOTAL UTILITY APPROACH				
Water Delivery Product drop down list (If delivering more than one type of product recommend using Table O-1C)	Retail Potable Deliveries	**Only for Water Delivery Products Under the Urban Water Supplier's Operational Control**		
Start Date of Reporting Period	12/24/2024	**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
End Date of Reporting Period	12/25/2025			
Is upstream embedded energy in the values reported?	No			
Units of Measure for Water	(MG)	**Total Utility** See DWR NOTES	**Hydropower**	**Net Utility**
Volume of Water Entering Process		469	0.00	469
Energy Consumed (kWh)		296,950	0.00	296,950
Energy Intensity (kWh/vol. converted to MG)		633	-	633

DWR NOTES:

Total Utility: The volume of water entered in the "Total Utility" column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from your volume in this table.

Quantity of Self-Generated Renewable Energy

0 kWh

Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)

Metered Data

Data Quality Narrative:

Volume of water is total volume for the year 2025 in million gallons. Water entering te system is metered. Energy information if from Pacific Gas and Electric PG&E billing records. Energy consumed includes, metered energy to convey, place into storage, and distribute drinking water.

Narrative:

Treated drinking water is gravity conveyed to MCSD Ramey Pump Station from HBMWD. Ramy Pump Station uses energy to, distribute water supplies, and place water into storage. Energy is consumed at the Cochran storage location for placing water into the McClusky storage tanks and to distribute water supplies throughout the distribution system, telecommunications, and alert system. Blake pressure zone is fed by a hydropnuematic tank that requires energy to place water into storage and for the distribution of water supplies.

NOTES:

7. WATER SUPPLY RELIABILITY

All water supplied to the region by HBMWD comes from the Mad River watershed and the Ruth Lake impounded by the R.W. Matthews Dam. The total volume of water impounded and diverted by HBMWD represents a small percentage of the natural yield of the Mad River watershed. With respect to diversions, the current withdrawal rate at Essex (where HBMWD pumps water for distribution within the region) is approximately 25 to 30 MGD which is only 3% of the total annual average runoff of the Mad River watershed. The full diversion capacity of 75 MGD (84,000 acre-feet per year) is just 8% of the total annual average runoff of the watershed.

Average annual precipitation in the watershed is approximately 60 inches with up to 75 inches in the high headwaters, primarily falling between October and April. Long duration snow and rainstorms are common during the winter with short duration thunderstorms occurring infrequently during the summer and fall. The highest average precipitation is in the middle of the watershed in the Bug Creek and Boulder Creek watersheds, averaging over 100 inches per year in the mountains. The highest precipitation in the watershed is in the vicinity of Bug Creek Butte, averaging over 120 inches a year (*Mad River Watershed Assessment, 2010*).

HBMWD treats its water and performs annual monitoring and testing, in accordance with the USEPA and the State Board regulations and requirements, to ensure its water is safe to drink. In addition, MCSD performs separate monitoring and testing, in accordance with the USEPA and the State Board regulations and requirements, to ensure that the water quality remains high within the MCSD storage and distribution systems. Additional monitoring performed by MCSD includes laboratory analysis for coliform bacteria, disinfection byproducts and lead/copper. Test results for disinfection byproducts and lead/copper are included in the MCSD test results table within the MCSD 2025 Consumer Confidence Report (CCR) (Appendix C). The MCSD testing for coliform produced zero results. Test results for disinfection byproducts have been below the Maximum Contaminant Level (MCL).

In 2024, MCSD conducted UCMR (Unregulated Contaminant Monitoring Rule) water quality tests for numerous contaminants. The results from MCSD's 2024 monitoring and testing programs indicate that the water quality is very high, as has consistently been the case in past years.

7.1. Constraints on Water Sources

The main constraint regarding MCSD's retail water source is the sole transmission line from HBMWD that runs under the Mad River. This transmission line is vulnerable to natural disasters such as, earthquakes and floods. MCSD has taken steps to address this concern by installing a 12-inch emergency intertie between the MCSD and City of Arcata water systems and applying for grants to install a redundant transmission line. This intertie has the capability to supply water to either municipality in the event water from HBMWD is unavailable. HBMWD may also restrict water use for retail customers if Ruth Lake falls to 65% of capacity and the accumulated rainfall in the Ruth area is 70% or less of the historical average (49 inches). An event such as this has not occurred within the Mad River Watershed since 1977. Other possible constraints include contamination or damage to the system from natural disasters such as, earthquakes, floods, or other destruction.

7.2. Reliability by Type of Year

HBMWD has permitted rights to store 48,030 AFY of Mad River water at Ruth Reservoir and divert 84,000 AFY of water at Essex to supply its wholesale and retail customers. The highest projected total water demand for HBMWD's wholesale customers in 2040 is 11,099 AFY, which is approximately 14% of this permitted water supply.

7.2.1. Normal Year

During a normal water year, the Ruth Lake area averages 65.42 inches of rainfall with about 173,000 AF of water flowing into the reservoir via the Mad River watershed. The average runoff for the watershed near the District's diversion facilities at Essex is 959,071 AFY (over the entire record period from 1963 to 2020). The average annual runoff data was provided by USGS at Gage Station 1148100 on the Mad River near Arcata, CA. The Water Year ending in 1989 was considered an average water year because the average runoff for the watershed that year was 985,364 AFY, which is closest to the average annual runoff for the watershed as provided.

Submittal Table 7-2. Normal year supply and demand comparison.

Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (MG)	2035 (MG)	2040 (MG)	2045 (MG)	2050 (Opt) (MG)
Supply totals (autofill from Submittal Table 6-9 R)	949	949	949	949	0
Use totals (autofill from Submittal Table 4-2 R)	493	510	525	544	0
Surplus/(shortfall)	456	439	424	405	0

7.2.2. Single-Dry Year

The water year ending in 1977 was the driest recorded for the District, far drier than any other. Rainfall in the Ruth area was 29 inches, or 41% of the normal 69.8 inches. Flows into the reservoir were 26,000 AFY, or 15% of the normal 173,000 AFY. The runoff for the watershed measured near the District's diversion facilities was 109,107 AFY, or 11% of the normal 959,071 AFY. The average reservoir volume for the water year was 21,000 AF, which is 44% of capacity (48,030 AF) and 51% of the normal 41,000 AF. The reservoir was drawn down to 13,000 AF, or 27% of its full capacity of 48,030 AF at the end of the water year.

Fall storms arrived in November 1977 and quickly refilled the reservoir. This water year was severely dry throughout the entire state of California and was a very exceptional year in the District's history:

- In 52 years of records, it was the only year in which rainfall was less than 50% of normal (69.8 inches).
- It was also the only year in which the reservoir was not filled to capacity.
- Total flows into the reservoir via the Mad River were half the value of the next driest year (2001).
- Runoff for the watershed and average reservoir volume were each 60% of the next driest year.

Submittal Table 7-3. Retail single dry year supply and demand assessment.

Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (MG)	2035 (MG)	2040 (MG)	2045 (MG)	2050 (Opt) (MG)
Supply totals	949	949	949	949	
Use totals	493	510	525	544	
Surplus/(shortfall)	456	439	424	405	

7.2.3. Multiple Dry-Year Period

The five water years between October 1990 and September 1994 represent the driest five multiple years recorded for the regional supplier HBMWD.

- Rainfall for this period averaged 49 inches per year, or 70% of normal.
- Of the five water years, the driest year for rainfall was water year 1991/1992 with 37 inches, or 53% of normal.
- Flows into Ruth Lake via the Mad River averaged 64,000 AFY, or 37% of the normal 173,000 AFY.
- Despite the diminished rainfall and runoff, rainfall was more than sufficient to refill the reservoir each year.
- Reservoir volume during this period averaged 39,062 AF which is 81% of capacity (48,030
- AF) and 95% of the normal 41,000 AF.

The runoff for the watershed above HBMWD's diversion facilities for these five water years as compared to the normal 959,071 AFY was:

- 1990: 571,815 AFY, or 60% of normal
- 1991: 371,300 AFY, or 39% of normal.
- 1992: 282,794 AFY, or 29% of normal (driest water year of the five).
- 1993: 1,175,052 AFY, or 119% of normal.
- 1994: 434,979 AFY, or 44% of normal.

7.3. Supply and Demand and Drought Risk Assessment

Watershed runoff data from the three consecutive water years mentioned above were used for the drought risk assessment (DRA), attributing 571,815 AFY (first year), 371,340 AFY (second year), and 282,794 AFY (third year), 1,175,052 AFY (fourth year) and 434,979 AFY (fifth year). As these supply amounts are larger than the HBMWD's maximum permitted supply amount of 84,000 AFY, HBMWD is able to maintain its water supply during these consecutive dry water years as well. Therefore, HBMWD's water supply projections for multiple dry water years as its permitted amount of 84,000 AFY for 2030 through 2045. The data shows that HBMWD has more than enough water supply to meet demand, even during multiple dry water years.

A peak flow rate of 2.6 MGD is committed to serve the MCSD from HBMWD. The current average daily demand (ADD) for the MCSD service area is 1.35 MGD (2025) with a maximum daily demand (MDD) of 2.53 MGD.

Submittal Table 7-4. Multiple dry years supply and demand comparison.

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison Water Code Section 10635(a)							
		2030 (MG)	2035 (MG)	2040 (MG)	2045 (MG)	2050 (Opt) (MG)
First year	Supply totals	949	949	949	949	
	Use totals	493	510	525	544	
	Surplus/(shortfall)	456	439	424	405	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	949	949	949	949	
	Use totals	493	510	525	544	
	Surplus/(shortfall)	456	439	424	405	0
	OPTIONAL WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	949	949	949	949	
	Use totals	493	510	525	544	
	Surplus/(shortfall)	456	439	424	405	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	949	949	949	949	
	Use totals	493	510	525	544	
	Surplus/(shortfall)	456	439	424	405	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	949	949	949	949	
	Use totals	493	510	525	544	
	Surplus/(shortfall)	456	439	424	405	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

As previously noted, during multiple drought years, Ruth Reservoir has filled to capacity. The only year the reservoir did not fill was the water year ending in 1977. Fall storms arrived in November 1977 and quickly refilled the reservoir. During the 1977 water year, watershed runoff was 109,107 AFY. This amount is more than HBMWD's permitted water supply of 84,000 AFY. For the DRA the District assumed decreased rainfall due to climate change and that the reservoir will not fill and steadily decreases dramatically over five years beginning with a low watershed runoff of 80,000 AFY. As noted, the lowest in the history was 109,107 AFY. These numbers used are actually lower than the five-year consecutive drought numbers. As the table shows, in the unlikely event that this scenario were to occur, there is still ample supply for all of HBMWD's customers.

Link to HBMWD UWMPP https://www.hbmwd.com/files/03d84a5c2/UWMP-2020+final.pdf

7.4. Regional Supply Reliability

The North Coast is one of the only areas in California with an abundance of water. Droughts, while severe climatically, have not resulted in the level of water supply shortfalls that other areas of California routinely experience. The drought of 1976/1977 was the only declared water emergency on the North Coast. During that event, Ruth Lake storage was 52% of normal average volume and rainfall in the Ruth Lake area was 42% of historical average. The drought came to an end with heavy rains during November 1977.

Submittal Table 7-5. Five-year drought risk assessment.

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)		
2026		**Total**
Total Water Use	(MG)	490
Total Supplies	(MG)	949
Surplus/Shortfall w/o WSCP Action		459
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(MG)	
WSCP - use reduction savings benefit	(MG)	
Revised Surplus/(shortfall)		
2027		**Total**
Total Water Use	(MG)	491
Total Supplies	(MG)	949
Surplus/Shortfall w/o WSCP Action		458
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(MG)	
WSCP - use reduction savings benefit	(MG)	
Revised Surplus/(shortfall)		
2028		**Total**
Total Water Use	(MG)	492
Total Supplies	(MG)	949
Surplus/Shortfall w/o WSCP Action		457
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(MG)	
WSCP - use reduction savings benefit	(MG)	
Revised Surplus/(shortfall)		
2029		**Total**
Total Water Use	(MG)	493
Total Supplies	(MG)	949
Surplus/Shortfall w/o WSCP Action		456
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(MG)	
WSCP - use reduction savings benefit	(MG)	
Revised Surplus/(shortfall)		
2030		**Total**
Total Water Use	(MG)	493
Total Supplies	(MG)	949
Surplus/Shortfall w/o WSCP Action		456
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	(MG)	
WSCP - use reduction savings benefit	(MG)	
Revised Surplus/(shortfall)		
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.		

8. WATER SHORTAGE CONTINGENCY PLANNING

The McKinleyville Community Services District (MCSD or District) Water Shortage Contingency Plan (WSCP) is a strategic planning document designed to prepare for and respond to water shortages. This Water Shortage Contingency Plan complies with California Water Code (CWC) Section 10632, which requires that every urban water supplier shall prepare and adopt a WSCP as part of its Urban Water Management Plan (UWMP). This level of detailed planning and preparation is intended to help maintain reliable supplies and reduce the impacts of supply interruptions.

The provisions of the WSCP shall take effect upon a declaration of a water shortage made by a resolution of the MCSD Board of Directors (the Board). Recommendation for the implementation of the WSCP shall be brought to the Board of Directors whenever the District General Manager, upon engineering analysis of District water supplies, information received from the wholesale water provider, Humboldt Bay Municipal Water District (HBMWD), or due to regulatory requirements, notices, or orders, finds and determines that a water shortage emergency exists or is imminent within the MCSD water service area. WSCP shall remain in effect for the duration of the water shortage set forth in the resolution, or until rescinded by the Board.

The WSCP establishes water use restrictions and prohibitions to be implemented during times of declared water shortages or declared water shortage emergencies. It establishes six stages of response actions to be implemented in times of shortage, with increasing restrictions on water use in response to worsening drought conditions or decreasing available supplies. The MCSD Board of Directors, upon recommendation by the General Manager, shall determine and declare by resolution the stage of response action necessary. Notice of such determination shall be published in a newspaper of general circulation and shall be effective within five (5) days from the date the declaration is made.

The MCSD WSCP has prescriptive elements, such as: an analysis of water supply reliability, the water shortage response actions for each of the six standard water shortage stages, protocols and procedures to communicate identified actions for any current or predicted water shortage conditions, procedures for an annual water supply and demand assessment; reevaluation and improvement procedures for evaluating the WSCP.

The WSCP also describes MCSD's procedures for conducting an Annual Water Supply and Demand Assessment that is required by CWC Section 10632.1 and is to be submitted to the California Department of Water Resources (DWR) on or before July 1 of each year. MCSD's 2025 WSCP is included as chapter 8 within the 2025 MCSD Urban Water management Plan (UWMP).

8.1. Water Supply Reliability

HBMWD has appropriative water rights permits from the State Water Resources Control Board through the year 2029 for surface water storage and diversion. HBMWD water rights permits allow it to store and divert a combined 75 million gallons a day (MGD) from the Mad River. This totals 84,000 Acre feet per year (AFY), which represents 8.5% of the average annual runoff

(982,600 AFY) of the Mad River Basin for the period from 1963 to 2020 (average annual runoff data provided by USGS at Gage Station 1148100 on the Mad River near Arcata, CA).

The HBMWD operates Ruth Reservoir about 79 miles east of the coastal areas. This reservoir impounds only about 3% of the watershed and fills at a very rapid rate in normal rainfall years. Approximately 11 MGD is delivered to the municipal/district customers and entitlement is limited by actions taken during water shortage emergencies. Of the delivered water, a peak flow rate of 2.6 MGD is committed to serve the MCSD customers.

The MCSD receives the water delivery at the North Bank Pump Station having a bank of three pumps. The District has one 4.5 Million-gallon tank, two 1.5 Million gallons tanks, two 1.0 million-gallon tanks, a 100,000 and 150,000-gallon tank and three booster stations throughout the distribution system. MCSD has plans to upgrade the 100,000 and 150,000-gallon tanks to different tank material.

8.2. Water Supply and Demand Assessment

As an urban water supplier, MCSD must prepare and submit an Annual Water Supply and Demand Assessment. The Annual Assessment is an evaluation of the near-term supplies and demands and how a perceived shortage may relate to WSCP shortage stage response actions in the current calendar year; this determination is based on known circumstances and information available to MCSD at the time of analysis.

Since 2022, the **Annual Assessment is due by July 1** of every year, as indicated by CWC Section 10632.1.

This section describes MCSD's procedures for conducting the Annual Assessment, which include: (1) the written decision-making process MCSD will use each year to determine its water supply reliability; and (2) the key data inputs and assessment methodology used to evaluate MCSD's water supply reliability for the current year and one dry year.

8.2.1. Steps to Approve the Annual Assessment

The Annual Assessment is primarily based on MCSD's monthly monitoring and reporting of water statistics and average and maximum water usages. Each month water supplies and demands are evaluated and reported to the MCSD Board of Directors. These monthly analyses provide key information for MCSD managers to meet a range of estimated demands and adjust to changing conditions throughout the year.

As a retail water supplier, MCSD's water demands are a function of residential and commercial customer usages. Each month billing records are utilized to evaluate and report system demands. The monthly water monitoring reports are compiled annually for State reporting and to evaluate consumptive and replenishment demands for the system. This information is the basis for determining unconstrained demands for the purpose of the Annual Water Shortage Assessment Report requirements.

By July 1, of each year, MCSD staff will complete an Annual Water Shortage Assessment Report. The report will be reviewed and approved by the General Manager. The final approved report will be submitted to the Department of Water Resources.

8.2.2. Current Year Customer Demand

The 2025 Average Daily Demand (ADD) for the entire MCSD water system is 1.35 MG, the Maximum Daily Demand (MDD) is 2.52 MG. The current ADD is not expected to increase much over the next ten years due to McKinleyville getting close to full build out. The weather for McKinleyville is coastal maritime with moderate temperatures, summer temperatures range from the low 50's up to the mid 70's. Currently there are no plans for expansion of the service area, the annexation of additional customers, or plans for substantive industrial development within the service area.

8.2.3. Current Year Available Supply

With respect to diversions, the current withdrawal rate at Essex (where HBMWD pumps water for distribution within the region) is approximately 25 to 30 MGD which is only 3% of the total annual average runoff of the Mad River watershed. The full diversion capacity of 75 MGD (84,000 acre-feet per year) is just 8% of the total annual average runoff of the watershed. The daily allocation for MCSD is 2.6 MGD, the current ADD is 1.35 MG providing MCSD a surplus supply of 1.25 MGD.

HBMWD may restrict water use for retail customers if Ruth Lake falls to 65% of capacity and the accumulated rainfall in the Ruth area is 70% or less of the historical average (49 inches), Humboldt Bay Municipal Water District Water Shortage Contingency Plan Draft 2025, (Appendix D). An event such as this has not occurred within the Mad River Watershed since 1977. Other possible constraints include contamination or damage to the system from natural disasters such as, earthquakes, floods, or other destruction.

8.2.4. Infrastructure Considerations

The main infrastructure consideration regarding MCSD's retail water source is the sole transmission line from HBMWD that runs under the Mad River. This transmission line is vulnerable to natural disasters such as earthquakes and floods. MCSD began addressing this concern by installing a 12-inch emergency intertie between the MCSD and City of Arcata water systems. In addition, MCSD is exploring the feasibility of a redundant transmission line from HBMWD to MCSD.

8.3. Six Standard Water Shortage Stages

MCSD's Water Shortage Contingency Plan consists of the standard six levels of water shortage for rationing and demand reduction goals:

Submittal Table 8-1. Water shortage contingency plan stages.

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)	
☑	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.

The declaration of a specific stage of water shortage emergency will depend on several variables including:

- Statewide drought conditions.
- Local drought conditions.
- Allocation reductions from HBMWD.
- State regulations, notices, and orders.

Declaration of a Stage 4, 5 or 6 water shortage emergencies may also be triggered by a major catastrophic event that affects the ability of the District to meet anticipated demands. The decision regarding declaration of a specific Stage of water shortage emergency will be based on conditions at the time, therefore the triggers are general to accommodate to a broad range of conditions.

8.4. Shortage Response Actions

The following response actions align with the defined shortage levels and includes supply augmentation actions, demand reduction actions, operational changes, and prohibitions against specific water use practices.

Stage 1 Up to 10% Reduction Water shortage voluntary water consideration is requested of all customers including the specific voluntary measures below:

- Water conservation is requested of all customers.
- Use water efficient indoor devices.
- Installation of low-flow shower heads, low-flush toilets, and faucet aerators.
- Request reduction in outdoor irrigation of ornamental landscapes.

Stage 2 Up to 20% Reduction Water shortage voluntary conservation is in place. Water uses indicated below are nonessential and are requested to be implemented:

- Request the use of hose-end shutoff nozzles on all garden and utility hoses.
- Refrain from washing cars, boats, trailers, or other vehicles except by hose with shutoff nozzle and bucket.
- Promptly repair all leaks in plumbing fixtures, water lines, and sprinkler systems.
- Request reduction in outdoor irrigation of ornamental landscapes.

Stage 3 Up to 30% Reduction Water shortage mandatory conservation. In addition to the restricted water uses in earlier stages, water uses indicated below are nonessential and are prohibited:

- Outdoor irrigation of ornamental landscapes or turf with potable water is only allowed on Sundays, Tuesdays, Thursdays, and Saturdays.
- Application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
- Use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculation system.
- The use of a hose that dispenses potable water to wash a motor vehicle or for any other purpose, except where the hose is fitted with a shutoff nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.
- Washing sidewalks, driveways, parking areas, tennis courts, patios or other exterior paved areas except by public agency for the purpose of public safety.

Stage 4 Up to 40% Reduction Emergency water shortage. In addition to the restricted water uses in earlier stages, water uses indicated below are nonessential and are prohibited:

- Watering any portion of a golf course other than the tees and greens except where private well or recycled water supply is used.
- Fire hydrant water unless authorized by the District, except by fire protection agencies for fire suppression purposes, or for other authorized uses including storm drain maintenance, and street sweeping purposes. Water/sewer flushing, and fire flow testing are authorized only if coordinated and performed at the same time.
- Require the repair of leaks in plumbing fixtures, water lines, and sprinkler systems. Excessive leaks that are not repaired may result in water service being discontinued.

Stage 5 Up to 50% Reduction Water shortage emergency mandatory rationing. In addition to the restricted water uses in earlier stages, water uses indicated below are nonessential and are prohibited:

- Outdoor irrigation is prohibited unless the total water use is reduced by 50% from the same billing period from the previous calendar year (prior to declaration of the most recent water shortage emergency).
- Any leaks that are not repaired within 24 hours after discovery will result in water shut-off.
- Operating a hotel, motel, or other commercial lodging establishment without offering patrons the option to forego the daily laundering of towels, sheets, and linens.
- Planting any new landscaping.
- Watering any residential lawn, or any commercial or industrial area lawn maintained for aesthetic purposes, at any time of the day or night during the period of March 1, through September 30, when a stage 5 is in progress.
- Use of water for any outdoor washing purpose including commercial car washing, window washing, and paint preparation.

- Washing of cars, boats, trailers, or other vehicles.
- Automated commercial car washes without a water recycling system.
- Street cleaning and dust control with potable water.
- Filling or top off of any swimming pools, outdoor spas, wading pools, and ornamental water features.
- Use of water from a fire hydrant except for fighting fires and human consumption.

Stage 6 ≥ 50% Reduction Critical water shortage emergency rationing. In addition to the restricted water uses in earlier stages, water uses indicated below are nonessential and are prohibited:

- Agricultural Irrigation.
- Outdoor Irrigation.
- Any leaks that are not repaired immediately will result in water shut-off.

Submittal Table 8-3. Demand reduction actions.

Submittal Table 8-3 Retail: Demand Reduction Actions **Water Code Section 10632(a)(4)(B) and (E)**					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)	Penalty, Charge, or Other Enforcement? **For Retail Suppliers Only** Drop Down List
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (MG)		
Add additional rows as needed					
1	Other	Percentage	10.00%	• Water conservation is requested of all customers. • Use water efficient indoor devices. • Installation of low-flow shower heads, low-flush toilets, and faucet aerators.	No
2	Other	Percentage	20.00%	• Use of hose-end shutoff nozzles on all garden and utility hoses. • Refrain from washing cars, boats, trailers, or other vehicles except by hose with shutoff nozzle and bucket. • Promptly repair all leaks in plumbing fixtures, water lines, and sprinkler systems.	No
3	Other	Percentage	30.00%	• Outdoor irrigation of ornamental landscapes or turf with potable water is only allowed on Sundays, Tuesdays, Thursdays, and Saturdays. • Application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. • Use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculation system. • The use of a hose that dispenses potable water to wash a motor vehicle or for any other purpose, except where the hose is fitted with a shutoff nozzle or device attached to it that causes it to cease dispensing water immediately when not in use. • Washing sidewalks, driveways, parking areas, tennis courts, patios or other exterior paved areas except by public agency for the purpose of public safety.	Yes
4	Other	Percentage	40.00%	• Watering any portion of a golf course other than the tees and greens except where private well or recycled water supply is used. • Fire hydrant water unless authorized by the District, except by fire protection agencies for fire suppression purposes, or for other authorized uses including storm drain maintenance, and street sweeping purposes. Water/sewer flushing, and fire flow testing are authorized only if coordinated and performed at the same time. • Promptly repair all leaks in plumbing fixtures, water lines, and sprinkler systems.	Yes
5	Other	Percentage	50.00%	• Outdoor irrigation is prohibited unless the total water use is reduced by 50% from the same billing period from the previous calendar year (prior to declaration of the most recent water shortage emergency). • Any leaks that are not repaired within 24 hours after discovery. • Operating a hotel, motel, or other commercial lodging establishment without offering patrons the option to forego the daily laundering of towels, sheets, and linens. • Planting any new landscaping, except for designated drought resistant landscaping approved by the District. • Watering any residential lawn, or any commercial or industrial area lawn maintained for aesthetic purposes, at any time of the day or night during the period of March 1, through September 30, when a stage 5 is in progress. • Use of water for any outdoor washing purpose including commercial car washing, window washing, and paint preparation. • Washing of cars, boats, trailers, or other vehicles. • Automated commercial car washes without a water recycling system. • Street cleaning and dust control with potable water. • Filling or top off of any swimming pools, outdoor spas, wading pools, and ornamental water features. • Use of water from a fire hydrant except for fighting fires and human consumption.	Yes
6	Other	Percentage	>50.00%	• Agricultural Irrigation. • Outdoor Irrigation. • Any leaks that are not repaired immediately. • Bulk water sales. • Use of water from a fire hydrant except for fighting fires and human consumption.	Yes
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

8.5. Emergency Response Plan

MCSD has developed a Drinking Water Emergency Response Plan pursuant to the requirements of the recently enacted America's Water Infrastructure Act of 2018. MCSD's Emergency Response Plan outlines procedures for response to emergencies caused by natural hazards, malevolent acts, or other unavoidable circumstances. MCSD operates in accordance with the Incident Command System, and the National Incident Management System. The Emergency Response Plan provides guidelines for evaluating an emergency situation, responding to an emergency, and activating the Incident Command Posts and the Emergency Operations Center. They also describe the Emergency Response procedures for public communication, outreach, and notifications. (MCSD Drinking Water Emergency Response Plan 2025) (Appendix E)

8.5.1. Seismic Risk Assessment

Beginning January 2020, CWC Section 10632.5 mandates urban water suppliers to include in their UWMPs a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.

MCSD's water distribution and storage facilities are designed either to withstand a probable seismic event or to minimize the potential repair time in the event of damage. As part of the Drinking Water Emergency Response Plan, MCSD developed earthquake emergency response procedures to prepare for, respond to, and recover from the event and to ensure minimum service levels and to mitigate health risks to the public and staff.

The Humboldt County Operational Area Hazard Mitigation Plan, McKinleyville Community Services District section provides details regarding MCSD's capabilities, planning initiative, hazard risk rankings, specific vulnerabilities, and action plans. (The Humboldt County Operational Area Hazard Mitigation Plan, McKinleyville Community Services District 2025) (Appendix F).

8.6. Communication Protocols

MCSD shall communicate with the public, and local, regional, and state government agencies during each water shortage stage to communicate the demand reduction actions required.

Stage 1 (10% Reduction) - Voluntary Consideration; MCSD will notify customers through mail stuffers, social media posts, and via the District website.

Stage 2 (20% Reduction) – Voluntary Conservation: MCSD will notify customers through mail stuffers, social media posts, via the District website, and through interactive voice response (IVR) reverse calling system.

Stage 3 (30% Reduction) – Mandatory Conservation; MCSD will notify customers, and local and state agencies through phone calls, email, mail stuffers, social media posts, via the District website, and through interactive voice response (IVR) reverse calling system.

Stage 4 (40% Reduction) – Emergency Water Shortage; MCSD will notify customers, and local and state agencies through phone calls, email, mail stuffers, social media posts, via the District website, interactive voice response (IVR) reverse calling system, and through media and news outlets.

Stage 5 (50% Reduction) – Emergency Mandatory Rationing; MCSD will notify customers, and local and state agencies through phone calls, email, mail stuffers, social media posts, via the District website, interactive voice response (IVR) reverse calling system, and through media and news outlets.

Stage 6 (≥ 50% Reduction)– Critical Water Shortage Emergency Rationing; MCSD will notify customers, and local and state agencies through phone calls, email, mail stuffers, social media posts, via the District website, interactive voice response (IVR) reverse calling system, and through media and news outlets.

8.7. Compliance and Enforcement

Fines, penalties, and enforcement are established in the MCSD Ordinance 2021-06 Water Conservation Establishing Rules and Regulations for Rationing Water During a Water Shortage Emergency and Establishing Penalties for Violations Thereof (Appendix G).

The General Manager and all employees of the McKinleyville Community Services District have the duty and are authorized to enforce the provisions of MCSD Ordinance No. 2021-06 and shall have all the powers and authority contained in California Penal Code Section 836.5, including the power to issue written Notice of Violations and Administrative Citations.

MCSD has a variety of remedies to help ensure compliance. These remedies begin with education regarding the restrictions and information about resources available from MCSD to assist in complying with regulations. The remedies also include an escalating series of actions, including:

1. Notice of Violation.
2. Administrative Citations up to $500
3. Referral to MCSD's Legal Counsel for civil or criminal prosecution.
4. Shut off-of water service.

8.8. Legal Authorities

The California Water Code contains two provisions for California water supplies related to water shortage contingency planning.

California Water Code Section 350-359 provides the authority for a governing body to declare water shortage emergencies. Upon the declaration of a water shortage emergency, the local agency is provided with broad powers to implement and enforce regulations and restrictions for managing water shortage conditions. Priority is given to water needed for domestic, sanitation and fire protection purposes. Discrimination is not allowed between water users using water for the same purpose or purposes.

The Urban Water Management Planning (UWMP) Act requires urban water suppliers to perform an urban water shortage contingency analysis that includes several elements (California Water Code §10632). This Water Shortage Contingency Plan addresses each of the required elements in the urban water shortage contingency analysis.

8.9. Financial Consequences

During the implementation of the various water shortage emergency stages, there will be an impact on revenue and expenses for the District due to the anticipated demand reduction. The table below indicates the net impact on revenue given the various demand reduction scenarios. This is intended to be a general analysis of revenue impact and is based on the 2024-2025 Fiscal Year annual budget.

Table 15. Water Shortage Contingency Plan Fiscal Consequences**.**

Revenue	FY 2024-2025	20% Volumetric Reduction	30% Volumetric Reduction	40% Volumetric Reduction	50% Volumetric Reduction	≥ 50% Volumetric Reduction
Revenue						
Water Sales	$4,394,319	$3,515,455	$3,076,023	$2,636,591	$2,197,160	$2,197,160
Other Revenue	$107,070	$85,656	$74,949	$64,242	$53,535	$53,535
TOTAL Annual Revenue	**$4,501,389.00**	**$3,601,111.20**	**$3,150,972.30**	**$2,700,833.40**	**$2,250,694.50**	**$2,250,695.00**

Expenses	FY 2024-2025	20% Volumetric Reduction	30% Volumetric Reduction	40% Volumetric Reduction	50% Volumetric Reduction
Expenses					
Fixed Expenses (T&D, Admin)	1,234,970	1,017,081	1,017,081	1,017,081	1,017,081
Cost of Water	1,298,741	1,038,993	909,119	779,245	649,371
Other Expenses	534,594	427,675	374,216	320,756	267,297
CIP Reserve	750,000	750,000	750,000	750,000	750,000
TOTAL Annual Expense	**3,818,305**	**3,233,749**	**3,050,416**	**2,867,082**	**2,683,749**

Reserves	$683,084	20% Volumetric Reduction	30% Volumetric Reduction	40% Volumetric Reduction	50% Volumetric Reduction
Anticipated Short Fall 12-Months		136,617	204,925	273,234	341,542
Anticipated Short Fall 6-Months		68,308	102,463	136,617	170,771
Anticipated Short Fall 3-Months		34,154	51,231	68,308	85,386

The net impact on revenue depends on the stage of water shortage emergency and the duration of the water shortage event. Stages 3 through 6 have an automatic increase in water base rates to recoup some of the predicted revenue losses. The worst-case scenario that is presented above is a 50% reduction in volumetric sales for a 12-month duration resulting in a $341,542 shortfall. The more likely scenario is a 20% demand reduction for a three-to-six-month duration resulting in a net reduction in revenue between $34,154 and $68,308.

The District has several options it can consider for handling the anticipated revenue impact including:

- Reduce funds allocated for Capital Improvements Plan (CIP), thereby reducing the CIP reserve fund and delaying implementation of CIP projects;
- During the next rate study develop a water revised shortage surcharge (rate structure) that automatically goes into effect upon declaration of a specific stage of water shortage emergency; or
- During the next rate study include the establishment of a water shortage emergency fund that will be available in the event of a water shortage emergency.

8.10. Monitoring and Reporting

During a declared water shortage emergency, water production volumes and enforcement metrics will be reviewed and reported to the State monthly, including a calculation of Gallons Per Capita per Day (GPCD), and comparison to the same month of the year just prior to the declaration of a water shortage emergency.

8.11. Refinement Procedures

MCSD will re-evaluate the WSCP and its effectiveness monthly during a water shortage emergency. The results from the monthly monitoring and reporting will guide any revisions to the demand reduction actions. MCSD will evaluate any procedural refinements or new actions that are identified by staff or are suggested by customers for their effectiveness, whether to incorporate them into the WSCP, and implement them quickly at the appropriate water shortage stage.

8.12. Special Water Feature Distinction

MCSD does not supply any retail drinking water or recycled water to any water features (ponds, lakes, waterfalls, or fountains) within the service area. Due to the geographic location of McKinleyville, swimming pool and spa features are very limited.

8.13. Plan Adoption Submittal and Availability

The MCSD WSCP is reviewed, updated, and Board approved every 5-years during the UWMP review process. If any amendments are required outside the UWMP review process, notices will be sent to affected cities, counties, and public informing them of the review process, changes made, the public comment period, and the MCSD Board adoption process.

MCSD shall make available the Water Shortage Contingency Plan to its customers, and any city or county to which it provides water supplies, no later than 30-days after adoption of the WSCP.

9. DEMAND MANAGEMENT MEASURES

The area served by MCSD is one of the few regions of California with a local abundance of water. This has meant that droughts, while just as severe climatically, have not led to the same level of supply shortfall as in many other regions. This does not mean that the District or its residents are unaware or unconcerned about the importance of water conservation.

Because supplies are sufficient to meet current and projected demand and per capita use is low, implementing additional Demand Management Measures (DMMs) beyond those that are required of MCSD as a retail water supplier is not economic for the District.

DWR requires retail water suppliers to address the following DMM's:

- Metering
- Conservation pricing
- Water waste prevention ordinances
- Public education and outreach
- Programs to assess and manage distribution system loss
- Water conservation program coordination and staffing support

9.1. Metering

All water received and distributed throughout the MCSD service area is metered. HBMWD meters all water delivered to MCSD and bills the District monthly. In addition to the HBMWD meter, MCSD meters all water pumped through the North Bank Pump Station before entering the MCSD distribution system. This dual metering allows both MCSD and HBMWD to compare usages and detect any metering inaccuracies.

All customer sectors within the service area are metered and billed monthly. In 2017 MCSD completed the 5-year replacement of all residential, commercial, and institutional/government meters with radio read meters.

9.2. Conservation Pricing

MCSD has a tiered rate structure that meets the UWMP requirements for conservation pricing. MCSD uses a two-tiered billing system with a variable cost of $2.92 per CCF up to 800 cubic feet. Over 800 cubic feet are charged at $3.91 per CCF (2025).

9.3. Water Waste Prevention Ordinances

Fines, penalties, and enforcement are established in the MCSD Ordinance No. 2021-06 and Article VII: Water Conservation of MCSD's Rules & Regulations. (Appendix G).

9.4. Public Education and Outreach

MCSD has provided public outreach and education for service area customers in the following formats and media outlets.

- MCSD provides information regarding MCSD drought rules for home and business water uses that are declared to be non-essential, State operated rebate programs, turf replacement rebates, and high efficiency toilet replacement program.
- MCSD Newsletter Articles were published informing customers of California/MCSD drought rules, rebate programs, and ways they can conserve water at home.

9.5. Programs to Assess and Manage Distribution System Loss

MCSD performs annual AWWA Water Loss Audits to assess real loss from the distribution system. Loss rates are very low for the District. Non-revenue water is only 3.4% of the volume of water supplied and is only 2% of the cost of operating the water system. Real loss is managed by addressing any water leak as soon as they are identified.

9.6. Water Conservation Program Coordination and Staffing Support

MCSD employs 29 total full-time personnel and does not have the capability of holding a position solely for a water conservation coordinator. Currently the General Manager is the point of contact for water conservation with staff support.

9.7. Implementation of Demand Measurement Measures Over the Past Five Years

MCSD conducts monthly monitoring of water use and reports the residential gallons per capita per day (R-GPCD) to the Board at each monthly Board meeting. MCSD conducts meter testing on large meters to ensure accuracy. Meters that are inaccurate are repaired or replaced. MCSD also continues to conduct public education through our newsletter regarding water conservation.

9.8. Planned Implementation to Achieve Water Use Targets

MCSD is meeting their water use targets by a significant margin. MCSD will continue their program to assess and manage distribution system real loss and will continue public education and outreach activities further meeting future water use targets. MCSD will monitor their GPCD annually while performing their annual AWWA water loss audits. If the MCSD GPCD begins to increase, further conservation programs may be implemented.

10. PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

The MCSD 2025 UWMP and WSCP have been prepared in accordance with the CWC and the 2025 Urban Water Management Plan Guidebook for Urban Water Suppliers. MCSD has included water use and planning data for the entire year 2025.

10.1. Notice of Public Hearing

MCSD shall hold a public hearing prior to adopting the UWMP (Public Hearing Notice Appendix H). MCSD provided written notice of their UWMP review and updating at least 60 days prior to the public hearing to the water wholesaler HBMWD, Humboldt County, City of Arcata. A copy of the 60-day notice letter is included as Appendix I.

Submittal Table 10-1. Notifications to cities and counties.

Submittal Table 10-1 Retail: Notification to Cities and Counties Water Code Section 10621(b) and 10642		
City Name	60 Day Notice Drop Down (yes/no)	Notice of Public Hearing Drop Down (yes/no)
Add additional rows as needed		
City of Arcata	Yes	Yes
Humboldt Municipal Water District	Yes	Yes
County Name Drop Down List	60 Day Notice Drop Down (yes/no)	Notice of Public Hearing Drop Down (yes/no)
Add additional rows as needed		
Humboldt County	Yes	Yes

The public hearing provides an opportunity for the public and cities and counties to provide input to the plan before it is adopted. The notice will include the time and place of the public hearing and where the 2025 UWMP can be viewed with contact information of the preparer. The public hearing notices will be published at least 15 days in advance in the local newspaper, and on the MCSD board agenda that is posted throughout the community.

10.2. Public Hearing and Adoption

The public hearing will be held during a regularly scheduled MCSD Board meeting, the first Wednesday of the month, the month prior to plan adoption. During the public hearing MCSD staff will provide information regarding baseline values, water-use targets, and implementation plan to achieve targets and goals.

The MCSD's 2025 UWMP, was adopted by the MCSD Board of Directors on June 3, 2026, Resolution 2026-##, and was submitted to the DWR on June ##, 2026.

10.3. Plan Submittal

MCSD shall submit their 2025 UWMP to the following agencies and locations:

- California Department of Water Resources: The MCSD 2025 UWMP shall be submitted to DWR within 30 days of adoption.
- Electronic Data Submittal: MCSD shall submit a copy of the adopted 2025 UWMP to the DWR online submittal tool, WUEdata. All data from the standardized tables shall be uploaded to through the online tool as well.
- California State Library: No later than 30 days, MCSD shall submit a CD or hardcopy of the adopted 2025 UWMP to the California State Library.
    - California State Library
      Government Publications Section
      P.O. Box 942837 Sacramento, CA 94237
      Attn: Coordinator, Urban Water Management Plans

10.4. Public Availability

MCSD shall make available a copy of the 2025 UWMP for public review. The UWMP will be available in digital format on the MCSD website, and a hard copy will be made available for public review at the MCSD office.

McKinleyville Community Services District
1656 Sutter Rd.
McKinleyville, CA 95519

Page Left Blank Intentionally

References

Environmental Protection Agency Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment application for Water Utilities 2020.

Humboldt County General Plan2017. Prepared by Humboldt County Staff. October 2017. https://humboldtgov.org/DocumentCenter/View/61984/Humboldt-County-General-Plan-complete-document-PDF

Humboldt County Operational Area Hazard Mitigation Plan 2025. https://humboldtgov.org/DocumentCenter/View/82770/HumboldtCountyHMP_Vol1_Final_2020-01-28

Mad River Watershed Assessment. Prepared by Stillwater Sciences for Redwood Community Action Agency, June 2010. https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/mad_river/pdf/120329/FINAL_PDF_MRWA.PDF

McKinleyville Community Plan, Humboldt County General Plan Volume II, Prepared by Humboldt County Staff, 2002. http://www.humboldtgov.org/205/Plans

MCSD Wastewater Facilities Plan Administrative Draft. SHN Consulting Engineers and Geologists, Inc. January 2012 http://mckinleyvillecsd.com/document-library/20%20Year%20Facilities%20Plan

MCSD Water Model Technical Report. Prepared by MCSD Staff reviewed by SHN Consulting Engineers and Geologists, Inc. July 2012 https://www.mckinleyvillecsd.ca.gov/mcsd-water-model-technical-report#/docaccess-575f27753cc59889c24eaae895253372

Page Left Blank Intentionally

Appendix A

AWWA Water Loss Worksheet 2020-2024

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: McKinleyville Community Services District (1210016)
Reporting Year: 2020 (1/2020 - 12/2020)

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

				Pcnt:	Value:	
Volume from own sources:			MG/Yr			MG/Yr
Water imported:	3	512.063	MG/Yr			MG/Yr
Water exported:	5	7.567	MG/Yr			MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 504.496 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	8	421.889 MG/Yr			
Billed unmetered:	10	3.462 MG/Yr			
Unbilled metered:	7	16.513 MG/Yr			
Unbilled unmetered:	5	6.306 MG/Yr	1.25%		MG/Yr

Use buttons to select percentage of water supplied **OR** value

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 448.170 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 56.326 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		1.261 MG/Yr	0.25%		MG/Yr
Customer metering inaccuracies:	5	1.099 MG/Yr	0.25%		MG/Yr
Systematic data handling errors:	6	1.055 MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 3.415 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 52.911 MG/Yr

WATER LOSSES: 56.326 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 79.145 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	89.0	miles
Number of active AND inactive service connections:	9	6,611	
Service connection density:		74	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line:

(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 3 65.0 psi

COST DATA

Total annual cost of operating water system:	10	$3,807,876	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$4.37	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	8	$2,746.98	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 61 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported
2: Customer metering inaccuracies
3: Unauthorized consumption

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.

? Click to access definition
+ Click to add a comment

Water Audit Report for: McKinleyville Community Services District (CA1210016)
Reporting Year: 2021 (1/2021 - 12/2021)

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:				MG/Yr			MG/Yr
Water imported:	4	513.670	MG/Yr	5	1.50%		MG/Yr
Water exported:	5	7.092	MG/Yr	5			MG/Yr
WATER SUPPLIED:		**498.987**	MG/Yr				

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	8	406.738	MG/Yr			
Billed unmetered:	10	3.891	MG/Yr			
Unbilled metered:	7	20.494	MG/Yr			
Unbilled unmetered:		6.237	MG/Yr	1.25%		MG/Yr
AUTHORIZED CONSUMPTION:		**437.360**	MG/Yr			

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption)

61.626 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		1.247	MG/Yr	0.25%		MG/Yr
Customer metering inaccuracies:	5	1.084	MG/Yr		1.084	MG/Yr
Systematic data handling errors:		1.017	MG/Yr	0.25%		MG/Yr
Apparent Losses:		**3.348**	MG/Yr			

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **58.278** MG/Yr

WATER LOSSES:	**61.626**	MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **88.358** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	90.0	miles
Number of active AND inactive service connections:	9	6,440	
Service connection density:		72	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line:

(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	3	65.0	psi

COST DATA

Total annual cost of operating water system:	10	$3,984,070	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$4.52	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	8	$2,422.38	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 64 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported
2: Customer metering inaccuracies
3: Unauthorized consumption

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

Water Audit Report for: McKinleyville Community Services District
Audit Year: 2022 | Jan 01 2022 - Dec 31 2022 | Calendar

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

WATER SUPPLIED

choose entry option:

		n	g				n	g				
VOS	Volume from Own Sources:	n	g	n/a		MG/Yr						VOSEA
WI	Water Imported:	n	g	5	474.443	MG/Yr	n	g	4		percent	WIEA
WE	Water Exported:	n	g	1	7.036	MG/Yr	n	g	4		percent	WEEA

WATER SUPPLIED: 467.407 MG/Yr

AUTHORIZED CONSUMPTION

choose entry option:

BMAC	Billed Metered:	n	g	8	383.850	MG/Yr		
BUAC	Billed Unmetered:	n	g	5	2.123	MG/Yr		
UMAC	Unbilled Metered:	n	g	6	20.974	MG/Yr		
UUAC	Unbilled Unmetered:	n	g	3	0.965	MG/Yr	0.25%	default

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 407.912 MG/Yr

WATER LOSSES

59.495 MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

choose entry option:

SDHE	Systematic Data Handling Errors:	n	g	3	0.965	MG/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n	g	4	8.262	MG/Yr	2.00%	percent	under-registration
UC	Unauthorized Consumption:	n	g	3	0.965	MG/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 10.192 MG/Yr

Real Losses

Real Losses: 49.303 MG/Yr

WATER LOSSES: 59.495 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 81.434 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	10	90.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	10	6,463		(active *and* inactive)
	Service connection density:				72	conn./mile main	

Are customer meters typically located at the curbstop/property line? Yes

Lp: n g 10

Average length of customer service line has been set to zero and a data grading of 10 has been applied

AOP: Average Operating Pressure: n g 6 65.0 psi

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	5	$4.74	$/100 cubic feet (ccf)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n	g	9	$2,722.93	$/Million gallons	$3,611,496	$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Water Imported (WI)
2: Billed Unmetered (BUAC)
3: Customer Metering Inaccuracies (CMI)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[D]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

Water Audit Report for: McKinleyville Community Services District
Audit Year: 2023 | Jan 01 2023 - Dec 31 2023 | Calendar

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

WATER SUPPLIED

choose entry option:

		n	g				n	g				
VOS	Volume from Own Sources:	n	g	n/a		MG/Yr						VOSEA
WI	Water Imported:	n	g	1	486.594	MG/Yr	n	g	4		percent	WIEA
WE	Water Exported:	n	g	1	7.090	MG/Yr	n	g	5		percent	WEEA

WATER SUPPLIED: 479.504 MG/Yr

AUTHORIZED CONSUMPTION

choose entry option:

BMAC	Billed Metered:	n	g	8	381.794	MG/Yr		
BUAC	Billed Unmetered:	n	g	5	2.184	MG/Yr		
UMAC	Unbilled Metered:	n	g	8	21.653	MG/Yr		
UUAC	Unbilled Unmetered:	n	g	3	0.960	MG/Yr	0.25%	default

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 406.591 MG/Yr

WATER LOSSES

72.913 MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

choose entry option:

SDHE	Systematic Data Handling Errors:	n	g	3	0.960	MG/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n	g	4	8.234	MG/Yr	2.00%	percent	under-registration
UC	Unauthorized Consumption:	n	g	3	0.960	MG/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 10.154 MG/Yr

Real Losses

Real Losses: 62.760 MG/Yr

WATER LOSSES: 72.913 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 95.526 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	10	90.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	10	6,487		(active *and* inactive)
	Service connection density:				72	conn./mile main	

Are customer meters typically located at the curbstop/property line? Yes

Lp: n g 10

Average length of customer service line has been set to zero and a data grading of 10 has been applied

AOP: Average Operating Pressure: n g 6 65.0 psi

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	5	$4.91	$/100 cubic feet (ccf)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n	g	9	$2,778.83	$/Million gallons	$3,063,535	$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier II (26-50). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Water Imported (WI)
2: Billed Unmetered (BUAC)
3: Customer Metering Inaccuracies (CMI)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[D]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

Water Audit Report for: McKinleyville Community Services District
Audit Year: 2024 | Jan 01 2024 - Dec 31 2024 | Calendar

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

WATER SUPPLIED

Water Supplied Error Adjustments

		n	g				n	g			
VOS	Volume from Own Sources:	n	g	n/a		MG/Yr					VOSEA
WI	Water Imported:	n	g	1	485.080	MG/Yr	n	g		percent	WIEA
WE	Water Exported:	n	g	1	6.836	MG/Yr	n	g	5	percent	WEEA

WATER SUPPLIED: 478.244 MG/Yr

AUTHORIZED CONSUMPTION

choose entry option:

		n	g					
BMAC	Billed Metered:	n	g	8	383.574	MG/Yr		
BUAC	Billed Unmetered:	n	g	5	1.590	MG/Yr		
UMAC	Unbilled Metered:	n	g	8	20.643	MG/Yr		
UUAC	Unbilled Unmetered:	n	g	3	0.963	MG/Yr	0.25%	default

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 406.770 MG/Yr

WATER LOSSES

71.474 MG/Yr

Apparent Losses

choose entry option:

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

		n	g						
SDHE	Systematic Data Handling Errors:	n	g	3	0.963	MG/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n	g	4	8.249	MG/Yr	2.00%	percent	under-registration
UC	Unauthorized Consumption:	n	g	3	0.963	MG/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 10.175 MG/Yr

Real Losses

Real Losses: 61.299 MG/Yr

WATER LOSSES: 71.474 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 93.080 MG/Yr

SYSTEM DATA

		n	g				
Lm	Length of mains:	n	g	10	90.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	10	6,503		(active *and* inactive)
	Service connection density:				72	conn./mile main	

Are customer meters typically located at the curbstop/property line? Yes

Lp: n g 10

Average length of customer service line has been set to zero and a data grading of 10 has been applied

AOP: Average Operating Pressure: n g 6 65.0 psi

COST DATA

		n	g					
CRUC	Customer Retail Unit Charge:	n	g	5	$5.39	$/100 cubic feet (ccf)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n	g	9	$2,894.78	$/Million gallons	$3,880,564	$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier II (26-50). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Water Imported (WI)
2: Billed Unmetered (BUAC)
3: Customer Metering Inaccuracies (CMI)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[D]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

Appendix B

Risk Assessment Summary Report for MCSD

Risk Assessment Summary Report for McKinleyville Community Services District

Report Date: May 4, 2026

Risk and Resilience Assessment Summary

Purpose

This risk and resilience assessment of McKinleyville Community Services District was performed on May 4, 2026 using the U.S. Environmental Protection Agency's (EPA) Vulnerability Self-Assessment Tool (VSAT) Web. EPA developed and maintains VSAT Web to serve as an all-hazards risk and resilience assessment tool for water and wastewater utilities of all sizes. Specifically, EPA designed VSAT Web to assist community water systems with meeting the requirements for risk and resilience assessments in the Safe Drinking Water Act (SDWA) section 1433.

VSAT can help water sector owners and operators with identifying the threats that present the highest risks to their facilities and with evaluating the costs and benefits of countermeasures to reduce those risks.

Methodology

VSAT Web addresses malevolent acts, natural hazards, and dependency/proximity threats to water sector operations and analyzes the cost-effectiveness of countermeasures to reduce risk. The methodology in VSAT Web is based on assessing the risk to a water system asset from a specific threat or hazard (i.e., an Asset-Threat Pair), where risk is defined as follows:

Risk (R) = Threat (T) X Vulnerability (V) X Consequences (C)

- T = Likelihood that the threat will be perpetrated or occur against the asset;
- V = Likelihood that the threat will cause the estimated consequences to the asset, considering the effectiveness of countermeasures; and
- C = Economic (cost to the utility and region) and public health (injuries and deaths) impacts resulting from damage to the asset.

A monetary value of statistical illness and value of statistical life are assigned to injuries and deaths, respectively, so that risk can be determined as a single monetized value.

SDWA section 1433 requires community water systems to assess the risks to and resilience of specified assets from both malevolent acts and natural hazards. Accordingly, VSAT Web begins with a characterization of water system resilience using the Utility Resilience Index, as described below. The analyst then conducts a qualitative assessment of risks from malevolent acts and natural hazards to all the assets required in SDWA section 1433. These steps can ensure that the assessment may be certified as compliant with SDWA section 1433.

Following these steps, the analyst determines which assets and threats will undergo a quantitative risk assessment, involving estimates of threat, vulnerability, and consequences. The quantitative risk assessment may include a broad spectrum of assets encompassing the entire water system, or be limited to those assets at highest risk. For threat selection, VSAT Web includes all the malevolent acts, natural hazards, and dependency/proximity threats listed in the AWWA J100-21 Standard, along with intentional contamination of source water. Analysts may also designate a custom threat.

After completing a quantitative risk assessment under the current (baseline) conditions for the water system, the analyst may choose to conduct an optional assessment of additional (potential) countermeasures (an improvement analysis). VSAT Web provides the analyst with a suite of countermeasures from which to select, or the analyst may designate a custom countermeasure. This analysis results in a profile of existing risk and a benefit/cost analysis of potential countermeasures to reduce risk.

Utility Overview

Utility Type and Information	
Utility Type	Drinking Water
Utility Name	McKinleyville Community Services District
State/Territory	California
Zip Code	95519
Population Served	16,630
Ownership	Public
Average Daily Water Service (MGD)	1.35
Average Rate ($/1000 gallons)	$6.64
Comments	

To edit utility type or information, return to the Utility Overview section in the tool.

Utility Resilience Index

The Utility Resiliency Index (URI) is a risk management tool that can assess a utility's capability to respond to and recover from an incident that impacts critical operations.[1]The URI is a valuable complement to the risk assessment performed in VSAT Web. A utility can use the URI together with the risk assessments results when developing an overall risk management plan.

The URI uses 12 indicators to calculate the index. Responses to the indicators are assigned values and weights, which are aggregated to provide a characterization of a utility's resilience on a scale from 0% to 100%. A low URI score indicates a low capability of the utility to respond to and recover from an incident, while a high URI score indicates a greater capability to do so. If multiple statements under one indicator apply to the utility, select the statement at the highest resilience level. Statements are arranged from lowest to highest resilience level under each indicator.

The URI for McKinleyville Community Services District is: 47%

[1]Adapted from Morley, K. M. (2012). *Evaluating resilience in the water sector: Application of the Utility Resilience Index (URI).* (http://www.worldcat.org/oclc/801849602) and used with permission.

1. **Emergency Response Plan (ERP)**
   An ERP provides a tactical level plan for immediate response to incidents of all types. Select the statement below that best describes the utility's ERP.

   An ERP has been developed

2. **National Incident Management System (NIMS) Compliance**
   NIMS establishes a common framework for defining roles and responsibilities to enhance incident response. NIMS applies the Incident Command System (ICS) to provide the support structure for response activities. Select the statement below that best describes the utility's NIMS compliance.

   Utility certified as NIMS compliant

3. **Mutual Aid and Assistance (MAA)**
   MAA agreements between other utilities and jurisdictions help to provide rapid response to incidents. Participation in such agreements is traditionally at no cost and does not obligate signatories to respond. An example is the Water/Wastewater Agency Response Network (WARN). Select the statement below that best describes the utility's MAA agreements.

   Intra-municipal (within own city/town agencies)

4. **Emergency Power for Critical Operations (EPCO)**
   EPCO is a minimum benchmark of 72 hours for backup power for critical operations and assets. Select the statement below that best describes the utility's EPCO.

   Greater than or equal to 73 hours of backup power

5. **Minimum Daily Demand/Treatment (MDDT)**
   MDDT is the ability to meet minimum daily demand or treatment when the production or treatment plant is non-functional. For example, a drinking water utility typically has some level of in-system storage that can provide minimum daily flows for a time even though a treatment plant may be non-functional. Select the statement below that best describes the utility's MDDT.

   49 hours to 72 hours

6. **Critical Parts and Equipment (CPA)**
   CPA is the lead time for repair, replacement, or recovery of operationally critical parts or equipment. Critical parts are defined as components of the system that upon failure may have the potential to impair the ability to produce, distribute, or treat drinking water or wastewater, including both physical and cyber/process control systems. Select the statement below that best describes the utility's CPA.

3-4 weeks or greater, or lead time is unknown

7. **Critical Staff Resilience (CSR)**
   CSR is the percentage of response-capable staff who are cross-trained in critical operations and maintenance positions and available as staff backup. This indicator is primarily related to pandemic flu planning. Select the statement below that best describes the utility's CSR.

   Greater than 25 to 50%

8. **Business Continuity Plan (BCP)**
   A BCP provides an overall indicator of a utility's commitment to integrating risk management principles into the management culture that supports their operations. These plans address the potential financial effects of a crisis, as well as the utility's flexibility to adapt human resource policies to meet the changing needs of employees. Select the statement below that best describes the utility's BCP.

   No BCP or unknown

9. **Utility Bond Rating (UBR)**
   UBRs are assigned by Moody's and indicate a utility's ability and willingness to satisfy financial obligations. The rating includes five primary factors related to municipal finance, which include market position, financial position, debt levels, governance, and covenants. Some utilities may not have a bond rating since they do not seek additional investment capital from the market. Select the statement below that best describes the utility's UBR.

   AA

10. **Government Accounting Standards Board (GASB) Assessment**
    A GASB Assessment determines how much infrastructure has been evaluated to provide an indication of the utility's overall commitment to proper asset management. The assessment coverage is calculated as: 100 x total number of critical assets categorized into condition categories divided by the total number of critical assets as determined in the asset characterization step of the J100 standard. Select the statement below that best describes the utility's GASB Assessment.

    Greater than 81% assessed

11. **Unemployment***
    Unemployment is a general socioeconomic indicator of a community's economic health. The Bureau of Labor Statistics (BLS) maintains a database of state and local rates (see http://www.bls.gov/lau/tables.htm) which provides a consistent source for determining this indicator. The value for this indicator is based on the unemployment level in the community served by the utility. Select the statement below that best describes the unemployment rate in the service area.

>= 5% National Average

**Monetized risk reduction attributable to this potential countermeasure, or countermeasure package, based on all asset/threat pairs to which the countermeasure(s) applies*

***Net benefit equals the difference between the monetized risk reduction and the annualized cost attributed to the potential countermeasure or countermeasure package*

12. **Median Household Income (MHI)***
MHI is a socioeconomic indicator of the wealth of the community served by the utility. This indicator provides insight on the fragility of a community to withstand a significant incident that could threaten the financial stability of the utility. The U.S. Census Bureau maintains a database for each state and county (see http://www.bls.gov/lau/tables.htm). Select the statement below that best describes the MHI in the service area.

10% or more below State Median

** Monetized risk reduction attributable to this potential countermeasure, or countermeasure package, based on all asset/threat pairs to which the countermeasure(s) applies*

***Net benefit equals the difference between the monetized risk reduction and the annualized cost attributed to the potential countermeasure or countermeasure package*

To adjust any of the responses above, return to the tool and revise the selections in the Utility Resilience Index section.

Qualitative Risk Assessment

Results from the Qualitative Risk Assessment for the utility are shown below.

Asset Category	Threat Type: Malevolent Act	Threat Type: Natural Hazard	Potential Impact, or Reason for No Selection
Physical Barriers	X		MCSD utilizes alarming systems and fencing to protect assets from vandalism and trespassing
Source Water		X	Contamination or earthquake
Pipes and Constructed Conveyances, Water Collection, and Intake		X	An Earthquake could potentially break the transmission line from HBMWD to North Bank Pump station.
Pretreatment and Treatment			MCSD does not treat or pre-treat drinking water.
Storage and		X	An earthquake could potentially break pipes

Asset Category	Threat Type: Malevolent Act	Threat Type: Natural Hazard	Potential Impact, or Reason for No Selection
Distribution Facilities			and storage tanks throughout the distribution system
Electronic, Computer, or other Automated Systems (including the security of such systems)	X		A cyberattack on the SCADA System
Monitoring Practices			MCSD does not process, treat, or monitor raw water
Financial Infrastructure	X		Ransom attacks, cyber attacks or phishing attempts on third part software that could impact billing and revenue collection
The Use, Storage, or Handling of Chemicals			MCSD does not store or handle chemicals for the treatment of drinking water.
The Operation and Maintenance of the Utility			Equipment, supplies, and key personnel are all backed up and agreements are secured.

To adjust any of the responses above, return to the tool and revise the answers in the Qualitative Risk Assessment section.

Quantitative Risk Assessment

Below is a list of the assets and threats the analyst selected for the utility's quantitative risk assessment and a table summarizing the results of the baseline risk assessment. To edit any of the asset/threat pairs below, return to the Quantitative Risk Assessment section of the tool and make the changes.

Identified Assets and Assigned Threats

Perimeter fence
- Unauthorized entry through fences

Main Transmission Line from HBMWD
- EQ4 - Earthquake - PGA 0.8 - 1.1

Distribution System Pipe Network
- EQ4 - Earthquake - PGA 0.8 - 1.1

Storage Tanks
- EQ4 - Earthquake - PGA 0.8 - 1.1

SCADA and Communicating Systems
- Cyberattack

Financial Infrastructure
- Cyberattack

Below is a list of the assets and their currently implemented cybersecurity controls for the utility's quantitative risk assessment. To edit the list of the cybersecurity controls below, return to the Quantitative Risk Assessment section of the tool and make the changes.

Identified Assets and Implemented Cybersecurity Controls

SCADA and Communicating Systems
- Maintain an updated inventory of all OT and IT network assets
- Have a named role/position/title that is responsible for planning, resourcing, and executing cybersecurity activities within the WWS
- Have a named role/position/title that is responsible for planning, resourcing, and executing OT-specific cybersecurity activities
- Provide regular opportunities to strengthen communication and coordination between OT and IT personnel, including vendors
- Patch or otherwise mitigate known vulnerabilities within the recommended timeframe
- Require that all OT vendors and service providers notify the WWS of any security incidents or vulnerabilities in a risk-informed timeframe
- Include cybersecurity as an evaluation criterion for the procurement of OT and IT assets and services
- Change default passwords
- Require a minimum length for passwords
- Require unique and separate credentials for users to access OT and IT networks
- Immediately disable access to an account or network when access is no longer required due to retirement, change of role, termination, or other factors
- Separate user and privileged (e.g., System Administrator) accounts
- Segment OT and IT networks and deny connections to the OT network by default unless explicitly allowed (e.g., by IP address and port)
- Detect and block repeated unsuccessful login attempts
- Require multi-factor authentication (MFA) wherever possible, but at a minimum to remotely access WWS Operational Technology (OT)/Information Technology (IT)

networks
- Provide/conduct annual cybersecurity awareness training for all WWS personnel that covers basic cybersecurity concepts
- Offer OT-specific cybersecurity training on at least an annual basis to personnel who use OT as part of their regular duties
- Use effective encryption to maintain the confidentiality of data in transit
- Use encryption to maintain the confidentiality of stored sensitive data
- Use email security controls to reduce common email-based threats, such as spoofing, phishing, and interception
- Disable Microsoft Office macros, or similar embedded code, by default on all assets
- Maintain current documentation detailing the set-up and settings (i.e., configuration) of critical OT and IT assets
- Maintain updated documentation describing network topology (i.e., connections between all network components) across WWS OT and IT networks
- Require approval before new software is installed or deployed
- Backup systems necessary for operations (e.g., network configurations, PLC logic, engineering drawings, personnel records) on a regular schedule, store backups separately from the source systems, and test backups on a regular basis
- Have a written cybersecurity incident response (IR) plan for critical threat scenarios (e.g., disabled or manipulated process control systems, the loss or theft of operational or financial data, exposure of sensitive information), which is regularly practiced and updated
- Collect security logs (e.g., system and network access, malware detection) to use in both incident detection and investigation
- Protect security logs from unauthorized access and tampering
- Prohibit the connection of unauthorized hardware (e.g., USB devices, removable media, laptops brought in by others) to OT and IT assets
- Ensure that assets connected to the public Internet expose no unnecessary exploitable services (e.g., remote desktop protocol)
- Eliminate connections between OT assets and the Internet
- Keep a list of threats and adversary tactics, techniques, and procedures (TTPs) for cyberattacks relevant to the WWS
- Have a written procedure for reporting cybersecurity incidents, including how (e.g., phone call, Internet submission) and to whom (e.g., FBI or other law enforcement, CISA, state regulators, WaterISAC, cyber insurance provider)
- Have the ability to safely and effectively recover from a cybersecurity incident

Financial Infrastructure

Baseline Risk Assessment Summary

Asset	Threat	Baseline Monetized Risk	Total Baseline Monetized Consequence*	Vulnerability Likelihood	Annual Threat Likelihood
Storage Tanks	EQ4 - Earthquake - PGA 0.8 - 1.1	$186,000	$3,000,000	62%	0.1
Financial Infrastructure	Cyberattack	$1,800	$100,000	6%	0.3

Asset	Threat	Baseline Monetized Risk	Total Baseline Monetized Consequence*	Vulnerability Likelihood	Annual Threat Likelihood
Main Transmission Line from HBMWD	EQ4 - Earthquake - PGA 0.8 - 1.1	$1,458	$2,500,000	53%	0.0011
SCADA and Communicating Systems	Cyberattack	$1,200	$100,000	12%	0.1
Perimeter fence	Unauthorized entry through fences	$120	$20,000	12%	0.05
Distribution System Pipe Network	EQ4 - Earthquake - PGA 0.8 - 1.1	$4	$1,200,000	3%	0.00011

*Total baseline monetized consequence includes the total dollar value of Utility Financial Consequence, Regional Economic Consequence, and Public Health Consequence (number of fatalities multiplied by the value of statistical life, plus the number of injuries multiplied by the value of statistical injury).

Countermeasure Risk Assessment

Countermeasures comprise any infrastructure, equipment, systems, or procedures that reduce risk (threat, vulnerability, or consequences). The table below shows the potential countermeasures selected for analysis to reduce risk. To edit any of the potential countermeasures, return to the Countermeasure Risk Assessment section of the tool and make changes there.

Identified Assets and Selected Countermeasures

Perimeter fence

- Guard(s)
- Security cameras
- Intrusion sensors

Main Transmission Line from HBMWD

- Redundant water source(s)

Assessment Summary

The table below shows the monetized risk summary for each asset/threat pair. Baseline results reflect existing countermeasures and improvement results reflect enhanced mitigation with the selected potential countermeasures in place. To edit any of the information shown in the table(s) below, return to either the Quantitative Risk Assessment or Countermeasure Risk Assessment section of the tool and make changes there.

Asset/Threat Pair: Perimeter fence/Unauthorized entry through fences Monetized Risk Summary

Potential Countermeasures: Guard(s); Security cameras; Intrusion sensors.

Risk Metrics	Baseline	Improvement
Monetized Risk	$120	$15
Utility Financial Impact	$20,000	$10,000
Regional Economic Impact	$0	$0
Fatalities	0	0
Injuries	0	0
Vulnerability Likelihood	12%	3%
Annual Threat Likelihood	0.05	0.05

Asset/Threat Pair: Main Transmission Line from HBMWD/EQ4 - Earthquake - PGA 0.8 - 1.1 Monetized Risk Summary

Potential Countermeasures: Redundant water source(s).

Risk Metrics	Baseline	Improvement
Monetized Risk	$1,458	$0
Utility Financial Impact	$2,500,000	$0
Regional Economic Impact	$0	$0
Fatalities	0	0
Injuries	0	0
Vulnerability Likelihood	53%	0%
Annual Threat Likelihood	0.0011	0

Asset/Threat Pair: Distribution System Pipe Network/EQ4 - Earthquake - PGA 0.8 - 1.1 Monetized Risk Summary

Potential Countermeasures:

Risk Metrics	Baseline	Improvement
Monetized Risk	$4	$0

Risk Metrics	Baseline	Improvement
Utility Financial Impact	$1,200,000	$0
Regional Economic Impact	$0	$0
Fatalities	0	0
Injuries	0	0
Vulnerability Likelihood	3%	
Annual Threat Likelihood	0.00011	

Asset/Threat Pair: Storage Tanks/EQ4 - Earthquake - PGA 0.8 - 1.1 Monetized Risk Summary

Potential Countermeasures:

Risk Metrics	Baseline	Improvement
Monetized Risk	$186,000	$0
Utility Financial Impact	$3,000,000	$0
Regional Economic Impact	$0	$0
Fatalities	0	0
Injuries	0	0
Vulnerability Likelihood	62%	
Annual Threat Likelihood	0.1	

Asset/Threat Pair: SCADA and Communicating Systems/Cyberattack Monetized Risk Summary

Potential Countermeasures:

Note: Total risk reduction is allocated equally among the selected potential cybersecurity countermeasures.

Risk Metrics	Baseline	Improvement
Monetized Risk	$1,200	$0
Utility Financial Impact	$100,000	$0
Regional Economic Impact	$0	$0
Fatalities	0	0
Injuries	0	0
Vulnerability Likelihood	12%	
Annual Threat Likelihood	0.1	

Asset/Threat Pair: Financial Infrastructure/Cyberattack Monetized Risk Summary

Potential Countermeasures:

Note: Total risk reduction is allocated equally among the selected potential cybersecurity countermeasures.

Risk Metrics	Baseline	Improvement
Monetized Risk	$1,800	$0
Utility Financial Impact	$100,000	$0
Regional Economic Impact	$0	$0
Fatalities	0	0
Injuries	0	0
Vulnerability Likelihood	6%	
Annual Threat Likelihood	0.3	

Countermeasure Costs and Packages

The table below shows the cost analyses for the selected potential countermeasures. If the analyst provided both the capital and the operations and maintenance (O&M) costs for the potential countermeasures, VSAT Web calculated an annualized capital cost using a 4% finance rate over 10 years. To edit any information shown below, return to the Countermeasure Costs section of the tool and make changes there.

Potential Countermeasure	Capital Cost	O&M Cost	Annualized Cost
Guard(s)	$0.00	$0.00	$0.00
Redundant water source(s)	$0.00	$0.00	$0.00
Security cameras	$0.00	$0.00	$0.00
Intrusion sensors	$0.00	$0.00	$0.00

To add information in this section, return to the Countermeasure Costs and Countermeasure Packages sections of the tool and complete the analysis there.

Appendix C

MCSD 2025 Consumer Confidence Report

2025 Consumer Confidence Report

Water System Name:	**McKinleyville Community Services District (MCSD)**	Report Date:	4/15/2026

The District tests drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 to December 31, 2025 and may include earlier monitoring data. Last year, as in years past, your tap water met all United State Environmental Protection Agency (USEPA) and State drinking water health standards. MCSD vigilantly safeguards its water infrastructure and once again, we are proud to report that our system did not violate a maximum contaminant level or any other water quality standard in 2025.

Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse McKinleyville Community Services District a 1656 Sutter Road McKinleyville, Ca. 95519 (707) 839-3251 para asistirlo en español.

Type of water source(s) in use:	Drinking water delivered by the McKinleyville Community Services District (MCSD) is supplied by the Humboldt Bay Municipal Water District (HBMWD). The District's source water has been classified by the State Water Resources Control Board (SWRCB) as groundwater <u>not</u> under the direct influence of surface water. The classification is important with respect to the regulations that a water system must follow to ensure water quality.
Name & general location of source(s):	The Humboldt Bay Municipal Water District is a regional water wholesaler that supplies the drinking water to MCSD. Drinking water delivered to the District is drawn from wells below the bed of the Mad River northeast of Arcata. This water-bearing ground below the river is called an aquifer. These wells, called Ranney Wells, draw water from the sands and gravel of the aquifer at depths of 60 to 90 feet, thereby providing a natural filtration process. During the summer, this naturally filtered water is disinfected via chlorination and delivered to the District. During the winter, it is further treated at a regional Turbidity Reduction Facility which reduces the occasional turbidity (cloudiness) in the District's source water. While turbidity itself is not a health concern, SWRCB is concerned that at elevated levels, turbidity could potentially interfere with the disinfection process.

Drinking Water Source Assessment information:	HBMWD performed a Drinking Water Source Assessment that was conducted by the Department of Health Services in August 2002. A copy of this assessment can be obtained at their District office at 828 7th Street Eureka, CA. This assessment found that the source water of the Ranney Wells may be vulnerable to activities that contribute to the release of aluminum and barium. Aluminum is associated with some surface water treatment processes and erosion of natural deposits. Barium is associated with the discharges of oil drilling waste or metal refineries and erosion of natural deposits. HBMWD treats its water and performs annual monitoring and testing, in accordance with SWRCB regulations and requirements, to ensure its water is safe to drink. MCSD performs separate monitoring and testing, in accordance with the USEPA and the State Board regulations and requirements, to ensure that the water quality remains high within the MCSD storage and distribution systems. The results from both the HBMWD's and the MCSD's 2025 monitoring and testing programs indicate that our water quality is very high, as has consistently been the case in past years. The tables below list the drinking water contaminants detected during 2025. A detected contaminant is any contaminant detected at or above its Detection Limit for Purposes of Reporting (DLR) (limit is established by SWRCB) or for unregulated contaminants, the Minimum Reporting Level (MRL). The tables show the level of detected contaminants. Contaminants that are not detected, or are detected below the DLR or MRL, are not required to be reported. The tables also show the maximum contaminant levels (MCL) and public health goals (PHG). Definitions for terms used in this report are listed on the next page.

Time and place of regularly scheduled board meetings for public participation:	First Wednesday of each month at 6:00 p.m. at Azalea Hall, 1620 Pickett Road, McKinleyville, Ca. 95519. Board meeting will be held via Zoom and in-person meetings during the regular scheduled meeting time.

For more information, contact:	Patrick Kaspari, General Manager	Phone:	(707) 839-3251

Definitions of Terms Used in This Report:

You will find many terms and abbreviations in the table below. To help you understand these terms, the following definitions are provided:

- **Public Health Goal (PHG):** The level of a contaminant in drinking water, below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.
- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs cover the aesthetic quality of the water such as odor, taste and appearance.
- **Primary Drinking Water Standard (PDWS):** MCLs for contaminants that affect health along with monitoring, reporting requirements and water treatment requirements.
- **Maximum Residual Disinfectant Level (MRDL)**: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant Level Goal (MRDLG)**: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Regulatory Action Level (RAL):** The concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.
- **Treatment Technique (TT):** A Required process intended to reduce the level of a contaminant in drinking water.
- **Variances and Exemptions:** State Board permission to exceed an MCL or not comply with a treatment technique under certain conditions.
- **n/a:** not applicable
- **ND:** not detectable at testing limit
- **ppb:** parts per billion or micrograms per liter **(µg/L)**
- **ppm:** parts per million or milligrams per liter **(mg/L)**
- **ppt:** parts per trillion or nanograms per liter **(ng/L)**
- **ppq:** parts per quadrillion or picogram per liter **(pg/L)**
- **pCi/l:** picocuries per liter **(a measure of radiation)**
- **mg$CaCO_3$/L:** milligrams of calcium carbonate per liter **(a measure of hardness)**
- **microseimens/cm :** a measure of specific conductance **(µS/cm)**
- **NTU:** Nephelometric Turbidity Units
- **Detection Limit for Purposes of Reporting (DLR):** The DLR is a parameter that is set by state regulation for each reportable contaminant. The presence of these contaminants in the drinking water at its DLR does not necessarily indicate that the water poses a health risk and can be below its MCL.
- **Minimum Reporting Level (MRL):** The MRL is defined by the USGS National Water Quality Laboratory as the smallest measured concentration of a substance that can be reliably measured by using a given analytical method.
- **Secondary Drinking Water Standards (SDWS):** MCLs for contaminants that affect taste, odor or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Radioactive contaminants that can be naturally-occurring or be the result of oil and gas production and mining activities.
- Organic chemical contaminants including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agriculture application, and septic systems.

Water Quality Testing Results

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board (State Board) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. State Board regulations also established limits for contaminants in bottled water that provide the same protection for public health. The MCSD testing for Fecal Coliform produced zero results. Test results for disinfection byproducts have been below the Maximum Contaminant Level (MCL).

The tables enclosed in the newsletter list all the drinking water contaminants that were monitored during 2025. Additionally, the State requires that both Districts monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Therefore, results from prior years are included if such a contaminant was detected. There are very few entries in the tables because very few contaminants were detected in prior years. It is once again important to note that the presence of these contaminants does not necessarily indicate that the water poses a health risk.

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water hotline (1-800-426-4791)

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA and the Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (1-800-426-4791)

HBMWD consistently and frequently monitors for the presence of giardia and cryptosporidium in its drinking water. Since the mid-1990s, when the EPA approved the testing technique for these contaminants, HBMWD has never had a confirmed detection of either contaminant.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. MCSD is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at (http://www.epa.gov/lead).

McKinleyville Community Services District 2025 Consumer Confidence Report

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	**Highest No. of Detections**	**No. of Months in Violation**	**MCL**	**MCLG**	**Typical Source of Bacteria**
Total Coliform Bacteria (state Total Coliform Rule)	(In a month) 0	0	0 positive monthly sample	0	Naturally present in the environment.
Fecal Coliform or *E. coli* (state Total Coliform Rule)	(In the year) 0	0	A routine sample and a repeat sample are total coliform positive, and one of these is also fecal coliform or *E. coli* positive	0	Human and animal fecal waste
E. coli (federal Revised Total Coliform Rule)	(In the year) 0	0	(a)	0	Human and animal fecal waste

(a) Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.

TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (complete if lead or copper detected in the last sample set)	**Sample Date**	**No. of Samples Collected**	**90th Percentile Level Detected**	**No. Sites Exceeding AL**	**AL**	**PHG**	**No. of Schools Requesting Lead Sampling**	**Typical Source of Contaminant**
Lead (ppb)	2025	32	1.8	0	15	0.2	A total of 4 Schools were tested for lead in 2019. Up to 3 samples collected per school	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	2025	32	.97	1	1.3	0.3	Not applicable	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**MCL**	**PHG (MCLG)**	**Typical Source of Contaminant**
Sodium (ppm)	2007	3.7	N/A	None	None	Salt present in the water and is generally naturally occurring
Hardness (ppm)	2005	67	57-80	None	None	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected (Average)**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
TTHMs (µg/L) – (Total Trihalomethanes)	2025	29.5	0-30	80	N/A	Byproduct of drinking water disinfection
HAA5 (µg/L) (Haloacetic Acids)	2025	13.8	0-18	60	N/A	Byproduct of drinking water disinfection
Chlorine (mg/L)	2025	Average=0.69	0.40-1.10	[MRDL = 4.0 (as Cl_2)]	[MRDLG = 4.0 (as Cl_2)]	Drinking water disinfectant added for treatment
Asbestos	2019	ND	ND	7	7	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

Unregulated Contaminant Monitoring Rule (UCMR) 4 – 2019 Testing Results

As part of the federal drinking water program, USEPA issues a list of currently unregulated contaminants to be tested by Public Water Systems throughout the nation. This process occurs every five years pursuant the Unregulated Contaminanat Monitoring Rule (UCMR). The purpose of the UCMR program is to determine the prevelence of unregualted contaminants in drinking water. Results of this testing help USEPA determine whether or not to regulate new contaminants for protection of public health.

The District participated in the current UCMR 4 testing in 2019. The UCMR 4 consists of testing for 20 additional contaminants, and 2 indicators. Below are the constituents within the previous five years that were detected above the minimum reporting level in the most recent tests. Information on the potential health effects are also included.

DETECTION OF UNREGULATED CONTAMINANTS

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**Notification Level**	**Health Effects Language**
HAA6 (µg/L) [Sum of 6 Haloacetic Acids]	2019	4.84	0-4.84	N/A	Some people who drink water containing haloacetic acids in excess over many years may have an increased risk of getting cancer.
HAA9 (µg/L) [Sum of 9 Haloacetic Acids]	2019	8.92	0-8.92	N/A	Some people who drink water containing haloacetic acids in excess over many years may have an increased risk of getting cancer.
Manganese, Total (µg/L)	2019	0.44	0.44	500	Manganese exposures resulted in neurological effects. High levels of manganese in people have been shown to result in adverse effects to the nervous system.

Appendix D

Humboldt Bay Municipal Water District Water Shortage Contingency Plan 2025
Draft

8 Water Shortage Contingency Planning

8.1 Plan Overview and Coordination

8.1.1 Overview

HBMWD is a regional water wholesaler and is capable of delivering both potable water (through its Domestic Water System) and untreated surface water (through its Industrial Water System).

The District delivers potable water to seven municipalities via its Domestic Water System, who in turn serve the residents, businesses, and industries in the greater Humboldt Bay region. The seven municipalities include the City of Arcata, City of Blue Lake, City of Eureka, Fieldbrook-Glendale CSD, Humboldt CSD, Manila CSD, and McKinleyville CSD. Retail water service is provided to approximately 200 customers who are generally located closer to the District's transmission system than to any other municipal water service. The District's Domestic Water System is capable of supplying approximately 20 MGD of treated drinking water. Current production of treated drinking water for municipal purposes averages approximately 10 MGD. This municipal use includes residential, commercial, industrial, and agricultural uses of the water. Per capita water use rates in this region are low and likely benefit greatly from the moderate climate and abundant rainfall, as needs for agriculture and landscaping are often met with rainfall rather than municipal water.

The District's Industrial Water System is separate and distinct from its Domestic Water System and has been used for supplying untreated surface water to industrial customers. This Industrial Water System is capable of supplying 60 MGD of untreated water. The District has delivered untreated water to two large industrial customers (pulp mills) for the majority of the time since the 1960s. However, one of the pulp mills closed in the 1990s, and the remaining pulp mill ceased operation in 2009. With no existing industrial customers, the District has the capability of supporting future water supply needs, which they are currently exploring.

Wholesale water is provided to the District's customers under long-term contracts. These contracts specifically assert the District's right, in accordance with the California Water Code, to suspend the water delivery requirements of the contracts if the District's Board declares that an actual or potential water shortage exists, or if all wholesale customers and the District mutually agree to implement the Water Shortage Contingency Plan (plan). During the 1976-77 drought, which was the only declared water emergency in the history of the District, it was the policy and practice of the District to set maximum use targets for its wholesale municipal customers, allowing them to choose how to meet those targets. Since the wholesale industrial customers could not operate effectively at significantly reduced water consumption levels, they were required to repair leaks and increase the efficiency of their water use. A reservoir capacity was set at which all deliveries to the industrial customers would cease. Fortunately, capacity did not fall to that level. The current plan operates on these principles. The municipalities retain responsibility for control of allotments provided under the provisions of the plan. Any potential wholesale industrial customers will face the reductions outlined in each action stage, and the District's approximately 200 retail customers will be treated in accordance with the action stages of the plan.

The water that HBMWD provides to its customers, both domestic and industrial, ultimately comes from the Ruth Lake Reservoir and the Mad River watershed located below R.W. Matthews Dam at Ruth. The reservoir was designed for a safe yield of 75 MGD per year, using the 1923-24 drought of record. To calculate the safe yield of the reservoir, the Bechtel Study used the "Mad River runoff during the period October 1922 to September 1954…using available short term flow records at the

Forest Glen and Arcata gaging stations, supplemented by the long-term records for the Eel River at the Scotia gaging Station." After the 1976-77 drought, which was the only declared water emergency in the history of the District, the safe yield value of 75 MGD came into question and Winzler & Kelly re-evaluated the safe yield of the reservoir based on the 1976-77 drought data. That study came up with a safe yield of 67 MGD of the reservoir. That study was also hampered by the lack of accurate inflow data from above Ruth Lake. The recent drought (2012-2016) caused the District to revisit this safe yield value as further detailed in Section 8.2.

8.1.2 Coordination

Coordination in implementing this Water Shortage Contingency Plan is assured through the activation of the Water Task Force. The first task force was formed in 1977. This task force is convened as necessary to address drought conditions or other significant events which could result in a water supply shortfall. The Task Force is comprised of representatives of the District and each of its wholesale customers. The Water Tack Force's responsibilities include:

1. Review the status of the water supply and forecasts.
2. Recommend specific actions in accordance with this plan and each entity's own water shortage plan.
3. Assure that priority of allocations meets legal requirements of consistency and non-discrimination.
4. Coordinate media releases and public announcements.
5. Coordinate interaction with regulatory agencies such as the California Department of Water Resources, Fish and Wildlife, and California Department of Public Health.
6. Review and make recommendations about requests for waivers from, or exceptions to, actions taken pursuant to this plan.

8.2 Safe Reservoir Yield During a Drought

A Rippl mass diagram can be used to plot the cumulative inflow to the reservoir against time for the drought of record to assist in determining safe yield from the reservoir during an extended drought. The inflow and resulting cumulative storage volume can then be compared to the cumulative storage required for various draft (demand) rates to establish a maximum, constant draft rate that could be achieved over the course of the drought planning period (in this case, five consecutive years of drought).

The development of a Rippl mass diagram for this analysis incorporates the following assumptions:

- The reservoir begins full with 48,030 acre-ft of water on May 17 (based on the drought of record, the time period from May 1976 to November 1977);
- Inflow to the reservoir during the drought of record can be repeated multiple times to extend the 1-year drought to a 5-year planning period;
- The total inflow to the reservoir can be estimated by scaling the inflow at the Zenia Bridge gauge station by a factor equal to the ratio of watershed area contributing to the gauge station site to the watershed area contributing to the reservoir spillway (1.2 or 121 mi^2/93.8 mi^2);
- Demand is taken directly from the reservoir (i.e. there are no contributing flows downstream of the reservoir);

- Evaporative losses can be estimated based on reservoir levels during the drought of record;

The drought of record storage was determined using Equation 1.

$$S_i = S_{i-1} + I \quad \text{(EQ-1)}$$

where:
S_i = Storage (MG)
i_{1-730} = Time Step (day)
I = Net Inflow (MG)

$$where: I = \left(I_{zenia} * \left(\frac{121mi^2}{93.8mi^2}\right) - Evap\right)$$

Cumulative storage required for draft rates were determined using Equation 2.

$$S_i = S_{i-1} + D \quad \text{(EQ-2)}$$

where:
S_i = Storage (MG)
i_{1-730} = Time Step (day)
D = Demand (MG)

A maximum allowable constant draft rate of 35.5 MGD over the five-year planning period was calculated based on the drought of record inflow (see Figure 6).

The Rippl diagram shows that a maximum constant draft rate of 35.5 MGD could be achieved (reservoir would never be empty) based on the mass budget during the drought of record. This was determined based on the assumption that the inflow to the reservoir and evaporation volumes from the drought of record could be repeated to achieve a 5-year planning cycle. Inflow for the second through fifth years may overestimate the actual inflow that would occur in this period of the drought. Inflow during the second year of drought may be lower than the first year due to decreased runoff/increased soil uptake over the course of the previous year, and the case could be similar for the subsequent years of the drought. However, this overestimation is likely more than offset by the very conservative assumption that the demand is taken directly from the reservoir with no contribution from the watershed below Ruth Lake.

The maximum constant cumulative draft volume comes within approximately 278 MG of cumulative storage volume in February of the fifth drought year. At this point, approximately 8 days of storage remains at the maximum constant draft rate. This storage volume likely falls below the desired planning volume, and in actuality, conservation measures likely would have been implemented to reduce the constant draft and increase storage.

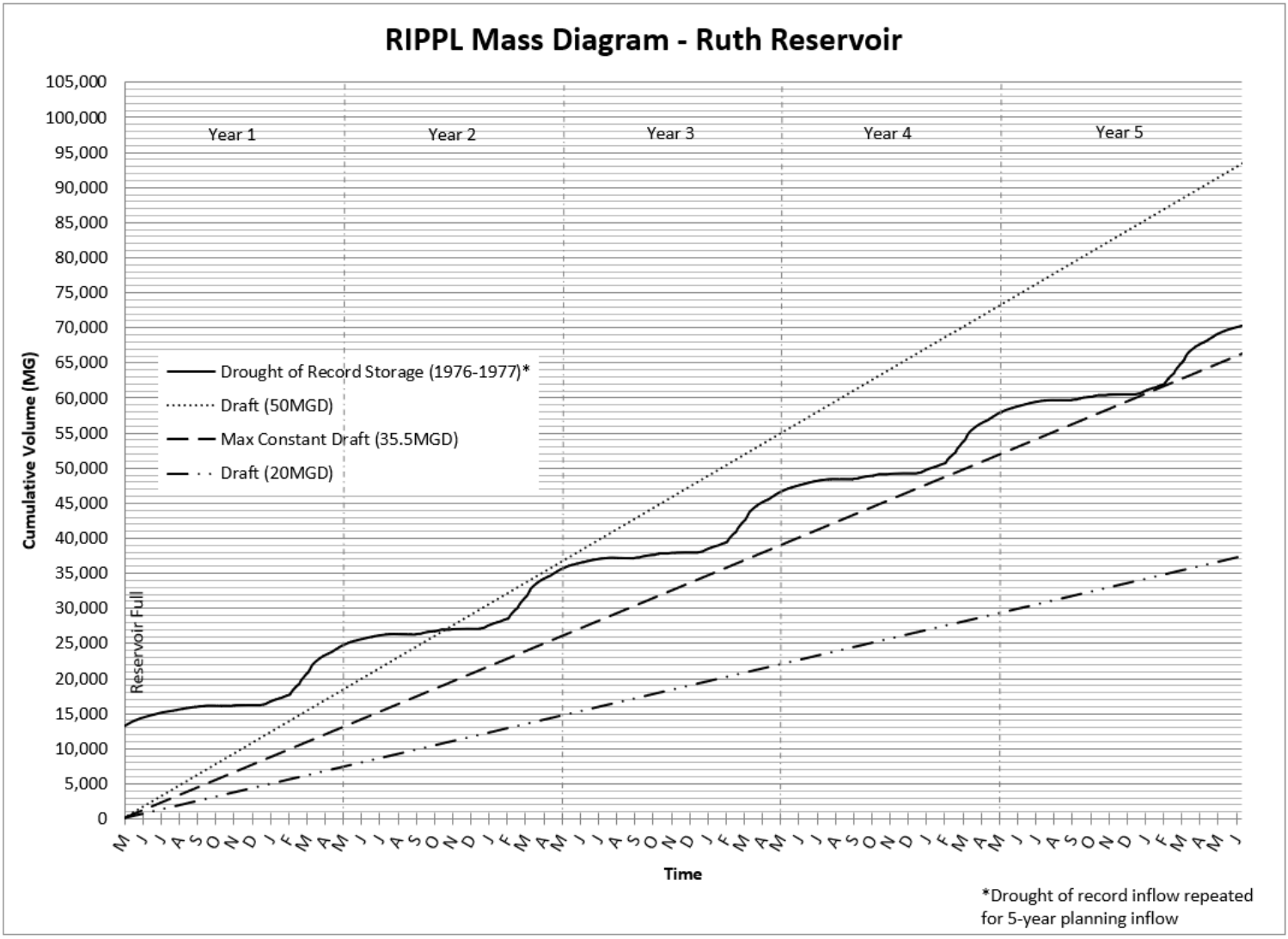


Figure 6. Rippl Mass Diagram for 5-year planning period

8.3 Stages of Action

There are five defined drought action stages (see Table 8-2). These stages correspond to standardized water shortage levels (up to 10, 20, 30, 40, and 50 percent shortage). The cross-reference relating the five drought action stages and standardized shortage levels is depicted graphically in Figure 7 – Figure 10. The stages and corresponding reservoir shortage levels vary on a seasonal basis as a result of water use and supply also typically varying on a seasonal basis. These stages may be implemented with or without a formal declaration of a water emergency by the District's Board of Directors. In the event circumstances merit or require a declaration of a water shortage emergency, it is the intent of the District to rely on this plan to provide the primary framework to deal with such an emergency. The triggers attached to each stage are not intended to be absolute. Circumstances not currently foreseeable may dictate moving to a higher action stage before the trigger levels for that stage are reached. Conversely, action stage implementation may be postponed or suspended if there is sufficient natural flow in the river to meet downstream needs. Action stages will be terminated, in consultation with the Water Task Force, as rain, runoff, and lake levels permit.

8.3.1 Stages and Conditions

An analysis was performed to develop reservoir operating curves and establish "action stages" or "trigger levels" that prompt various responses, dependent upon reservoir levels at various times of the year. The analysis established five drought action stages and associated maximum draft rates in the form of an Operating Curve (Figure 7 -Figure 10). This Operating Curve outlines the specific water supply conditions that are applicable to each stage. Stage implementation will occur as a result of the reservoir level at a given time of year, as shown in Figure 7-Figure 10. For example, if the reservoir storage level was at 25,000 acre-feet in November (up to 50% reservoir shortage), Stage 2 would be implemented.

Portions of water demand that need to be included when considering draft from the reservoir include domestic use, industrial use, and instream flow dedications. The municipalities that HBMWD serves currently use an average of approximately 10 MGD of District water. There are currently no industrial customers; however, there is potential for industrial customers in the future. There is also a minimum of 5 cfs that is to be released from the dam for fish flows. The District's Habitat Conservation Plan and Water Rights permit also establish fish flows that must always be present in the river (see Table 8-1).

Table 8-1: Mad River Flow Requirements for Fish

Period	Flow at Hwy 299 Bridge (cfs)
October 1 – October 15	30
October 16 – October 31	50
November 1 – June 30	75
July 1 – July 31	50
August 1 – August 31	40
September 1 – September 30	30

The flow values given in Table 8-1 are the flows that need to be measured at the Highway 299 bridge near the District's operation facilities at Essex, and they do not necessarily reflect flows that need to be released from the reservoir, as there are contributing flows to the Mad River below the reservoir. Furthermore, flows at the Highway 299 bridge are permitted to be as low as the "natural flow" calculation if that value is lower than those given in Table 8-1. The District will always maintain the minimum of 5 cfs as required, and has historically endeavored to meet the minimum flows as established in Table 8-1 to support healthy fish life. However, it is likely that in the event of a longer-term drought and during periods of the higher conservation Stages being enacted, the District may resort to the natural flow requirement and reduce discharges accordingly.

For the purpose of determining trigger responses, the following assumptions were made:

- The District is operating both its domestic and industrial systems.
- A domestic water delivery of 10 MGD and an industrial water delivery of 40 MGD were used. Although the industrial water system is not currently in use, this assumption accounts for the potential for future industrial water demand. It should also be noted, however, that the Operating Curve is based on total flow released from the reservoir (e.g. in Stage 2, 50 MGD can be released), and this flow can be apportioned based on domestic and industrial water consumption at that point in time.
- Because instream flow dedication requirements vary throughout the year, and can vary depending upon natural flow conditions, these flows were not included. However, flows released from the dam during the various action stages are generally above the flows that are required per Table 8-1.

Table 8-2: Drought Triggers Action Table

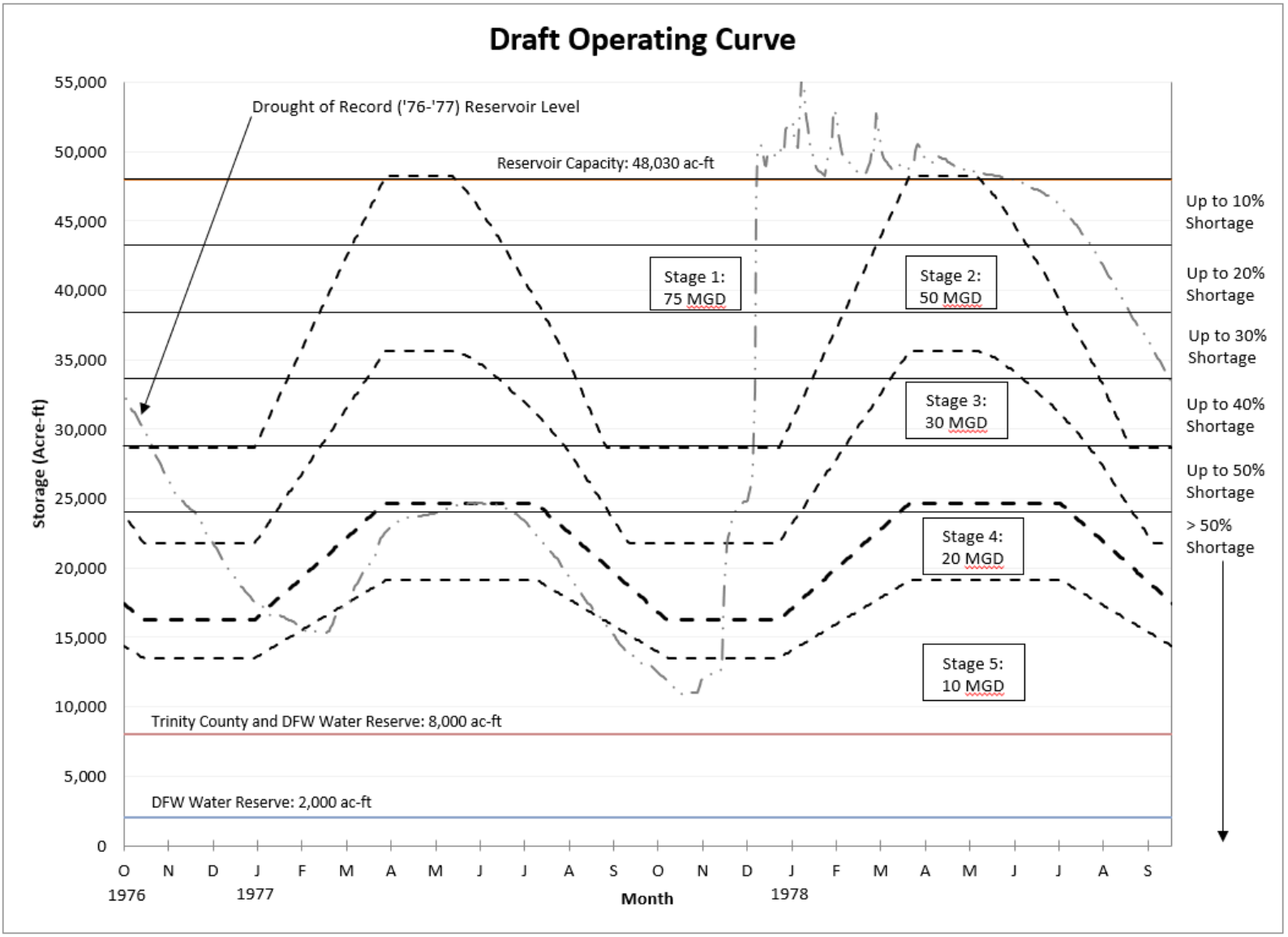
Stage	Domestic Reduction	Industrial Reduction	Total Percent Supply Reduction	Delivered Water (Municipal, MGD)	Delivered Water (Industrial, MGD)	Total Delivered (MGD)	Maximum Draft (MGD)
1	0%	0%	0%	10	40	50	75
2	5%	5%	5%	9.5	38	47.5	50
3	10%	50%	42%	9	20	29	30
4	20%	70%	60%	8	12	20	20
5	30%	95%	82%	7	2	9	10

The operating curves that were established (Figure 10) give maximum draft rates for each of the five different drought action stages. The conservation action boundaries were developed based on these maximum draft rates, the amount of storage remaining over time at a given draft rate, drought of record (1976-1977) inflow, typical evaporation losses, and common reservoir level trends during the period of record (1969-2020). Throughout the period of record, reservoir levels have generally been lowest from October to January, and highest from March to May. The trigger levels have been established to account for these seasonal variations (e.g. a storage level of 30,000 AF, up to 40% reservoir shortage, would be in Stage 1 in November, but it would be in Stage 3 in May).

To give a context of historical trends of Ruth Lake storage levels, the reservoir levels during the 1976-1977 drought are also shown on Figure 7. The storage during the drought follows the general pattern of the operating curves that have been generated. During the drought, reservoir storage never dropped below 10,800 AF.

Reservoir levels during the 2012-2016 drought are shown on Figure 8, 9, and 10. While the 2012-2016 drought was significant for the State of California, it should be noted that the Ruth Reservoir filled every year during this most recent drought. The reservoir level remained in the Stage 1 action level (maximum draft of 75 MGD) for most of the 2012-2016 drought. There were a few occasions when the reservoir level triggered Stage 2 action, and one occasion when the reservoir level triggered Stage 3 action. The highest drought trigger stage that was reached from 2012-2016 was Stage 3 (maximum draft of 30 MGD, which is well below the District's current average draft rate of 10 MGD). This occurred for a brief period during January-February of 2014, and the reservoir was filled by the end of February 2014.

Figure 7: Ruth Lake operating curves



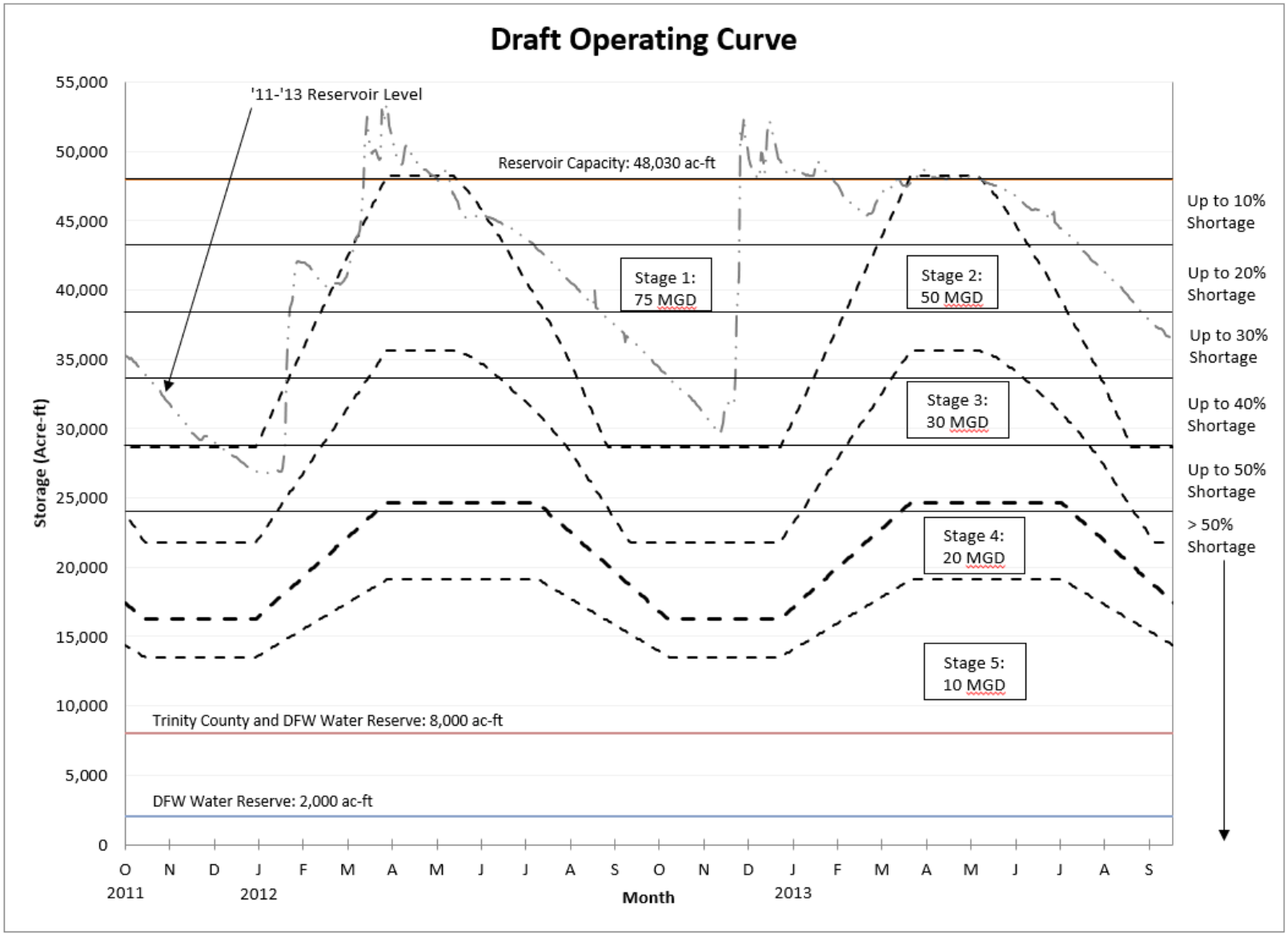


Figure 8: Ruth Lake operating curves with 2011-2013 Reservoir Levels

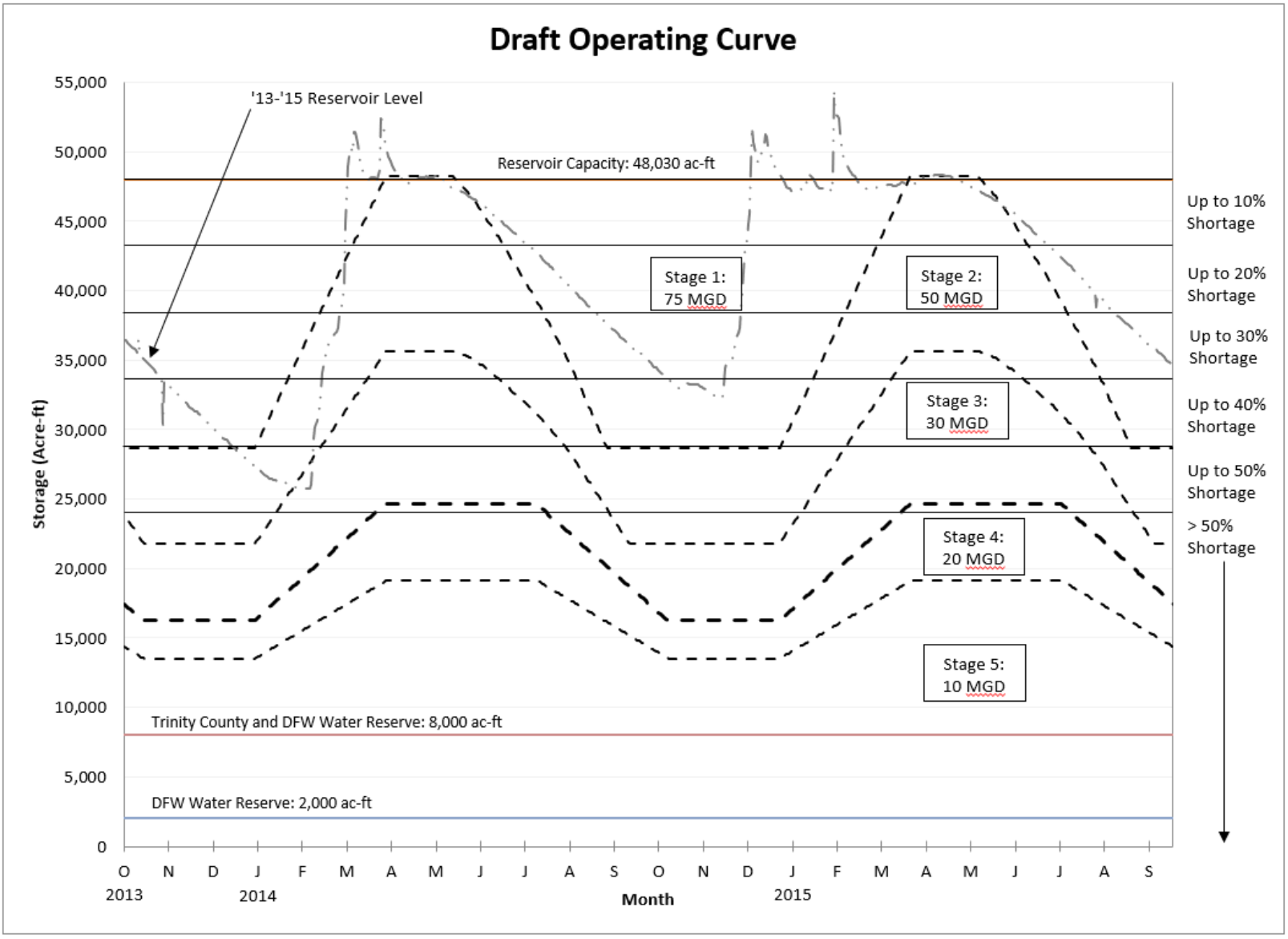


Figure 9: Ruth Lake operating curves with 2013-2015 Reservoir Levels

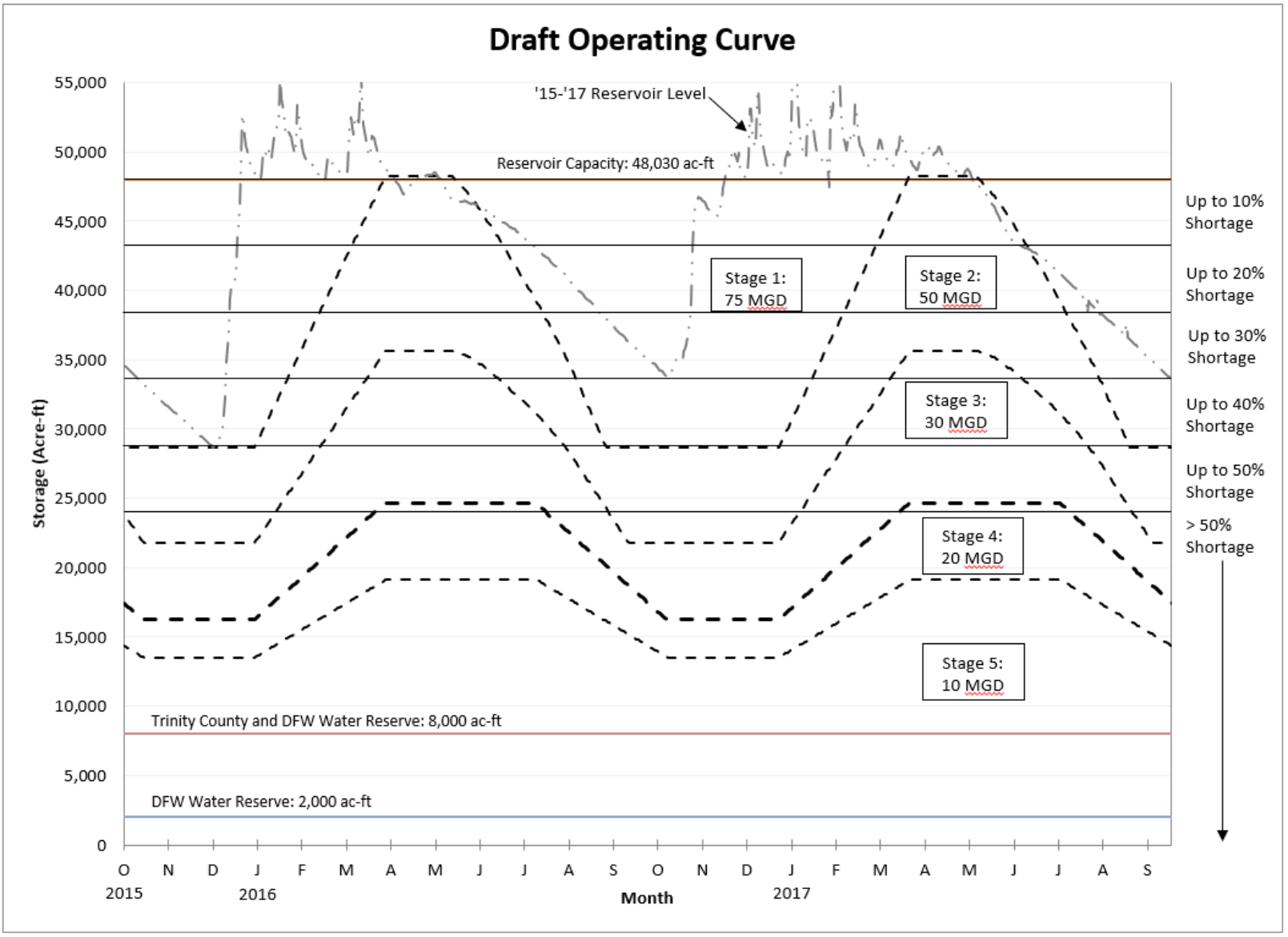


Figure 10: Ruth Lake operating curves with 2015-2017 Reservoir Levels

As the District, through its Water Resource Planning efforts, plans to service wholesale industrial water users in the future, the action stages and conditions are given with the assumption that the District is still operating at normal levels prior to loss of its wholesale industrial customers (i.e. 40 MGD is being supplied to industrial customers, and 10 MGD is being supplied to domestic customers). Without wholesale industrial customers, triggering of these stages would not occur as quickly and may not occur at all. Following is a narrative describing the stages given in Table 8-2 in further detail.

Stage 1 – Controlled Release from Storage

If the reservoir level is within the Stage 1 boundaries, only the amount of water needed for instream flow dedication and water supply purposes will be released from the reservoir.

Stage 2 – Optimizing Available Supply

Consideration to implement Stage 2 (50 MGD maximum draft rate) will be triggered when the storage in Ruth Lake falls below the 75 MGD operating curve. Other triggers to be considered for entering into the Stage 2 requirements include are damage to the system by flood, earthquake, or other system failures; and accidental or intentional toxic spills in the supply. The Water Task Force will review the trigger data and make recommendations regarding actual implementation of Stage 2.

In this stage, the draft rate will be limited to 50 MGD or less. Given current water consumption rates, reductions in water delivery may not need to be made to achieve this; however, entering Stage 2 means that awareness needs to be raised and customers need to begin public outreach and education, and potentially voluntary conservation measures. Customers will be notified of potential future reductions, and public education efforts encouraging water conservation should take place. If required, industrial and domestic deliveries will each be reduced by 5% (down to 38 MGD and 9.5 MGD, respectively). Shutting down hydro-electric production should also be considered, as hydro-electric production is incidental to water supply needs and not justification for releases.

Stage 3 – General Reduction

Consideration to implement Stage 3 will be triggered when the storage in Ruth Lake falls below the 50 MGD operating curve. The Water Task Force will review the trigger data and make recommendations regarding actual implementation of Stage 3.

If the reservoir storage level is within the Stage 3 boundaries, the draft rate will be limited to a maximum draft rate of 30 MGD. Based on current demand, domestic use will be reduced by 10% (down to 9 MGD), and delivery to industrial customers will be reduced by 50% (down to 20 MGD). Changes to the specific reduction will be determined on a biweekly basis based on rate of supply reduction, weather, and other relevant factors.

Stage 4 – Usage Allocations

Consideration to implement Stage 4 will be triggered when the storage in Ruth Lake falls below the 30 MGD operating curve. The Water Task Force will review the trigger data and provide input regarding actual implementation of Stage 4.

If the reservoir storage level drops into Stage 4, all of the District's wholesale and retail customers will be required to reduce usage by the amount necessary to limit consumption to 20 MGD. Domestic use will be reduced by 20% (down to 8 MGD), and industrial deliveries will be reduced by 70% (down to 12 MGD). Furthermore, each wholesale industrial customer will provide certification that water use is being optimized and that wasteful use of water is not occurring. Changes to the specific reduction will be determined on a biweekly basis based on rate of supply reduction, weather, and other relevant factors.

Stage 5 – Rationing

Consideration to implement Stage 5 will be triggered when the storage in Ruth Lake falls below the 20 MGD operating curve. The Water Task Force will review the trigger data and provide input regarding the actual implementation of Stage 5.

If the reservoir storage level reaches Stage 5, the District's wholesale and retail customers will be limited to a total usage of 10 MGD. Wholesale industrial water usage will be limited to the amounts required for human consumption, sanitation, and fire protection. No water will likely be available for

industrial processes. Domestic reduction will be approximately 30%-50%. Municipal and retail customer usage will be reassessed on a bi-weekly basis and may be adjusted as determined by the rate of use of available supply and weather conditions.

8.4 Prohibitions on End Uses

The District does not have the ability to impose use restriction or other requirements directly on end users of the municipal customers' water. Each wholesale customer is responsible for adopting plans to implement the reductions in water use called for by the action stages outlined above. Effectiveness of this plan will be monitored on a daily basis using continuously metered data from Ruth Lake and the metered connections to all wholesale municipal and industrial customers.

8.5 Penalties, Charges, Other Enforcement of Prohibitions

As noted earlier in this plan, each wholesale customer is responsible for adopting plans to implement the reductions in water use called for by the action stages outlined above. Effectiveness of this plan will be monitored on a daily basis using continuously metered data from Ruth Lake and the metered connections to all wholesale municipal and industrial customers.

Table 8-3 shows examples of prohibitions and the stage when those prohibitions become mandatory. These prohibitions assume that the District is operating at normal levels prior to loss of its industrial customers.

Table 8-3: Water Shortage Contingency – Mandatory Prohibitions

Examples of Prohibitions	Stage when Prohibition Becomes Mandatory
Domestic use limited to 9 MGD, and industrial use limited to 20 MGD	3
Domestic use limited to 8 MGD, and industrial use limited to 12 MGD	4
Domestic use limited to 7 MGD, and industrial use limited to only the amounts required for human consumption, sanitation, and fire protection	5

8.6 Consumption Reduction Methods

As previously mentioned, the District does not have the ability to impose use restriction or other requirements directly on end users of the municipal customers' water. Each wholesale customer is responsible for adopting plans to implement the reductions in water use called for by the action stages outlined above. The District will also perform general voluntary water conservation measures in conjunction with its wholesale customers, as well as perform public education efforts to encourage

water conservation. As storage levels in the reservoir drop, the District will work closely with its wholesale customers to attempt to minimize water consumption in the area, as well as minimize their own internal use. However, their internal usage is minimal, but items such as line flushing will be discontinued or kept to a bare minimum as required.

While the District does not have the ability to limit the amount of water its municipal customers deliver, the District does have the ability to limit water delivered to potential industrial customers. Should a drought situation arise where action is required, delivery to industrial customers will be reduced as outlined in Section 8.1. Table 8-4 gives a summary of the consumption reduction methods and the stages when the method will take effect.

Table 8-4: Consumption Reduction Methods

Consumption Reduction Methods	Stage when Method Takes Effect
Release from storage only amount of water needed for in-stream and water supply purposes	1
General voluntary water conservation measures with wholesale customers	2
Public education efforts encouraging water conservation	2
Encourage all wholesale and retail customers to reduce usage. Require industrial customers to reduce usage.	3
Encourage all wholesale and retail customers to reduce usage further. Require industrial customers to further reduce usage.	4
No water for industrial processes and reduce wholesale and retail customer usage up to 50%	5

8.7 Determining Water Shortage Reductions

The District has water meters in place at all of the connections to the systems of each of its seven wholesale municipal customers. There are also meters at every residential connection, and a meter will be installed at any future industrial customer connection. To determine the actual reductions in use of water during a water shortage, the District will use its Supervisory Control and Data Acquisition (SCADA) system to monitor distribution to its customers on a daily basis. In the event of a power outage, the District has two auxiliary power generators as standby power sources. The first generator is a 35kW (kilowatt) generator and the second is a 2MW (megawatt) generator. Therefore, the SCADA system will continue operating during power outages and continue monitoring distribution. Water shortage reductions will be determined by subtracting post-drought consumption rates from pre-drought consumption rates.

8.8 Revenue and Expenditure Impacts

Each wholesale customer must gauge the revenue and expenditure impact of the action stages. The expenditure and revenue impacts on the District are negligible since the wholesale rates are designed to cover costs incurred by the District in producing and distributing the water. With less water to produce, there would be less expense incurred by the District. Therefore, expenditures and revenues for costs directly related to the amount of water produced (e.g. costs for power for pumping) will both decrease as deliveries of water are curtailed. If the shortage were to continue for a prolonged period, the District could reduce staff in order to cut costs as the District would not be producing and distributing water at normal levels. The District also has a reserve account to act as a buffer to cover fixed costs for a short period of time if the District were to need it.

8.9 Resolution or Ordinance

A copy of the District's draft Water Shortage Contingency Resolution for declaring a water shortage emergency and implementing the District's Water Shortage Contingency Plan is attached as Appendix F.

8.10 Catastrophic Supply Interruption

The District's Emergency Operations Plan (EOP) provides the overall response procedures for catastrophic supply interruptions. The EOP further provides specific procedures for power outages and for security incidents. The District's Emergency Action Plan (EAP) provides response procedures for catastrophic supply interruptions involving the R.W. Matthews Dam and Reservoir (Ruth Lake), such as an earthquake. The District is complying with the seismic risk assessment pursuant to Section 10644, by providing a copy of the most recent Humboldt County Operational Area Hazard Mitigation Plan 2019 Volume 1: Area-Wide Elements, pages 101-122. See Appendix J for document or: https://humboldtgov.org/506/Local-Hazard-Mitigation. The District's Operations Plan (OP) provides procedures for system failures. Hazardous materials incidents are covered by numerous response plans depending on the nature of the incident. Table 8-5 summarizes possible catastrophe events and the actions that would be taken or plans that would be implemented for each scenario.

Table 8-5: Preparation Actions for a Catastrophe

Possible Catastrophe	Summary of Actions/Plans
Regional Power Outage	Emergency Operations Plan-Power Outage Procedures
System Failure	Operations Plan for Water Supply, Treatment, and Distribution System
Earthquake	Emergency Operations Plan/Emergency Action Plan (R.W. Matthews Dam at Ruth)
Hazardous Material Spill	Hazardous Materials Response Plans
Acts of Terrorism	Emergency Operations Plan-Security Procedures/ Emergency Action Plan (R.W. Matthews Dam at Ruth)

8.11 Minimum Supply Next Five Years

The five water years between October 1990 and September 1994 represent the driest five multiple years recorded for the District:

- Rainfall for this period averaged 49 inches per year, or 70% of normal.
- Of the five water years, the driest year for rainfall was water year 1991/1992 with 37 inches, or 53% of normal.
- Flows into Ruth Lake via the Mad River averaged 64,000 AFY, or 37% of normal (173,000 AFY).
- Despite the diminished rainfall and runoff, rainfall was more than sufficient to refill the reservoir each year.
- Reservoir volume during this period averaged 39,062 AF which is 81% of capacity (48,030
- AF) and 95% of normal (41,000 AF).

Furthermore, the District was still supplying industrial water during this time, whereas the District is currently only supplying domestic water. Given this, in the event that the next five years are hydrologically the same as the driest five consecutive years of record, the minimum available supply would be greater than the full reservoir level of 48,030 acre-feet for each year, as shown in Table 8-6.

Table 8-6: Minimum Supply Next Five Years

	2021	**2022**	**2023**	**2024**	**2025**
Available Water Supply	> 48,030 AF	> 48,030 AF	> 48,030 AF	> 48,030 AF	> 48,030 AF

A Rippl mass diagram was generated (Figure 11) using the same assumptions as given in Section 8.2 to plot the cumulative inflow to the reservoir (less evaporation) and various cumulative draft rates. As seen in the figure, a constant draft rate of 38.5 MGD could be achieved if the hydrologic conditions of the drought of record (1976-77) were to be synthetically repeated for a three-year planning period. Current usage is approximately 10 MGD. Therefore, even if the single-year drought of record were repeated for three years, the District would still have a more than adequate water supply to serve its current customers' needs.

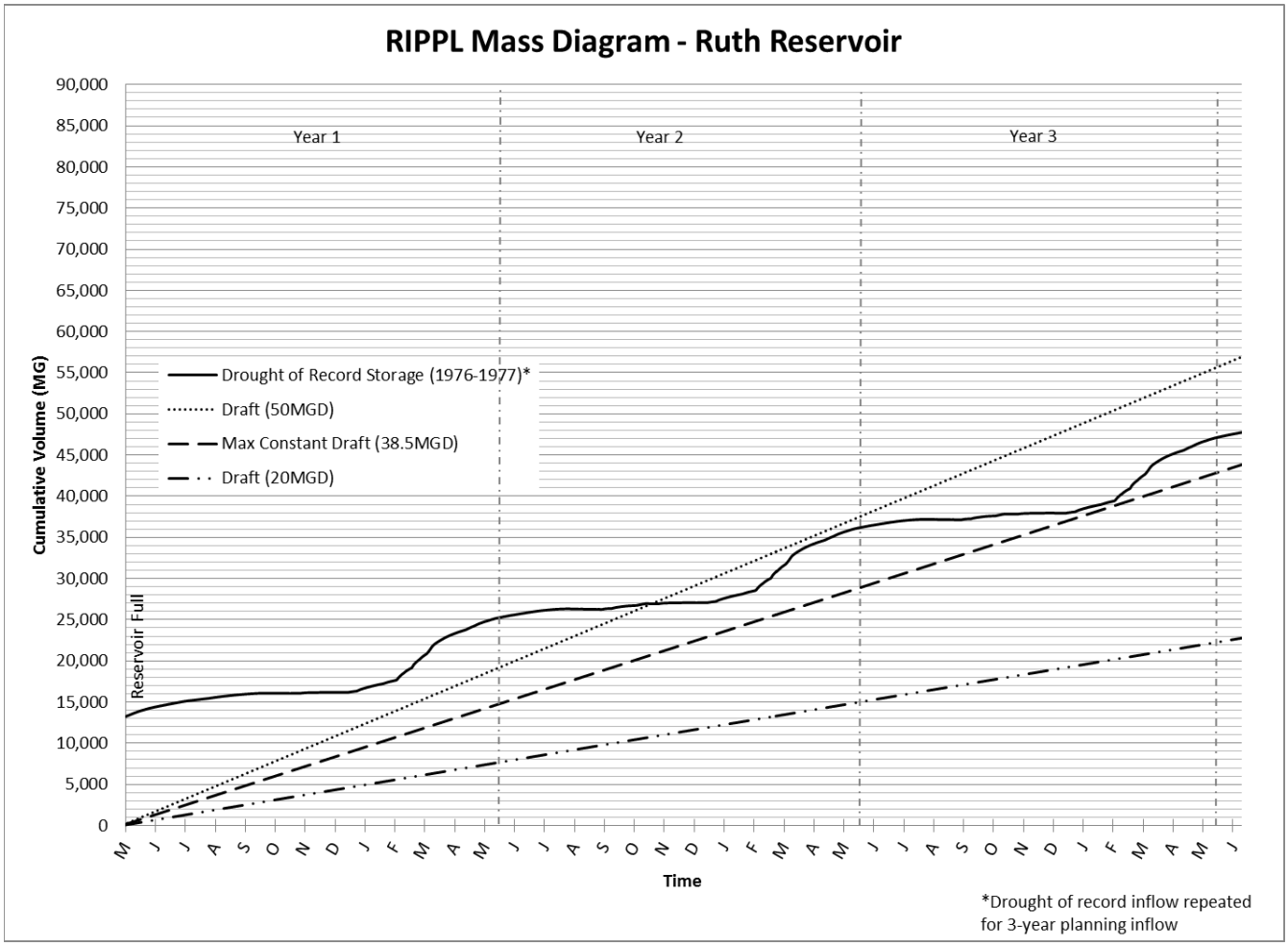


Figure 11: Rippl Mass Diagram with '76-'77 drought hydrologic information repeated for a three-year planning period

8.12 Annual Water Supply and Demand Assessment Procedures

A new requirement this year is to develop procedures to conduct an annual water supply and demand assessment to determine water supply reliability with reports due by July 1st of each year, beginning in 2022. As noted throughout this document, HBMWD has not had issues with supply reliability in the past, even during drought years. To meet the new requirements, HBMWD will look at the supply/demand of water used. To do this, we will look at the unconstrained demand used by our municipal and retail customers and the supply available, taking into account factors such as weather, growth and other factors that may impact current and future demands, including assuming future dry years. We have daily readings on reservoir level and output and hydrologic conditions. Since our water is metered, we are able to provide realistic numbers and based on those, adjust policies as needed to ensure future demand. We will strive to provide this information to our wholesale municipal customers by mid-May of each year to assist in their annual water supply and demand assessment also due by July 1st of each year. Our Board of Directors will approve the Annual Assessment prior to submittal.

Appendix E

McKinleyville Community Services District Drinking Water Emergency Response Plan 2025

McKinleyville Community Services District

Drinking Water System Emergency Response Plan

&

Risk and Resilience Assessment

In accordance with America's Water Infrastructure Act of 2018 (AWIA) Section 2013

By: MCSD Staff

May 2026

Table of Contents

1. INTRODUCTION

The purpose of this Drinking Water Emergency Response Plan (DWERP) is to continue minimum service levels and mitigate the public health risks from a drinking water outage or contamination that may occur during a disaster or other emergency. The following DWERP outlines how MCSD will respond to drinking water emergencies and/or disasters that are likely to affect its operation.

Disasters or emergencies that are likely to occur in the MCSD service area that are addressed are, earthquake, localized flooding, source water contamination, distribution system water contamination, and cyber-attacks.

1.1. Utility Information

McKinleyville is a small northern California coastal community located 280 miles north of San Francisco and is part of unincorporated Humboldt County CA. McKinleyville Community Services District (MCSD or District) is a retail drinking water supplier that purchases wholesale treated drinking water form Humboldt Bay Municipal Water District (HBMWD) and has 5,835 connections. The District boundary encompasses 12,616 acres ranging from North Bank Road on the south to Patrick's Creek Dr. on the north. The McKinleyville water system has five pressure zones, seven storage tanks (MG), two booster stations and 88.51 miles of distribution mains.

MCSD service area has a mix of residential, and commercial water use customers with a small institutional/governmental sector. McKinleyville has mostly residential dwellings served by a small commercial urban area. There is a U.S. Coast Guard Air Station, Federal Courthouse, and a Regional Airport within the service area. There are no industrial zoned parcels or accounts.

Utility System Name and Address: McKinleyville Community Services District
1656 Sutter Rd. McKinleyville, CA 95519

Utility System Number: 1210016

Population 2025: 16,630

Number of Connections 2025: 5,835

2. DESIGNATED RESPONSIBLE PERSONNEL

The Operations Director is responsible for maintaining, implementing, and submitting the Drinking Water Emergency Response Plan (DWERP).

Operations Director: James Henry

1656 Sutter Rd. McKinleyville, CA

Ph: (707) 839-3251

A copy of the MCSD Drinking Water Emergency Response Plan shall be kept in the Operations Field Office and is available for review by request.

The following is a list of MCSD emergency response team members their roles and contact information.

Table 1. MCSD emergency response team responsibility and contact list.

Name	Responsibility	Contact
Patrick Kaspari	General Manager	(707) 599-5123
James Henry	Operations Director, Chief Plant Operator	(707) 496-2295
Chris Jones	Lead Person	(707) 502-8286
Kyle Stone	Water/Wastewater Operator	(707) 496-9208
Drew Small	Water/Wastewater Operator	(707) 362-1800
Seth Meynell	Water/Wastewater Operator	(707) 499-5910
Jordan Johnson	Water/Wastewater Operator	(707) 845-7815
Chris Reed	Water/Wastewater Operator	(707) 599-5947
Ryan DeSmet	Equipment and Site Maintenance	(707) 499-5841
Dylan Weir	Equipment and Site Maintenance	(530) 736-6113
Wiley Robles	Equipment and Site Maintenance	(209) 256-3668
Duty Cell	Emergency Cell	(707) 601-9241

2.1. Incident Command System (ICS) Roles

MCSD employees are trained in the ICS process, roles, and structure. In the event of an emergency or disaster the following ICS roles have been assigned to the following employees:

- Public Information Officer – General Manager, Patrick Kaspari
- Incident Commander – Operations Director, James Henry
- Operations Section Chief – Operations Lead Person, Chris Jones
- Logistics Section Chief – Operations Water/Wastewater Operator, Seth Meynell

The MCSD field office will be the designated Emergency Operations Center (EOC). Local fire, police, and public works will be integrated into the response structure and vice versa.

3. OTHER AGENCY COORDINATION

MCSD shall coordinate with local, state, and federal agencies, to provide information regarding the extent of the damage/emergency and to seek guidance on appropriate protective actions following the incident.

The following is a list of emergency responders, partners, and local and state agencies with their contact information.

Table 2. External Response Partner Communication

Name or Agency	Role	Contact
Arcata Fire Department	Initial response to hazardous material spill or release, assist with community coordination.	9-1-1 or (707) 839-2432
Humboldt County Sheriff's Office	Initial response to hazardous material spill or release, assist with community coordination.	9-1-1 or (707) 445-7251
State Office of Emergency Services	In the event of a chemical release will determine level of response and whether to activate ICS	(800) 825-7550
Humboldt County Division of Environmental Health	Assist with spill/release response and community coordination	(707) 445- 6215
Emergency Medical Facility	Mad River Hospital 3800 Janes Rd. Arcata, CA	(707) 826-8264
Valley Pacific Petroleum Services	Fuel services 1100 West 14th St. Eureka, CA	(800) 266-3782 (707) 443-1645
Pacific Gas and Electric PG&E	PG&E 24-hour service: 1-800-743-5000 PG&E info on outages: 1-800-743-5002	
Cal-WARN		

4. PUBLIC NOTIFICATION PROCEDURES

MCSD shall use the following methods and procedures to communicate to the public information regarding the emergency/disaster, the extent of the damage, estimated time for water service restoration, water quality information, and general safety.

All public notifications (Boil Water Notice, Unsafe Water Act) should be coordinated with California Department of Public Health (CDPH) District Engineer, Humboldt County Environmental Health Department, and the County health officer prior to issuing a public notice. However, any one of the three agencies can act in an emergency to immediately issue a Boil

Water Notice (BWN) or Unsafe Water Alert (UWA) if delays would jeopardize public health and safety. The CDPH District Engineer or MCSD must notify the county health department, and the county health officer prior to or immediately after issuing a public notice. Notice must be given directly to a person, a message left on an answering machine or voicemail is NOT sufficient to meet this requirement.

MCSD has a Water Quality Notification Plan on file with California State Water Resources Control Board for use during an emergency (Appendix B).

Critical customers shall be given priority notification due to their reliance on the water supply and significance to the community. The following customers have been identified as critical.

Table 3. Critical Customer List

Name	Address	Contact
Fresenius Dialysis	1550 Heartwood Dr	(800) 881-5101
Timber Ridge Nursing Home	1400 Nursery Way	(707) 839-9100
McKinleyville High School	1300 Murray Rd	(707) 839-6400
McKinleyville Middle School	2285 Central Ave	(707) 839-1508
Dows Prairie Elementary	3940 Dows Prairie	(707) 839-1558
Morris Elementary	2395 McKinleyville Ave	(707) 839-1529
Humboldt County Airport	3561 Boeing Ave	(707) 839-5401
U.S. Coast Guard Air Station	1001 Lycoming Ave	(707) 839-6160
Holiday Inn Hotel	3107 Concorde Dr.	(707) 840-9305

4.1. Public Communication and Media Outreach

MCSD shall use the following methods to communicate to the public information regarding the emergency/disaster, the extent of the damage, estimated time for water service restoration, water quality information, and general safety.

Door Hangers: Door hangers will be provided to all customers affected by the emergency or disaster when there is sufficient time to prepare, and the emergency/disaster does not require immediate notification. Door hangers will include type of emergency/disaster, water outage times, estimated return service time, drinking water instructions (boil, conserve, etc.), and District contact information.

Website: The MCSD website **(**MCSD.com**)** shall be utilized to share information with the public when there is sufficient time to prepare, and the emergency/disaster does not require immediate notification. Notifications will include information regarding the type of emergency/disaster, water outage times, estimated return service time, drinking water instructions (boil, conserve, etc.), District contact information, and links to local resources and emergency services.

Interactive Voice Response (IVR): When there is little time to notify customers and the public of a disaster/emergency that would affect the delivery or quality of drinking water, the interactive voice response (IVR) system will be utilized. Notifications will include information

regarding the type of emergency/disaster, water outage times, estimated return service time, drinking water instructions (boil, conserve, etc.), and District contact information.

News Media: When there is little time to notify customers and the public of a disaster/emergency that would affect the delivery or quality of drinking water, a public service announcement will be made on the local TV news channels. Notifications will include information regarding the type of emergency/disaster, water outage times, estimated return service time, drinking water instructions (boil, conserve, etc.), and District contact information. Only the General Manager can speak with the news media.

4.2. Boil Water Notice

MCSD shall issue a Boil Water Notice (BWN) when minimum bacteriological water quality standards cannot be reasonably assured. To assure public health protection a BWN shall be issued as soon as it is concluded by the designated personnel/agency that the water supply is or may be biologically unsafe (Appendix A).

Examples of these situations include:

1. Biological contamination of water supply system, including but not limited to:
    a. Positive total or fecal coliform bacterial samples.
    b. Prolonged water outages in areas of ruptured sewer and/or water mains.
    c. Failed septic tank systems and sewer mains in close proximity to ruptured water mains.
    d. Ruptured water treatment, storage, and/or distribution facilities in areas of know sewer spills.
    e. Known biological contamination.
    f. Cross-connection contamination problems.
    g. Illness attributed to water supply.
2. Unusual system characteristics, included but not limited to:
    a. Prolonged loss of pressure.
    b. Sudden loss of chlorine residual.
    c. Severe discoloration and odor.
    d. Inability to implement emergency chlorine.
3. Implemented due to treatment inadequacies.

4.3. Unsafe Water Alert "Do Not Drink"

In the event a known or suspected contamination event to a water system, where the contaminant may be chemical, biological, or radiological, an Unsafe Water Alert (UWA) or "Do Not Use" or "Do Not Drink" should be issued. Water should NOT be used for drinking, cooking, or sanitation purposes (Appendix A).

Examples of these situations include:

1. Known or suspected widespread chemical or hazardous contamination in water supply distribution, including but not limited to:
    a. Terrorist contamination event.

4.4. Cancellation of Public Notification

Once the BWN or UWA is issued, the only agency that can rescind the public notice is the drinking water primacy agency, California Department of Public Health (CDPH) and/or Humboldt County Department of Public Health. The ban will not be lifted for a microbial contaminant until two rounds, collected one day apart, for the coliform bacteria samples have been analyzed and the results are negative. The two samples' results shall be sent to the CDPH for final approval before rescinding the UWA.

5. ALTERNATIVE WATER SOURCES

MCSD is a retail water supplier that receives wholesale water from Humboldt Bay Municipal Water District via a sole transmission line. If an emergency/disaster causes the loss of that transmission line and MCSD cannot receive water, the MCSD/Arcata intertie can supply water between the two systems.

In the event the source water is contaminated emergency government support (Federal Emergency Management Agency FEMA) would be required to provide temporary drinking water stations or bottle water supplies throughout the community.

6. EMERGENCY RESPONSE PROCEDURES

This section of the MCSD DWERP contains plans, procedures, and equipment to be used in the event of a malevolent act or natural hazard that threatens the ability of MCSD to deliver safe drinking water.

MCSD staff will as quickly as possible, determine the status of other employees, assess damage to water system facilities, provide logistics for emergency repairs, monitor progress of repairs and restoration efforts, communicate with health officials and water users according to the MCSD "Water Quality Emergency Notification Plan" (Appendix A) on file with the regulatory agency.

Disasters/emergencies that are likely to occur in the water system's service area that are addressed are:

- Earthquake
- Localized Flooding
- Source Water Contamination
- Distribution System Contamination
- Cyber-Attack

Each disaster/emergency response procedure assessed is broken into four categories:

- Personnel: Identifies water system emergency/disaster personnel and responsibilities.
- Coordination: Coordination with partners, contractors, and governmental agencies.
- Notifications: Public notices and notification procedures.
- Assessment and Action Items: Assessment steps and action items to be taken.
- Documentation and Reporting: Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked, and contractors used during the response.
- Follow-up Actions: Review and identify follow up actions.

In any event, the following general safety tips must be followed:

1. Analyze the type and severity of the emergency.
2. Take immediate action to save lives.
3. Take action to reduce injuries and system damage.
4. Make repairs based on priority demand.
5. Return the system to normal operation.

6.1. Earthquake Emergency Response Procedures

Earthquakes create many cascading and secondary impacts that may include, but not limited to:

- Structural damage to facility infrastructure and equipment.
- Water tank damage or collapse.
- Water source transmission line realignment or damage.
- Damage to distribution lines due to shifting ground and soil liquefaction, resulting in potential water loss, water service interruptions, low pressure, contamination, and sinkholes and/or large pools of water throughout the service area.
- Loss of power and communication infrastructure.
- Restricted access to facilities due to debris and damage to roadways.

In the event an earthquake occurs the following procedures are to be followed to prepare for, respond to, and recover from the event and to ensure minimum service levels and to mitigate health risks to the public and staff.

Personnel

1. Account for all personnel and provide emergency care if needed. Caution personnel about known hazards resulting from earthquakes.
2. Deploy emergency operations and clean-up crews. Identify key access points and route for employees to enter utilities and critical infrastructures.
3. Coordinate the need for debris clearing with local emergency management authorities.
4. Ensure there is no threat of tsunami or aftershocks.

Coordination

1. Notify the local Emergency Management Authority (EMA) and State regulatory primacy agency of system status.
2. If needed, request or, offer assistance, through mutual aid networks.
3. Assign Operations Director to the Incident Commander post within MCSD's National Incident management System (NIMS).

Notifications

1. Notify customers of any water advisories. Consider utilizing the local media to distribute information. If emergency water is being supplied, provide information on the distribution location.
2. Have the General Manager communicate with customers concerning a timeline for recovery and any other pertinent information.

Assessment and Action Items

1. Conduct damage assessments of the utility to prioritize repairs and other actions.
2. Check that back-up equipment and facilities, such as controls and pumps, are in working order, and ensure that chemical containers and feeders are intact.

3. Inspect the utility and service area for damage. Identify facility infrastructure, (storage tanks, valves, hydrants, mains), that have been buried, are inaccessible, or have been damaged or destroyed.
4. Ensure pressure is maintained throughout the system and isolate those sections where it is not.
5. Isolate and control leaks in Water transmission and distribution lines.
6. Turn off Water meters at destroyed homes and buildings.
7. Monitor water quality, develop a sampling plan, and notify accordingly.
8. Notify regulatory/primacy agency if operations and/or water quality or quantity are affected.
9. Utilize pre-established emergency connections or setup temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from pre-determined tanks or hydrants.
10. Use back-up generators, as needed, to supply power to system components.

Documentation and Reporting

1. Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked, and contractors used during the response, to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs of damage at each worksite (with time and date stamp). Proper documentation is critical to requesting reimbursement.

Follow-up Actions

1. Complete permanent repairs, replace depleted supplies and return to normal service.
2. Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to earthquakes when planning for system upgrades.

6.2. Localized Flooding Emergency Response Procedures

Flooding is common throughout much of the United States and can be caused by heavy precipitation events, storm surge, levee or dam failures or inadequate drainage. These events often occur with little or no notice and can cause extensive damage to drinking water and wastewater infrastructure. Flooding impacts to utilities often include, but are not limited to:

- Infrastructure damage, possibly resulting in service interruptions.
- Pipe breaks due to washouts, which could result in sewage spills or low water pressure throughout the service area.
- Debris blockage at an intake or unearthed water and wastewater lines due to falling trees.
- Loss of power and communication lines.
- Combined sewer overflows (CSOs).
- Water quality changes to source waters and treated effluents, including increased turbidity, increased nutrients and other potential contaminants.
- Restricted access to the facility due to debris, flood waters and damage to roadways from washouts and sinkholes.
- Loss of water quality testing capability due to restricted facility and laboratory access and damage to utility equipment

In the event localized flooding occurs the following procedures are to be followed to prepare for, respond to, and recover from the event and to ensure minimum service levels and to mitigate health risks to the public and staff.

Personnel

1. Account for all personnel and provide emergency care if needed. Caution personnel about known hazards resulting from flooding.
2. Deploy emergency operations and clean-up crews. Identify key access points and route for employees to enter utilities and critical infrastructures.
3. Coordinate the need for debris clearing with local emergency management authorities.

Coordination

1. Notify the local Emergency Management Authority (EMA) and State regulatory primacy agency of system status.
2. If needed, request or, offer assistance, through mutual aid networks.
3. Assign Operations Director to the Incident Commander post within MCSD's National Incident management System (NIMS).

Notifications

1. Notify customers of any water advisories. Consider utilizing the local media to distribute information. If emergency water is being supplied, provide information on the distribution location.

2. Have the General Manager communicate with customers concerning a timeline for recovery and any other pertinent information.

Assessment and Action Items

1. Conduct damage assessments of the utility to prioritize repairs and other actions.
2. Check that back-up equipment and facilities, such as controls and pumps, are in working order, and ensure that chemical containers and feeders are intact.
3. If necessary and possible, turn off all utilities (electric, gas) associated with your facility to prevent further damage and minimize electrical and explosive hazards.
4. Inspect the utility and service area for damage due to downed trees and flood waters. Identify facility infrastructure, (storage tanks, valves, hydrants, mains), that have been buried, are inaccessible, or have been damaged or destroyed.
5. Ensure pressure is maintained throughout the system and isolate those sections where it is not.
6. Isolate and control leaks in water transmission and distribution lines.
7. Turn off Water meters at destroyed homes and buildings.
8. Monitor water quality, develop a sampling plan, and notify accordingly.
9. Notify regulatory/primacy agency if operations and/or water quality or quantity are affected.
10. Utilize pre-established emergency connections or setup temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from pre-determined tanks or hydrants.
11. Use back-up generators, as needed, to supply power to system components.

Documentation and Reporting

1. Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked, and contractors used during the response, to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs of damage at each worksite (with time and date stamp). Proper documentation is critical to requesting reimbursement.

Follow-up Actions

1. Complete permanent repairs, replace depleted supplies and return to normal service.
2. Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to earthquakes when planning for system upgrades.

6.3. Source Water Contamination Emergency Response Procedures

Drinking water contamination can result in several adverse consequences to the public and the distribution system. Preparing a response procedure for such an occurrence enables a utility to effectively manage the incident to limit these consequences, providing a decision-making framework for implementing activities that, ultimately, returns the system to normal operations.

MCSD is retail water supplier and does not manage or draw source water. Humboldt Bay Municipal Water District HBMWD is the regional water supplier and is responsible for source water testing and quality.

In the event MCSD is notified by HBMWD, or Department of Public Health, that the source water is contaminated, the following procedures are to be followed to ensure minimum service levels and to mitigate health risks to the public and staff.

In the event the MCSD water system is contaminated, by a known or unknown source, the following procedures are to be followed to prepare for, respond to, and recover from the event and to ensure minimum service levels and to mitigate health risks to the public and staff.

Personnel

1. Account for all personnel and provide emergency care if needed. Caution personnel about contaminated drinking water and known hazards.

Coordination

1. Notify the local Emergency Management Authority (EMA) and State regulatory primacy agency of system status.
2. If needed, request or, offer assistance, through mutual aid networks.
3. Remain in communication with HBMWD to receive updates regarding the emergency.
4. Assign Operations Director to the Incident Commander post within MCSD's National Incident management System (NIMS).

Notifications

1. Notify customers of any water advisories or shut offs. Consider utilizing the local media to distribute information. If emergency water is being supplied, provide information on the distribution location.
2. Have the General Manager communicate with customers concerning a timeline for recovery and any other pertinent information.
3. Contact the primacy agency to determine public notification requirements as soon as practical, but not later than 24 hours after learning of the situation.
4. Issue notifications of use restrictions.

a. Types of use restrictions include instructions to “do not use,” “do not drink,” or “boil water.” Depending on the restriction, this notification should be closely coordinated with the provision of alternate sources of drinking water.

Assessment and Action Items

1. Establish isolation and flushing priorities and scheduling. Coordinate with HBMWD & Dept. of Public Health.
2. Coordinate a water sampling plan with HBMWD & Dept. of Public Health.
3. Continue sampling and monitoring to verify removal of the contamination.
4. Establish clean water stations for the public.
5. Assist HBMWD and Dept. of Public Health in the investigation of the source of contamination and remediation efforts.

Documentation and Reporting

1. Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked, and contractors used during the response, to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs of damage at each worksite (with time and date stamp). Proper documentation is critical to requesting reimbursement.
2. Document all samples taken, include, date, time, location and who the sample was taken by.

Follow-up Actions

1. Complete permanent sampling, repairs, replace depleted supplies and return to normal service.
2. Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to earthquakes when planning for system upgrades.

6.4. Distribution System Water Contamination Emergency Response Procedures

Drinking water contamination can result in several adverse consequences to the public and the distribution system. Preparing a response procedure for such an occurrence enables a utility to effectively manage the incident to limit these consequences, providing a decision-making framework for implementing activities that, ultimately, returns the system to normal operations.

In the event the MCSD water system is contaminated, by a known or unknown source, the following procedures are to be followed to prepare for, respond to, and recover from the event and to ensure minimum service levels and to mitigate health risks to the public and staff.

Personnel

1. Account for all personnel and provide emergency care if needed. Caution personnel about contaminated drinking water and known hazards.

Coordination

1. Notify the local Emergency Management Authority (EMA) and State regulatory primacy agency of system status.
2. Notify Humboldt County Department of Public Health (HCDPH) of contamination.
3. If needed, request or, offer assistance, through mutual aid networks.
4. Remain in communication with EMA & HCDPH to receive updates regarding the emergency.
5. Assign Operations Director to the Incident Commander post within MCSD's National Incident management System (NIMS).

Notifications

1. Notify customers of any water advisories or shut offs. Consider utilizing the local media to distribute information. If emergency water is being supplied, provide information on the distribution location.
2. Have the General Manager communicate with customers concerning a timeline for recovery and any other pertinent information.
3. Contact the primacy agency to determine public notification requirements as soon as practical, but not later than 24 hours after learning of the situation.
4. Issue notifications of use restrictions.
    a. Types of use restrictions include instructions to "do not use," "do not drink," or "boil water." Depending on the restriction, this notification should be closely coordinated with the provision of alternate sources of drinking water.

Assessment and Action Items

1. Establish isolation and flushing priorities and scheduling. Coordinate with HBMWD & Dept. of Public Health.
2. Coordinate a water sampling plan with Dept. of Public Health.
3. Continue sampling and monitoring to verify removal of the contamination.
4. Establish clean water stations for the public.
5. Assist the Dept. of Public Health in the investigation of the source of contamination and remediation efforts.

Documentation and Reporting

1. Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked, and contractors used during the response, to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs of damage at each worksite (with time and date stamp). Proper documentation is critical to requesting reimbursement.
2. Document all samples taken, include, date, time, location and who the sample was taken by.

Follow-up Actions

1. Complete permanent sampling, repairs, replace depleted supplies and return to normal service.
2. Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to earthquakes when planning for system upgrades.

6.5. Drinking Water System Cyber Attack Emergency Response Procedures

Cyberspace and its underlying infrastructure are vulnerable to a wide range of hazards from both physical attacks as well as cyberthreats. Sophisticated cyber actors and nation-states exploit vulnerabilities to steal information and money and are developing capabilities to disrupt, destroy or threaten the delivery of essential services such as drinking water and wastewater.

Potential cyber-attack impacts to drinking water and wastewater utility may include but are not limited to:

- Interruption of treatment, distribution, or conveyance processes from opening and closing valves, overriding alarms or disabling pumps or other equipment.
- Theft of customers personal data such as credit card information and social security numbers stored in on-line billing systems.
- Defacement of the utilities website or compromise of the email system.
- Damage to system components.
- Loss of use of industrial control systems, such as SCADA, for remote monitoring of automated treatment and distribution processes.

MCSD currently contracts with Infinite Consulting for Information Technology (IT) systems services.

Infinite Consulting Services McKinleyville, CA 95519

Contact: Ezequiel Sandoval **Ph:** 707 830-4427

In the event MCSD is compromised by a cyber-attack, the following procedures are to be followed to prepare for, respond to, and recover from a cyber-attack and maintain minimum service levels and to mitigate health risks to the public and staff.

Personnel

1. Account for all personnel and provide emergency care if needed. Caution personnel about cyber-attacks and known hazards.
2. MCSD General Manager will coordinate with the IT system manager/contractor and oversee all cyber-related duties and provide guidance on moving forward.
3. Train personnel to perform critical functions manually during a cyber incident that disables business enterprise, process controls and communication systems.

Coordination

1. Report the incident immediately to the General Manager
2. Report the incident immediately to Infinite Consulting Services.
3. Report the cyber incident as required to law enforcement and regulatory agencies.

Notifications

1. Notify the IT vendor (Infinite Consulting) of the incident and the need for emergency response assistance.
2. Notify Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency (CISA) they can assist with IT system response and recovery.
    a. Ph: 1-888-282-0870.
3. Notify any external entities that may have remote connections to the affected network.

Assessment and Action Items

1. If possible, disconnect compromised computers from the network to isolate breached components and prevent further damage, such as the spreading of malware. DO NOT turn off or re-reboot computer systems, this preserves evidence and allows for an assessment to be performed.
2. Assess any damage to utility systems and equipment along with disruptions to utility operations.
3. Review system and network logs and use virus and malware scans to identify affected equipment, systems, accounts, and networks.
4. Document which user accounts were or are logged on, which programs and processes were or are running, any remote connections to the affected IT systems or network(s) and all open ports and their associated applications.
5. If possible, take a "forensic image" of the affected IT systems to preserve evidence. Tools to take forensic images include Forensic Tool Kit (FTK) and EnCase.
6. If possible, identify any malware used in the incident, any remote servers to which data may have been sent during the incident, and the origin of the incident. DHS CISA can assist with the forensic analysis (https://www.cisa.gov/reporting-cyber-incident).
7. Research and identify if any employee or customer personally identifiable information (PII) was compromised.
8. Remove any malware, corrupted files and other changes made to IT systems by the incident.

Documentation and Reporting

1. Document key information on the incident, including any suspicious calls, emails, or messages before or during the incident, damage to utility systems, and steps taken in response to the incident (including dates and times).
2. Document all findings and avoid modifying or deleting any data that might be attributable to the incident.

Follow-up Actions

1. Continue to work with IT staff, vendors and integrators, government partners and others to obtain needed resources and assistance for recovery.
2. Notify affected employees and customers if any PII was compromised.
3. Submit an incident report through WaterISAC (866-H2O-ISAC). Membership is not required to submit a report.
4. Install patches and updates, disable unused services, and perform other countermeasures to harden the system against known vulnerabilities that may have been exploited.
5. Restore IT systems as required (e.g., re-image hard drives, reload software). DHS CISA can assist with the IT system recovery (https://www.cisa.gov/reporting-cyber-incident).
6. Restore compromised files from a system back-up that has not been compromised

7. RETURN TO NORMAL OPERATIONS

After the disaster/emergency has ended MCSD shall resume normal operations and submit all reports, financial requests, sampling data, and system status, to the appropriate agencies in a timely manner.

- Ensure leaks are contained and system integrity is sound.
- Ensure system pressure is restored, increase production, if possible, to provide maximum system output.
- Increase system disinfectant residual and disinfect all repairs per AWWA standards.
- Ensure all water quality tests, and necessary system flushing, and disinfection are complete.
- Coordinate with county and state on system condition and water quality results.
- Coordinate with county and state agencies to rescind all water notices.
- Submit all reports, sampling data, and actions taken, and financial requests to proper agencies.

8. MITIGATION ACTIONS AND DETECTION STRATEGIES

This section of the DWERP includes mitigation actions and detection strategies MCSD has taken to significantly lessen the impact of a malevolent act or natural hazard on the public health safety and supply of drinking water provided.

8.1. Mitigation Actions

The following mitigation actions are in place or are proposed to lessen the impact of a malevolent act or natural hazard.

1. Installation of back up batteries to provide power during outages and events.
2. United States Geological Survey (USGS) seismic sensors are placed throughout the community to assist in earthquake detection.

3. Seismic valves are in place to isolate water in the event an earthquake causes main breaks.
4. Installation of motion sensor lighting to remote stations and facilities.
5. Installation of fire alarms and detection alarm systems managed through a security company.

8.2. Detection Strategies

This section outlines strategies in place to aid in the detection of malevolent acts or natural hazards that threaten the security and resilience of the water system.

8.2.1. Unauthorized Entrant into Utility Facilities

Unauthorized entrants into utility facilities can cause damage to facilities and infrastructure, potentially contaminate the drinking water system, and possibly cause harm or death to unauthorized entrants. The following detection strategies are in place to provide an effective and timely response to unauthorized entrants into utility facilities.

1. Maintained and tested intrusion detection systems
2. Perimeter fencing with locks.
3. Notifications from law enforcement officers and community watch groups.

8.2.2. Water Contamination

Distribution system contamination can occur under a variety of circumstances, including natural, accidental, and intentional causes. The following detection strategies are in place to provide an effective and timely response to water system contamination.

1. Source water contamination detection is the responsibility of HBMWD, MCSD coordinates with HBMWD daily and shall assist in detection and sampling efforts.
2. Distribution system contamination can be detected through the following:
    a. Systematic tracking of customer complaints.
    b. Public health surveillance.
    c. Physical security monitoring at access point to finished water.
    d. Grab sample analysis.
    e. Online water quality monitoring.

8.2.3. Natural Hazards

Natural hazards such as earthquakes, flooding and extreme weather can cause damage to the water utility and staff. The following detection strategies are in place to provide an effective and timely response to natural hazards.

1. Utilize local, state, and national emergency alert systems regarding earthquakes, flooding, and extreme weather.
2. USGS has seismic monitors placed throughout the system for earthquake detection.
3. Water tanks have seismic valves that will close in the event of an earthquake.

8.2.4. Cyber Attack

Cyber incidents can compromise the ability to provide clean and safe water, erode customer confidence, and result in legal and financial liabilities. The following detection strategies are in place to provide an effective and timely response to a cyber-attack.

1. MCSD contracts with Infinite Consulting to provide IT security and management.
2. All MCSD computers are firewall protected with the latest malware and anti-virus software.

8.2.5. Power Outages

Power outages, planned or unplanned, can impact water system operations, facilities, and treatment processes. The following detection strategies are in place to provide an effective and timely response to power outages.

1. Ensure all power utility contacts are up to date.
2. Ensure PG&E has the current contact information for MCSD.
3. Utilize local, state, and national emergency alert systems regarding power outages.
4. Back-up generators and batteries are installed at each facility.

9. PLAN SUBMITTAL

Each community water system serving more than 3,300 persons must review its risk and resilience assessment at least **once every five years** to determine if it should be revised. Upon completion of such a review, the system must submit to the EPA a certification that it has reviewed its assessment and revised it, if applicable.

Further, each community water system serving more than 3,300 persons must review and, if necessary, revise its emergency response plan at least once every five years after the system completes the required review of its risk and resilience assessment. The emergency response plan must incorporate any revisions to the risk and resilience assessment. Upon completion of such a review, but not later than six months after certifying the review of its risk and resilience assessment, the system must submit to the EPA a certification that it has reviewed its emergency response plan and revised it, if applicable**.**

Step 1 - **Account Registration:** From our America's Water Infrastructure Act Certification page, select the "Certify my community water system's risk and resilience assessment" link.

Begin by registering your community water system. If you do not have an existing U.S. EPA Shared CROMERR Services (SCS) account, select "Register a new account" to sign up, otherwise login with your User ID and password.

Once you register, future risk and resilience assessment or emergency response plan certifications can be completed in a few simple clicks. If you need assistance or have questions

about the certification process, please reach out to the U.S. EPA via email at helpdesk@epacdx.net or call 888-890-1995 (Option 2).

Step 2 - PWSID Number: Next enter your community water system's PWSID number, including your two-character primacy agency abbreviation, such as your state, territory, or tribal nation abbreviation, followed by the full seven-digit identification number, with no spaces in between, then select "Continue. You'll then see a pop-up to ensure your PWSID number is correct. Recheck your input, then select "Continue" again.

Step 3 - Terms and Conditions: Read and accept the terms and conditions, click the box certifying your acceptance, then click "Accept."

Step 4 - Account Details: Now it is time to build your "Account Profile." Enter the required information in the Account Owner section. Required fields are indicated with an asterisk (*). The system does require your First and Last names, as well as your email address. Create your User ID and password. The password must be at least eight characters long and contain at least one uppercase letter, one lowercase letter, and one number. Confirm your password, then select and complete the three security questions. The answers to these questions will be used to recover your password if it is forgotten. You may click the box on the bottom left-hand side of the screen to Show Passwords and Answers to ensure that you have typed in the correct entries. Note that you may create a PDF of your answers and keep a password protected digital copy or print your responses and keep them in a safe place. Now select "Continue" to move on to the next screen.

Step 5 - Organization or Community Water System Information: On this page you'll encounter one of two scenarios:

Scenario 1: If your community water system is listed below.

- Click on the community water system name.
- Click the "Select1" icon next to your address.
- Click the "Continue" icon at the bottom right-hand side of the screen.
- Click the "Add new address" link. If your address information is incorrect, supply the correct information, then click "Continue."

Scenario 2: If your community water system is not listed below.

- Enter your community water system's name in the search box.
- Click on your community water system's information, then click the "Continue" icon at the bottom right-hand side of the screen.
- If problems persist in identifying your system, select the "Enter a new organization" link, add your information, then click the "Continue" icon. Alternatively, you may want to ensure your PWSID number is correctly entered by clicking the "Program Identification" link in the upper left-hand toolbar of this screen. When applicable, correct your information and continue.

After walking through one of these two scenarios, click "Continue."

Step 6 - Email Validation: After entering your community water system's information, you will receive an automated email from SCS Administrator in your email inbox containing an account validation code. Enter the validation code into the "Code" field under your User ID and select "Create Account." This code is only used for account creation and you do not need to save it.

Your account is now created. You will be directed to your Dashboard where you will see your pending actions. A second email is also sent to your email inbox from SCS Administrator stating that your account has been activated.

Step 7 – Vulnerability Assessments Submitted to U.S. EPA Under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002: Under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, your community water system likely submitted a vulnerability assessment to U.S. EPA. On this screen you will be asked if you want that vulnerability assessment: 1) permanently disposed of by U.S. EPA; 2) returned to you; or 3) if the scenario is not applicable. Make your choice and click "Submit." After you select "Submit," you will be presented with a pop-up message asking you to certify your risk and resilience assessment either now or later.

You may select "Certify Later," if you want to use your original vulnerability assessment to inform your new risk and resilience assessment or for any other reason. If you do select "Certify Later," you will be able to login into this system with just your User ID and Password to complete the risk and resilience assessment or emergency response plan certification process. Please be advised that it may take up to 60 days for U.S. EPA to return your vulnerability assessment.

Step 8 - Certification Selection Process: The next step is to certify your pending actions. The certification processes for the Risk and Resilience Assessment and Emergency Response Plan are very similar, so for demonstration purposes, we will choose to click on "Certify your Risk and Resilience Assessment." Step 9 - Certification Statements: You will be presented with your standard Risk and Resilience Assessment certification statement, which is based on the language in Section 2013 of America's Water Infrastructure Act. Your name, community water system's name, and population served will be auto-populated into the certification statement. Please review the statement. If you need to, you can edit your community water system's name and its population served. Once you verify your information, select the "Certify Now" icon on the bottom left of your screen.

Prior to certification, you may also print this page as a record for your files and you will receive an acknowledgment of receipt email from U.S. EPA (scs@epacdx.net) when your certification is completed.

If you run into any issues, please click on the "Contact Us" link in the top right of your screen.

Once you have certified your Risk and Resilience Assessment a pop-up message will appear on your screen asking if you want to certify your Emergency Response Plan now or later. You may not be ready to certify your Emergency Response Plan at this time, so you may select "Certify Later;" this selection will return you to the homepage.

If you are ready to certify your Emergency Response Plan, select “Certify Now.” This will open a page that prompts you to enter your PWSID number. Use the “Select” button to enter your organization or community water system as you did under the Enter Organization Information process above.

Once you have opened the certification page, as before, you will have the ability to edit your community water system’s name and population served before submitting. Prior to certification, you may also print this page as a record for your files and you will receive an acknowledgment of receipt email from U.S. EPA (scs@epacdx.net) once certification is completed.

Step 10 - Future Logins: Once these steps are completed, you will be able to simply login with your established User ID and password to certify your risk and resilience assessment or emergency response plan in the future.

MCSD Drinking Water Emergency Response Plan 2025

Appendix A

Public Notices

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Este aviso contiene informacion muy importante sobre su agua potable. Para una copia en español, favor de llamar al sistema de agua (xxx) xxx-xxxx.

McKinleyville CSD System # 1210016

XX/XX/XXXX

BOIL WATER NOTICE

Boil Your Water Before Drinking or Food Preparation to Avoid Illness

Due to the recent [event (e.g., water outage, power outage, flood, fire, earthquake or other emergency)], which occurred on [date], the State Water Resources Control Board, Division of Drinking Water, the Humboldt County Health Depart- ment, and the McKinleyville Community Services District Water System are advising residents of McKinleyville to only use boiled tap water or bottled water for drinking and cooking purposes as a safety precaution to avoid stomach or intestinal illness. The affected area includes: [INSERT GEOGRAPHICAL DESCRIPTION, STREET BOUNDARIES, ETC.]

We will inform you when tests show that water is safe to drink and you no longer need to boil your water. We anticipate resolving the problem within [estimated time frame].

If you have questions about other uses of tap water, such as bathing and dish washing, please call your water system or read this guidance: https://www.cdc.gov/healthywater/emergency/dwa-comm-toolbox/before/tools/What-to-Do-During-a-Boil-Water-Advisory.docx

Optional: Potable water is available at the following locations: [List locations]

Please bring a clean water container (5 gallons maximum capacity).

Do not drink the water without boiling it first

- Boil all water for one (1) minute (rolling boil).
- Let water cool before drinking.
- Use boiled or bottled water for drinking, brushing teeth, and food preparation until further notice.
- Boiling water kills bacteria and other organisms in the water.

If you are unable to boil your water:

Household unscented liquid bleach

- For clear water, use 8 drops (1/8 tspn.) of bleach for 1 gallon of water. For cloudy water, filter through a clean cloth and use 16 drops (1/4 tspn.) of bleach for 1 gallon of water.
- Mix well. Allow to stand for 30 minutes before using.
- Water may taste or smell like chlorine. This means disinfection has occurred.

Water disinfection tablets

- Please follow the manufacturer's instructions.

If you are concerned about your health or the health of a family member, contact your health care provider or [local health department].

For more information, call: MCSD Front Office
Water Utility contact: MCSD Office, 1656 Sutter Rd. (707) 839-3251
State Water Resources Control Board District Office: (800) 852-7550
Local Environmental Health Jurisdiction: (707) 445-6200

Please share or post this information with others who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

INFORMACIÓN IMPORTANTE SOBRE SU AGUA POTABLE

Este aviso contiene información muy importante sobre su agua potable, por favor léalo bien.

[Water System Name]

XX/XX/XXXX

AVISO DE HERVIR EL AGUA

Para Evitar Enfermarse, Hierva Su Agua Antes de Beberla o Preparar Comida

Debido al reciente [evento (ejemplo: corte de agua, corte de luz, inundación, incendio, temblor u otra situación de emergencia)], el cual ocurrió en [date], la Junta Estatal de Control de Recursos de Agua (División de Agua Potable), el [County Name] County Health Department, y el Sistema de Agua [Water System name], están advirtiéndoles a los residentes de [City, Town, System] que como precaución de seguridad, solo usen agua de la llave hervida o agua embotellada para beber y para cocinar. Esto es para evitar enfermedad intestinal o del estómago. El área afectada incluye: [INSERT GEOGRAPHHICAL DESCRIPTION, STREET BOUNDARIES, ETC.]

Le informaremos cuando las pruebas muestren que el agua es segura para beber y usted ya no tenga que hervir su agua. Esperamos resolver el problema dentro de [estimated time frame].

Si tiene preguntas sobre el agua de la llave para otros usos, como para bañarse, y lavar los trastes, favor de llamar a su sistema de agua o lea esta guía: https://www.cdc.gov/healthywater/emergency/dwa-comm-toolbox/before/tools/Hoja-informativa.docx

Opcional: En los siguientes lugares hay Agua Potable disponible: [List locations]

Favor de llevar un contenedor limpio para el agua (de 5 galones máximos de capacidad)

No beba el agua sin antes hervirla

- Hierva toda el agua por un (1) minuto (a punto de ebullición).
- Deje enfriar el agua antes de beberla.
- Hasta nuevo aviso, use agua hervida o embotellada para beber, lavarse los dientes, y para preparar comida.
- Hervir el agua mata las bacterias y otros organismos en el agua.

Si no puede hervir su agua:

Puede usar blanqueador sin olor de uso doméstico (household bleach)

- Para agua clara, agregue 8 gotas (1/8 de cucharada) de blanqueador para 1 galón de agua. Para agua turbia, use una prenda de ropa limpia para filtrarla, y agregue 16 gotas (1/4 de cucharada) de blanqueador para 1 galón de agua turbia.
- Mezcle bien. Deje reposar el agua por 30 minutos antes de usarla.
- Puede ser que el agua sepa o huela a blanqueador. Esto significa que el agua ha sido desinfectada.

Tabletas desinfectantes de agua

- Siga las instrucciones del fabricante.

Si está preocupado por su salud o la salud de un miembro de la familia, contacte a su proveedor de salud o a [local health department].

Para más información llame a:

Representante del Proveedor de Servicio de Agua: [Utility Representative Name, title, phone & address]

Oficina de Distrito de la Junta Estatal de Agua (State Water Resources Control Board)**:** [(XXX) XXX-XXXX]

Jurisdicción de Salud Ambiental Local (Local Environmental Health Jurisdiction)**:** [XXXXX County, al [(XXX) XXX-XXXX]

Por favor publique o comparta esta información con otras personas que beben esta agua, especialmente aquellos que no hayan recibido éste aviso directamente (por ejemplo, las personas en apartamentos, asilos, escuelas, y negocios). Puede hacerlo poniendo este aviso en un lugar público o distribuyendo copias en persona o por correo.

UNSAFE WATER ALERT

Date:

McKinleyville Community Services District water is possibly contaminated with [an unknown substance]

DO NOT DRINK YOUR WATER

Failure to follow this advisory could result in illness.

An unknown substance has been added to the drinking water supplied by the McKinleyville Community Services District due to a recent [intrusion; break-in] at [one of the wells; our treatment plant; storage tank; specific facility]. The State Water Resources Control Board, Humboldt County Health Department, and McKinleyville Community Services District Water System are advising residents of McKinleyville to NOT USE THE TAP WATER FOR DRINKING AND COOKING UNTIL FURTHER NOTICE.

What should I do?

- **DO NOT DRINK YOUR TAP WATER---USE ONLY BOTTLED WATER.** Bottled water should be used for all drinking (including baby formula and juice), brushing teeth, washing dishes, making ice and food preparation **until further notice**.

- **DO NOT TRY AND TREAT THE WATER YOURSELF.** Boiling, freezing, filtering, adding chlorine or other disinfectants, or letting water stand will not make the water safe.

- Optional: Potable water is available at the following locations: [List locations]
  Please bring a clean water container (5 gallons maximum capacity).

We will inform you when tests show that the water is safe again. We expect to resolve the problem within [estimated time frame].

For more information call: (707) 839-3251
Water Utility contact: MCSD front office, 1656 Sutter Rd. McKinleyville, CA
State Water Resources Control Board at (800) 852-7550 or (916) 845-8911
Local County Health Department: (707) 845-6200

This notice is being sent to you by McKinleyville Community Services District California Public Water System ID # 1210016. Date Distributed: [date].

Please share this information with all other people who receive this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand.

Last updated – 4/30/2026

Date:

ALERTA DE AGUA NO SEGURA

[Insert one-liner language other than Spanish here, if needed, otherwise delete.]

El agua de McKinleyville Community Services District posiblemente está contaminada con [an unknown substance]

NO BEBA SU AGUA

Si descarta ésta advertencia puede enfermarse

Una sustancia desconocida fue agregada al agua potable suministrada por McKinleyville Community Services District esto fue debido a una reciente [intrusion; break-in] en [uno de los pozos; nuestra planta de tratamiento; tanque de almacenamiento; instalaciones específicas]. La Junta Estatal de Control de Recursos de Agua, el Humboldt County Health Department, y el Sistema de Agua McKinleyville Community Services District, están advirtiéndoles a los residentes de McKinleyville que NO USEN EL AGUA DE LA LLAVE PARA BEBER Y COCINAR HASTA NUEVO AVISO.

¿Qué debo hacer?

- **NO BEBA AGUA DE LA LLAVE---SOLO USE AGUA EMBOTELLADA.** Se debería usar agua embotellada para todas las bebidas (incluyendo formula de bebés y jugo), para lavarse los dientes, lavar trastes, hacer hielo y preparar comida **hasta nuevo aviso**.

- **NO INTENTE TRATAR EL AGUA USTED MISMO.** Hervir, congelar, filtrar, agregar cloro (chlorine) u otros desinfectantes, o dejar que el agua repose, no hará que el agua sea segura.

- Optional: Hay agua potable disponible en los siguientes lugares: [List locations]
  Por favor traiga un contenedor limpio para el agua (de 5 galones máximos de capacidad).

Le informaremos cuando las pruebas muestren que el agua es segura otra vez. Esperamos resolver el problema dentro de [estimated time frame].

Para más información llame a: (707) 839-3251
Contacto del Servicio de Agua: MCSD front office, 1656 Sutter Rd. McKinleyville, CA 95519
Junta Estatal de Control de Recursos de Agua (State Water Resources Control Board): (800) 852-7550 or (916) 845-8911
Departmento Local de Salud del Condado: (707) 845-6200

Este aviso es enviado a usted por McKinleyville CSD Núm. de Identificación de California del Sistema de Agua Público 1210016. Fecha de distribución: [date].

Por favor comparta esta información con todas las demás personas que reciben esta agua, especialmente aquellos que no hayan recibido éste aviso directamente (por ejemplo, las personas en apartamentos, asilos, escuelas, y negocios). Puede hacerlo poniendo este aviso en un lugar público o distribuyendo copias en persona.

Last updated – 04/30/2026

MCSD Drinking Water Emergency Response Plan 2025

Appendix B

Water Quality Notification Plan

State Water Resources Control Board
Division of Drinking Water

WATER QUALITY EMERGENCY NOTIFICATION PLAN

Name of Utility: McKinleyville Community Services District	System No. 1210016
Mailing Address: P.O. Box 2037 McKinleyville, Ca. 95519	FAX No: 707-839-3251
Street Address: (if different than mailing address) 1656 Sutter Road McKinleyville, Ca. 95519	E-mail address: mcsdgm@mckinleyvillecsd.com

The following persons have been designated to implement the plan upon notification by the State Water Resources Control Board, Division of Drinking Water, that an imminent danger to the health of water users exists:

WATER SYSTEM PERSONNEL OR SYSTEM CONTACT

NAME	TITLE	DAY PHONE	CELL PHONE	EVENING PHONE	Email Address
1.Patrick Kaspari	General Manager	707-839-3251	707-599-5123	707-599-5123	pkaspari@mckinleyvillecsd.com
2.James Henry	Operations Director	707-839-3251	707-496-2295	707-496-2295	jhenry@mckinleyvillecsd.com
3.Erik Jones	Leadperson	707-839-3251	707-496-8818	707-496-8818	ejones@mckinleyvillecsd.com
4.					

The implementation of the plan will be carried out with the following Division of Drinking Water Personnel

STATE PUBLIC HEALTH DEPARTMENT PERSONNEL

NAME	TITLE	DAY PHONE	EVENING PHONE
Scott Gilbreath	Staff Engineer	(530) 224-4876	(530) 949-1127
Barry Sutter	District Engineer	(530) 224-4875	(530)949-1127
Klamath District 01 Staff	Staff Engineers	(530) 224-4800	(530) 224-4800

If the above personnel cannot be reached, contact:
Office of Emergency Services Warning Center (24 hrs) (800) 852-7550 or (916) 845-8911
When reporting a water quality emergency to the Warning Center, please ask for the State Water Resources Control Board, Division of Drinking Water Program Duty Officer

NOTIFICATION PLAN

Describe methods or combinations of methods to be used (radio, television, door-to-door, sound truck, etc.). For each section of your plan give an estimate of the time required, necessary personnel, estimated coverage, etc. Consideration must be given to special organizations, particularly non-English speaking groups, and outlying water users. (Use the other side of this form or attach a written description, if necessary).

Media – General Manager could notify media and have a news bulletin out in minutes
IVR - One staff member would need 15 minutes to notify all customers by phone (reverse 911)
Website – One staff member can post an emergency bulletin on District Website in 5 minutes.
Door Hangers –Response time would depend on total number of customers in emergency zone.

Plan Prepared by: JAMES HENRY (Print Name) Title: OPERATIONS DIRECTOR

Signature: James Henry Date: 8/21/2020

MCSD Drinking Water Emergency Response Plan 2025

Appendix C

Risk Assessment Summary

McKinleyville Community Services District

PWS: 1210016

Drinking Water Distribution System

Risk and Resilience Assessment

Prepared by: MCSD Staff

5/8/2026

Community Water System
Risk and Resilience Assessment Checklist

Enter CWS Name Below:

1210016

Risk and Resilience Assessment

Please fill in the information below.

Facility Name (if applicable): McKinleyville Community Services District

PWSID: 1210016

Description of System: PWS serving unincorporated Area of McKinleyville in Humboldt County, Ca

Analyst Name(s): MCSD Staff

Date of Analysis: 4/29/2026

Analysis Notes:

Table 1a: Physical Barriers (Malevolent Acts)[6]

Asset Category: *Physical Barriers* **Examples of Assets in this Category:** Encompasses physical security in place at the CWS. Possible examples include fencing, bollards, and perimeter walls; gates and facility entrances; intrusion detection sensors and alarms; access control systems (e.g., locks, card reader systems); and hardened doors, security grilles, and equipment cages.	
Malevolent Acts[7] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Physical Barriers* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Cyberattack[8]	
☑ Assault on Utility – Physical	Physical attack on perimeter fencing, gates, locked doors and other infrastructure intended to exclude unauthorized persons could expose other elements of the water system to attack. Some locations are not covered by security systems that would detect unauthorized entry
☐ Theft or Diversion – Physical	
☑ Sabotage – Physical	Sabotage of physical barriers could increase the likelihood and effectiveness of subsequent attacks on critical facilities.
☑ Other(s), enter below: Access Control	Access is controlled by keyed entry and alarm codes. Access is tracked through individual alarm codes.

6 In a risk assessment, physical barriers are usually treated as countermeasures, which reduce the risk of a threat to an asset, rather than being treated as assets. However, under AWIA, a CWS must assess the risks to and resilience of physical barriers.

7 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.

8 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Table 1b: Physical Barriers (Natural Hazards)[9]

Asset Category: *Physical Barriers* **Examples of Assets in this Category:** Encompasses physical security in place at the CWS. Possible examples include fencing, bollards, and perimeter walls; gates and facility entrances; intrusion detection sensors and alarms; access control systems (e.g., locks, card reader systems); and hardened doors, security grilles, and equipment cages.	
Natural Hazards[10] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Physical Barriers* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☑ Flood	North Bank Pump Station may be vulnerable to inundation due to flooding The risk to the transmission line and distribution system due to flooding is low
☑ Earthquake	Damage to physical barriers due to earthquakes include damage to perimeter fencing from downed trees, power poles and other structures.
☐ Tornado	
☐ Ice storm	
☐ Fire	
☑ Other(s), enter below: Tsunami	A tsunami triggered by seismic activity could cause severe damage to physical barriers for facilities located in tsunami hazard zones due to battering from debris carried by the wave.

9 In a risk assessment, physical barriers are usually treated as countermeasures, which reduce the risk of a threat to an asset, rather than analyzed as assets themselves. However, under AWIA, a CWS must assess the risks to and resilience of physical barriers.

10 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Table 2a: Source Water (Malevolent Acts)

Asset Category: *Source Water* **Examples of Assets in this Category:** Encompasses all sources that supply water to a water system. Possible examples include rivers, streams, lakes, source water reservoirs, groundwater, and purchased water.	
Malevolent Acts[11] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Source Water* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☑ Theft or Diversion – Physical	Physical attack on source water along the Mad River Pipeline would prevent replenishment of storage reservoirs and trigger mandatory rationing. This would leave MCSD with approximately 10 days of water under strict rationing rules and likely necessitate water importation and distribution to meet basic needs. The MCSD and City of Arcata Intertie may be utilized to transfer water from one system to the other if feasible.
☑ Intentional Contamination of Source Water	Contamination of finished water prior to delivery at the reservoir would have a widespread effect on MCSD ' s ability to deliver drinking water
☑ Other(s), enter below: Sabotage - Physical	Sabotage of the Mad River Pipeline would either be in the form of physical disruption or contamination (see Table 1A)

11 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.

Table 2b: Source Water (Natural Hazards)

Asset Category: *Source Water* **Examples of Assets in this Category:** Encompasses all sources that supply water to a water system. Possible examples include rivers, streams, lakes, source water reservoirs, groundwater, and purchased water.	
Natural Hazards[12] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Source Water* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☑ Flood	North Bank Pump Station may be vulnerable to inundation due to flooding The risk to the transmission line and distribution system due to flooding is low
☑ Earthquake	The risk to the transmission line due to earthquake is significant. Worst case scenario involves a 9+ seismic event that could disrupt one or more sections of the pipeline
☐ Tornado	
☐ Ice storm	
☐ Fire	
☑ Other(s), enter below: Tsunami	A tsunami triggered by seismic activity could cause severe damage to physical barriers for facilities located in tsunami hazard zones due to battering from debris carried by the wave.

12 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Table 3a: Pipes and Constructed Conveyances, Water Collection, and Intake (Malevolent Acts)

Asset Category: *Pipes and Constructed Conveyances, Water Collection, and Intake* **Examples of Assets in this Category:** Encompasses the infrastructure that collects and transports water from a source water to treatment or distribution facilities. Possible examples include holding facilities, intake structures and associated pumps and pipes, aqueducts, and other conveyances.	
Malevolent Acts[13] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Pipes and Constructed Conveyances, Water Collection, and Intake* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☑ Cyberattack[14]	Storage facilities are monitored by SCADA, a cyber-attack could close tank valves restricting water delivery, turn off pumps restricting the ability to replenish storage tanks
☑ Assault on Utility – Physical	The ability to cause physical damage to the distribution network is limited by its location underground
☐ Theft or Diversion – Physical	
☐ Sabotage – Physical	
☑ Intentional Contamination of Finished Water	The ability for a single individual to cause widespread contamination through backpressure feeding of contaminants is high due to the number of access points and limited ability to detect and characterize an event
☐ Intentional Contamination of Source Water	
☐ Other(s), enter below:	

13 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.
14 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Table 3b: Pipes and Constructed Conveyances, Water Collection, and Intake (Natural Hazards)

Asset Category: *Pipes and Constructed Conveyances, Water Collection, and Intake* **Examples of Assets in this Category:** Encompasses the infrastructure that collects and transports water from a source water to treatment or distribution facilities. Possible examples include holding facilities, intake structures and associated pumps and pipes, aqueducts, and other conveyances.	
Natural Hazards[15] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Pipes and Constructed Conveyances, Water Collection, and Intake* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☐ Flood	
☑ Earthquake	Damage to the distribution system storage tanks due to seismic movement is high due to the age of the system and unconsolidated nature of subsurface materials in the McKinleyville area.
☐ Tornado	
☐ Ice storm	
☐ Fire	
☑ Other(s), enter below: Tsunami	A Cascadia fault event could trigger a tsunami that would cause inundation of low-lying areas including the Fischer ranch.

15 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Table 4a: Pretreatment and Treatment (Malevolent Acts)

Asset Category: *Pretreatment and Treatment* **Examples of Assets in this Category:** Encompasses all unit processes that a water system uses to ensure water meets regulatory public health and aesthetic standards prior to distribution to customers. Possible examples include sedimentation, filtration, disinfection, and chemical treatment. For the risk assessment, individual treatment processes at a facility may be grouped together and analyzed as a single asset if they have a similar risk profile.	
Malevolent Acts[16] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Pretreatment and Treatment* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Cyberattack[17]	
☐ Assault on Utility – Physical	
☐ Theft or Diversion – Physical	
☐ Sabotage – Physical	
☐ Intentional Contamination of Finished Water	

16 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.
17 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Asset Category: *Pretreatment and Treatment* **Examples of Assets in this Category:** Encompasses all unit processes that a water system uses to ensure water meets regulatory public health and aesthetic standards prior to distribution to customers. Possible examples include sedimentation, filtration, disinfection, and chemical treatment. For the risk assessment, individual treatment processes at a facility may be grouped together and analyzed as a single asset if they have a similar risk profile.	
Malevolent Acts[16] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Pretreatment and Treatment* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Intentional Contamination of Source Water	
☐ Other(s), enter below:	

Table 4b: Pretreatment and Treatment (Natural Hazards)

Asset Category: *Pretreatment and Treatment* **Examples of Assets in this Category:** Encompasses all unit processes that a water system uses to ensure water meets regulatory public health and aesthetic standards prior to distribution to customers. Possible examples include sedimentation, filtration, disinfection, and chemical treatment. For the risk assessment, individual treatment processes at a facility may be grouped together and analyzed as a single asset if they have a similar risk profile.	
Natural Hazards[18] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Pretreatment and Treatment* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☐ Flood	
☐ Earthquake	
☐ Tornado	
☐ Ice storm	
☐ Fire	
☐ Other(s), enter below:	

18 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Table 5a: Storage and Distribution Facilities (Malevolent Acts)

Asset Category: *Storage and Distribution Facilities* **Examples of Assets in this Category:** Encompasses all infrastructure used to store water after treatment, maintain water quality, and distribute water to customers. Possible examples include residual disinfection, pumps, tanks, reservoirs, valves, pipes, and meters.	
Malevolent Acts[19] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Storage and Distribution Facilities* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☑ Cyberattack[20]	Storage facilities are monitored by SCADA, a cyber-attack could close tank valves restricting water delivery, turn off pumps restricting the ability to replenish storage tanks.
☑ Assault on Utility – Physical	Elevated reservoirs are high visibility targets. Damage to reservoirs can result in loss of water or impairment of ability to distribute water to various parts of the system
☐ Theft or Diversion – Physical	
☐ Sabotage – Physical	
☑ Intentional Contamination of Finished Water	Intentional contamination of water at the North Bank Pump Station or any tank site could cause a widespread public health emergency and totally shut down MCSD ' s ability to deliver water to customers. The severity of risk and associated outage is dependent on the type, extent, and duration of contamination.
☐ Intentional Contamination of Source Water	
☐ Other(s), enter below:	

19 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.
20 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Table 5b: Storage and Distribution Facilities (Natural Hazards)

Asset Category: *Storage and Distribution Facilities* **Examples of Assets in this Category:** Encompasses all infrastructure used to store water after treatment, maintain water quality, and distribute water to customers. Possible examples include residual disinfection, pumps, tanks, reservoirs, valves, pipes, and meters.	
Natural Hazards[21] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Storage and Distribution Facilities* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☐ Flood	
☑ Earthquake	Damage to the distribution system storage tanks due to seismic movement is high due to the age of the system and unconsolidated nature of subsurface materials in the Eureka area.
☐ Tornado	
☐ Ice storm	
☐ Fire	
☑ Other(s), enter below: Tsunami	A Cascadia fault event could trigger a tsunami that would cause inundation of low-lying areas including the Fischer ranch.

21 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Table 6a: Electronic, Computer, or Other Automated Systems (including the security of such systems) (Malevolent Acts)

Asset Category: *Electronic, Computer, or Other Automated Systems (including the security of such systems)*
Examples of Assets in this Category: Encompasses all treatment and distribution operational technology (OT) or process control systems, business enterprise information technology (IT) and communications systems (other than financial), and the processes used to secure such systems. Possible examples include the controls, monitors and other interfaces, plus related IT hardware and software and communications, used to control water collection, treatment, and distribution. Also includes IT hardware, software, and communications used in business enterprise operations. The assessment must account for the security of these systems (e.g., cybersecurity, information security).

Note: This table focuses on how specific malevolent acts may impact the cybersecurity and information security of electronic, computer, or other automated systems. In addition, CWSs should complete Table 11, the "Checklist of Priority Cybersecurity Practices," to identify gaps in essential cybersecurity best practices.

Malevolent Acts[22] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Electronic, Computer, or Other Automated Systems (including the security of such systems)* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☑ Cyberattack[23]	Storage facilities are monitored by SCADA, a cyber-attack could close tank valves restricting water delivery, turn off pumps restricting the ability to replenish storage tanks.
☑ Assault on Utility – Physical	The risk of a physical assault on the electronic, computer, and automated systems is low.
☐ Theft or Diversion – Physical	
☐ Sabotage – Physical	
☑ Other(s), enter below: Contamination of finished water - Intentional	MCSD does not treat drinking water and does not have any automated systems controlling the dosing or treating of drinking water.

22 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.
23 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Table 6b: Electronic, Computer, or Other Automated Systems (including the security of such systems) (Natural Hazards)

Asset Category: *Electronic, Computer, or Other Automated Systems (including the security of such systems)*
Examples of Assets in this Category: Encompasses all treatment and distribution operational technology (OT) or process control systems, business enterprise information technology (IT) and communications systems (other than financial), and the processes used to secure such systems. Possible examples include the controls, monitors and other interfaces, plus related IT hardware and software and communications, used to control water collection, treatment, and distribution. Also includes IT hardware, software, and communications used in business enterprise operations. The assessment must account for the security of these systems (e.g., cybersecurity, information security).

Note: This table focuses on how specific natural hazards may impact the cybersecurity and information security of electronic, computer, or other automated systems. In addition, CWSs should complete Table 11, the "Checklist of Priority Cybersecurity Practices," to identify gaps in essential cybersecurity best practices.

Natural Hazards[24] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Electronic, Computer, or Other Automated Systems (including the security of such systems)* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☑ Flood	Potential extended power outages
☑ Earthquake	Damage to the electronic, computer, and automated systems due to an earthquake is moderate due to the potential for power outages resulting from an earthquake.
☐ Tornado	

24 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Asset Category: *Electronic, Computer, or Other Automated Systems (including the security of such systems)*
Examples of Assets in this Category: Encompasses all treatment and distribution operational technology (OT) or process control systems, business enterprise information technology (IT) and communications systems (other than financial), and the processes used to secure such systems. Possible examples include the controls, monitors and other interfaces, plus related IT hardware and software and communications, used to control water collection, treatment, and distribution. Also includes IT hardware, software, and communications used in business enterprise operations. The assessment must account for the security of these systems (e.g., cybersecurity, information security).

Note: This table focuses on how specific natural hazards may impact the cybersecurity and information security of electronic, computer, or other automated systems. In addition, CWSs should complete Table 11, the "Checklist of Priority Cybersecurity Practices," to identify gaps in essential cybersecurity best practices.

Natural Hazards[24] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Electronic, Computer, or Other Automated Systems (including the security of such systems)* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Ice storm	
☐ Fire	
☑ Other(s), enter below: Severe Weather	Potential extended power outages

Table 7a: Monitoring Practices (Malevolent Acts)[25]

Asset Category: *Monitoring Practices* **Examples of Assets in this Category:** Encompasses the processes and practices used to monitor source water and finished water quality, along with any monitoring systems not captured in other asset categories. Possible examples include sensors, laboratory resources, sampling capabilities, and data management equipment and systems that are implemented as part of a contamination warning system for a source water or distribution system.	
Malevolent Acts[26] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Monitoring Practices* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☑ Cyberattack[27]	Storage facilities are monitored by SCADA, a cyber-attack could close tank valves restricting water delivery, turn off pumps restricting the ability to replenish storage tanks.
☐ Assault on Utility – Physical	
☐ Theft or Diversion – Physical	
☐ Sabotage – Physical	
☐ Intentional Contamination of Finished Water	

25 Monitoring associated with physical security should be addressed under Physical Barriers; monitoring associated with process controls and cybersecurity should be addressed under Electronic, Computer or Other Automated Systems; monitoring associated with financial systems should be addressed under Financial Infrastructure.

26 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.

27 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Asset Category: *Monitoring Practices* **Examples of Assets in this Category:** Encompasses the processes and practices used to monitor source water and finished water quality, along with any monitoring systems not captured in other asset categories. Possible examples include sensors, laboratory resources, sampling capabilities, and data management equipment and systems that are implemented as part of a contamination warning system for a source water or distribution system.	
Malevolent Acts[26] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Monitoring Practices* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Intentional Contamination of Source Water	
☐ Other(s), enter below:	

Table 7b: Monitoring Practices (Natural Hazards)[28]

Asset Category: *Monitoring Practices* **Examples of Assets in this Category:** Encompasses the processes and practices used to monitor source water and finished water quality, along with any monitoring systems not captured in other asset categories. Possible examples include sensors, laboratory resources, sampling capabilities, and data management equipment and systems that are implemented as part of a contamination warning system for a source water or distribution system.	
Natural Hazards[29] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Monitoring Practices* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☑ Flood	Potential extended power outages
☑ Earthquake	Damage to the electronic, computer, and automated systems due to an earthquake is moderate due to the potential for power outages resulting from an earthquake.
☐ Tornado	
☐ Ice storm	

28 Monitoring associated with physical security should be addressed under Physical Barriers; monitoring associated with process controls and cybersecurity should be addressed under Electronic, Computer or Other Automated Systems; monitoring associated with financial systems should be addressed under Financial Infrastructure.

29 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Asset Category: *Monitoring Practices* **Examples of Assets in this Category:** Encompasses the processes and practices used to monitor source water and finished water quality, along with any monitoring systems not captured in other asset categories. Possible examples include sensors, laboratory resources, sampling capabilities, and data management equipment and systems that are implemented as part of a contamination warning system for a source water or distribution system.	
Natural Hazards[29] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Monitoring Practices* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Fire	
☑ Other(s), enter below: Severe Weather	Potential extended power outages

Table 8a: Financial Infrastructure (Malevolent Acts)

Asset Category: *Financial Infrastructure* **Examples of Assets in this Category:** Encompasses equipment and systems used to operate and manage CWS finances. Possible examples include billing, payment, and accounting systems, along with third parties used for these services. This asset category is not intended to address the financial "health" of the CWS (e.g., credit rating, debt-to-equity ratios).	
Malevolent Acts[30] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Financial Infrastructure* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
■ Cyberattack[31]	Ransom attacks or other cyberattacks on the financial infrastructure are likely and could significantly impact operations including billing and revenue collection
■ Assault on Utility – Physical	Damage to MCSD's computer network, hardware, or financial software could significantly impact operations including billing and revenue collection
☐ Theft or Diversion – Physical	
■ Sabotage – Physical	Physical sabotage of the financial system could create short term problems.
■ Other(s), enter below: Sabotage-cyber	Sabotage of MCSD ' s financial systems through cybercrime is a significant concern. Depending on the nature and extent of the attack, MCSD could lose the ability to generate revenues short term but would not affect the ability to deliver water.

30 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.
31 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Table 8b: Financial Infrastructure (Natural Hazards)

Asset Category: *Financial Infrastructure* **Examples of Assets in this Category:** Encompasses equipment and systems used to operate and manage CWS finances. Possible examples include billing, payment, and accounting systems, along with third parties used for these services. This asset category is not intended to address the financial "health" of the CWS (e.g., credit rating, debt-to-equity ratios).	
Natural Hazards[32] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Financial Infrastructure* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☑ Flood	Potential extended power outages
☑ Earthquake	Seismic events which make buildings unstable, or interrupt power of network coverage would limit the ability to generate revenue
☐ Tornado	
☐ Ice storm	
☐ Fire	
☑ Other(s), enter below: Severe Weather	Events which make buildings unstable, or interrupt power of network coverage would limit the ability to generate revenue

32 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Table 9a: The Use, Storage, or Handing of Chemicals (Malevolent Acts)

Asset Category: *The Use, Storage, or Handling of Chemicals* **Examples of Assets in this Category:** Encompasses the chemicals and associated storage facilities and handling practices used for chemical disinfection and treatment. Assessments under this asset category should focus on the risk of uncontrolled release of a potentially dangerous chemical (e.g., chlorine).	
Malevolent Acts[33] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Use, Storage, or Handling of Chemicals* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Cyberattack[34]	
☐ Assault on Utility – Physical	
☐ Theft or Diversion – Physical	
☐ Sabotage – Physical	
☐ Intentional Contamination of Finished Water	

33 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.
34 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Asset Category: *The Use, Storage, or Handling of Chemicals* **Examples of Assets in this Category:** Encompasses the chemicals and associated storage facilities and handling practices used for chemical disinfection and treatment. Assessments under this asset category should focus on the risk of uncontrolled release of a potentially dangerous chemical (e.g., chlorine).	
Malevolent Acts[33] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Use, Storage, or Handling of Chemicals* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Intentional Contamination of Source Water	
☐ Cyberattack	
☐ Other(s), enter below:	

Table 9b: The Use, Storage, or Handing of Chemicals (Natural Hazards)

Asset Category: *The Use, Storage, or Handling of Chemicals* **Examples of Assets in this Category:** Encompasses the chemicals and associated storage facilities and handling practices used for chemical disinfection and treatment. Assessments under this asset category should focus on the risk of uncontrolled release of a potentially dangerous chemical (e.g., chlorine).	
Natural Hazards[35] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Use, Storage, or Handling of Chemicals* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☐ Flood	
☐ Earthquake	
☐ Tornado	
☐ Ice storm	
☐ Fire	
☐ Other(s), enter below: Employee loss Due to pandemic	

35 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Table 10a: The Operation and Maintenance of the System (Malevolent Acts)

Asset Category: *The Operation and Maintenance of the System* **Examples of Assets in this Category:** Encompasses critical processes required for operation and maintenance of the CWS that are not captured under other asset categories. Possible examples include equipment, supplies, and key personnel. Assessments may focus on the risk to operations associated with dependency threats like loss of utilities (e.g., power outages), loss of suppliers (e.g., interruption in chemical deliveries), and loss of key employees (e.g., disease outbreak or employee displacement).	
Malevolent Acts[36] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Operation and Maintenance of the System* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Cyberattack[37]	
☐ Assault on Utility – Physical	
☐ Theft or Diversion – Physical	
☐ Sabotage – Physical	
☐ Intentional Contamination of Finished Water	

36 Examples of malevolent acts are provided, as well as the field "Other(s), enter below:" for you to write in any additional malevolent acts of concern.
37 Cyberattacks are the most prevalent and highest-risk malevolent act carried out against water systems in the United States. The EPA strongly recommends that your water system consider assessing the threat of a cyberattack for as many asset categories as deemed relevant by your utility.

Asset Category: *The Operation and Maintenance of the System* **Examples of Assets in this Category:** Encompasses critical processes required for operation and maintenance of the CWS that are not captured under other asset categories. Possible examples include equipment, supplies, and key personnel. Assessments may focus on the risk to operations associated with dependency threats like loss of utilities (e.g., power outages), loss of suppliers (e.g., interruption in chemical deliveries), and loss of key employees (e.g., disease outbreak or employee displacement).	
Malevolent Acts[36] Select the malevolent acts in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a malevolent act in the left column as a significant risk to the *Operation and Maintenance of the System* asset category, briefly describe in the right column how the malevolent act could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Intentional Contamination of Source Water	
☐ Other(s), enter below:	

Table 10b: The Operation and Maintenance of the System (Natural Hazards)

Asset Category: *The Operation and Maintenance of the System* **Examples of Assets in this Category:** Encompasses critical processes required for operation and maintenance of the CWS that are not captured under other asset categories. Possible examples include equipment, supplies, and key personnel. Assessments may focus on the risk to operations associated with dependency threats like loss of utilities (e.g., power outages), loss of suppliers (e.g., interruption in chemical deliveries), and loss of key employees (e.g., disease outbreak or employee displacement).	
Natural Hazards[38] Select the natural hazards in this column that pose a significant risk to this asset category at the CWS.	**Brief Description of Impacts** If you select a natural hazard in the left column as a significant risk to the *Operation and Maintenance of the System* asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS, especially as the impact relates to existing vulnerabilities at the CWS. Include effects on major assets, water service, and public health as applicable.
☐ Hurricane	
☐ Flood	
☐ Earthquake	
☐ Tornado	
☐ Ice storm	
☐ Fire	
☐ Other(s), enter below: Employee loss Due to Pandemic	The loss of key employees for extended periods of time can impact the level of operation and maintenance throughout the distibution system

38 Examples of natural hazards are provided, as well as the field "Other(s), enter below:" for you to write in any additional natural hazards of concern.

Table 11: Checklist of Priority Cybersecurity Practices for Water Systems

	Question Does the CWS…	**Answer** Mark the appropriate check box ("Yes", "No", "In progress", "Not applicable") to answer each cybersecurity assessment question.
Reduce Exposure to Public-Facing Internet		
1.	Ensure assets connected to the public Internet expose no unnecessary exploitable services (e.g., remote desktop protocol) and eliminates connections between OT assets and the Internet?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Eliminate unnecessary exposed ports and services on public-facing assets with regular review and eliminate OT asset connections to the public Internet unless explicitly required for operations.*
Conduct Regular Cybersecurity Assessments		
2.	Conduct regular cybersecurity assessments?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Conduct a cybersecurity assessment on a regular basis to understand the existing vulnerabilities within OT and IT systems. Assessments enable you to identify, assess, and prioritize mitigating vulnerabilities in both OT and IT networks.*
3.	Have a named role/position/title that is responsible for planning, resourcing, and executing cybersecurity activities within the CWS?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Identify one role/position/title responsible for cybersecurity within the CWS. Whoever fills this role/position/title is then in charge of all CWS cybersecurity activities.*
Change Default Passwords Immediately		
4.	Change default passwords and require a minimum length for passwords?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Change all default manufacturer or vendor passwords before equipment or software is put into service and implement a minimum length requirement for passwords through a policy and/or administrative controls set in the system.*

	Question Does the CWS…	Answer Mark the appropriate check box ("Yes", "No", "In progress", "Not applicable") to answer each cybersecurity assessment question.
5.	Require multi-factor authentication (MFA) wherever possible, but at a minimum to remotely access CWS/ OT/IT networks?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Deploy MFA as widely as possible for both operational technology (OT) and information technology (IT) networks. At a minimum, MFA should be used for remote access to the OT network.*
Conduct Inventory of OT/IT Assets		
6.	Maintain an updated inventory of all OT and IT network assets?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Regularly review (no less than monthly) and maintain a list of all Operational Technology (OT) and IT assets with an IP address. This includes third-party and legacy (i.e., older) equipment. Create an inventory of software and hardware assets to help understand what you need to protect. Focus initial efforts on internet-connected devices and devices where manual operations are not possible. Use monitoring to identify the devices communicating on your network.*
7.	Maintain current documentation detailing the set-up and settings (i.e., configuration) of critical OT and IT assets?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Maintain accurate documentation of the original and current configuration of OT and IT assets, including software and firmware version.*
Develop and Exercise Cybersecurity Incident Response and Recovery Plans		
8.	Have a written cybersecurity incident response (IR) plan for critical threat scenarios (e.g., disabled or manipulated process control systems, the loss or theft of operational or financial data, exposure of sensitive information), which is regularly reviewed, practiced, and updated?	☑ Yes Date of last IR plan review/update: 04/29/2026 ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Develop, practice, review, and update an IR plan for cybersecurity incidents that could impact CWS operations. Participate in discussion-based (ex. TTX) and operations-based exercises (ex. Drill) to improve responses to potential cyber incidents.*

	Question Does the CWS…	**Answer** Mark the appropriate check box ("Yes", "No", "In progress", "Not applicable") to answer each cybersecurity assessment question.
9.	Have a written procedure for reporting cybersecurity incidents, including how and to whom? (e.g., phone call, internet submission) and to whom (e.g., FBI or other law enforcement, CISA, state regulators, Water Information Sharing & Analysis Center - WaterISAC, cyber insurance provider)?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Document the procedure for reporting cybersecurity incidents to better aid law enforcement, receive assistance with response and recovery, and to promote water sector awareness of cybersecurity threats (see OW factsheet).*
Backup OT/IT Systems		
10.	Backup systems necessary for operations (e.g., network configurations, PLC logic, engineering drawings, personnel records) on a regular schedule, store backups separately from the source systems, and test backups on a regular basis?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Regularly backup OT/IT systems so you can recover to a known and safe state in the event of a compromise. Test backup procedures and isolate backups from network connections. Implement the NIST 3-2-1 rule:* *3) Keep three copies: one primary and two backups;* *2) Keep the backups on two different media types;* *1) Store one copy offsite.*
Reduce Exposure to Vulnerabilities		
11.	Patch or otherwise mitigate known vulnerabilities within the recommended time frame?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Identify and patch vulnerabilities in a risk-informed manner (e.g., critical assets first) as quickly as possible.*
12.	Require unique and separate credentials for users to access OT and IT networks and separate user and privileged (e.g., System Administrator) accounts?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Require a single user to have two different usernames and passwords; one account to access the IT network, and the other account to access the OT network to reduce the risk of an attacker being able to move between both networks using a single login and restrict System Administrator privileges to separate user accounts for administrative actions only and evaluate administrative privileges on a recurring basis to ensure accurate information for the individuals who have these privileges.*

	Question Does the CWS…	**Answer** Mark the appropriate check box ("Yes", "No", "In progress", "Not applicable") to answer each cybersecurity assessment question.
13.	Prohibit the connection of unauthorized hardware (e.g., USB devices, removable media, laptops brought in by others) to OT and IT assets?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: When feasible, remove, disable, or otherwise secure physical ports (e.g., USB ports on a laptop) to prevent unauthorized assets from connecting.*
14.	Immediately disable access to an account or network when access is no longer required due to retirement, change of role, termination, or other factors?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Terminate access immediately to accounts or networks upon a change in an individual's status making access unnecessary (i.e., retirement, change in position, etc.).*
Conduct Cybersecurity Awareness Training		
15.	Provide/conduct annual cybersecurity awareness training for all CWS personnel that covers basic cybersecurity concepts?	☑ Yes ☐ No ☐ In progress ☐ Not applicable *If "No", EPA recommends that the CWS take the following action: Conduct cybersecurity awareness training annually, at a minimum, to help all employees understand the importance of cybersecurity and how to prevent and respond to cyberattacks.*

Table 12: Countermeasures (Optional)[39]

Countermeasures (optional) List countermeasures in the left column the CWS could potentially implement to reduce risk from the malevolent acts and natural hazards that were selected.	Brief Description of Risk Reduction or Increased Resilience For each countermeasure, in the right column, describe how the countermeasure could reduce risk or increase resilience for CWS assets from malevolent acts or natural hazards that were selected in the analysis. A countermeasure may reduce risk across multiple malevolent acts, natural hazards, and asset categories.
1.	
2.	
3.	
4.	
5.	

[39] The assessment does not require a specific number of countermeasures. You may have fewer than five countermeasures or add more countermeasures on a separate sheet.

Change History

Please describe the changes made to this risk and resilience assessment since its original development, who made the changes, and on what date the changes were incorporated.

Name/Title:	Date:	Description of Change:

Appendix F

Humboldt County Operational Area Hazard Mitigation Plan, Volume 2 Planning Partner Annexes, McKinleyville Community Services District Annex 2025

16. McKinleyville Community Services District Annex

This section presents the jurisdictional annex for the McKinleyville Community Services District (CSD). The jurisdiction's governing body passed a formal resolution to participate in this multijurisdictional hazard mitigation plan update. McKinleyville CSD did not identify any new priorities for this plan update.

16.1. Planning Process

16.1.1. Contact Information

A key part of hazard mitigation planning is engaging the whole community. This plan was developed by planning consultant IEM, with input from the participating jurisdictions, including McKinleyville CSD, the stakeholders, and the public. McKinleyville CSD was represented during the planning process by the individuals listed in Table 281.

Table 281: McKinleyville Community Services District Points of Contact

Name	Job Title	Jurisdiction/ Agency	Preferred Contact Info (Email and/or Phone)
Patrick Kaspari	General Manager	McKinleyville Community Services District	pkaspari@mckinleyvillecsd.com
Joseph Blaine	Board Secretary	McKinleyville Community Services District	jblaine@mckinleyvillecsd.com
James Henry	Operations Director	McKinleyville Community Services District	Jhenry@mckinleyvillecsd.com
Samantha Howard	Finance Director	McKinleyville Community Services District	Showard@mckinleyvillecsd.com
Kirsten Messmer	Park & Recreation Director	McKinleyville Community Services District	Kirsten@mckinleyvillecsd.com

16.1.2. Stakeholder Engagement

Stakeholders, including local and regional agencies, neighboring communities, representatives of businesses and academia, private organizations, nonprofit organizations, and community-based organizations that work directly with and/or provide support to underserved communities and vulnerable populations, were invited to be involved in the planning process and are recognized in Table 282. Stakeholders were invited to the stakeholder meetings through emails, calendar invites, and phone calls. In addition, they were encouraged to complete and share a public survey to gather more information. Lastly, all stakeholders were provided the opportunity to review the draft plan and provide feedback.

Table 282: Stakeholders Invited to Participate

Name	Job Title	Agency or Organization	Preferred Contact Info (Email and/or Phone)	Type of Stakeholder
Michiko Mares	General Manager	Humboldt Bay Municipal Water District	gm@hbmwd.com	1.Local and regional agencies involved in hazard mitigation activities
T. K. Williams	General Manager	Humboldt Community Services District	Twilliams@humboldtcsd.org	1.Local and regional agencies involved in hazard mitigation activities
Tina Bartlett	Regional Manager	California Department of Fish and Wildlife	AskRegion1@wildlife.ca.gov	2. Agencies that have the authority to regulate development
Patric Esh	Program Coordinator – Hazard Mitigation Program	Humboldt County Office of Emergency Services	pesh2@co.humboldt.ca.us	3. Neighboring communities, including special districts
Sara Dronkers	Chief Executive Officer	Humboldt Area Foundation	SaraD@hafoundation.org	4. Representatives of businesses, academia, and other private organizations
Simon Knopf		American Red Cross – Northern	simon.knopf@redcross.org	5. Representatives of nonprofit organizations,

Name	Job Title	Agency or Organization	Preferred Contact Info (Email and/or Phone)	Type of Stakeholder
		California Coastal Region		including community-based organizations

16.1.3. Public Outreach

Continued public involvement was imperative to the overall success of the plan's implementation. The update process provided an opportunity to solicit participation from new and existing stakeholders, publicize mitigation success stories, and seek additional public comment. The plan's maintenance and update will include continued public and stakeholder involvement and input through attendance at designated committee meetings, web postings, press releases to local media, and public hearings. Figure 24 illustrates how the public was encouraged to participate in the survey available via QR code link in English, Spanish, and Hmong languages. McKinleyville CSD posted on their website, pinned a post to social media, and posted a flyer in various locations throughout town.

The public survey received 72 responses from people who identified themselves as residents of McKinleyville. When asked the question "What types of projects do you believe the county and other local jurisdictions (cities and community service districts) should be doing to reduce damage and disruption from natural hazard events?" most of the respondents indicated that they wanted to see mitigation projects focused on upgrades to bridges, power, roads, water supply, and wastewater; improvement of public infrastructure against potential impacts from climate change; and opportunities for training for the public to better respond to natural disasters. Public feedback has been incorporated into the risk assessment and mitigation strategy sections. One example of how McKinleyville CSD's mitigation actions support the public's requests is the addition of mitigation action MKCSD1 (See Table 298), a mitigation project to purchase generators and transfer switches for critical facilities, including the CSD office, Pierson Park facilities, and Kelly Lift Station, and upgrade other sewer lift stations.

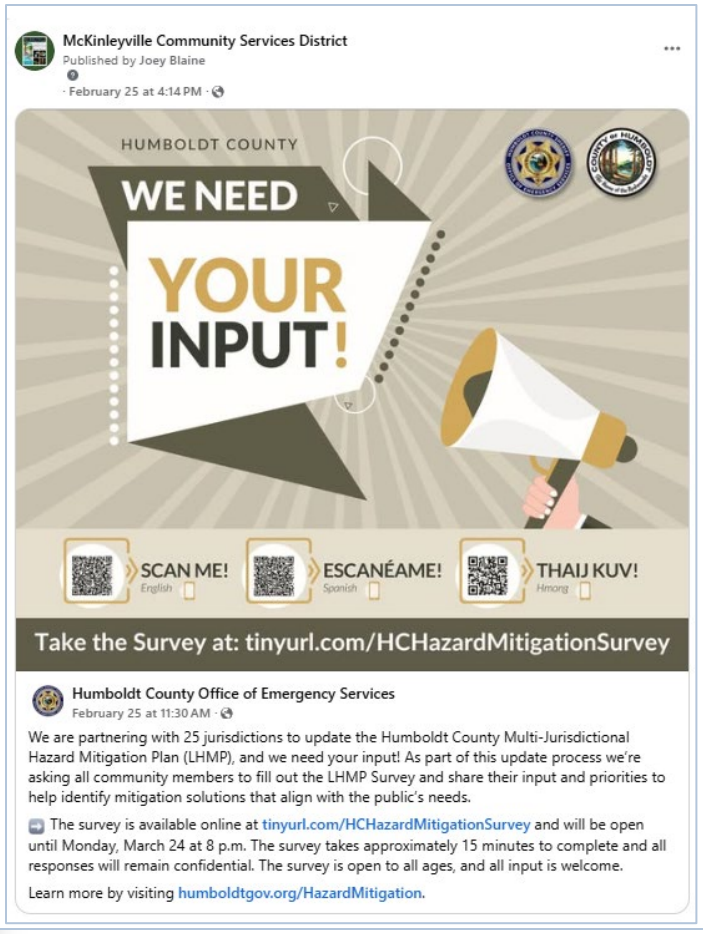


Figure 24: Public Outreach Methods

16.1.3.1.VULNERABLE POPULATION OUTREACH

Some McKinleyville CSD residents may be disproportionately affected by natural hazard events for reasons other than proximity to high-risk areas. Vulnerable and underserved residents in McKinleyville CSD may have less access to information and resources to help mitigate risk and increase preparedness for emergencies. To better understand the risks and vulnerabilities the district residents face, this planning update developed a multilingual public survey in English, Spanish, and Hmong languages that collectively identified ways to support, enhance, and broaden capacity and resilience at the individual and social network levels. Figure 25 displays how the district advertised the survey specifically to vulnerable populations. Outreach methods included resources such as posting flyers on front doors and in high traffic areas to reach populations that may not have access to the internet.

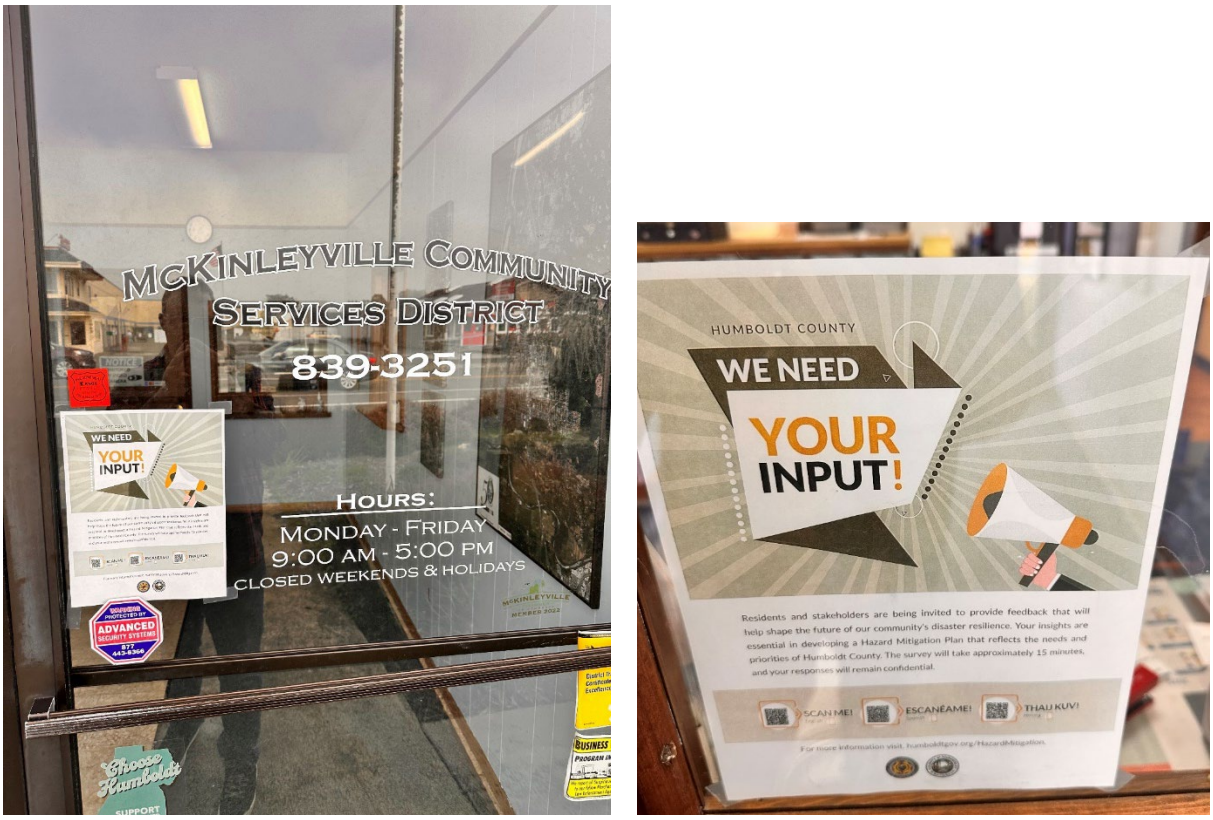


Figure 25: Public Outreach to Vulnerable Populations

16.1.4. Plan Integration

16.1.4.1.INTEGRATION INTO LOCAL PLANNING MECHANISMS

This section identifies where such integration is already in place and where there are opportunities for further integration in the future. The successful implementation of this plan will require a constant and vigilant review of existing plans and programs for coordination and

multi-objective opportunities that promote a safe, sustainable community. The existing planning mechanisms into which this plan has been integrated are listed in Table 283.

Table 283: Previous Plan Integration for the McKinleyville Community Services District

Plan Name	Description
Capital Improvement Plan	The district includes all of our hazard mitigation projects from the hazard mitigation plan in our capital improvement plan and budgets for them in our applicable annual budgets.
Emergency Operations and Recovery Plan	Our emergency operations and recovery plan also details proposed projects from the hazard mitigation plan.

The plan must also identify the local planning mechanisms where the updated hazard mitigation information and actions may be integrated in the future. The plan must describe each participant's process for integrating information from the mitigation strategy into their identified planning mechanisms. Table 284 displays how each community will integrate the hazard mitigation plan into other planning mechanisms in the future.

Table 284: Future Types of Plan Integration for the McKinleyville Community Services District

Type of Plan	Integration Method
Capital Improvement Plan (CIP)	The CIP is updated yearly to budget for major capital projects, including proposed hazard mitigation projects. The CIP looks out 10 plus years and budgets for the initial planning and design phases of projects, as well as the final design and construction of hazard mitigation and other capital projects. The projects reflected in the Hazard Mitigation Plan update are currently included in the district's current CIP, and new projects will be added as they are identified and developed.
District Emergency Operations Plan	Proposed and completed mitigation projects are reflected in the Emergency Operations Plan, including the operation of emergency generators and the coordination of emergency water delivery to and support from the surrounding cities and CSDs, the County OES, the Sheriff, and Fire Agencies.

16.2. Risk Assessment

This plan must develop a comprehensive risk assessment to systematically identify the specific hazards and vulnerabilities that are of the most concern for each jurisdiction, as displayed in Table 285 and Table 286. For further information about these hazards, including their extent, please refer to Volume 1 of this HMP.

Table 285: McKinleyville Community Services District Hazards

Type of Hazard Event	Jurisdiction Impact? (Yes/No)	If Not, What Is the Rationale for Omitting Hazard?
Dam Failure	Yes	N/A
Drought	Yes	N/A
Earthquake	Yes	N/A
Extreme Temperatures (Extreme Heat and Extreme Cold)	Yes	N/A
Flooding	Yes	N/A
Landslide	Yes	N/A
Tsunami	Yes	N/A
Wildfire	Yes	N/A
Wind	Yes	N/A
Winter Weather	Yes	N/A

Table 286: McKinleyville Community Services District Risk Assessment

Type of Hazard Event	Probability of Future Occurrence	People Impact	Property Impact	Economy Impact	Category
Dam Failure	Low	High	Low	High	Low
Drought	Medium	High	Low	Medium	Medium
Earthquake	High	High	High	High	High
Extreme Heat	High	Medium	Medium	Medium	Medium
Extreme Cold	Low	Medium	Low	Medium	Low
Flooding	Medium	High	High	Medium	High
Landslide	Medium	Medium	Medium	Medium	Medium
Tsunami	Medium	Medium	Low	High	Medium
Wildfire	Medium	High	High	High	High
Wind	High	High	High	High	High
Winter Weather	High	High	High	High	High

Note: The process used to assign risk rankings is described in Volume 1.

16.2.1. Historical Events and Impacts

The following section lists past occurrences of natural hazards for which specific impacts and damage were recorded in McKinleyville CSD. Other hazard events that broadly affected the entire planning area, including McKinleyville CSD, are listed in the risk assessments in Volume 1.

16.2.1.1.HISTORICAL EVENTS

Table 287 presents a summary of the storm events that occurred in McKinleyville CSD from Nov. 1, 2019 to Dec. 31, 2024, according to the National Centers for Environmental Information (NCEI).

Table 287: NCEI Storm Event Database for the McKinleyville Community Services District, 2019–2024

Location	Date	Event Type	Deaths	Injuries	Property Damage	Crop Damage
McKinleyville	12/01/2022	Hail	0	0	$2,500.00	$0
McKinleyville	01/13/2024	Flood	0	0	$0.00	$0

The NCEI database does not always capture localized hazard data. To address this gap, McKinleyville CSD has documented additional significant events, with their impacts detailed below.

DAM FAILURE

- No events have occurred for this hazard.

DROUGHT

- **January–March 2022:** Limited water availability impacted the water system's lifeline.

EARTHQUAKE

- **December 5, 2024:** A 7.0 magnitude earthquake caused broken water and sewer mains, impacting the water system's lifeline.
- **December 20, 2022:** Aftershocks from the December 5 event caused broken water and sewer mains, impacting the water system's lifeline.

EXTREME TEMPERATURES

- **December 2024–January 2025:** Extreme temperatures resulted in power outages, impacting the operation of water systems.

- **January–March 2024:** Extreme temperatures resulted in power outages, impacting the operation of water systems.
- **November 2023:** Extreme temperatures resulted in power outages, impacting the operation of water systems.
- **February–March 2023:** Extreme temperatures resulted in power outages, impacting the operation of water systems.

FLOODING

- **Jan. 13, 2024:** An atmospheric river sank south and stalled over Humboldt, Del Norte, and western Trinity counties, bringing widespread rains between 3 and 7 inches to the region. Rain fell over a short period of 8–10 hours, resulting in the highest flows on the Mad River and Redwood Creek since the 1970s. Widespread creek flooding occurred in Del Norte and Humboldt counties, with multiple homes damaged or destroyed. Many roadways were unpassable. Agricultural lands were inundated with water. The Mad River stream gauge at Arcata exceeded the flood stage and reached the second highest stage ever recorded. Extensive flooding occurred in the Mad River Bottoms on both sides of the river. North Bank Road, Mad River Road, Silva Road, and Fischer Road all were flooded (see Figure 26).

Figure 26: McKinleyville Flooding Impacts

LANDSLIDE

- **January–March 2024:** Landslides caused broken water and sewer mains, impacting the water system's lifeline.
- **Jan. 6, 2023:** Landslides caused broken water and sewer mains, impacting the water system's lifeline.
- **Jan. 14, 2021:** Landslides caused broken water and sewer mains, impacting the water system's lifeline.
- **Feb. 25, 2019:** Landslides caused broken water and sewer mains, impacting the water system's lifeline.

TSUNAMI

- No events have occurred for this hazard.

WILDFIRE

- No events have occurred for this hazard.

WIND

- **November–December 2024:** Severe winds caused power outages and downed trees on multiple roadways. The damage included broken water and sewer mains, impacting the water system's lifeline (see Figure 27).

Figure 27: McKinleyville Wind Impacts

WINTER WEATHER

- **January 13, 2024:** Power outages due to severe winter weather impacted the operation of water systems.
- **December 2022–February 2023:** Power outages due to severe winter weather impacted the operation of water systems.
- **November–December 2021:** Power outages due to severe winter weather impacted the operation of water systems.
- **January–February 2019:** Power outages due to severe winter weather impacted the operation of water systems.

16.2.2. Jurisdiction-Specific Vulnerabilities and Impacts

Table 288 provides information on a few key vulnerabilities and impacts on the district.

Table 288: McKinleyville Community Services District Vulnerabilities and Impacts

Hazard	Vulnerabilities
Dam Failure	*Vulnerabilities:* The town of McKinleyville has several watershed areas, including the north bank of the Mad River, Mill Creek, Patrick Creek and Little River. Flooding from the R.W. Matthews Dam could affect operations. *Impacts*: Dam failure could cause loss of life of CSD employees, disrupt the CSD water supply, reduce revenue, and damage critical CSD infrastructure. Disruptions to services could impact the local population.
Drought	*Vulnerabilities:* All critical systems in the CSD service area that rely on groundwater sources for operation are vulnerable to drought. Also, CSD customers who rely on available local water supplies for hydration may become vulnerable to health and hygiene risks. *Impacts*: Water systems may be disrupted in the case of prolonged drought. In addition, a decline in water supply levels can impact the CSD's ability to supply water to its customers. Drought events impact the water supply by reducing the water levels that could impact the response to wildfire incidents caused by prolonged drought events, and increase water demand. Plants in parks may die.
Earthquake	*Vulnerabilities:* All critical CSD facilities are vulnerable to facility and equipment damage from failing structures. In particular, the Fischer Life Station, district operations office, and maintenance buildings are vulnerable to earthquakes. In addition, any underground water lines would be vulnerable to earthquake damage. People dependent on services may also be vulnerable to damage or disruptions.

Hazard	Vulnerabilities
	Impacts: Earthquake events can damage or destroy the water supply and wastewater treatment systems, affecting the district's ability to provide critical services to MCSD customers. MCSD may be impacted by extensive repair costs to restore critical facilities like water systems, the Law Enforcement Facility, and community assets that MCSD owns, such as the McKinleyville Library. Additional impacts include the potential loss of life of employees and the loss of revenue from service disruptions.
Extreme Temperatures	*Vulnerabilities:* MCSD critical infrastructure that lacks weatherproofing is vulnerable to frozen pipes and water mains bursting, which could lead to prolonged service disruption. Excessive heat can lead to increased demand for MCSD utility services. MCSD customers are vulnerable to service disruptions from extreme heat and extreme cold events. *Impacts*: Extreme temperatures can stress the local electrical grid, and extreme heat can increase the demand for water. The MCSD may be impacted by a loss of revenue during prolonged service disruptions.
Flooding	*Vulnerabilities:* Critical MCSD infrastructure is vulnerable to flooding events that could cause prolonged utility service disruptions when equipment fails or is inundated with flood waters. MCSD employees are vulnerable to fatalities and loss of life during flood events. *Impacts*: Flood events can contaminate the water supply, damage critical facilities and equipment, and reduce MCSD revenue during prolonged service disruptions that restrict water and wastewater services to MCSD customers.
Landslide	*Vulnerabilities:* Vulnerable areas on the west side of town may experience landslides. MCSD customers may be vulnerable to prolonged service disruption in impacted service areas. *Impacts*: Landslide events can impact MCSD's water distribution and wastewater treatment systems. MCSD employee service delivery activities would be impacted by inaccessible roads. Extensive and expensive repair costs can impact MCSD financially if service disruptions are prolonged.
Tsunami	*Vulnerabilities:* MCSD is vulnerable to coastal flooding and flooding along the Mad River that could damage critical infrastructure, including oxidation ponds involved in the wastewater management process, and disrupt utility services. MCSD customers are vulnerable to prolonged service disruptions during equipment repair and service restoration efforts. *Impacts*: Tsunami events can impact the water supply and wastewater treatment systems, damage critical facilities and equipment, and result in loss of revenue during prolonged service disruptions for CSD customers in impacted service areas.

Hazard	Vulnerabilities
Wildfire	*Vulnerabilities:* McKinleyville is bordered to the west by the moderate-risk Fire Hazard Severity Zone. MCSD assets, particularly those without backup power like the Pierson Park facilities, Kelly Lift Station, Azalea Hall, and Activity Center, community parks, trails, and forests, such as the McKinleyville Community Forest, are vulnerable. Fuel hazards near residential neighborhoods pose a threat. The MCSD water supply is also vulnerable to increased demand during wildfire events. MCSD customers in service areas are vulnerable to water service disruption due to prolonged power outages during planned public safety power shutoffs. *Impacts*: Wildfire events can cause extensive damage to critical MCSD infrastructure and community assets. Public Safety Power Shutoffs or other outages can disrupt services and restrict the use of facilities. People can be injured or killed.
Wind	*Vulnerabilities:* MCSD customers may be impacted by prolonged power outages from downed power lines or service disruptions from planned power safety shutoffs during high wind/wildfire prevention events. MCSD water systems facilities, parks, and forests are vulnerable to strong wind events. MCSD employees conducting repair activities can experience injuries and fatalities during strong wind events. *Impacts*: Severe winds can impact critical facility operations, and flying debris can block road access to critical facilities, prolonging service disruptions. Power outages caused by severe wind can impact the district's ability to provide services. Severe wind can down trees and increase debris in MCSD's parks.
Winter Weather	*Vulnerabilities:* CSD customers with no weatherization to their heating resources are vulnerable to extreme winter weather events, as well as increased heating costs. *Impacts*: Prolonged power outages caused by winter weather can impact the water supply and wastewater treatment systems. Winter weather can also damage critical facilities and restrict road access to critical MCSD facilities. Disruptions to the water supply can cause public health concerns. Falling tree limbs can injure people.

16.2.2.1. DEVELOPMENT CHANGES

Table 289 summarizes development trends in McKinleyville CSD since the preparation of the previous hazard mitigation plan and expected future development trends.

Table 289: Recent and Expected Future Development Trends

Type of Development	Recent Development	Future Development	Overall Vulnerability (Increased, Decreased, No Change)
Residential	New subdivisions	Continued development	Increased
Commercial	Limited development	Development will increase	Increased
Industrial	Limited development	Limited development	Increased

16.3. Capability Assessment

Local mitigation capabilities are essential for reducing the impact of hazards on communities. Local authorities can effectively mitigate hazards by leveraging existing authorities, policies, programs, and resources. McKinleyville CSD performed an assessment of its existing capabilities for implementing hazard mitigation actions. The capability assessment is evaluated using a multifaceted approach, including the following:

- Planning and Regulatory Capabilities
- Administrative and Technical Capabilities
- Financial Capabilities
- Education and Outreach Capabilities

16.3.1. Planning and Regulatory Capabilities

Table 290 and Table 291 summarize McKinleyville CSD's planning and regulatory capabilities, including plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Land use in the district is subject to the Humboldt County General Plan, McKinleyville Community Plan, McKinleyville Area Local Coastal Plan (for coastal portions), and Zoning Regulations (Humboldt County Code Title III, Division 1). The McKinleyville Community Plan (adopted in 2002 and amended in 2017) includes the developed McKinleyville area, the surrounding watersheds, and Dows Prairie. McKinleyville CSD operates under existing 2022 California Building Codes and Humboldt County building codes 331-11 and Title 24 Building codes (2019 and 2022). In addition, McKinleyville CSD regulates construction related to water systems from its own list of ordinances in its rules and regulations.[23]

[23] McKinleyville Community Service District, "Rules and Regulations", https://www.mckinleyvillecsd.ca.gov/files/077f1c034/20210807+Rules+and+Regulations.pdf.

Table 290: Plans

Plans	Does the Plan Address Hazards? (Y/N)	How Can the Plan Be Used to Implement Mitigation Actions?	When Was It Last Updated? When Will It Next Be Updated?
General Plan	No	N/A	N/A
Recovery Plan	Yes	The recovery plan outlines rolls and responsibilities for recovery tasks, which can be duplicated for mitigation actions as applicable.	Last Update: 05/2022 Next Update: 05/2027
Capital Improvement Plan	Yes	All planned mitigation actions and projects are included in the CIP and are budgeted for.	Last Update: 02/2025 Next Update: 02/2026
Climate Change Adaptation Plan	No	N/A	N/A
Community Wildfire Protection Plan	No	N/A	N/A
Economic Development Plan	No	N/A	N/A
Land Use Plan	No	N/A	N/A
Local Emergency Operations Plan	Yes	The EOP lists roles and responsibilities that can be adapted to implementation of mitigation actions.	Last Update: 05/2022 Next Update: 05/2028
Stormwater Management Plan	No	N/A	N/A
Transportation Plan	No	N/A	N/A
Substantial Damage Plan	No	N/A	N/A
Debris Management Plan	No	N/A	N/A

Table 291: Regulations and Ordinances

Regulation or Ordinance	Does This Effectively Reduce Hazard Impacts?	Is It Adequately Administered and Enforced?	When Was It Last Updated? When Will It Next Be Updated?
Building Code	Yes – 2022 California Building Code	Yes – by the County	Last Update: 12/2022 Next Update: 12/2025
Flood Insurance Rate Maps	Yes	Yes – by the County	Last Update: 05/2017 Next Update: Unknown
Floodplain Ordinance	Yes	Yes – by the County	Last Update: 09/2016 Next Update: 09/2026
Subdivision Ordinance	N/A	N/A	N/A
Zoning Ordinance	N/A	N/A	N/A
Natural Hazard Specific Ordinance	Yes	Yes – by the County	Last Update: 05/2018 Next Update: 05/2026
Acquisition of Land for Open Space and Public Recreation Use	Yes	Yes	Last Update: 02/2025 Next Update: 09/2025
Prohibition of Building in At-Risk Areas	N/A	N/A	N/A

16.3.2. Administrative and Technical Capabilities

Table 292 and Table 293 summarize McKinleyville CSD's administrative and technical capabilities, including the staff and their respective skills and the available tools to support mitigation actions.

Table 292: Administrative Capabilities

Administrative Capability	Status (Non-Vacant, Vacant)	Is Staffing Adequate?	Is Staff Trained on Hazards?	Is Coordination Effective?
Chief Building Official	Vacant	N/A	N/A	N/A
Grant Writer	Non-Vacant	No	Yes	Yes

Administrative Capability	Status (Non-Vacant, Vacant)	Is Staffing Adequate?	Is Staff Trained on Hazards?	Is Coordination Effective?
Civil Engineer	Non-Vacant	Yes	Yes	Yes
Community Planner	Vacant	N/A	N/A	N/A
Emergency Manager	Non-Vacant	Yes	Yes	Yes
Floodplain Administrator	Vacant	N/A	N/A	N/A
Geographic Information System (GIS) Coordinator	Non-Vacant	Yes	No	No
Planning Commission	Vacant	N/A	N/A	N/A
Fire Safe Council	Vacant	N/A	N/A	N/A
Community Emergency Response Team (CERT)	Vacant	N/A	N/A	N/A
Active Organizations Active in Disaster	Vacant	N/A	N/A	N/A

Table 293: Technical Capabilities

Technical Capability	Utilized? (Y/N)	How Has the Capability Been Used to Assess or Mitigate Risk in the Past?	How Can the Capability Be Used to Assess or Mitigate Risk in the Future?
Hazard Data and Information	Yes	Obtaining and implementing hazard mitigation grant projects	Obtaining and implementing hazard mitigation grant projects
GIS	Yes	In the implementation of mitigation projects assessment, permitting and construction.	Same
Mutual Aid Agreements	Yes	Obtaining and implementing hazard mitigation grant projects	Obtaining and implementing hazard mitigation grant projects
Water & Wastewater Operations	Yes	Obtaining and implementing hazard mitigation grant projects	Obtaining and implementing hazard mitigation grant projects

16.3.3. Financial Capabilities

Table 294 summarizes McKinleyville CSD's financial capabilities, which refer to the resources to fund mitigation actions. Discussing the funding and financial capabilities of the district is important to determine the kinds of projects that are feasible, given their cost.

Table 294: Financial Capabilities

Funding Resource	Utilized? (Y/N)	What Types of Activities?	Can Be Used to Fund Future Mitigation Actions?	Can Be Used as a Local Match for a Federal Grant
Capital Improvement Project Funding	Yes	Yes. Obtaining and implementing hazard mitigation grant projects	Yes	Yes
General Funds	Yes	Yes. Obtaining and implementing hazard mitigation grant projects	Yes	Yes
Hazard Mitigation Grant Program (HMGP/404)	Yes	Yes. Obtaining and implementing hazard mitigation grant projects	Yes	Yes
Building Resilient Infrastructure and Communities (BRIC)	No	N/A	No	N/A
Flood Mitigation Assistance (FMA)	No	N/A	N/A	N/A
Community Development Block Grant (CDBG)	No	N/A	N/A	N/A
Natural Resources Conservation Services (NRCS) Programs	Yes	Obtaining and implementing hazard mitigation grant projects	Yes	No
U.S. Army Corps of Engineers (USACE) Programs	No	N/A	N/A	N/A
Property, Sales, Income or Special Purpose Taxes	Yes	No	No	No

Funding Resource	Utilized? (Y/N)	What Types of Activities?	Can Be Used to Fund Future Mitigation Actions?	Can Be Used as a Local Match for a Federal Grant
Stormwater Utility Fee	No	N/A	N/A	N/A
Fees for Water, Sewer, Gas or Electric Services	Yes	Yes. Obtaining and implementing hazard mitigation grant projects	Yes	Yes
Impact Fees from New Development and Redevelopment	Yes	Yes. Obtaining and implementing hazard mitigation grant projects	Yes	Yes
General Obligation or Special Purpose Bonds	Yes	Yes. Obtaining and implementing hazard mitigation grant projects	Yes	Yes
Federal-Funded Programs	No	N/A	N/A	N/A
State-Funded Programs	Yes	Yes. Obtaining and implementing hazard mitigation grant projects	Yes	Yes
Private Sector or Nonprofit Programs	No	N/A	N/A	N/A

16.3.4. Education and Outreach Capabilities

Table 295 summarizes McKinleyville CSD's education and outreach capabilities, which refer to programs and actions that can communicate information about and encourage risk reduction.

Table 295: Education and Outreach

Education and Outreach Capability	Used? (Y/N)	Does It Incorporate Hazard Mitigation?	Notes
Community Newsletter(s)	Yes	Yes	N/A
Hazard Awareness Campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, School Programs)	No	N/A	N/A

Education and Outreach Capability	Used? (Y/N)	Does It Incorporate Hazard Mitigation?	Notes
Public Meetings/Events	Yes	Yes	Board and Planning meetings
Emergency Management Listserv	Yes	Yes	N/A
Local News	Yes	Yes	N/A
Distributing Hard Copies of Notices (e.g., Public Libraries, Door-to-Door Outreach)	Yes	No	N/A
Insurance Disclosures/ Outreach	No	N/A	N/A
Organizations that Represent, Advocate for, or Interact with Underserved and Vulnerable Communities	Yes	No	McKinleyville Family Resource Center
Social Media	Yes	Yes	Facebook, Instagram, District website

16.3.5. Opportunities to Expand and/or Improve Capabilities

The capability assessment findings were reviewed to identify opportunities to expand, initiate, or integrate capabilities to further hazard mitigation goals and objectives. These opportunities are included in Table 296. Where such opportunities were identified and determined to be feasible, they are included in the action plan.

Table 296: Opportunities to Expand and/or Improve

Capability Type	Opportunity to Expand and/or Improve
Planning and Regulations	The district has acquired a 600-acre community forest and are attempting to prepare wildfire and emergency response plans and regulations. The technical capabilities and capacity or funding to fully develop these documents.
Administrative and Technical	The district does not have the capacity to fund the technical and administrative resources necessary to implement all our planned and future mitigation measures.
Financial	The district is always stretched financially to be able to fund our necessary mitigation projects and also stretched with available district staff to chase and fund necessary grant programs.

Capability Type	Opportunity to Expand and/or Improve
Education and Outreach	The district does not have the capacity or resource materials to efficiently incorporation educational and outreach materials into our operations.

16.4. National Flood Insurance Program

McKinleyville CSD is not required to participate in the NFIP program because, as a special district, it does not have authority to do so. However, a flood event might result in the loss of potable water infrastructure, which will impact fire services, hydration, and public health. Flood events create vulnerabilities to the water supply due to contamination and may also damage property. Flood events can also cause overflowing of the sanitary sewer system, resulting in impacts on human health and the environment due to untreated wastewater.

16.5. Mitigation Strategy

McKinleyville CSD has adopted the same goals and prioritization process as Humboldt County, which is in Volume 1. Previous mitigation actions and their statuses are in Table 297, while new mitigation action items and those carried forward from the previous plan are in Table 298.

16.5.1. Previous Mitigation Actions

Table 297: Previous Mitigation Actions

Mitigation Action	Description	Status
MKCSD1	Where appropriate, support retrofitting, purchase or relocation of structures in hazard areas, prioritizing those that have experienced repetitive losses and/or are in high- or medium-risk hazard areas.	Deferred
MKCSD2	Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.	Continuing to actively participate
MKCSD3	Purchase generators for critical facilities and infrastructure that lack adequate backup power, including the district office and Azalea Hall.	Deferred. We are upgrading the district office and waiting for the final load sizing to size the generator.
MKCSD4	Support countywide initiatives identified in Volume 1 of this hazard mitigation plan.	Continue to support

Mitigation Action	Description	Status
MKCSD5	Work with county on the development of a regional debris management plan.	Continue to support
MKCSD6	Construct redundant waterline to mitigate for the potential loss of the watermain from HBWMD where it travels under the Mad River.	Deferred. Submitted Hazard Mitigation Grant (HMG) and have been going back and forth with Cal OES and FEMA. Waiting for final Phase 1 authorization.
MKCSD7	Construct 5-million-gallon water storage reservoir to supplement existing potable water storage.	Currently being constructed. Should be done by 8/2025.
MKCSD8	Replace three sewer main crossings under Highway 101.	Completed Phase 1 of HMG. Phase 2 authorization obtained 1/2025. Construction should be completed by 12/2026.
MKCSD9	Purchase Green Diamond land east of the district to establish community forest.	Completed
MKCSD10	Assess and replace the sewer force mains from all of the District Sewer Lift Stations.	Ongoing. Two are actively in design; the remaining 3 will be completed and rolled over to the new HMP Annex.
MKCSD11	Replace redwood water tanks at McCluski Hill.	Phase 1 of HMG completed. Waiting for Phase 2 HMG authorization.
MKCSD12	Harden the water and sewer SCADA system and provide additional redundancy.	Deferred. Work is ongoing, and vulnerabilities are being identified. Will roll over.
MKCSD13	Develop a local well for an alternative to the water supply that is currently vulnerable to damage from multiple hazard events, particularly where the existing water supply main runs under the Mad River.	Deleted

16.5.2. Updated Mitigation Actions

Table 298: 2025 Mitigation Actions[24]

#	Action Description	Priority	Lead Agency	Hazards Mitigated	Potential Funding Source(s)	Estimated Cost	Estimated Timeline	New and/or Existing Asset	Vulnerable Population Benefit?	Community Lifelines Benefit?
MKCSD1	Purchase generators and transfer switches for critical facilities including district office, Pierson Park facilities and Kelly Lift Station and upgrades to other sewer lift stations.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$1,500,000	Medium-term	Both	Yes	All
MKCSD2	Construct redundant waterline to mitigate for the potential loss of the watermain from HBWMD where it travels under the Mad River.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, general funds	$5,000,000	Short-term	Both	Yes	Water Systems
MKCSD3	Replace three sewer main crossings under Highway 101.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, general funds	$8,000,000	Short-term	Both	Yes	Water Systems
MKCSD4	Develop emergency access routes throughout the district's community forest.	High	McKinleyville Community Services District	Drought, earthquake, extreme temperatures, flooding, landslide, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$2,000,000	Long-term	Both	Yes	Safety and Security

[24] BRIC: Building Resilient Infrastructure and Communities, CDBG: Community Development Block Grant, FMA: Flood Mitigation Assistance, HMGP: Hazard Mitigation Grant Program, PDM: Pre-Disaster Mitigation

#	Action Description	Priority	Lead Agency	Hazards Mitigated	Potential Funding Source(s)	Estimated Cost	Estimated Timeline	New and/or Existing Asset	Vulnerable Population Benefit?	Community Lifelines Benefit?
MKCSD5	Assess and replace the sewer force mains from all of the district sewer lift stations.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$5,000,000	Long-term	Both	Yes	Water Systems
MKCSD6	Replace redwood water tanks at McCluski Hill.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, general funds	$5,000,000	Short-term	Both	Yes	Water Systems
MKCSD7	Upgrade the water and sewer SCADA system and provide additional redundancy.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$1,000,000	Medium-term	Both	Yes	Water Systems
MKCSD8	Seismically retrofit the district's operations office and maintenance buildings.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$4,000,000	Medium-term	Both	Yes	All
MKCSD9	Implement wildfire protection throughout the district's community forest and other open space zones.	High	McKinleyville Community Services District	Drought, earthquake, extreme temperatures, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$3,000,000	Long-term	Both	Yes	Safety and Security

#	Action Description	Priority	Lead Agency	Hazards Mitigated	Potential Funding Source(s)	Estimated Cost	Estimated Timeline	New and/or Existing Asset	Vulnerable Population Benefit?	Community Lifelines Benefit?
MKCSD10	Perform Fischer Lift Station Seismic upgrade.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$4,000,000	Short-term	Both	Yes	
MKCSD11	Perform Pierson Park Facilities seismic upgrade including library, law enforcement facility, Azalea Hall and activity center.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$8,000,000	Long-term	Both	Yes	All
MKCSD12	Install backup microgrid or solar array at Azalea Hall and Activity Center.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$2,000,000	Long-term	Both	Yes	Energy
MKCSD13	Develop a regional water supply resiliency plan.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$1,000,000	Short-term	Both	Yes	Water Systems
MKCSD14	Implement regional water supply resiliency infrastructure project.	High	McKinleyville Community Services District	Dam failure, drought, earthquake, extreme temperatures, flooding, landslide, tsunami, wildfire, wind, winter weather	HMGP, PDM, CDBG, general funds	$10,000,000	Long-term	Both	Yes	Water Systems

#	Action Description	Priority	Lead Agency	Hazards Mitigated	Potential Funding Source(s)	Estimated Cost	Estimated Timeline	New and/or Existing Asset	Vulnerable Population Benefit?	Community Lifelines Benefit?
MKCSD15	Continue to support countywide initiatives identified in this plan.	High	McKinleyville Community Services District	Earthquake, floods, dam failure, drought, extreme temperatures, landslides, tsunami, wildfire, wind, winter weather	HMGP, district funds	$100,000	Short-term and ongoing	Both	Yes	All

Appendix G

MCSD Ordinance 2021-06 Water Conservation Establishing Rules and Regulations for Rationing Water During a Water Shortage Emergency and Establishing Penalties for Violations Thereof

ORDINANCE NO. 2021-06
AN ORDINANCE OF THE MCKINLEYVILLE COMMUNITY SERVICES DISTRICT ADDING ARTICLE VII: WATER CONSERVATION ESTABLISHING RULES AND REGULATIONS FOR RATIONING WATER DURING A WATER SHORTAGE EMERGENCY AND ESTABLISHING PENALTIES FOR VIOLATIONS THEREOF

WHEREAS, Article X, Section 2 of the California Constitution declares that waters of the State are to be put to beneficial use, that waste, unreasonable use, or unreasonable method of use of water be prevented, and that water be conserved for the public welfare; and

WHEREAS, conservation of current water supplies and minimization of the effects of water supply shortages that are the result of drought are essential to the public health, safety and welfare; and

WHEREAS, regulation of the day or time of certain water use, manner of certain water use, design of rates, method of application of water for certain uses, installation and use of water-saving devices, provide an effective and immediately available means of conserving water; and

WHEREAS, California Government Code section 61100, subdivision (a) incorporates Water Code sections 71000 et seq., including section 71640, into the Community Service District Law; and

WHEREAS, California Water Code section 71610.5 authorizes the District to undertake a water conservation program to reduce water use and may require, as a condition of new service, that reasonable water-saving devices and water reclamation devices be installed to reduce water use; and

WHEREAS, pursuant to Water Code section 71640, municipal water districts may restrict the use of district water during a drought emergency or other water shortage condition and may prohibit the wastage of district water or the nonessential use of district water during such periods for any purpose other than household uses or other restricted uses as the District determines to be necessary; and

WHEREAS, pursuant to Water Code section 71641 and Government Code section 6061, the District must publish in a newspaper of general circulation any ordinance setting forth the restrictions, prohibitions, and exclusions determined to be necessary under Water Code section 71640 within 10 days after its adoption, even though the ordinance is effective upon adoption; and

WHEREAS, Water Code section 71644 establishes that, from the publication of an ordinance pursuant to section 71641 until the repeal of the ordinance or end of the emergency, it is a misdemeanor punishable by up to 30 days in county jail and/or a fine

of up to $500 for any person to use or apply water from the District contrary to or in violation of any restriction or prohibition; and

WHEREAS, the adoption and enforcement of a comprehensive water conservation program will allow the District to delay or avoid implementing measures such as water rationing or more restrictive water use regulations pursuant to a declared water shortage emergency as authorized by California Water Code sections 350 et seq.; and

WHEREAS, the District has previously adopted a comprehensive water conservation program in 1977 through Ordinance 10, amended with Ordinance 11 also in 1977, and further amended in 2015 through Resolution 2015-09; and

WHEREAS, the District desires to incorporate and codify this water conservation program within its Rules and Regulations with necessary updates.

NOW THEREFORE, the Board of Directors of the McKinleyville Community Services District does hereby ordain the following:

Section1. ARTICLE VII: WATER CONSERVATION is added to the MCSD Rules and Regulations as attached in Exhibit A.

Section 2. Definitions. For the purpose of this Ordinance the following terms, phrases, words, and their derivations shall have the meaning given herein and if not already within the Rules and Regulations Definitions found in Rule 1 shall be added. The word "shall" is always mandatory and not merely directory.

a) **"District"** is McKinleyville Community Services District.
b) **"Board of Directors"** is the elected Board of Directors of the McKinleyville Community Services District.
c) **"Customer"** is any person using water supplied by the McKinleyville Community Services District.
d) **"Manager"** is the General Manager of the McKinleyville Community Services District.
e) **"Person"** is any person, firm, partnership, association, corporation, company, or organization of any kind.
f) **"Water"** is water from the McKinleyville Community Services District.
g) **"Outdoor surface"** is any patio, porch, veranda, driveway, or sidewalk.

Section 3. Publication. Within ten (10) days of adoption, the District will publish in a newspaper of general circulation this ordinance setting forth the restrictions, prohibitions, and exclusions determined by the District to be necessary.

This Ordinance shall take effect and be in full force and effective thirty (30) days after its passage.

Introduced at a regular meeting of the Board of Directors held on July 7, 2021 and passed and adopted by the Board of Directors on August 4, 2021, upon the motion of Director Binder and seconded by Director Orsini and by the following roll call vote:

AYES: Binder, Couch, Orsini, and Mayo
NOES:
ABSTAIN:
ABSENT: Clark-Peterson

Dennis Mayo, Board President

Attest:

April Sousa, MMC, Board Secretary

Appendix H

Notice of Public Hearing

RELEASE DATE: **MAY 6, 2026**

RUN THROUGH DATE: **MAY 31, 2026**

FROM: **MCKINLEYVILLE COMMUNITY SERVICES DISTRICT**

PAT KASPARI, GENERAL MANAGER

(707) 839-3251

SUBJECT: **NOTICE OF PUBLIC HEARING REGARDING THE 2025 URBAN WATER MANAGEMENT PLAN**

The McKinleyville Community Services District (MCSD) will hold a public hearing on June 3, 2026 at 6:00 PM. In person at Azalea Hall (1620 Pickett Road, McKinleyville) and Via ZOOM & TELEPHONE: Use ZOOM MEETING ID: 859 4543 6653 or DIAL IN TOLL FREE: 1-888-788-0099 (No Password Required!) The purpose of the hearing is to invite and accept public input on the draft 2025 Urban Water Management Plan which is available for public review at the District Office at 1656 Sutter Road, McKinleyville or available on-line at www.mckinleyvillecsd.com. Please direct comments or questions to Pat Kaspari, General Manager, 1656 Sutter Road, McKinleyville, CA 95519. (707) 839-3251 pkaspari@mckinleyvillecsd.com

##########

(End)

Appendix I

60 Day Notice to Cities and Counties

PHYSICAL ADDRESS:

1656 SUTTER ROAD
McKINLEYVILLE, CA 95519

MAILING ADDRESS:

P.O. BOX 2037
McKINLEYVILLE, CA 95519

McKINLEYVILLE COMMUNITY SERVICES DISTRICT

mckinleyvillecsd.com

MAIN OFFICE:

PHONE: (707) 839-3251
FAX: (707) 839-8456

PARKS & RECREATION OFFICE:

PHONE: (707) 839-9003
FAX: (707) 839-5964

Date: April 2, 2026

To: Michiko Mares, Humboldt Bay Municipal Water District
John Ford, Humboldt County Planning Dept.
Rachel Hernandez, City of Arcata

Re: 60-Day Notice Regarding Review of McKinleyville Community Services District's 2025 Urban Water Management Plan

The McKinleyville Community Services District (MCSD) is in the process of preparing and updating the 2025 Urban Water management Plan (UWMP), as required under the Urban Water management Plan Act. The deadline for completing and adopting the final 2025 Urban Water Management Plan is July 1, 2026.

California Water Code 10621 (b) requires an urban water supplier preparing an Urban Water Management Plan to notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is the MCSD notice to your agency that MCSD is in the process of reviewing and updating its UWMP. As with the 2020 UWMP, MCSD is reviewing and updating its 2025 UWMP in collaboration with Humboldt Bay Municipal Water District, and the City of Arcata.

If your agency would like to provide input or be involved in the review process, you are encouraged to contact myself or any of the above-named agencies to coordinate your participation.

If you have any questions, please feel free to contact me at (707) 839-3251

Sincerely,

Pat Kaspari, P.E.
General Manger
McKinleyville Community Services District