2025 URBAN WATER MANAGEMENT PLAN

FOR

HUMBOLDT BAY MUNICIPAL WATER DISTRICT

828 SEVENTH STREET
EUREKA, CA 95501

June 2026

Prepared With the Assistance of
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1.0 URBAN WATER MANAGEMENT PLAN INTRODUCTION AND LAY DESCRIPTION

This Urban Water Management Plan (UWMP) has been prepared for the Humboldt Bay Municipal Water District (HBMWD or District) in accordance with the California Urban Water Management Planning Act of 1983 (AB 797) (UWMP Act) as amended, including amendments made per the Water Conservation Bill of 2009 (SBX7-7). In addition, the 2025 UWMP Guidebook was utilized in the preparation of the District's 2025 UWMP. The overall intent of the UWMP is to provide long-term water supply and resource planning. The 2025 UWMP describes the District's water supplies and demands, as well as conservation efforts. The District's 2025 UWMP relies upon its knowledge and ability to consider the unique circumstances of our water agency. This Plan contains all information required by the California Water Code, Division 6, Part 2.6. This is the fourth such plan prepared by the District. The last plan was submitted in June 2021.

The data used for preparing this report comes primarily from the District's operational records. Figures relating to watershed runoff were obtained from the United States Geological Survey (USGS). Current and projected population figures for Humboldt County (County) are based on data from the California Department of Finance (DOF) with guidance from the Humboldt County Planning Department (HCPD). In some sections, tables of information suggested in the Department of Water Resources (DWR) 2025 UWMP Guidebook (Guidebook) are not applicable to the District. A majority of the tables from the Guidebook have been incorporated into this UWMP to help DWR's review process, even if they are not applicable to the District. The UWMP Checklist has also been included in Appendix A to support DWR's review process.

1.1 Urban Water Management Planning Act of 1983

The UWMP Act requires water agencies to develop Urban Water Management Plans (UWMPs). The UWMPs provide a framework for long term water planning and informs the public of a supplier's plans for long-term resource planning that ensures adequate water supplies for existing and future demands. The California Water Code (CWC) requires urban water suppliers to report, describe, and evaluate;

- Water deliveries and uses;
- Water supply sources;
- Efficient water uses;
- Demand management measures; and
- Water shortage contingency planning.

1.2 Water Conservation Act of 2009 (SB X7-7)

The Water Conservation Act of 2009 requires retail urban water suppliers to report the following in their UWMPs:

- Baseline gallons per capita per day (GPCD);
- 2015 Interim Urban Water Use Target;
- 2020 Urban Water Use Target; and
- Compliance Daily per Capita Water Use.

1.3 Lay Description

The District is located in Humboldt County and serves the greater Humboldt Bay region (Figure 1). The District was established in 1956 to provide municipal and industrial water for the area. The District's service area includes the most heavily populated and developed parts of the County. The District operates a regional water system and provides service at the wholesale

level. Since the early 1960s, the District has reliably supplied water to customers in the greater Humboldt Bay area of Humboldt County, California. The District provides treated, potable water for domestic and business use to seven municipalities (wholesale customers), as well as approximately 200 retail customers. Previously, the District also provided untreated surface water to two large industrial customers (pulp mills). One of the pulp mills closed down in the 1990s and the other pulp mill ceased operation in 2009. This change significantly reduced the water demand for the District. A significant investment would be necessary to utilize the industrial water system. The District does not have plans or initiatives to provide industrial water.

As a result of these changes in customers and water demand, the District now has more than enough water supply to serve existing and future customers, even during drought years. The District's only source of water, Ruth Lake Reservoir, has filled multiple times during record drought years and supplies a consistent, reliable source of water, reducing challenges to water supply availability. As noted in sections below, the District is evaluating options for the use of this additional water supply, including expansion of demand within its service territory, transfers to other users and dedication of portions of its water rights to instream flow enhancement. In 2029 the Water Rights permits are scheduled to be reevaluated. Currently, the outcome is uncertain.

2.0 URBAN WATER MANAGEMENT PLAN PREPARATION

2.1 Basis for Preparing a Plan

Requirement: *"Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems (CWC 10617).*

According to the UWMP Act, all water suppliers with more than 3,000 connections or distributing more than 3,000 acre-feet per year (AFY) of water shall complete an UWMP every five years ending in '5' and '0.' HBMWD is an urban water supplier and is preparing this Urban Water Management Plan pursuant to CWC 10617 et seq. HBMWD supplies more than 3,000 acre-feet per year of potable water to seven retail water suppliers and is preparing this update under the category of a wholesale water supplier. HBMWD is required to provide this update to its UWMP by July 1, 2026.

2.1.1 Suppliers With Both Wholesale and Retail Sales

The District provides treated, potable water for domestic and business use to seven municipalities (wholesale customers), as well as approximately 200 retail customers. HBMWD meets the definition of a Wholesaler.

2.1.2 Public Water Systems

HBMWD collaborates closely with Humbold County Public Works and the seven municipalities (wholesale customers).

2.2 Individual or Regional Plan

HBMWD is preparing an individual plan, and although coordinating with other regional agencies, HBMWD is not preparing a region plan. (Table 2-2)

2.2.1 Regional Reporting

Although HBMWD collaborates closely with its seven wholesale water supply customers, HBMWD is not preparing a regional Report.

2.3 Fiscal or Calendar Year and Units of Measure

HBMWD has prepared this UWMP using calendar year data. The typical units of measure in this UWMP are acre-feet (Table 2-3).

2.4 Coordination and Outreach

Requirement: *An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water*

supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c). (CWC 10631).

The District collaborated with multiple local and stakeholder agencies in preparation of this UWMP. This effort was conducted to inform the agencies of the planning activities of the District, to gather quality data for use in this UWMP, and to coordinate with other regional plans and initiatives. To that end, the District worked with its four larger municipal customers that are Urban Water Suppliers as defined by the Urban Water Management Plan Act: City of Arcata, City of Eureka, Humboldt Community Services District, and McKinleyville Community Services District. The District provided assistance and information needed by these agencies for the preparation of their UWMPs and they reciprocated. Monthly meetings were conducted from March 2026 through May 2026 between the District and these agencies, which were called 2025 UWMP Working Group Meetings. Appendix B shows a sample Work Group Meeting Agenda and signup sheet. All seven of the District's wholesale customers will be provided with copies of the District's adopted 2025 UWMP.

2.4.1 Wholesale and Retail Coordination

Requirement: *Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable. (CWC 10620 (d)(2)).*

HBMWD collaborates closely with its seven wholesale water supply customers, meeting with them monthly to address water quality and supply regulatory requirements, operational and infrastructure replacement needs, and funding needs. During these meetings UWMP data is exchanged between the District and the retail agencies.

2.4.2 Coordination with Other Agencies and the Community

HBMWD collaborates closely with Humboldt County Planning Department.

2.4.3 Notice to Cities and Counties

Requirement*: Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, 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. (CWC 10621 (b)).*

In addition to the above coordination efforts, notification was provided to local city and county, land-use planning agencies prior to the UWMP public hearing that the District was in the process of reviewing and updating its UWMP. Appendix C contains a copy of the Notification letter sent to the agencies, 60-days prior to the public hearing, listed below;

- Humboldt County Planning Department;
- City of Arcata;
- City of Eureka;
- Humboldt CSD;
- McKinleyville CSD;
- City of Blue Lake;

- Fieldbrook-Glendale CSD; and
- Manila CSD.

2.5 Submittal Tables

Submittal Table 2-2: Plan Identification		
Select One	**Type of Plan**	**Name of Regional Alliance or RUWMP** (Drop Down List)
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	
NOTES:		

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☑	Supplier is a wholesale supplier
☐	Supplier is a retail supplier
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 the drop down list).	
Unit	AF
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

Submittal Table 2-4 Wholesale: Water Supplier Information Exchange Water Code Section 10631(h)	
☐	Check the box if the Supplier has informed more than 10 other water suppliers of water supplies available. **Completion of the table below is optional. If not completed, include a list of the water suppliers that were informed.**
	Provide page number for location of the list.
☑	Check the box if the Supplier has informed 10 or fewer other water suppliers of water supplies available. **Complete the table below.**
Water Supplier Name	
Add additional rows as needed	
	Humboldt County Planning Dept
	City of Arcata
	City of Eureka
	Humboldt CSD
	McKinleyville CSD
	City of Blue Lake
	Fieldbrook-Glendale CSD
	Manila CSD

3.0 SERVICE AREA DESCRIPTION

This Section includes a description of the District's service area, climate, Public Water System, and City organizational structure and history.

3.1 General Description

***Requirement**: Describe the service area of the supplier. (CWC 10631 (b)).*

HBMWD operates a domestic water system which supplies treated drinking water. HBMWD's system consists of the following facilities:

- R. W. Matthews Dam which forms Ruth Lake Reservoir (Ruth Lake, Ruth Reservoir) in southern Trinity County;
- Gosselin Hydro-Electric Power House at R.W. Matthews Dam;
- Diversion, pumping, and control facilities adjacent to the Mad River near Essex at the John R. Winzler Operations and Control Center;
- Storage and treatment facilities; and
- The distinct pipeline systems which deliver treated drinking water to HBMWD's customers.

R. W. Matthews Dam impounds runoff from the upper quarter of the Mad River basin, an area of approximately 121 square miles. The capacity of Ruth Reservoir, impounded by R.W. Matthews Dam, is approximately 48,030 acre-feet.

A portion of the water stored in Ruth Lake is released each summer and fall to satisfy HBMWD's downstream diversion requirements, as well as maintain minimum bypass flow requirements in the Mad River below Essex. Although HBMWD impounds water at Ruth Lake and diverts water at Essex, the operations do not significantly affect the natural flow regime in the Mad River. There are several reasons for this that are described as follows.

The total volume of water impounded and diverted by HBMWD represents a small percentage of the natural yield of the Mad River watershed. The Mad River's average annual discharge into the Pacific Ocean is approximately 992,378 AF (1951-2025, Mad R NR Arcata CA - USGS-1148100). Ruth Reservoir, in its entirety, represents approximately 4.8% of the total average annual runoff from the Mad River basin. The total approximately 48,030 AF capacity of Ruth Reservoir is not drawn down each year, so the amount of winter-season runoff captured in the reservoir is yet a smaller percentage of the total runoff. With respect to diversions, the current withdrawal rate at Essex averages 8 million gallons per day (approximately 10,761 AF per year), which is only approximately 1% of the total annual average runoff of the Mad River watershed and only 1/3 of the lowest recorded inflow into Ruth Reservoir of approximately 33,390 AFY (2001).

This diversion is accomplished by extracting river water from the underlying aquifer via Ranney Collectors. In the winter months, additional filtration is provided by an in-line filtration facility. The full diversion capacity of 75 MGD (84,000 AF per year) is approximately 8% of the total annual average runoff of the watershed. The balance of the capacity above that is diverted via the Ranney Collectors, can be pumped from a screened surface diversion, also at Essex.

3.2 Service Area Boundary Maps

The HBMWD service area boundary is shown in Figure 1.

3.3 Service Area Climate

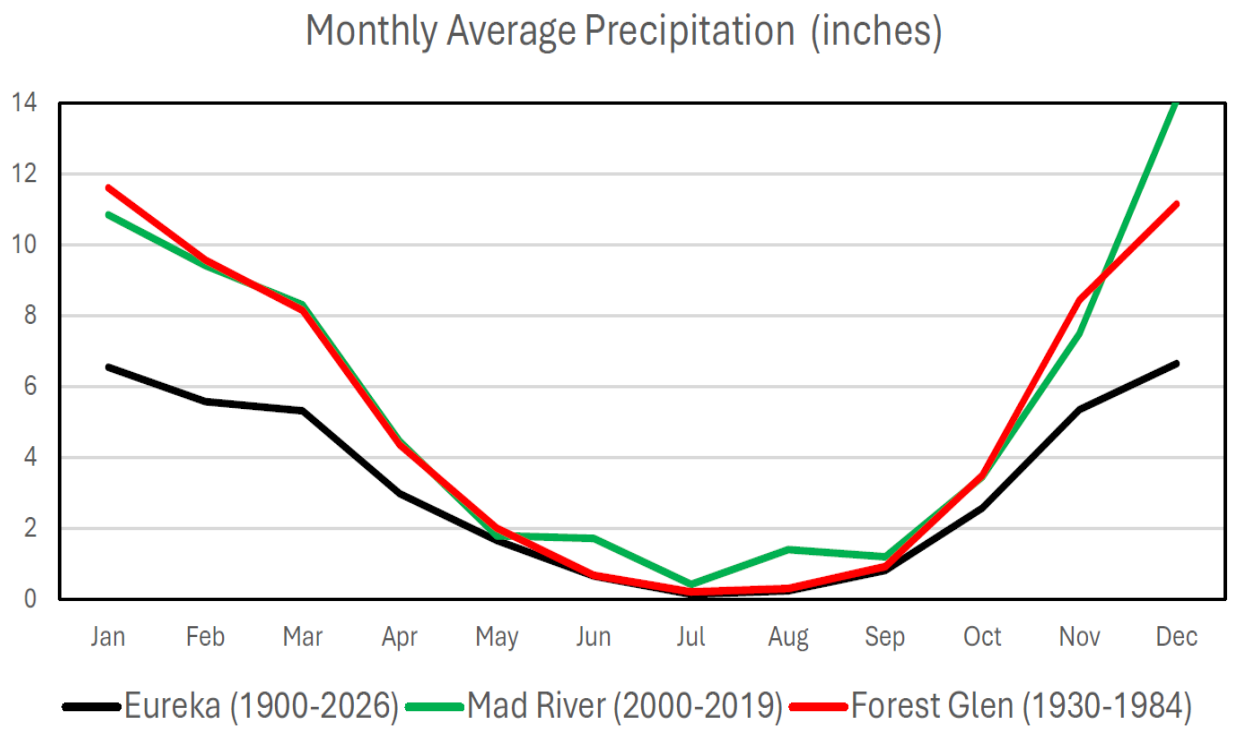
***Requirement**: Describe the service area of the supplier, including… climate…. (CWC 10631 (b)).*

According to the National Oceanic and Atmospheric Administration (NOAA) and the Western Regional Climate Center (WRCC), Humboldt and Trinity County's watersheds receive high annual rainfall. Mad River and Forest Glen weather stations are the closest sources of weather data near Ruth Reservoir. Below are the average precipitations that characterize the climates in Eureka and at Ruth Lake.

Average Annual Precipitation (inches)

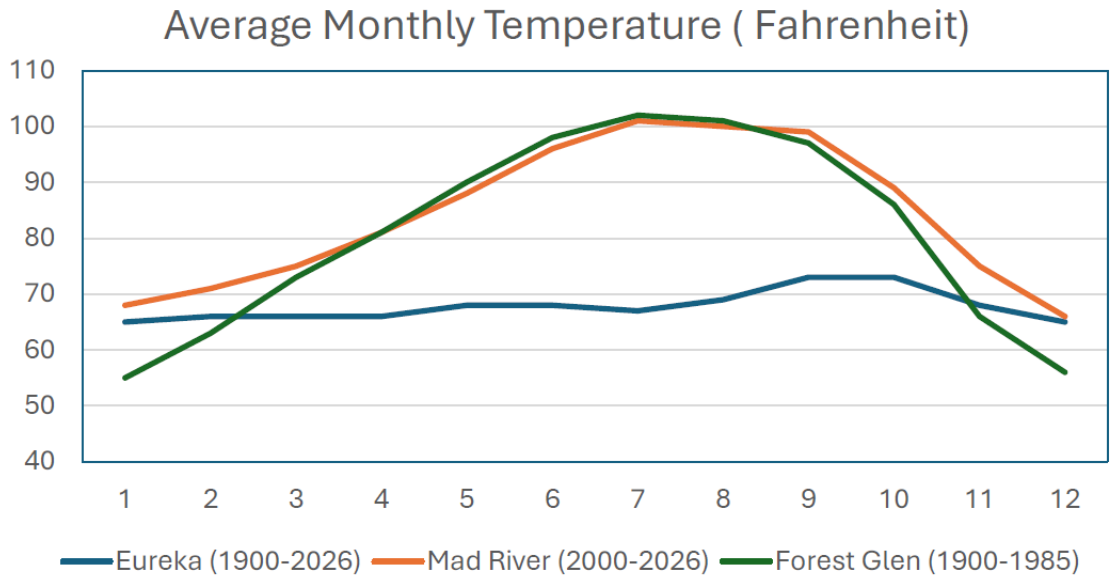
Eureka (1900-2026)	38.32
Mad River (2000-2019)	62.89
Forest Glen (1930-1984)	53.68

Average monthly precipitation data for Eureka, Mad River, and Forest Glen are shown in the graph below:



The above graph shows that the area near Ruth Lake Reservoir receives approximately twice the average precipitation in the wet season compared to Eureka.

Average monthly temperature for Eureka and the area near Ruth Lake is shown in the graph below:



Average monthly temperatures at Eureka range between 65°F to 75°F while average monthly temperatures near the Ruth Lake (Mad River and Forest Glen) are between 55°F to 100°F.

3.4 Service Area Population and Demographics

***Requirement**: Describe the service area of the supplier, including current and projected population …The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available . (CWC 10631).*

3.4.1 Service Area Population

The District used data from the US Census for Humboldt County population on census years and was combined with Humboldt County GIS census block data analysis to determine the HBMWD service area population as a percentage of the entire County. The result indicated that in 2020 the District's service area population was approximately 67.59% of the population of Humboldt County. Additional results from the GIS analysis indicate that in 2024 HBMWD service population was approximately 72% of the County population. Between the benchmark data points, population growth rate was proportioned.

The California Department of Finance (DOF) created a database with individual files for each county in the State containing population data. DOF provided estimated population projections served by the District (Table 3-1W). The current data has population projections for the year 2020 and population projections up to the year 2045. Humboldt County's population projection through 2045 was taken from this database and used to project the population of HBMWD.

Total Population Projections for California Counties, July 1 2025-2045

	2025	2030	2035	2040	2045
Humboldt County	132,257	140,919	139,623	138,307	137,035
HBMWD	**94,963**	**94,409**	**93,541**	**92,680**	**91,828**
Annual % Change	-0.10%	-0.18%	-0.18%	-0.18%	-0.18%

Projections Prepared by Demographic Research Unit, California Department of Finance, September 2025

3.4.2 Other Social, Economic, and Demographic Factors

***Requirement**: Describe the service area of the supplier, including other demographic factors affecting the supplier's water management planning. (CWC 10631).*

Age distribution, income levels, and household size can affect water consumption patterns. U.S. Census Bureau QuickFacts: Humboldt County, California indicate:

Persons under the age of 5	4.4%
Persons under the age of 18	18.2%
Persons over the age of 65	21.0%
Median household income	$61,160
Per Capita Income	$36,080
Persons living in poverty	18.0%
Persons per household	2.37

3.5 Land Use within Service Area

Urban land use is concentrated in cities like Eureka and Arcata, which serve as hubs for residential, commercial, and governmental activities. Coastal zones include protected habitats, recreational areas, and small fishing communities. Additionally, large portions of the county are dedicated to parks, wildlife reserves, and public lands, supporting outdoor recreation and environmental preservation.

3.6 Submittal Tables

Submittal Table 3-1 Wholesale: Population - Current and Projected
Water Code Section 10631(a)

Population Served	2025	2030	2035	2040	2045	2050(opt)
	94,963	94,409	93,541	92,680	91,828	

NOTES: Data from the California Department of Finance (DOF) to determine the estimated population served by the District. Staff at the Humboldt County Planning determine the

4.0 WATER USE CHARACTERIZATION

This Section describes and quantifies the current and projected water uses within the Districts service area.

4.1 Non-Potable Versus Potable Water Use

The District provides treated, potable water for domestic and business use to seven municipalities (wholesale customers), as well as approximately 200 retail customers. From the early 1960s to the 1990s, the District also provided untreated (non-potable) surface water to two industrial customers (pulp mills). . One of the pulp mills closed down in the 1990s and the other pulp mill ceased operation in 2009. This change significantly reduced the water demand for the District. A significant investment would be necessary to utilize the industrial water system. The District does not have plans or initiatives to provide industrial water.

4.2 Past, Current, and Projected Water Use by Sector

Water Code Section 10631(d) does not require Wholesale Suppliers to report quantities of past, current, or projected water uses by sector in their UWMP;

4.2.1 Water-Use Sectors Listed in Water Code

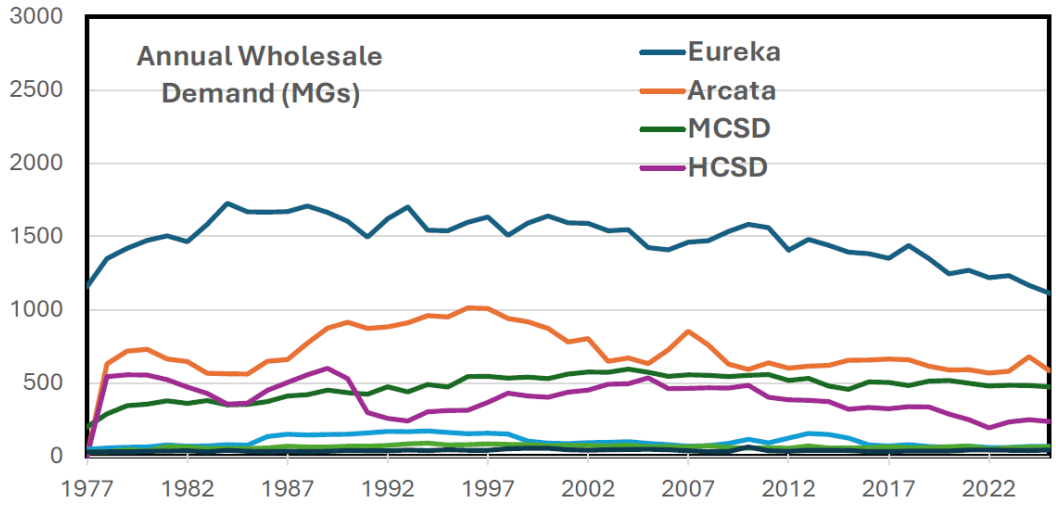
Wholesale Suppliers are not required to report water use by sector.

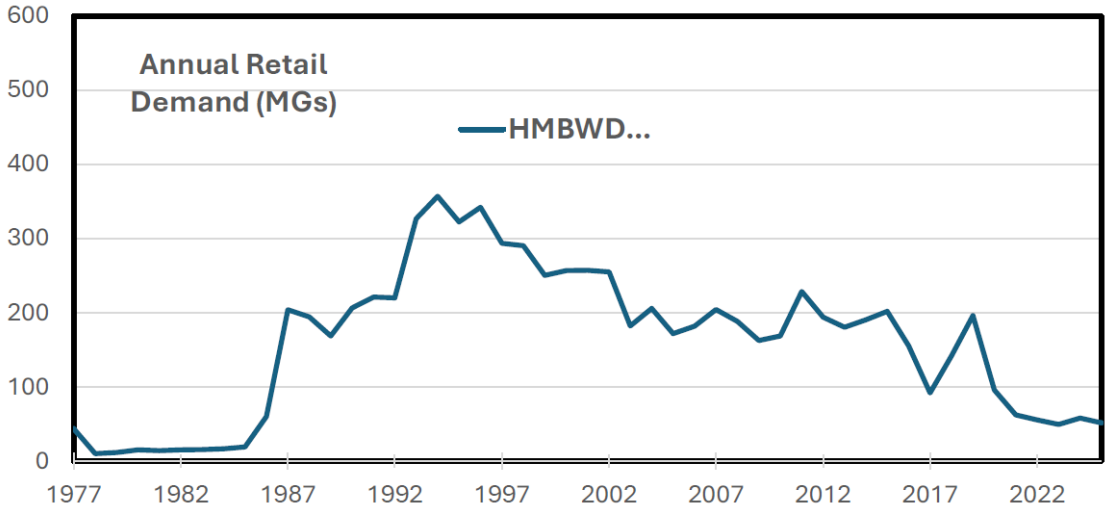
4.2.2 Optional Water-Use Sectors in Addition to Those Listed in Water Code

Wholesale Suppliers are not required to report optional water-use sectors in addition to those listed in Water Code

4.2.3 Past Water Use

Although, Wholesale Suppliers are not required to quantify past water use, past water use is shown in the graphs below:





4.2.4 Current Water Use

Water Code does not require Wholesale Suppliers to report current water use by sector, Water use for 2025 is reported in Table 4-1 W.

4.2.5 Projected Water Use

In accordance with Water Code Section 10635(a), all Suppliers will need to report their projected water use, in five-year increments through 2045.

4.2.6 Water-Use Projections by Sector

Water Code does not require Wholesale Suppliers to project water use by sector. Wholesale Suppliers are encouraged to report water use in Optional Submittal Tables 4-2 W. This information can be used in the Supplier's reliability assessment.

4.2.7 Standards, Codes, Ordinances, and Plans

Water Code does not require Wholesale Suppliers to provide information regarding standards, codes, ordinances, and plans.

4.2.8 Lower-Income Households

The Water Code does not require Wholesale Suppliers to include projections of lower-income household water use. Based on US Census data 2020, 18% of Humboldt County residents live in poverty.

4.2.9 Climate Change Considerations

The August 27, 2018 North Coast Region Report for California's Fourth Climate Change Assessment (pages 19-20) notes that "In the North Coast region, model predictions of annual precipitation fall within the range of historical variation…but trend towards slightly higher (2-16%) precipitation across the region by the end of the century. Recent research indicates that the precipitation variability is likely to increase in the future".

Overall, water supply and demand are projected to have low to moderate vulnerability to climate change in the North Coast region in general, and even less so in the Mad River watershed. The Mad River watershed is rainfall-dominated (little to no snowpack), and annual demand on water supplies available from the watershed are typically well below

10% of mean runoff. As noted in Section 3.3.1, HBMWD has estimated that demand up to 36 MGD (compared to a current annual average usage of 8 MGD) could be met reliably, even if hydrologic conditions similar to the 1976-77 drought occurred.

4.3 Distribution System Water Loss

Water Code Section 10631(d) does not require Wholesale Suppliers to report distribution system water loss in their UWMP.

4.3.1 Previous Five Years Distribution System Losses

Water Code Section 10631(d) does not require Wholesale Suppliers to report previous five-years distribution system water loss in their UWMP.

4.3.2 Progress Toward Meeting the Water Loss Performance Standard

Water Code Section 10631(d) does not require Wholesale Suppliers to report quantities of past, current, or projected water uses by sector in their UWMP.

4.4 Submittal Tables

Optional **Submittal Table 4-1 Wholesale: Total Uses for Potable and Non-Potable Water — Actual**
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		**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
Sales to other agencies	City of Arcata	Potable	1797
Sales to other agencies	City of Eureka	Potable	3418
Sales to other agencies	Humboldt CSD	Potable	727
Sales to other agencies	McKinleyville CSD	Potable	1456
Sales to other agencies	City of Blue Lake	Potable	202
Sales to other agencies	Fieldbrook-Glendale CSD	Potable	193
Sales to other agencies	Manila CSD	Potable	128
Incidental Retail Use	HBMWD Retail Customers	Potable	158
Distribution System Water Loss	Estimated Loss (20%)	Potable	2,019.75
		Subtotal Potable	10,099
		Subtotal Non-Potable	0
		Total	10,099

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:

Optional **Submittal Table 4-5 Wholesale: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)**		
Public Water System ID #	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		
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES: Water Code Section 10631(d) does not require Wholesale Suppliers to report previous five-years distribution system water loss in their UWMP.		

5.0 SB X7-7 BASELINES, 2020 TARGETS, AND 2025 REPORTING

Wholesale Suppliers are not required to calculate baseline, targets, or compliance GPCDs. However, they are required to provide an assessment of their present and proposed future measures, programs, and policies that will help the Retail Suppliers in their wholesale service area to achieve their Targets.

Suppliers that only met the definition of an urban retail water supplier (as defined in Water Code Section 10608.12) after 2020 were not subject to SB X7-7 or UWMP requirements during the 2020 reporting cycle.

5.1 Reporting Requirements for Wholesale Suppliers

Proposed future measures, programs, and policies that will help the Retail Suppliers in HBMWD's service area to achieve their Targets include:

- Monthly meeting with Retailers where water conservation can be discussed;
- Potential for a table at the Humboldt County Fair by HBMWD and Retailer representatives;
- HBMWD will provide technical assistance to retailers on water conservation issues as needed: and
- Regional water conservation activities.

5.2 Reporting Requirements for Retail Suppliers

This section applies to Retail service water agencies only.

5.2.1 Supplier was Not an Urban Retail Water Supplier in 2020

This section applies to Retail service water agencies only.

5.2.2 Supplier Met 2020 Target in 2020

This section applies to Retail service water agencies only.

5.2.3 Supplier Did Not Meet 2020 Target in 2020—No Change to Service Area

This section applies to Retail service water agencies only.

5.2.4 Supplier Did Not Meet 2020 Target-Change to Service Area Since 2020

This section applies to Retail service water agencies only.

5.2.5 Types of Changes to Service Area Since 2020

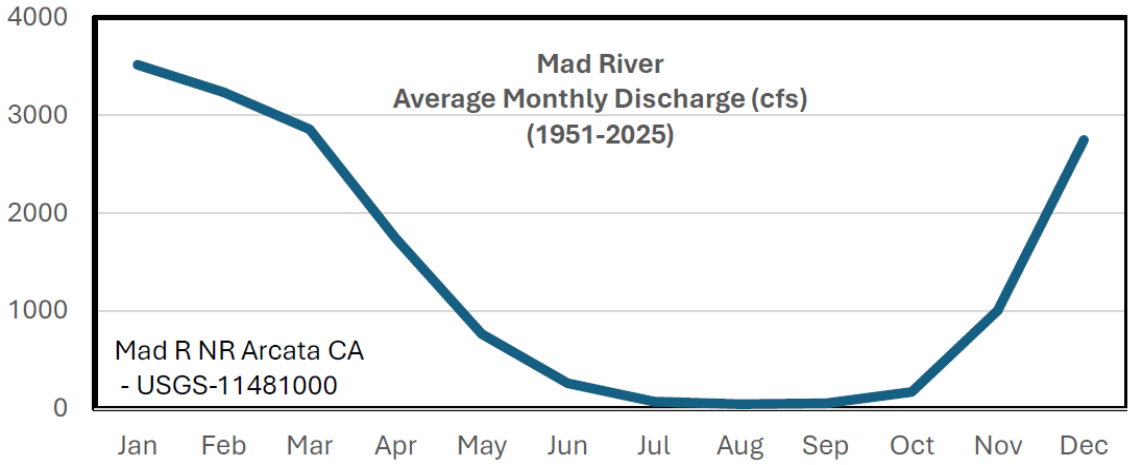
This section applies to Retail service water agencies only.

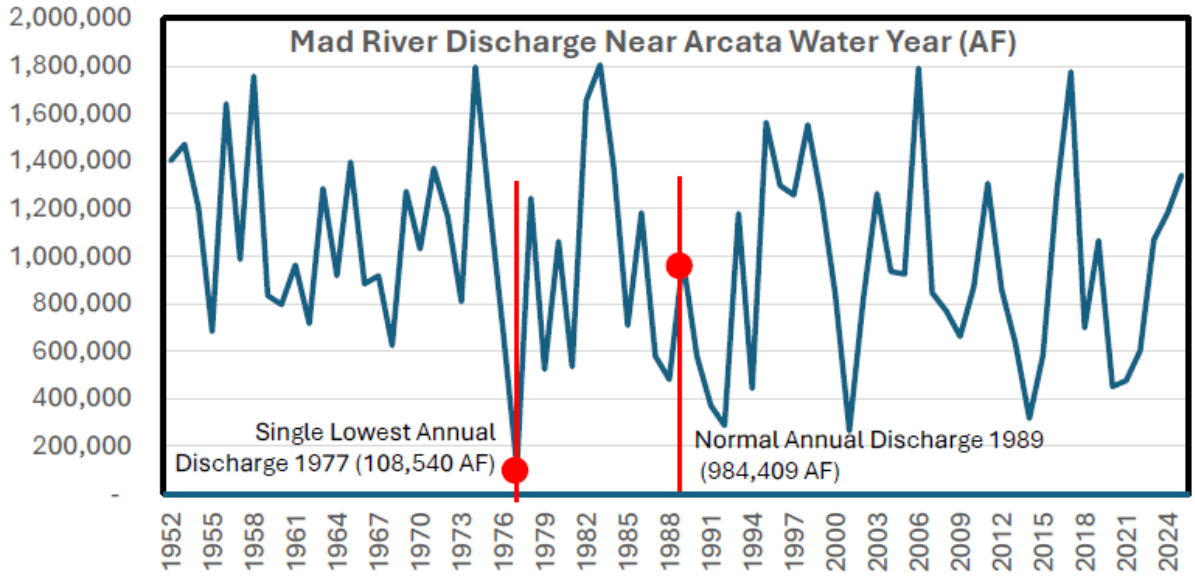
5.2.6 Funding Eligibility

This section applies to Retail service water agencies only.

6.0 NORMAL-YEAR WATER SUPPLY CHARACTERIZATION

During a normal water year, the Ruth Lake area averages 53-63 inches of rainfall (towns of Mad River and Forest Glen). An average of 272,681 AF (over the entire record period from 1981 to 2025) of water flows into the reservoir via the Mad River, and the average runoff for the watershed near the District's diversion facilities at Essex is 992,458 AFY (over the entire record period from 1963 to 2025). The average annual runoff data was provided by USGS at Gage Station 1148100 on the Mad River near Arcata, CA. As shown in Table 7-1 W, the Water Year ending in 1989 was considered an average water year because there was an average runoff for the watershed that year. This Section describes and quantifies the current and projected sources of water available to the agency including supplies from other agencies, surface water, groundwater, recycled water, desalinated water, transfers and exchanges, and any other source water the supplier considers part of its supply portfolio.





6.1 Water Supply Analysis Overview

During a normal water year, the Ruth Lake area averages approximately 65.42 inches of rainfall. Approximately 173,000 AF of water flows into the reservoir via the Mad River, and 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. As shown in Table 7-1 W, 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. Table 7-2 W shows the normal year supply and demand comparison. During a normal water year, the Ruth Reservoir and Mad River watershed have enough water supply to meet the District's current maximum permitted diversion of 84,000 AFY.

HBMWD is in the process of licensing their water rights permit. The current water rights permit will be renewed in 2029, and the resulting permitted diversion volume is unknown. In a worst-case scenario, the District would only be permitted to divert the total amount currently under contract with the local agencies, plus an estimate for HBMWD retail demand (1,303 AFY), plus an estimated 20% HBMWD system loss (5,696 AFY) for a total of 28,480 AFY. If during a normal year there is enough water supply to meet the District's current maximum permitted diversion of 84,000 AFY, then certainly they will have ample supply for the reduced demand of 28,480 AFY.

6.1.1 Specific Analysis Applicable to All Water Supply Sources

The specific analysis conducted to verify water supply to meet demand during a normal year, single driest year, and 5 driest years is presented in Section 7 of this plan.

6.1.2 Special Considerations

Regulatory uncertainty exists related to the 2029 water rights permit licensing which could result in a decrease in volume of water allowed to be diverted.

6.1.3 Climate Change Effects

Overall, water supply and demand are projected to have low to moderate vulnerability to climate change in the North Coast region in general, and even less so in the Mad River watershed. The Mad River watershed is rainfall-dominated (little to no snowpack), and annual demand on water supplies available from the watershed are typically well below 10% of mean runoff. As noted in Section 3.3.1, HBMWD has estimated that demand up to 36 MGD, compared to a current annual average usage of 8 MGD, could be met reliably, even if hydrologic conditions similar to the 1976-77 drought occur.

6.1.4 Regulatory Conditions and Project Development

Regulatory uncertainty exists related to the 2029 water rights permit licensing which could result in a decrease in volume of water allowed to be diverted.

6.1.5 Other Locally Applicable Criteria

There are no other locally-applicable criteria related to water supply during a normal year.

6.1.6 Wholesale and Retail Suppliers Coordination

HBMWD collaborates closely with its seven wholesale water supply customers, meeting with them regularly to address water quality and supply regulatory requirements, operational and infrastructure replacement needs, and funding needs. During these meetings UWMP data is exchanged between the District and the retail agencies.

6.2 Water Supply Characterization

The following section describes the District's water supply.

6.2.1 Purchased or Imported Water

The source of water distributed by the District is from the Mad River. The R.W. Mathews dam, located in Trinity County, impounds water to form Ruth Reservoir (Figure 2). The Mad River flows from Trinity County into Humboldt County where water is diverted at the District's Essex pumping facility located approximately 75 miles downstream from the dam. The District does not purchase or import water from any other source.

6.2.2 Ground Water

At the District's Essex Operations Center, municipal water is pumped from the aquifer beneath the Mad River by four Ranney wells. The water that is pumped by the Ranney wells is continually recharged by surface water from the Mad River, part of which is released from Ruth Lake pursuant to the District's water rights permits. Therefore, the District does not pump or deliver groundwater and Table 6-1 W is not applicable to the District. Groundwater is not identified as an existing or planned source of water available to the District.

6.2.2.1 Basin Description

Although the District does not pump groundwater, in 2006, the District completed a Groundwater Study of the aquifer in the Essex Reach of the Mad River in the vicinity of the Ranney wells. This study was done to support the District's Capital Improvement Plan, and to better understand the basin hydrology and the interactions between the Ranney wells and the surrounding environment for the projects proposed. The site studied was the Mad River Groundwater Basin which is located in the North Coast Hydrologic Region. This basin is not adjudicated. DWR has determined this Basin to be a low priority classification. It is composed of the Mad River Lowland Subbasin (Basin #1-8.01).

6.2.2.2 Basin Management Information

The Mad River Groundwater Basin is not adjudicated. DWR has determined this Basin to be a low priority classification.

6.2.2.3 Other Considerations

Groundwater is not identified as an existing or planned source of water available to the District.

6.2.2.4 Past Five Years Groundwater Pumping

HBMWD does not use, or plan to use, self-supplied groundwater as part of its water supply. HBMWD utilizes self-supplied surface water for its water supply.

6.2.3 Stormwater

HBMWD does not have jurisdiction over stormwater facilities.

6.2.4 Wastewater and Recycled Water

HBMWD does not have a wastewater treatment plant and does not generate or distribute recycled water.

6.2.4.1 Recycled Water Coordination

HBMWD does not have a wastewater treatment plant and does not generate or distribute recycled water.

6.2.4.2 Wastewater Collection, Treatment, and Disposal

HBMWD does not have a wastewater treatment plant and does not generate or distribute recycled water.

6.2.4.2.1 Wastewater Collected Within the Service Area

HBMWD does not have a wastewater treatment plant and does not generate or distribute recycled water.

6.2.4.2.2 Wastewater Treatment and Discharge

HBMWD does not have a wastewater treatment plant and does not generate or distribute recycled water.

6.2.4.3 Recycled Water System Description

HBMWD does not have a wastewater treatment plant and does not generate or distribute recycled water.

6.2.4.4 Current, Potential, and Projected Recycled Water Uses

HBMWD does not have a wastewater treatment plant and does not have plans, or the potential to generate or distribute recycled water.

6.2.4.4.1 Potential Recycled Water Use

HBMWD does not have a wastewater treatment plant and does not have plans, or the potential to generate or distribute recycled water.

6.2.4.4.2 Projected Recycled Water Use

HBMWD does not have a wastewater treatment plant and does not have plans, or the potential to generate or distribute recycled water.

6.2.4.5 Actions to Encourage and Optimize Future Recycled Water Use

HBMWD does not have a wastewater treatment plant and does not have plans, or the potential to generate or distribute recycled water.

6.2.5 Desalinated Water Opportunities

HBMWD does not have a need to investigate desalination opportunities.

6.2.6 Water Exchanges or Transfers

This section describes any existing, planned, or potential future water exchanges or transfers.

6.2.6.1 Exchanges

The District does not have current and/or planned water supply exchanges.

6.2.6.2 Transfers

The District does not have current and/or planned water supply transfers.

6.2.6.3 Emergency Interties

The City of Eureka maintains interties with HCSD which owns and operates groundwater wells. If an emergency shut down event on HBMWD's distribution system occurs, HCSD can use these interties to supply water to the regional distribution system and to other regional water suppliers. HCSD is in the process of upgrading infrastructure to allow more efficient use of the intertie and groundwater sources during water emergencies.

6.2.7 Supply From Storage

The District uses the Ruth Lake Reservoir for storage which is extracted at the Essex facility. No other short-term or long-term storage is used by the District.

6.2.8 Other

There are no other water exchanges or transfers to discuss.

6.2.9 Future Water Projects

As previously discussed, the District has an abundance of water to supply its customers. This abundance of water will be available to the District in average, single-dry, and multiple-dry water years, as will be discussed in the following sections. Therefore, no new water supply projects that create a *new source of supply* are planned or deemed necessary at this time. Table 6-7 W (Expected Future Water Supply Projects or Programs) is not applicable.

6.3 Energy Use

Energy use information for the District is not readily available and is not reported in this plan.

6.4 Submittal Tables

Submittal Table 6-1 Wholesale: Groundwater Volume Pumped							
☑	Check the box if the Supplier does not pump groundwater.						
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)						
Groundwater Type **Drop Down List** May use each category multiple times	Potable or Non-Potable (OPTIONAL) Drop down list	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Add additional rows as needed							
		Total	0	0	0	0	0
DWR NOTES:							
NOTES:							

Submittal Table 6-3 Wholesale: Wastewater Treatment and Discharge Within Service Area
Water Code Section 10633(b)

☑ Check the box if the Wholesale Supplier neither distributes nor provides supplemental treatment to recycled water. Proceed to the next table.

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 (AF)	Total 2025 Volume of Water Treated (AF)	2025 Outcomes of Treated Wastewater										
				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 (AF)	Treatment Level Drop down list	Volume (AF)	Treatment Level Drop down list	Volume (AF)	Treatment Level Drop down list	Volume (AF)	Treatment Level Drop down list	Volume (AF)	Name of other entity
Add additional rows as needed.														
Total		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.
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 Wholesale: Current and Projected Recycled Water Uses
Water Code Section 10633(c),(d),(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) :	
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :	
Volume of Supplemental Water Added in 2025 (OPTIONAL) :	
Source of 2025 Supplemental Water (OPTIONAL) :	

Name of Receiving Supplier or Direct Use by Wholesale Supplier	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	Potential Recycled Water Use	
									Volume (AF)	Narrative page number (OPTIONAL)
Add additional rows as needed										
Subtotal Potable			0	0	0	0	0	0	0	
Subtotal Non-Potable			0	0	0	0	0	0	0	
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 reports 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:

Submittal Table 6-5 Wholesale: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual Water Code Section 10633(e)		
☑	Check the box if recycled water was not used or distributed by the supplier in 2025, nor projected for use or distribution in 2020. Proceed to the next table.	
Name of Receiving Supplier or Direct Use by Wholesale Supplier	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Add additional rows as needed		
Total	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.		
NOTES:		

Submittal Table 6-7 Wholesale: 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. Proceed to the next table.						
☐	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.						
	Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop down list	Planned Implementation Year	Planned for Use in Year Type **Drop Down list**	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Add additional rows as needed							
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.							
NOTES:							

Submittal Table 6-8 Wholesale: Water Supplies — Actual
Water Code Section 10631(b)

Water Supply	Additional Description (as needed)	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		**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed				
Surface water (not desalinated)	Mad River Storage and Diversion	Potable	10,099	
		Subtotal Potable	10,099	0
		Subtotal Non-Potable	0	0
		Total	10,099	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.
Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES: Based on vulume of sales plus an estimated system loss of 20%. System loss is measure from the diversion point to the retailer meters.

Submittal Table 6-9 Wholesale: Water Supplies — Projected
Water Code Section 10631 (b)

Water Supply			Projected Water Supply (Report to the Extent Practicable)									
			2030		2035		2040		2045		2050 (opt)	
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	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed												
Surface water (not desalinated)	Mad River Storage and	Potable	28,480		28,480		28,480		28,480		28,480	
		Subtotal Potable	28,480	0	28,480	0	28,480	0	28,480	0	28,480	0
		Subtotal Non-Potable	0	0	0	0	0	0	0	0	0	0
		Total	28,480	0	28,480	0	28,480	0	28,480	0	28,480	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 a Submittal Table 2-3.
Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.
NOTES:

7.0 WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

This Section describes the reliability of the District's water supply and projects the reliability for the next 20 years. This description will be provided for normal, single dry years and multiple dry years.

7.1 Constraints on Water Sources Considerations

As will be shown in the discussion below, there are no hydrologic or climate related constraints to the District's water source over the planning period.

There is potential for regulatory constraint on the water source. The District has appropriative water rights permits from the State Water Resources Control Board (SWRCB) through the year 2029 for surface water storage and diversion. These are Permit No. 11714 and Permit No. 11715 respectively. HBMWD is in the process of licensing their water rights permit. After 2029, it is not known what volume of water the District will be able to store and divert. There is the potential for a reduction of water rights volumes. In that case, the SWRCB would review water use over a period of time to determine the "municipal use" and add a growth allowance.

According to the Humboldt Bay Municipal Water District 2020 UWMP:

The only water quality issue occasionally encountered by the District in the past was turbidity. Generally, turbidity in the Ranney Well source water has been very low and meets the turbidity standards set by the California Department of Public Health (CDPH), now known as the Division of Drinking Water (DDW). However, during or following severe winter storm events, turbidity in the source water can rise beyond the standards set by DDW. In the late 1990s, an extremely heavy "El Nino" rainy season caused a prolonged series of storms that raised turbidity in the source water to such a level that DDW became concerned that it could potentially interfere with the disinfection process, and therefore, pose a threat to public health. In 1997, DDW directed all of the Public Water Systems in the Humboldt Bay area (the District and its wholesale municipal customers) to address the wintertime turbidity issue and to meet the turbidity standards established by DDW. The District initiated a process with its seven wholesale customers to determine the most cost-effective way to meet the State's requirement. The solution was to design and construct a regional Turbidity Reduction Facility (TRF). The TRF was completed in April 2003 and now operates during the winter storm season to reduce higher turbidities in accordance with the State's standards.

As the District's ongoing water monitoring and testing program indicates that the District's water quality has been and continues to be very high and with the turbidity issue taken care of by the TRF, the District does not foresee any current or projected water supply impacts resulting from water quality.

The water retailers provided HBMWD projected demand over the planning period. Each retailer demand projections represent unique situations including development and growth in specific service areas.

7.2 Water Service Reliability Assessment

Throughout the years, there have been studies that refer to the District's water source and its reliability. Bechtel Corporation (Bechtel) was retained in the 1950s to perform various water supply studies and to complete the design and specifications for the original regional water system. During this time, Bechtel completed a detailed operations study of the reservoir storage to determine the safe yield of the original project pursuant to the District's downstream diversion

requirements and the requirements in the District's water rights permits. The study was done on the basis of a 75 MGD average annual diversion rate at Essex. Existing prior water rights downstream of Ruth Lake were incorporated into this study. Bechtel confirmed the safe yield of the reservoir to be 75 MGD, assuming the driest period of record they studied (1923-1924). Bechtel reported "The Mad River Development will utilize the available supply and by storage regulation make this supply available for year-round diversion at Essex. The firm supply made available at Essex is measured by the amount of water the District can divert under its permits in the driest year on record 1923-1924." *(*Reference: *Engineering Report on Mad River Development, Bechtel Corporation, October 1960).*

Subsequent to Bechtel's operations study, DWR calculated the safe yield of Ruth reservoir to be very close to what Bechtel had determined *(Reference: Bulletin No. 142-1, North Coastal Hydrographic Area).* The State also used the 1923-24 drought period in its determination. These hydrological conditions were supported by subsequent studies by DWR, the U.S. Army Corps of Engineers, Bechtel Corporation, and Winzler and Kelly Engineering.

In a study by DWR titled "Office Report on Preliminary Investigation of Mad River," DWR acknowledges that the Ruth Lake area where the District keeps its storage supply has "heavy and frequent precipitation." DWR also said in the report that the mean seasonal runoff of the Mad River as measured at Arcata at the time (1958) was 750,000 AFY, which is far more than the District's permitted 84,000 AFY and the actual projected water demands from its customers as shown in Table 7-4 W.

The U.S. Army Corps of Engineers also discusses the mean annual runoff of the Mad River in their 1968 report titled, "Interim Review Report for Water Resources Development, Mad River, California." The report states that the variation in annual runoff has ranged from a low of 280,000 AFY in the lowest year recorded at the time, to a high of 1,746,000 AFY in the year of the highest runoff recorded at the time. It also states that the minimum five-year average annual runoff was 650,000 AFY. These average annual runoff amounts show that the District has ample supply to support its customer demands. The report also describes the local climate in that it is typical of coastal areas of California with a large percentage of the rainfall occurring during major storms during the winter months of November through March. It reports that the average annual precipitation over the basin ranges from about 40 inches along the coastal plains to more than 70 inches in the central part of the basin, with an estimated basin average of approximately 63 inches.

In 1977, Winzler and Kelly Engineering did a drought deficiency analysis of R.W. Matthews Dam with then current data (including the drought of 1977) and determined the safe yield to be approximately 67 MGD (75,040 AFY), 8 MGD less than projected by Bechtel. Although the safe yield projected by Winzler and Kelly was slightly less than the one projected by Bechtel Corporation, it still far exceeds the District's current and projected demands from its wholesale customers (Table 7-4 W).

The results from the above studies by DWR, U.S. Army Corps of Engineers, Bechtel Corporation, and Winzler and Kelly Engineering are supported by the District's historical data. From the District's historical data, on average, Ruth Lake begins the water year on October 1 with approximately 31,000 AF of water, 64% of its 48,030 AF capacity. Most rainfall in the area occurs between November and April. In every year but one since 1969, there has been at least one large storm during this period, bringing 3 to 9 inches of rain over a seven-day period. This is almost always sufficient to fill the reservoir to capacity.

There has only been one water year (1976/77) in which the reservoir was not filled to capacity. The average reservoir volume on May 1 (the end of the usual rainy season) is approximately 47,700 AF, over 99% of capacity. This storage allows the District to supplement low flows until the rain begins again in the fall. Seasonal or climatic shortages are only likely to occur after two consecutive rainy winter seasons with severely reduced rainfall and runoff (well below 50% of normal). This has not happened in the history of the District.

As stated in earlier sections, the District currently 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 until 2029. Table 4-2 W and Table 7-2 show that the highest projected total water demand for the District's wholesale customers in 2045 is 12,082 AFY (14% of the permitted diversion amount. Based on this projected demand, the following sections will provide data for each of the following water year types: normal, single dry, and multi-dry. Supply and demand comparisons for each water year type will also be discussed.

7.2.1 WSRA Year-Type Characterization

There are three year-types for which the WSRA must be conducted. To conduct this assessment, Suppliers will need to identify what these year-types are and their associated effects on water supplies for their local conditions.

7.2.1.1 Types of Years

The three year-types that must be included in the WSRA include:

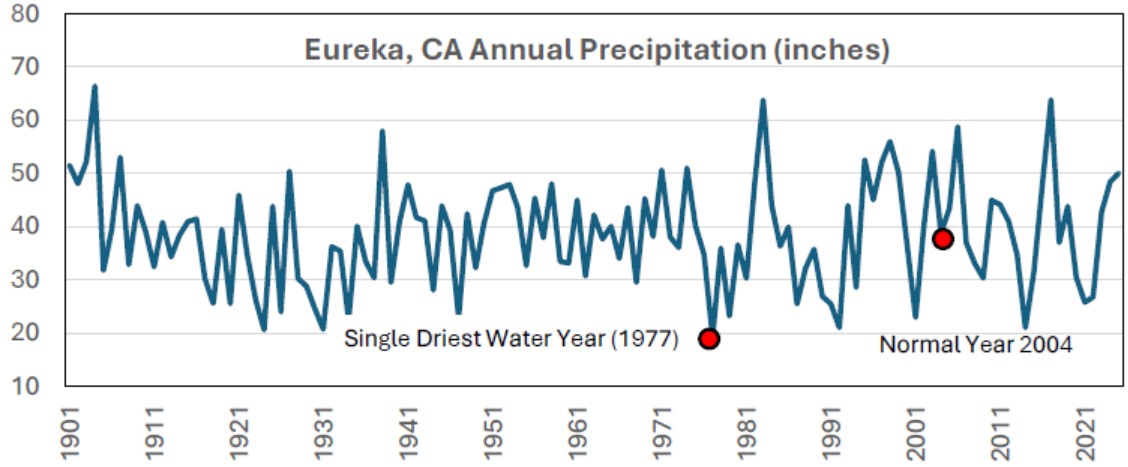
- **Normal Year.** This condition represents the water supplies a Supplier considers available during normal conditions. This could be a single year or averaged range of years that most closely represents the average water supply available to the Supplier. In the Guidebook, DWR uses the terms "average" and "normal" interchangeably when addressing the water-year type.
- **Single Dry Year.** Suppliers can analyze trends and extremes to identify the relevant single dry year used for their analysis. In general, this will likely be the year that represents the lowest water supply available to the Supplier.
- **Five-Consecutive-Year Drought.** There are no specifications for characterizing the WSRA five-consecutive-year drought in the Water Code.

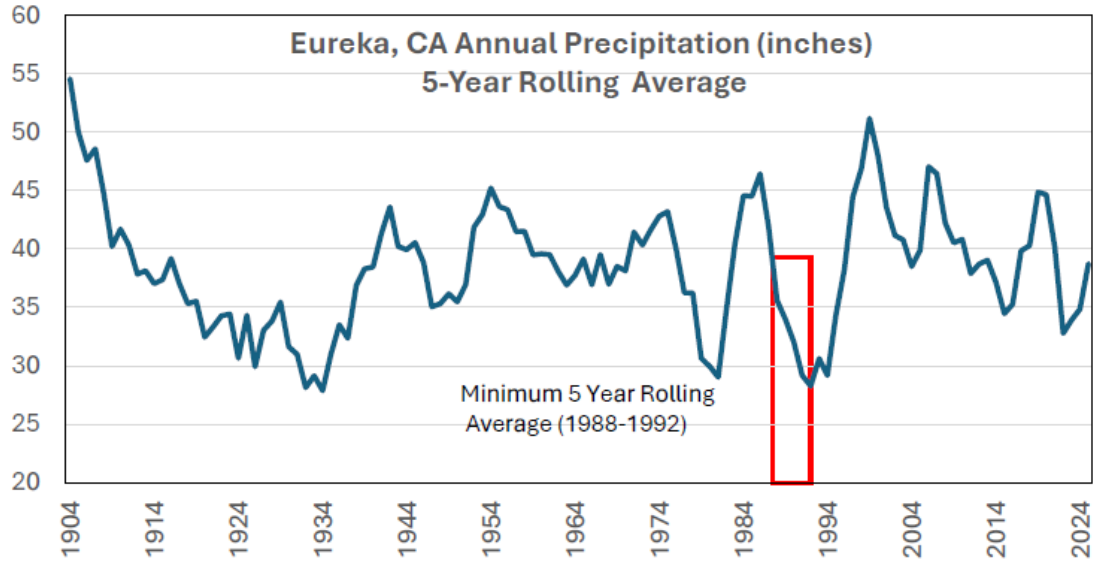
7.2.1.2 Sources for Water Data

Data sources used for the WSRA include:

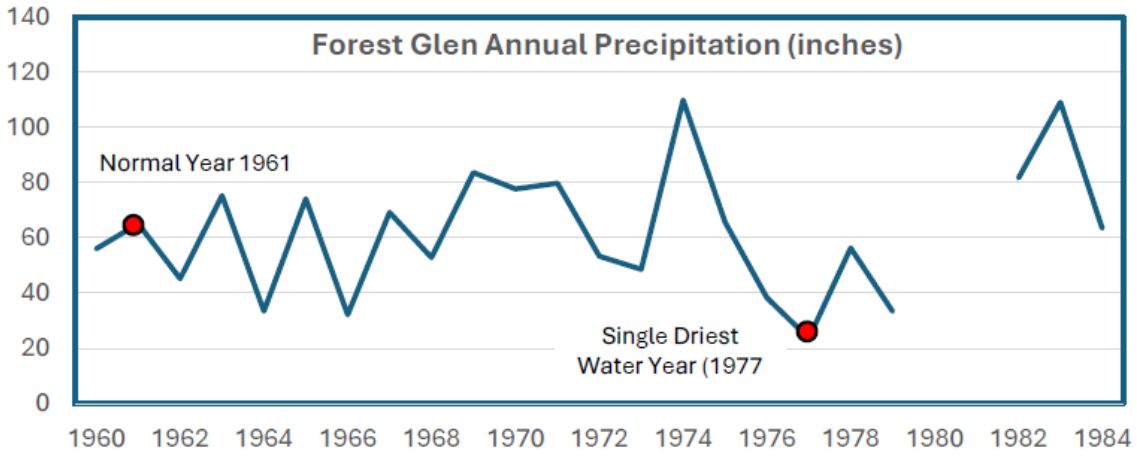
- Precipitation records Eureka (1900-2026) (Eureka WFO Woodley Island CA), https://scacis.rcc-acis.org/;
- Precipitation records Mad River (2000-2019) (MAD RIVER 12 SE, CA); https://scacis.rcc-acis.org/;
- Precipitation records Forest Glen (1930-1984) (FOREST GLEN, CA); https://scacis.rcc-acis.org/;
- Mad River near Arcata Discharge (1951-2026), USGS-11480390; and
- Mad River Discharge into Ruth Lake (1981-2026) USGS-11481000.

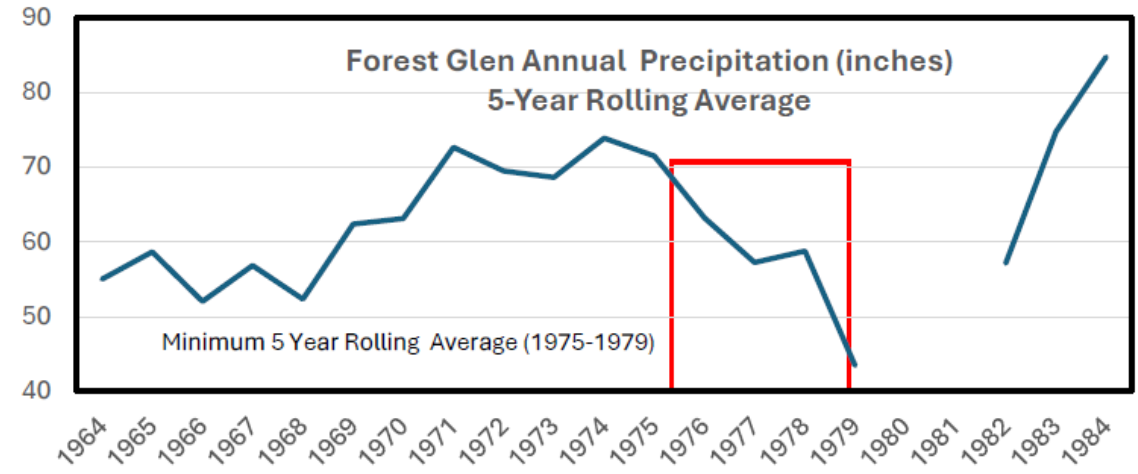
The graphs below illustrate historic precipitation trends for Eureka which has the longest record of precipitation near the Essex diversion facility. All of the following graphs are based on a water year (Oct-Sept).





The graphs below illustrate historic precipitation trends for the Forest Glen weather station which is the closest source of weather data to the Ruth Reservoir.



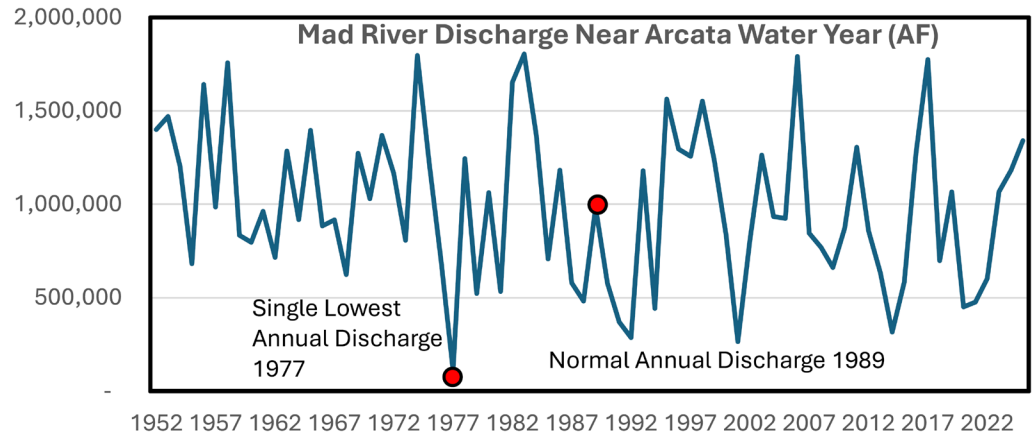


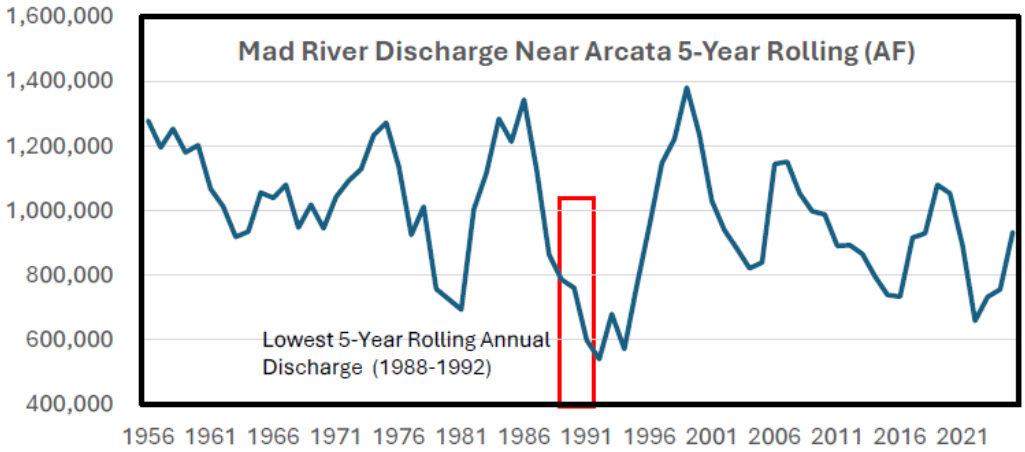
Precipitation data above is summarized in the tables below:

Location	Normal Year		Single Driest Year	Percentage of Average Yearly Precipitation.	Percentage of Average Yearly Flow into Ruth Reservoir
Eureka	2004		1977	50%	Data not available
Forest Glen	1961		1977	38%	Data not available

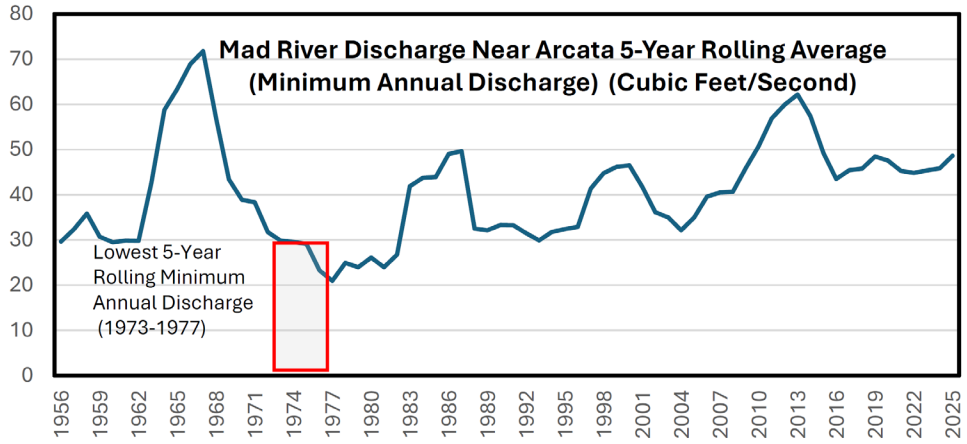
Location	Minimum 5- Years	Percentage of 5-Year Rolling Average Precipitation	Percentage of Average Flow into Ruth Reservoir
Eureka	1988-1993	74%	48%
Forest Glen	1975-1979	69%	Data not available %

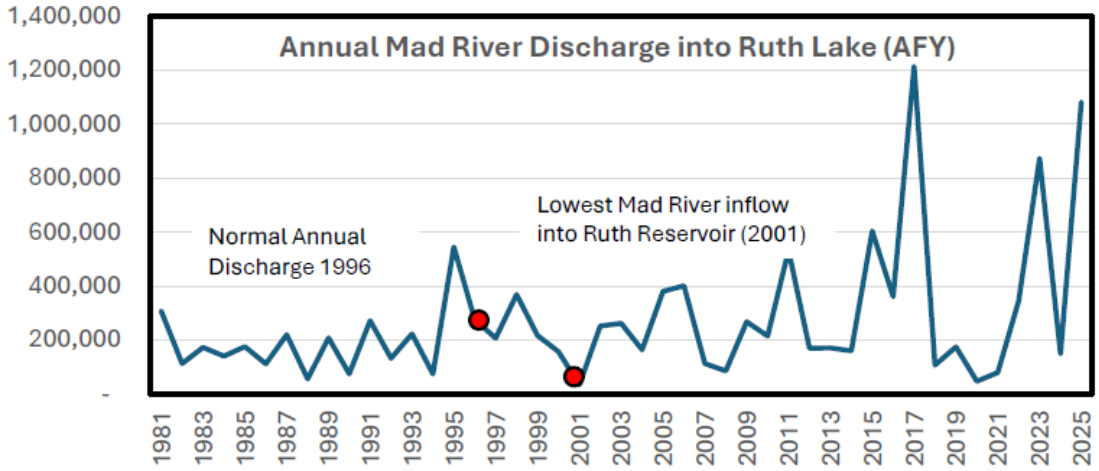
Below are graphs showing historical Mad River discharge data from two locations in the watershed. The Mad River Discharge Near Arcata is downstream of the Essex extraction facility near where the Mad River discharges to the Pacific Ocean. The second location is where the Mad River Discharge into Ruth Lake, which is located upstream of the Ruth Reservoir.

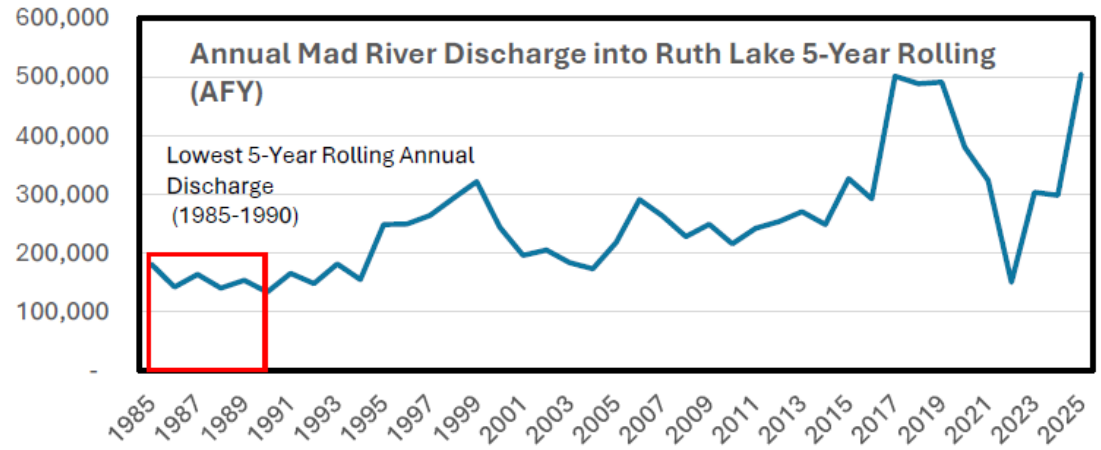




The graph below shows that annual minimum discharge is increasing over time, with a 5-year rolling annual minimum discharge was from 1973 to 1977.







Discharge data above is summarized in the tables below:

Location	Normal Year		Single Dry Year	Percentage of Average Year	5 Driest Years	Percentage of 5-Year Rolling Average
Mad River Discharge Near Arcata	1989		1977	11%	1988-1992	55%
Mad River Discharge into Ruth Lake	1996		2001	12%	1985-1990	52%

7.2.2 WSRA Supply and Demand Comparison

As stated in earlier sections, the District currently 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. Table 4-2 W and Table 7-2 show that the highest projected total water demand for the District's wholesale customers in 2045 is 12,082 AFY, 14 % of permitted diversion volume. With this in mind, the following sections

will provide data for each of the following water year types: normal, single dry, and multi-dry. Supply and demand comparisons for each water year type will also be discussed.

7.2.2.1 Normal Years

During a normal water year, the Ruth Lake area averages 65.42 inches of rainfall. Approximately 173,000 AF of water flows into the reservoir via the Mad River, and 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 as shown in Table 7-1 W. 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. Table 7-2 W shows the normal year supply and demand comparison. During a normal water year, the Ruth Reservoir and Mad River watershed have enough supply to meet the District's maximum currently permitted diversion of 84,000 AFY.

7.2.2.2 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 approximately 23 inches (Forest Glen), or approximately 40% of normal (59.2 inches). Flows into the reservoir were approximately 26,000 AFY, or approximately 15% of normal (173,000 AFY). The runoff for the watershed measured near the District's diversion facilities was approximately 109,107 AFY, or approximately 11% of normal (992,458 AFY). The average reservoir volume for the water year was 21,000 AF, which is approximately 44% of capacity (48,030 AF) and approximately 51% of normal (41,000 AF). The reservoir was drawn down to approximately 13,000 AF, or approximately 27% of its capacity (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 (59.2 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.

Table 7-3 W shows the Single Dry Year supply and demand comparison. This supply was based on the 1977 water year with watershed runoff of approximately 108,540 AFY. As this amount is more than the District's currently permitted water supply of 84,000 AFY, the District still had the 84,000 AFY of water available as it does during a normal water year.

It is uncertain what water rights the District will have after 2029. The District cannot guarantee 84,000 AFY as the supply as it has in previous UWMPs. All

analysis and review indicate that 84,000 AFY is achievable under any of the required climate scenarios. Due to the uncertainty, the District is projecting a supply equal to the maximum current contracted water volumes with the retailers, plus the Districts retail demand (maximum over past 5 years) plus an estimated 20 % loss (diversion to retail meters) for a total projected supply of approximately 28,480 AFY as shown in the table below.

Maximum Historic Use (2021-2025)	Arcata	Blue Lake	Eureka	Fieldbrook	HBMWD	HCSD	Manila CSD	MCSD	Estimated System Loss 20%	Total Production Supply
Max MGY	679.71	67.83	1269.73	70.02	519.00	250.13	41.97	498.50		
Max MGD	1.86	0.19	3.48	0.19	0.83	0.69	0.11	1.37		
% of Contract (2021-2025)	**62%**	**46%**	**50%**	**45%**		**24%**	**77%**	**53%**		
Max Contract MGD (2017)	3	0.4	7	0.43	1	2.9	0.15	2.6		
Max Contract MGY	1095	146	2555	156.95	365	1058.5	54.75	949		
Max Contract AFY	3910	521	9124	560	1303	3780	196	3389	5696	**28,480**

Therefore, Table 7-3 W shows the same calculations as in Table 7-2 W for the normal water year condition showing the supply totals as 28,480 AFY from 2025 through 2040. The data shows that the District has more than enough water supply to meet demand, even in a critical single dry water year situation.

7.2.2.3 Five Consecutive Dry Years

The following section is contained in the Humboldt Bay Municipal Water District 2020 UWMP and is still applicable for the current plan. The model is based on having the driest year on record (1977) repeated for 5 consecutive.

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 1977 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); and*
- *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.

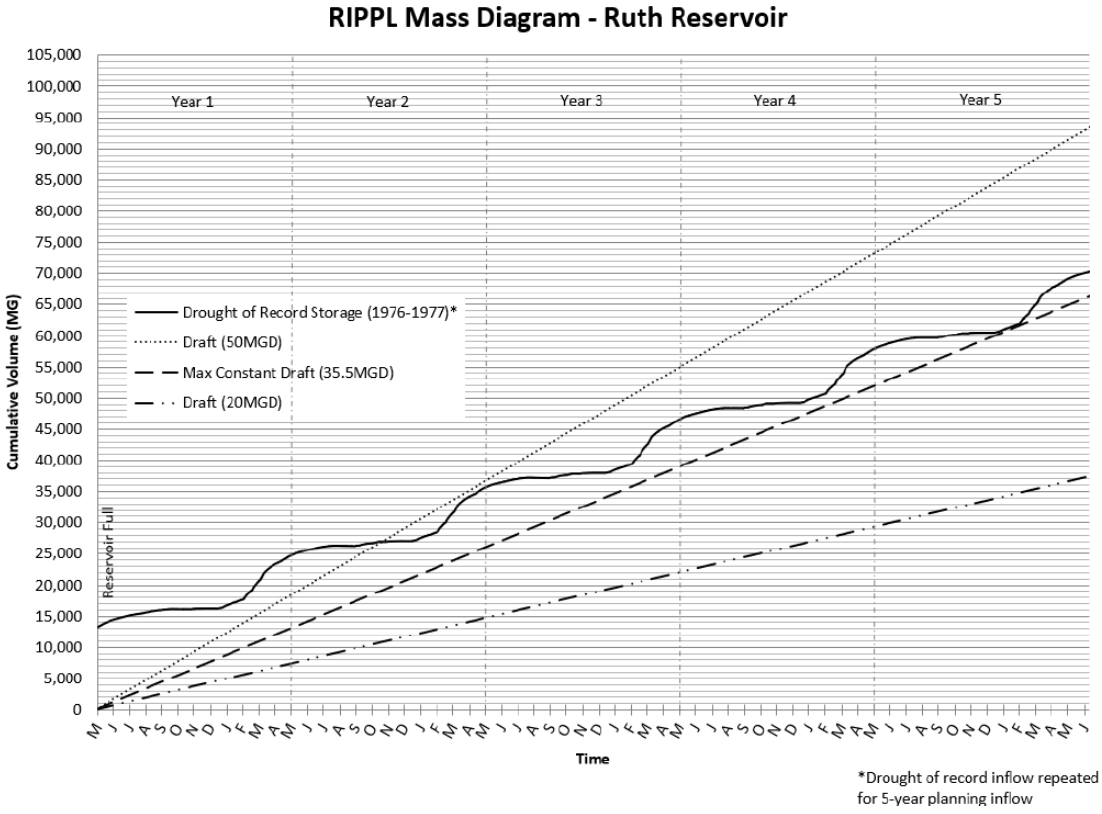
$$S_i = S_{i-1} + D \quad \text{(EQ-2}$$

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

A maximum allowable constant draft rate of 35.5 MGD (39,791 AFY) over the five-year planning period was calculated based on the drought of record inflow (see Figure below).

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.



Based on the conservative analysis above (*no contributing flows downstream of the reservoir)*, during a 5-year modeled drought consisting of 5-years repeating the conditions of 1977, there would be 39,791 AFY of water available which is in excess of the projected demand in 2045 of 28,480 AFY.

7.2.3 WSRA Description of Management Tools and Options

HBMWD has management tools and options to use that will maximize resources and minimize the need to import water from other regions. Some of the management actions or programs the District may implement in response to the surplus or shortage include:

- Expected use reduction due to increased implementation of Demand Management Measures (DMMs);
- Implementation of drought stages;
- Savings from codes and standards; and
- Increased drought messaging.

7.3 Drought Risk Assessment

The Drought Risk Assessment (DRA) is contained in the HBMWD Water Shortage Contingency Plan (WSCP) (Appendix F).

7.3.1 DRA Data, Methods, and Basis for Water Shortage Conditions

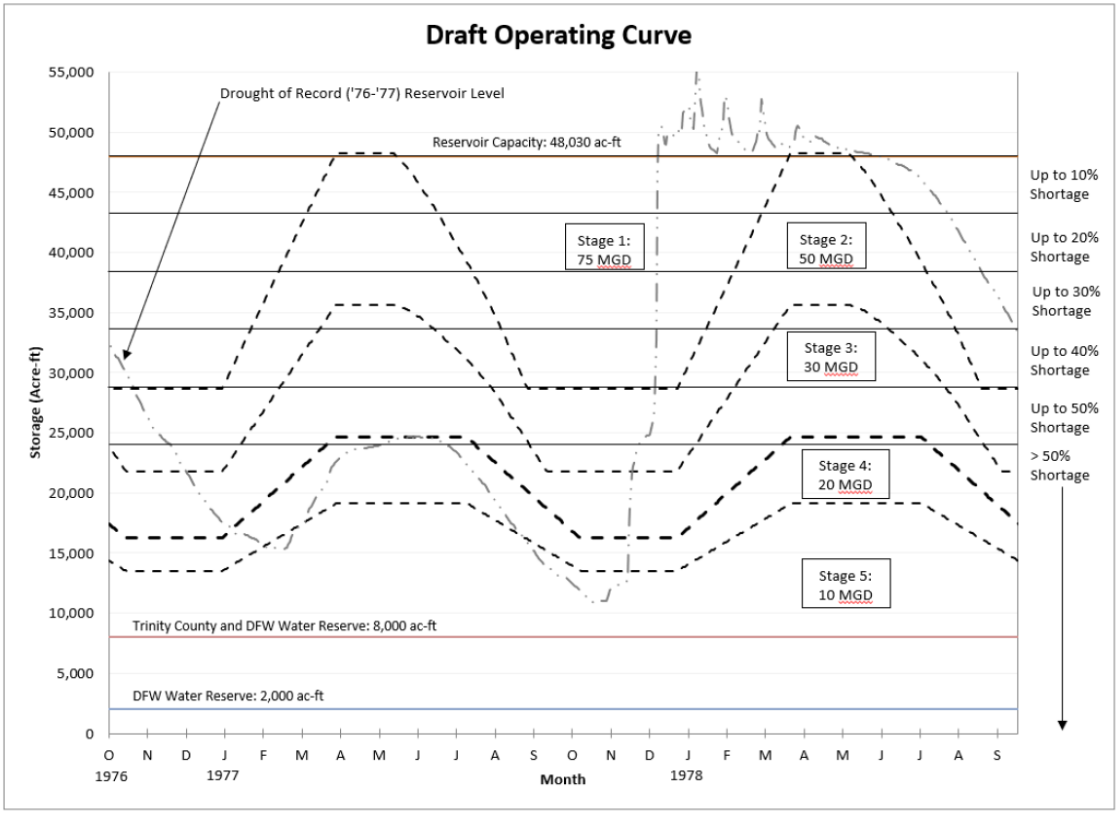
The DRA methodology and basis for water shortage conditions are contained in the HBMWD WSCP (2021), Appendix F.

7.3.2 DRA Individual Water Source Reliability

The drought risk assessment methodology and basis for water shortage conditions are contained in the HBMWD WSCP (2021), Appendix F. The DRA addresses the single water source that the District relies on.

7.3.3 DRA Total Water Supply and Use Comparison

On an ongoing basis District operations staff are comparing the current operating curve to the graph below to determine if water shortage conditions exist. The graph below from the HBMWD WSCP compares supply and demand to determine if water shortage conditions exist. The graph below takes into account seasonal variations based on historic data.



7.4 Submittal Tables

OPTIONAL Submittal Table 7-1 Wholesale: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	Available Supplies if Year Type Repeats	
		☐ Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]	
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	% of Average Supply
Average Year	1989	984,409	100%
Single-Dry Year	1977	108,540	11%
Consecutive Dry Years 1st Year	1988	481,779	49%
Consecutive Dry Years 2nd Year	1989	984,409	100%
Consecutive Dry Years 3rd Year	1990	578,522	59%
Consecutive Dry Years 4th Year	1991	370,769	38%
Consecutive Dry Years 5th Year	1992	286,682	29%

DWR NOTES: Supplier may use multiple versions of Submittal Table 7-1 W if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Submittal Table 7-1 W, in the "Note" section of each submittal table, state that multiple versions of Submittal Table 7-1 W are being used and identify the particular water source that is being reported in each submittal table. **Units of measure (AF, CCF, MG**) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the unit of measure selected in Submittal Table 2-3.

NOTES: Average Year volume chosen based on average annual Mad River watershed discharges from 1951-202.

Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 (AF)**
Supply totals (autofill from Submittal Table 6-9 W)	28,480	28,480	28,480	28,480	
Use totals (see OPTIONAL Submittal Table 4-2 W)	11,071	11,379	11,716	12,079	
Surplus/(shortfall)	17,409	17,101	16,764	16,401	
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.					
NOTES:					

Submittal Table 7-3 Wholesale: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (AF)	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 (AF)**
Supply totals	28,480	28,480	28,480	28,480	
Use totals	11,071	11,379	11,716	12,079	
Surplus/(shortfall)	17,409	17,101	16,764	16,401	
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.					
NOTES:					

Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Use Comparison Water Code Section 10635(a)						
		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	28,480	28,480	28,480	28,480	
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	28,480	28,480	28,480	28,480	
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	28,480	28,480	28,480	28,480	
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	28,480	28,480	28,480	28,480	
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	28,480	28,480	28,480	28,480	28,480
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	28,480
	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.						
NOTES:						

Submittal Table 7-5 Wholesale: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
2026	**Total**
Total Water Use (AF)	10,293
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	18,187
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	0
2027	**Total**
Total Water Use (AF)	10,488
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	17,992
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	10,682
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	17,798
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	10,877
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	17,603
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2030	**Total**
Total Water Use (AF)	11,071
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	17,409
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

8.0 WATER SHORTAGE CONTINGENCY PLAN

This Section describes the District's staged plan for dealing with water shortages, including a catastrophic supply interruption, pursuant to California Water Code §10632. The District's Water Shortage Contingency Plan (WSCP) was developed and adopted as part of the 2020 UWMP cycle and is carried forward as Appendix F of this Plan. The WSCP was reviewed and determined to remain applicable to current District conditions. The five drought action stages contained in the WSCP are cross-referenced to the six standardized shortage levels required under CWC §10632(a)(3), as permitted by CWC §10632(b).

8.1 Water Supply Reliability Analysis

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.

8.2 Annual Water Supply and Demand Assessment Procedures

Annually the District will conduct a Water Supply and Demand Assessment described in the sections below.

8.2.1 Decision-Making Process

Pursuant to California Water Code §10632.1, the District conducts an Annual Water Supply and Demand Assessment (AWSDA) each year to determine water supply reliability, with reports due to DWR by July 1 of each year. As noted throughout this document, HBMWD has not had issues with supply reliability in the past, even during drought years.

The District will provide assessment findings to its wholesale municipal customers in advance of the July 1 submittal deadline of each year to assist in their own annual water supply and demand assessments, also due by July 1 of each year. The Board of Directors will approve the Annual Assessment prior to submittal.

8.2.2 Data and Methodologies

Data reviewed for the Annual Water Supply and Demand Assessment include unconstrained demand used by 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. The District takes daily readings on reservoir level and output and hydrologic conditions. Since the District's water is metered, the District is able to provide realistic numbers and based on those, adjust policies as needed to ensure future demand.

8.3 Six Standard Water Shortage Levels

The District WSCP (Appendix F) contains the following water shortage levels:

Stage 1 – Controlled Release from Storage
Stage 2 – Optimizing Available Supply
Stage 3 – General Reduction
Stage 4 – Usage Allocations

Stage 5 – Rationing

The District WSCP contains consumption Reductions as shown below:

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

*

8.4 Shortage Response Actions

8.4.1 Supply Augmentation

The District does not currently have options for supply augmentation during periods of water shortage.

8.4.2 Demand Reduction

As stated in the HBMWD WSCP (Appendix F) "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."

8.4.3 Operational Changes

As stated in the HBMWD WSCP (Appendix F) Operational changes contained within the 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. In Stage 2, the District will consider shutting down hydroelectric production, as hydroelectric production is incidental to water supply needs and not justification for releases.

8.4.4 Additional Mandatory Restrictions

The District does not have the ability to impose use restrictions or other requirements directly on end users of the municipal customer's water. Each wholesale customer is

responsible for adopting plans to implement the reductions in water use called for by the action stages outlined in the WSCP. 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 customers.
As contained in the HBMWD WSCP, at various stages of water storage, the District implements mandatory prohibitions shown below:

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

8.4.5 Emergency Response Plan

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. 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.

8.4.6 Seismic Risk Assessment and Mitigation Plan

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. 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.

8.5 Communication Protocols

Coordination in implementing the 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 Task Force's responsibilities include:

- Review the status of the water supply and forecasts;
- Recommend specific actions in accordance with this plan and each entity's own water shortage plan;
- Assure that priority of allocations meets legal requirements of consistency and non-discrimination;

- Coordinate media releases and public announcements;
- Coordinate interaction with regulatory agencies such as the California Department of Water Resources, Fish and Wildlife, and California Department of Public Health; and
- Review and make recommendations about requests for waivers from, or exceptions to, actions taken pursuant to this plan.

8.6 Compliance and Enforcement

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 customers.

8.7 Legal Authorities

8.7.1 Legal Authorities

Water Code §350–366 (Urban Water Shortage Contingency Plans) contains the primary authority which allows a water supplier to declare a water shortage emergency when it determines that the water supply available is inadequate to meet ordinary demands.

8.7.2 Declaration of Water Shortage

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

8.7.3 Proclamation of Local Emergency

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.

8.8 Financial Consequences of a Water Shortage Contingency Plan

8.8.1 Financial Impacts and Mitigation Action

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.

8.8.2 Reporting Cost of Compliance With Excessive Water Use Prohibition During Drought Emergency

The District does not have the ability to impose use restrictions, or other requirements, directly on end users of the municipal customer's water. Each wholesale customer is responsible for adopting plans to implement the reductions in water use called for by the action stages outlined above.

8.9 Monitoring and Reporting.

Wholesale Suppliers are not required to describe methods of monitoring and reporting on the effects of WSCP implementation.

8.10 Water Shortage Contingency Plan Refinement Procedures

The WSCP will be reviewed as part of each five-year UWMP update cycle and revised as necessary to reflect changes in District operations, water supply conditions, or applicable regulatory requirements. Amendments to the WSCP may also be made between UWMP cycles if warranted by material changes in conditions.

8.11 Special Water Feature Distinction

The District does not have the ability to impose use restrictions, or other requirements, directly on end users of the municipal customer's water. Each wholesale customer is responsible for adopting plans to implement the reductions in water use called for by the action stages outlined above.

8.12 Plan Adoption, Submittal, Availability, and Amendment Procedures

Within 30 days after adoption of the 2025 UWMP (including the Water Shortage Contingency Plan), the District will submit electronic copies of the adopted 2025 UWMP to the California State Library, the County of Humboldt Planning Department, and the municipalities within its service area.

8.13 Submittal Tables

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels			
☐	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%	Stage 1 — Controlled Release from Storage: Only the amount of water needed for instream flow dedication and water supply purposes will be released from the reservoir. No demand reductions required.	Up to 10%
2	Up to 20%	Stage 2 — Optimizing Available Supply: Draft rate limited to 50 MGD. Domestic deliveries reduced by 5% (to 9.5 MGD); industrial deliveries reduced by 5% (to 38 MGD). Public outreach and voluntary conservation measures initiated	Up to 20%
3	Up to 30%	Stage 3 — General Reduction: Draft rate limited to 30 MGD. Domestic deliveries reduced by 10% (to 9 MGD); industrial deliveries reduced by 50% (to 20 MGD). Note: HBMWD's Stage 3 corresponds to both Level 3 and Level 4 shortage conditions per CWC §10632(b).	Up to 30%
4	Up to 40%	Stage 3 — General Reduction: Draft rate limited to 30 MGD. Domestic deliveries reduced by 10% (to 9 MGD); industrial deliveries reduced by 50% (to 20 MGD). Note: HBMWD's Stage 3 corresponds to both Level 3 and Level 4 shortage conditions per CWC §10632(b).	Up to 40%
5	Up to 50%	Stage 4 — Usage Allocations: Draft rate limited to 20 MGD. Domestic deliveries reduced by 20% (to 8 MGD); industrial deliveries reduced by 70% (to 12 MGD).	Up to 50%
6	>50%	Stage 5 — Rationing: Draft rate limited to 10 MGD. Domestic deliveries reduced by 30–50%; industrial deliveries limited to amounts required for human consumption, sanitation, and fire protection.	>50%
NOTES:			

Submittal Table 8-2 Wholesale: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
No	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
1	Other Actions (describe)	Percentage	0-10	No Augmentation Actiona
2	Expand Public Information Campaign	Percentage	46,315	
3	Other Actions (describe)	Percentage	20-30	No Augmentation Actiona
4	Other Actions (describe)	Percentage	30-50	No Augmentation Actiona
5	Other Actions (describe)	Percentage	>50	No Augmentation Actiona
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES: HBMWD is a water Wholesaler with a reliable water resource. None of the other augmentation actions are available or applicable.				

Submittal Table 8-3 Wholesale: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)				
No	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)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
1	Other	Percentage	5	No DMMs implemented in this shortage stage.
2	Expand Public Information Campaign	Percentage	46,315	
3	Other	Percentage	20-30	No DMMs implemented in this shortage stage.
4	Other	Percentage	30-50	No DMMs implemented in this shortage stage.
5	Other	Percentage	>50	No DMMs implemented in this shortage stage.
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES: HBMWD is a water Wholesaler without the legal authority to implement other direct to consumer DMMs.				

9.0 DEMAND MANAGEMENT MEASURE

This Section will describe HBMWD's efforts to promote conservation and to reduce demand for their water supply and will specifically address several Demand Management Measures (DMMs).

9.1 Demand Management Measures for Retail Suppliers

9.1.1 Implementation Over the Past Five Years

This section does not apply since HBMWD is a wholesaler of water.

9.1.2 Implementation to Achieve Water-Use Targets

This section does not apply since HBMWD is a wholesaler of water.

9.1.3 Required Demand Management Measures

This section does not apply since HBMWD is a wholesaler of water.

9.1.3.1 Water-Waste Prevention Ordinances

This section does not apply since HBMWD is a wholesaler of water.

9.1.3.2 Metering

This section does not apply since HBMWD is a wholesaler of water.

9.1.3.3 Conservation Pricing

This section does not apply since HBMWD is a wholesaler of water.

9.1.3.4 Public Education and Outreach

This section does not apply since HBMWD is a wholesaler of water.

9.1.3.5 Programs to Assess and Manage Distribution System Real Loss

This section does not apply since HBMWD is a wholesaler of water.

9.1.3.6 Water Conservation Program Coordination and Staffing Support

This section does not apply since HBMWD is a wholesaler of water.

9.1.3.7 Other Demand Management Measures

This section does not apply since HBMWD is a wholesaler of water.

9.2 Demand Management Measures for Wholesale Suppliers

9.2.1 Required Demand Management Measures

9.2.1.1 Metering

The District has meters on all service connections and water sources. The existing connections to the District's wholesale customers are metered and monitored regularly for leaks and waste. If a new wholesale customer were to join the District, the connection would be metered. Totalizers connected to the District's control system which measure and record production rates as well as delivery rates to all wholesale customers. These readings are taken continuously

and are monitored at all times by the District's Water Plant Operators. Any issues with leaks and waste, along with other water related topics are discussed at the District's monthly Muni-Meetings, which the District implements as part of its Wholesale Agency Programs.

The District conducts regularly scheduled flow testing, calibration and maintenance of all its wholesale water meters. This ensures that the meter readings are accurate and helps the District and its wholesale customers monitor for leaks and waste. The District's wholesale customers (urban retail water suppliers) will conduct reviews of their own metering and retrofit programs for end users in their UWMPs.

9.2.1.2 Public Education and Outreach

The District supports initiatives to inform the public about water conservation. In the past, the District has made financial contributions to the California Water Awareness Campaign and the Water Education Foundation. These organizations are involved with providing water education and promoting water conservation statewide. The District also supported and developed public outreach and awareness programs through radio, newspapers, public access television, and information booths at county fairs, farmers markets, and local zoo events.

District personnel at the Essex Operational Center give tours of the water production and treatment facilities to students. These tours have varied from the most basic water awareness talks for kindergarten classes to technical presentations for graduate engineering classes. Personnel have also assisted individual high school and university students with their projects relating to either the water system or the Mad River. The District enjoys the opportunity to work with students as it is rewarding to all involved and helps to disseminate awareness of water as a valuable resource and to practice conservation.

The District will continue efforts to raise public awareness of water conservation issues by working collaboratively with its wholesale customers (urban retail water suppliers) to develop and co-fund public awareness programs that leverage current communications platforms, including social media, the District's website, community events, and targeted outreach to schools and local organizations.

9.2.1.3 Water Conservation Program Coordination and Staffing Support

In compliance with DMMs, the District has designated a Water Conservation Coordinator, whose responsibilities include program management, tracking, planning and reporting on implementation of the DMMs. The Water Conservation Coordinator for the District is its Associate Engineer.

9.2.1.4 Other Demand Management Measures

Conservation pricing - The District has individual wholesale contracts with each of its wholesale customers. These contracts include both a flat rate component and a variable-fee component based on the power used for pumping. A set peak rate has also been allocated to each wholesale customer so that they cannot continually exceed that peak rate without discussing this amount with the District and negotiating a new peak rate.

9.2.2 Wholesale Demand Management Measures

9.2.2.1 Asset Management

The District maintains a geographical information system (GIS) program to track and manage its distribution assets. The GIS program contains multiple layers of data and information, including layers for different boundaries, pipelines, meters, backflow devices, structures, easements, and images. The District recognizes the importance of long-term capital planning and is in the process of updating its Capital Improvement Plan to reflect current infrastructure needs and priorities. .

The District's CIP, most recently updated in 2018, provides a policy framework for identifying and prioritizing capital improvement and replacement projects on the regional water system. The District recognizes that infrastructure planning needs to evolve over time and is committed to keeping its capital planning current.. The purposes of the CIP are:

- Summarize the history of development of the regional water system;
- Identify asset inventory associated with the regional water system and document its age and condition;
- Develop policies to guide the District's infrastructure investments;
- Identify and prioritize infrastructure projects to support the District's mission;
- Develop a financial plan to fund CIP projects;
- Communicate the infrastructure needs to the District's wholesale municipal customers and the community; and
- Position the District for state and federal grant funding opportunities.

This CIP is a planning instrument intended to guide District budgets, assist wholesale customers with financial planning and rate studies, and support the District's mission to sustainably deliver clean and reliable water to the community.

9.2.2.2 Supplier Assistance Programs

The District and its wholesale customers work together to identify options to reduce water waste, improve water use efficiency, and educate the end users about conservation practices. These efforts occur during the monthly "Muni-Meetings" coordinated and hosted by the District. The wholesale customers attend these monthly meetings, which are the forum that is intended to foster this type of partnership between the retail agencies and the District. Examples of recent coordination efforts are described below:

- The District hosts and leads monthly water conservation discussions and UWMP planning meetings with the four larger water agencies; Cities of Eureka and Arcata, and Humboldt and McKinleyville Community Services Districts, forming the Northcoast Region Water Conservation Group (conservation group). The conservation group was formed with the intention of sharing resources, including the cost of program implementation, and to provide a consistent conservation message throughout the region.
- The District provides educational material and water use data to the wholesale customers for distribution to the end users, to assist the wholesale agencies in understanding their demand.

- Separate from the conservation group mentioned above, the District conducts monthly Muni-Meetings where conservation topics are discussed and when practical, the District assists the wholesale agencies with the development of their respective UWMPs.

10.0 URBAN WATER MANAGEMENT PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

The following steps will be used for the 2025 UWMP adoption, submittal, and to make it available to the public:

10.1 Plan Completion Timeline

Notice of preparation to cities and counties that the Supplier will be reviewing the UWMP and considering amendments to the plan, 60-days prior to public hearing.	February 2, 2026
Legal Notice of Public Hearing (The Time-Standard, Mad River Union, and North Coast Journal Inc.).	May 10, 2026
Legal Notice of Public Hearing (from The Time-Standard, Mad River Union, and North Coast Journal Inc.).	May 17, 2026
Public Hearing and Adoption 2025 UWMP.	June 11, 2026
Submit the 2025 UWMP to the Department of Water Resources by July 1, 2026.	July 1, 2026
Submittal to other agencies.	July 1, 2026
Submittal of the District's 2025 UWMP and WSCP to the California Public Utilities Commission as part of its general rate case filings.	July 1, 2026

10.2 Notice of Plan Preparation

On February 2, 2026, the District provided a notice of plan preparation to:

- Humboldt County Public Works;
- Humboldt County Planning Department;
- City of Arcata;
- City of Eureka;
- Humboldt CSD;
- McKinleyville CSD;
- City of Blue Lake;
- Fieldbrook-Glendale CSD; and
- Manila CSD.

A copy of the notification of UWMP revision is contained in Appendix C.

10.3 Notice of Public Hearing

The District notified its wholesale customers, the communities served, land-use planning agencies, and the County of Humboldt of the location where the Draft 2025 UWMP can be reviewed, and the time and place of the public hearing (Appendices D). Pursuant to Section 6066 of the Government Code, Notice of Public Hearing was published in the Times Standard newspaper on May 10, 2026 and June 17, 2026 and was posted at the District's Eureka main office. The District's 2025 UWMP was also available for public review at the main office in Eureka. Notice of Public Hearing was provided to Humboldt County, City of Arcata, City of Eureka, City of Blue Lake, Humboldt CSD, McKinleyville CSD, Fieldbrook-Glendale CSD, and Manila CSD on (Table 10-1 W) on May 10, 2026.

10.4 Public Hearing and Adoption

The District held its public hearing for the 2025 UWMP at its regularly scheduled Board meeting on June 11. 2026. Following the hearing, the District's Board adopted the 2025 UWMP as prepared. The following documents relating to the public hearing have been included:

- Certificate of Publication of the Legal Notice of Public Hearing (Appendix E);
- District's Board Agenda Notice of Public Hearing (Appendix E); and
- Board Resolution Adopting the District's 2025 UWMP (Appendix E).

10.5 Plan Submittal

10.5.1 Submitting a UWMP and Water Shortage Contingency Plan to DWR

The District's 2025 UWMP was submitted to the DWR within 30 days of adoption on June 11, 2026. By July 11, 2026, the 2025 UWMP was submitted as an electronic copy to the California State Library, and electronic copy to the County of Humboldt, and the cities and community services districts within their service area.

10.5.2 Electronic Data Submittal

Submittal of the 2026 UWMP was through the DWR's Water Use Efficiency data online submittal tool

10.5.3 Submitting a UWMP, Including WSCP, to the California State Library

By July 11, 2026, the 2025 UWMP was submitted as an electronic copy to the California State Library

10.5.4 Submitting a UWMP to Cities and Counties

An electronic copy of the 2025 UWMP was provided to the County of Humboldt, and the cities and community services districts within its service area.

10.6 Public Availability

The District made its 2025 UWMP available for public review prior to a public hearing to receive input. After adoption of the 2025 UWMP, the District made the plan available for public review at its main office in Eureka, CA as well as on the District's website (www.hbmwd.com). Documentation showing the adopted UWMP was available for public review is included (Appendix D).

10.7 Notification to Public Utilities Commission

The District's 2025 UWMP and WSCP were submitted to the California Public Utilities Commission as part of its general rate case filings.

10.8 Plan Implementation

The District will implement its 2025 UWMP after adoption pursuant to this chapter in accordance with the schedule set forth in its plan.

10.9 Amending an Adopted Urban Water Management Plan or Water Shortage Contingency Plan

10.9.1 Amending a UWMP or WSCP

Any changes to the 2025 UWMP or WSCP shall be adopted by the District's Board of Directors. All notification, public hearing, adoptions, and submittal requirements shall be followed for an amended plan. The District's WSCP was reviewed during the preparation of the 2025 UWMP. It was determined that the analysis and methodology for determining water shortage stages was still applicable without modification.

10.9.2 Submitting Revised Water Shortage Contingency Plan

If the WSCP is revised and adopted by the District's Board of Directors, the District will follow notification, public hearing, adoptions, and submittal requirements for an amended plan.

Submittal Table 10-1 Wholesale: Notification to Cities and Counties Water Code Section 10621(b) and 10642		
☐	Check the box if the Supplier has notified more than 10 cities or counties. **Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.**	
	Provide the page or location of this list in the UWMP.	
☑	Check the box if the Supplier has notified 10 or fewer cities or counties. **Complete the table below.**	
City Name	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Add additional rows as needed		
Humboldt County Public Wo	Yes	Yes
Humboldt County Planning Dept	Yes	Yes
City of Arcata	Yes	Yes
City of Eureka	Yes	Yes
Humboldt CSD	Yes	Yes
McKinleyville CSD	Yes	Yes
City of Blue Lake	Yes	Yes
Fieldbrook-Glendale CSD	Yes	Yes
Manila CSD	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
NOTES:		

References

Bechtel Corporation, October 1960, Engineering Report on Mad River Development

California Natural Resource Agency, August 27, 2018. North Coast Region Report for California's Fourth Climate Change Assessment

Humboldt Bay Municipal Water District, 2020, Urban Water Management Plan

U.S. Army Corps of Engineers, 1968, Interim Review Report for Water Resources Development, Mad River, California

U.S. Army Corps of Engineers, 1968, Interim Review Report for Water Resources Development, Mad River, California."

TABLES

Submittal Table 2-2: Plan Identification		
Select One	**Type of Plan**	**Name of Regional Alliance or RUWMP** (Drop Down List)
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	
NOTES:		

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☑	Supplier is a wholesale supplier
☐	Supplier is a retail supplier
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 the drop down list).	
Unit	AF
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

Submittal Table 3-1 Wholesale: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	95,225	101,462	100,529	99,581	98,665	97,758
NOTES: Data from the California Department of Finance (DOF) to determine the estimated population served by the District. Staff at the Humboldt County Planning determine the						

Optional **Submittal Table 4-1 Wholesale: Total Uses for Potable and Non-Potable Water — Actual** **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		**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
Sales to other agencies	City of Arcata	Potable	1797
Sales to other agencies	City of Eureka	Potable	3418
Sales to other agencies	Humboldt CSD	Potable	727
Sales to other agencies	McKinleyville CSD	Potable	1456
Sales to other agencies	City of Blue Lake	Potable	202
Sales to other agencies	Fieldbrook-Glendale CSD	Potable	193
Sales to other agencies	Manila CSD	Potable	128
Incidental Retail Use	HBMWD Retail Customers	Potable	158
Distribution System Water Loss	Estimated Loss (20%)	Potable	2,019.75
		Subtotal Potable	10,099
		Subtotal Non-Potable	0
		Total	10,099
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:			

Optional **Submittal Table 4-2 Wholesale: Total Uses for 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.		**Potable or Non-Potable** (OPTIONAL) Drop down list	**2030 (AF)**	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 opt (AF)**
Add additional rows as needed							
Sales to other agencies	City of Arcata	Potable	1977	2197	2423	2658	
Sales to other agencies	City of Eureka	Potable	3703	3668	3634	3600	
Sales to other agencies	Humboldt CSD	Potable	798	826	856	885	
Sales to other agencies	McKinleyville CSD	Potable	1531	1565	1611	1673	
Sales to other agencies	City of Blue Lake	Potable	209	209	209	209	
Sales to other agencies	Fieldbrook-Glendale CSD	Potable	215	215	215	215	
Sales to other agencies	Manila CSD	Potable	129	129	129	129	
Incidental Retail Use	HBMWD Retail Customers	Potable	295	295	295	295	
Distribution System Water Loss	Estimated Loss	Potable	2214	2276	2343	2416	
			11,071	11,379	11,716	12,079	

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:

Optional **Submittal Table 4-5 Wholesale: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)**		
Public Water System ID #	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		
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES: Water Code Section 10631(d) does not require Wholesale Suppliers to report previous five-years distribution system water loss in their UWMP.		

Submittal Table 6-1 Wholesale: Groundwater Volume Pumped							
☑	Check the box if the Supplier does not pump groundwater.						
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)						
Groundwater Type **Drop Down List** May use each category multiple times	Potable or Non-Potable (OPTIONAL) Drop down list	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Add additional rows as needed							
		Total	0	0	0	0	0
DWR NOTES:							
NOTES:							

10631(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following
(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Submittal Table 6-3 Wholesale: Wastewater Treatment and Discharge Within Service Area
Water Code Section 10633(b)

☑ Check the box if the Wholesale Supplier neither distributes nor provides supplemental treatment to recycled water. Proceed to the next table.

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 (AF)	Total 2025 Volume of Water Treated (AF)	2025 Outcomes of Treated Wastewater										
				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 (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Name of other entity
Add additional rows as needed.														
Total		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.
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 Wholesale: Current and Projected Recycled Water Uses
Water Code Section 10633(c),(d),(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) :	
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :	
Volume of Supplemental Water Added in 2025 (OPTIONAL) :	
Source of 2025 Supplemental Water (OPTIONAL) :	

Name of Receiving Supplier or Direct Use by Wholesale Supplier	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	Potential Recycled Water Use	
									Volume (AF)	Narrative page number (OPTIONAL)
Add additional rows as needed										
		Subtotal Potable	0	0	0	0	0	0	0	
		Subtotal Non-Potable	0	0	0	0	0	0	0	
		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 reports 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:

Submittal Table 6-5 Wholesale: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual
Water Code Section 10633(e)

☑	Check the box if recycled water was not used or distributed by the supplier in 2025, nor projected for use or distribution in 2020. Proceed to the next table.

Name of Receiving Supplier or Direct Use by Wholesale Supplier	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Add additional rows as needed		
Total	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.

NOTES:

Submittal Table 6-7 Wholesale: 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. Proceed to the next table.
☐	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop down list	Planned Implementation Year	Planned for Use in Year Type **Drop Down list**	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Add additional rows as needed							

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.

NOTES:

Submittal Table 6-8 Wholesale: Water Supplies — Actual
Water Code Section 10631(b)

Water Supply	Additional Description (as needed)	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		**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed				
Surface water (not desalinated)	Mad River Storage and Diversion	Potable	10,099	
		Subtotal Potable	10,099	0
		Subtotal Non-Potable	0	0
		Total	10,099	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.

Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES: Based on vulume of sales plus an estimated system loss of 20%. System loss is measure from the diversion point to the retailer meters.

Submittal Table 6-9 Wholesale: Water Supplies — Projected
Water Code Section 10631 (b)

Water Supply			Projected Water Supply (Report to the Extent Practicable)									
			2030		2035		2040		2045		2050 (opt)	
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	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed												
Surface water (not desalinated)	Mad River Storage and	Potable	28,480		28,480		28,480		28,480		28,480	
		Subtotal Potable	28,480	0	28,480	0	28,480	0	28,480	0	28,480	0
		Subtotal Non-Potable	0	0	0	0	0	0	0	0	0	0
		Total	28,480	0	28,480	0	28,480	0	28,480	0	28,480	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 a Submittal Table 2-3.

Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES:

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following... (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year

OPTIONAL Submittal Table 7-1 Wholesale: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	Available Supplies if Year Type Repeats	
		☐ Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]	
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	**% of Average Supply**
Average Year	1989	984,409	100%
Single-Dry Year	1977	108,540	11%
Consecutive Dry Years 1st Year	1988	481,779	49%
Consecutive Dry Years 2nd Year	1989	984,409	100%
Consecutive Dry Years 3rd Year	1990	578,522	59%
Consecutive Dry Years 4th Year	1991	370,769	38%
Consecutive Dry Years 5th Year	1992	286,682	29%

DWR NOTES: Supplier may use multiple versions of Submittal Table 7-1 W if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Submittal Table 7-1 W, in the "Note" section of each submittal table, state that multiple versions of Submittal Table 7-1 W are being used and identify the particular water source that is being reported in each submittal table.
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the unit of measure selected in Submittal Table 2-3.

NOTES: Average Year volume chosen based on average annual Mad River watershed discharges from 1951-202.

Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 (AF)**
Supply totals (autofill from Submittal Table 6-9 W)	28,480	28,480	28,480	28,480	
Use totals (see OPTIONAL Submittal Table 4-2 W)	11,071	11,379	11,716	12,079	
Surplus/(shortfall)	17,409	17,101	16,764	16,401	
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.					
NOTES:					

Submittal Table 7-3 Wholesale: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (AF)	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 (AF)**
Supply totals	28,480	28,480	28,480	28,480	
Use totals	11,071	11,379	11,716	12,079	
Surplus/(shortfall)	17,409	17,101	16,764	16,401	
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.					
NOTES:					

Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Use Comparison Water Code Section 10635(a)						
		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	28,480	28,480	28,480	28,480	
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	28,480	28,480	28,480	28,480	
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	28,480	28,480	28,480	28,480	
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	28,480	28,480	28,480	28,480	
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	28,480	28,480	28,480	28,480	28,480
	Use totals	11,071	11,379	11,716	12,079	
	Surplus/(shortfall)	17,409	17,101	16,764	16,401	28,480
	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.						
NOTES:						

Submittal Table 7-5 Wholesale: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
2026	**Total**
Total Water Use (AF)	10,293
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	18,187
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	0
2027	**Total**
Total Water Use (AF)	10,488
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	17,992
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	10,682
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	17,798
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	10,877
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	17,603
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2030	**Total**
Total Water Use (AF)	11,071
Total Supplies (AF)	28,480
Surplus/Shortfall w/o WSCP Action	17,409
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels			
☐	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%	Stage 1 — Controlled Release from Storage: Only the amount of water needed for instream flow dedication and water supply purposes will be released from the reservoir. No demand reductions required.	Up to 10%
2	Up to 20%	Stage 2 — Optimizing Available Supply: Draft rate limited to 50 MGD. Domestic deliveries reduced by 5% (to 9.5 MGD); industrial deliveries reduced by 5% (to 38 MGD). Public outreach and voluntary conservation measures initiated	Up to 20%
3	Up to 30%	Stage 3 — General Reduction: Draft rate limited to 30 MGD. Domestic deliveries reduced by 10% (to 9 MGD); industrial deliveries reduced by 50% (to 20 MGD). Note: HBMWD's Stage 3 corresponds to both Level 3 and Level 4 shortage conditions per CWC §10632(b).	Up to 30%
4	Up to 40%	Stage 3 — General Reduction: Draft rate limited to 30 MGD. Domestic deliveries reduced by 10% (to 9 MGD); industrial deliveries reduced by 50% (to 20 MGD). Note: HBMWD's Stage 3 corresponds to both Level 3 and Level 4 shortage conditions per CWC §10632(b).	Up to 40%
5	Up to 50%	Stage 4 — Usage Allocations: Draft rate limited to 20 MGD. Domestic deliveries reduced by 20% (to 8 MGD); industrial deliveries reduced by 70% (to 12 MGD).	Up to 50%
6	>50%	Stage 5 — Rationing: Draft rate limited to 10 MGD. Domestic deliveries reduced by 30–50%; industrial deliveries limited to amounts required for human consumption, sanitation, and fire protection.	>50%
NOTES:			

Submittal Table 8-2 Wholesale: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
No	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
1	Other Actions (describe)	Percentage	0-10	No Augmentation Actiona
2	Expand Public Information Campaign	Percentage	46,315	
3	Other Actions (describe)	Percentage	20-30	No Augmentation Actiona
4	Other Actions (describe)	Percentage	30-50	No Augmentation Actiona
5	Other Actions (describe)	Percentage	>50	No Augmentation Actiona
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES: HBMWD is a water Wholesaler with a reliable water resource. None of the other augmentation actions are available or applicable.				

10632(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

(A) Locally appropriate supply augmentation actions.

(C) Locally appropriate operational changes.

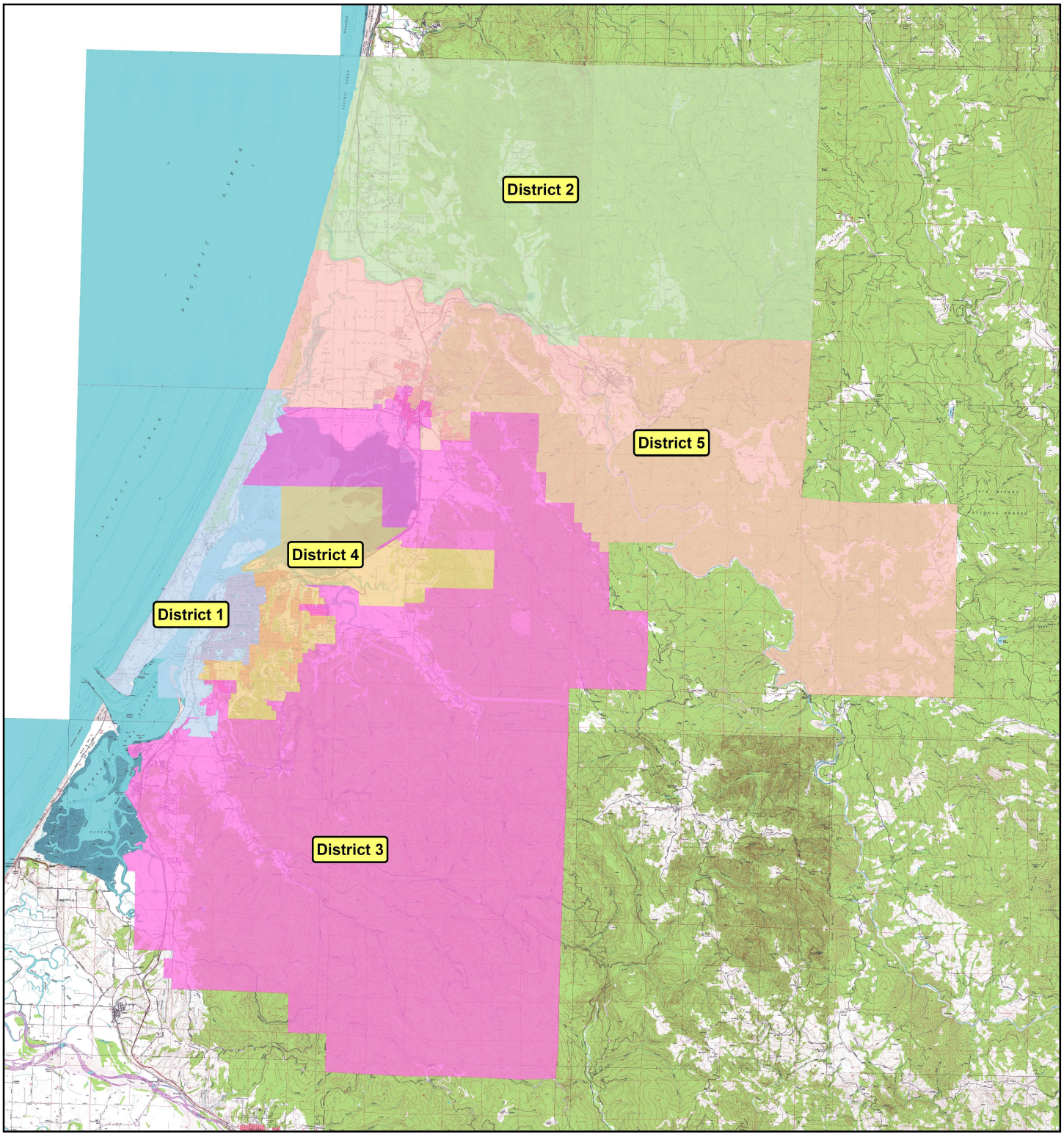
(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

Submittal Table 8-3 Wholesale: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)				
No	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)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
1	Other	Percentage	5	No DMMs implemented in this shortage stage.
2	Expand Public Information Campaign	Percentage	46,315	
3	Other	Percentage	20-30	No DMMs implemented in this shortage stage.
4	Other	Percentage	30-50	No DMMs implemented in this shortage stage.
5	Other	Percentage	>50	No DMMs implemented in this shortage stage.
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES: HBMWD is a water Wholesaler without the legal authority to implement other direct to consumer DMMs.				

10632(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:
(B) Locally appropriate demand reduction actions to adequately respond to shortages.
(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

Submittal Table 10-1 Wholesale: Notification to Cities and Counties Water Code Section 10621(b) and 10642		
☐	Check the box if the Supplier has notified more than 10 cities or counties. **Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.**	
	Provide the page or location of this list in the UWMP.	
☑	Check the box if the Supplier has notified 10 or fewer cities or counties. **Complete the table below.**	
City Name	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Add additional rows as needed		
Humboldt County Public Wo	Yes	Yes
Humboldt County Planning Dept	Yes	Yes
City of Arcata	Yes	Yes
City of Eureka	Yes	Yes
Humboldt CSD	Yes	Yes
McKinleyville CSD	Yes	Yes
City of Blue Lake	Yes	Yes
Fieldbrook-Glendale CSD	Yes	Yes
Manila CSD	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
NOTES:		

FIGURES



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LEGEND

Districts

Base Image Data Source:
1:24,000 Digital Raster Graph Mosaic of Humboldt County, California

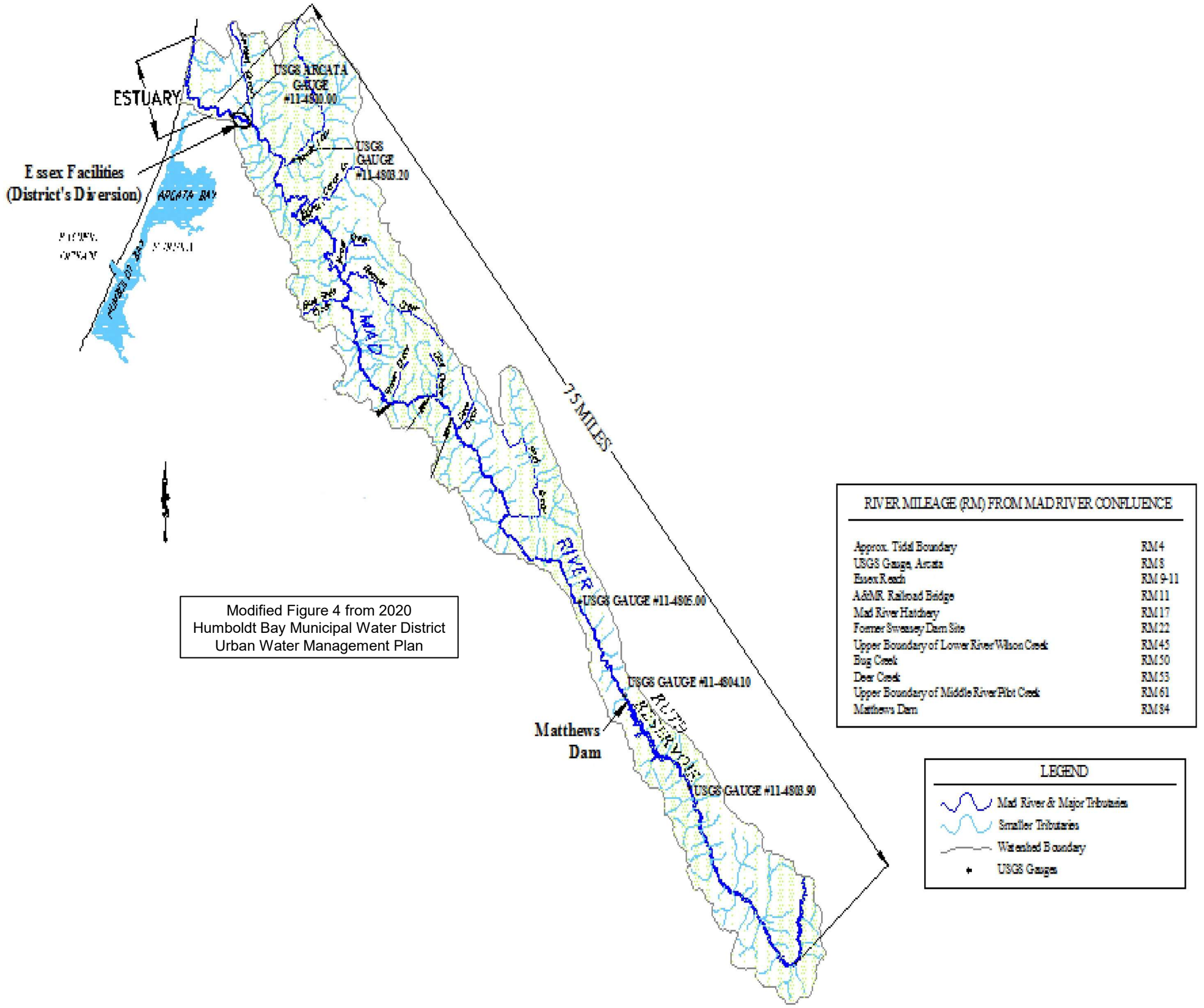
ALL LOCATIONS APPROXIMATE

Humboldt Bay Municipal Water District
Urban Watershed Management Plan

Figure 1
Districts

Freshwater Environmental Services

Project No.	Figure Date	By
HBMWD UWMP	2-12-26	SJT



Modified Figure 4 from 2020
Humboldt Bay Municipal Water District
Urban Water Management Plan

Humboldt Bay Municipal Water District Urban Water Management Plan		
Figure 2 Map of HBMWD Water System		
Project No. HBMWD	Figure Date 5-2-26	By SJT

Freshwater Environmental Services

APPENDIX A

2025 UWMP CHECKLIST

Retail (x = required)	Wholesale (x = required)	Order	2025 Guide book Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	1	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and overview	n/a	1
x	x	1	Chapter 1	10630.5	Each plan shall include a simple description of the Supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a Supplier may also choose to include a simple description at the beginning of each chapter.	Plan preparation	n/a	1
x	x	2.1	Section 2.1	10620(b)	Every person that becomes a Supplier shall adopt UWMP within one year after it has become a Supplier.	Plan preparation	n/a	3
x	n/a	2.5	Section 2.5	10644	Supplier shall report the Public Water Systems number, volume of delivered water, and number of connections that are included in this UWMP.	Plan preparation	n/a	n/a
x	x	2.5	Section 2.5	10644	Supplier shall report if this UWMP is an individual UWMP and whether the Supplier belongs to a regional UWMP or regional alliance.	Plan preparation	2-2	3
x	x	2.5	Section 2.5	10644	Supplier shall report whether the data is in fiscal or calendar years and the units of measure used for reporting water volumes.	Plan preparation	2-3	3
x	x	2.4	Section 2.4	10642	Provide supporting documentation that the Supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan preparation	n/a	4
x	x	2.4	Section 2.4.2	10620(d)(3)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other Suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan preparation	n/a	4
x	n/a	2.4	Section 2.4.1	10631(h)	Retail Suppliers will include documentation that they have provided their Wholesale Supplier(s)—if any—with water use projections from that source.	Plan preparation	2-4 R	n/a
n/a	x	2.4	Section 2.4.1	10631(h)	Wholesale Suppliers will provide their Suppliers with identification and quantification of the existing and planned sources of water available from the Wholesale Supplier to the Supplier during various water year types.	Plan preparation	2-4 W	5
x	x	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	7
x	x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	8
x	x	3.4	Section 3.4.1	10631(a)	Provide the current and projected service area populations for 2030, 2035, 2040, 2045 and optionally 2050.	System description	3-1	10
x	x	3.4	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the Supplier's water management planning.	System description	n/a	10
x	x	3.5	Section 3.5	10631(a)	Describe the land uses within the service area… include the current and projected land uses within the existing or anticipated service area affecting the Supplier's water management planning. Describe the land uses within the service area.	System description and baselines	n/a	10
x	Optional	4.2	Sections 4.2.3 and 4.2.4	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System water use	4-1 and 4-2	11
x	Optional	4.3	Section 4.3.1	10631(d)(3)(A)	Report the distribution system water loss for each of the five years preceding the plan update.	System water use	4-5	13
x	n/a	4.3	Section 4.3.2	10631(d)(3)(C)	Retail Suppliers shall provide data to show the distribution loss standards were met.	System water use	4-6	n/a
x	n/a	4.2	Section 4.2.5.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the Supplier.	System water use	4-3	n/a
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System water use	4-3	n/a
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System water use	4-3	n/a
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)(ii)	To the extent that a Supplier reports the information described in subparagraph (A), an urban water Supplier shall… Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.	System water use	4-3	n/a
x	x	4.2	Section 4.2.5.6	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System water use	n/a	12 and 17
n/a	x	5.1	Section 5.1	10608.4	Wholesale Suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their Retail Suppliers achieve targeted water use reductions.	Baselines and targets	n/a	n/a
x	n/a	5.2	Section 5.2	10608.4	Retail Suppliers shall report on their compliance in meeting their water use targets. Reporting requirements will vary depending on whether the Supplier: - Was considered an urban retail water supplier in 2020, - Met its 2020 target in 2020, or - Was part of a merger or consolidation since 2020. Chapter 5 Subsections 5.2.1, 5.2.2, and 5.2.3 address each of these situations.	Baselines and targets	5-1	n/a
x	x	6.1	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System supplies	n/a	17
x	x	6.1	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.	System supplies	n/a	26
x	x	6.2	Section 6.2.2	10631(b)(4)(C)	Indicate whether groundwater is an existing or planned source of water available to the Supplier. If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	Water supplies and recycled water	6-1	18
x	x	6.2	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the Supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System supplies	n/a	18
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	18

x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the Supplier has the legal right to pump.	System supplies	n/a	18
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… (include) information as to whether DWR has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin.	Water supplies and recycled water	n/a	18
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… describe efforts by the Supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	Water supplies and recycled water	n/a	18
x	x	6.2	Section 6.2.2.	10631(b)(4)(C)	If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	System supplies	n/a	n/a
x	x	6.2	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System supplies	6-9	18
x	x	6.1	Section 6.1	10631(b)	Identify and quantify the existing and planned sources of water available for 2025, 2030, 2035, 2040, 2045 and optionally 2050.	System supplies	6-8 and 6-9	23
x	x	6.2	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System supplies	n/a	19
x	n/a	6.2	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the Supplier's service area with quantified amount of collection and treatment and the disposal methods.	System supplies (recycled water)	6-2	n/a
x	x	6.2	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System supplies (recycled water)	6-3	18
x	x	6.2	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the Supplier's service area.	System supplies (recycled water)	6-4	18
x	x	6.2	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System supplies (recycled water)	6-4	18
x	x	6.2	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the Supplier's service area at the end of 5, 10, 15, and 20 years, and describe the actual use of recycled water in comparison to uses previously projected.	System supplies (recycled water)	6-4 and 6-5	19
x	x	6.2	Section 6.2.5	10633(f)	Describe the actions that may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System supplies (recycled water)	6-6	19
x	x	6.2	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the Supplier's service area.	System supplies (recycled water)	n/a	19
x	x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	19
x	x	6.2	Section 6.2.10	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water Supplier to address water supply reliability in average, single-dry, and for a period of drought lasting five consecutive water years.	System supplies	6-7	20
x	x	6.3	Section 6.3 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a Supplier can readily obtain.	System suppliers, energy intensity	O-1A, O-1B, O-1C, and O-2	20
x		7.1	Section 7.1	10634	Provide information on the quality of existing sources of water available to the Supplier and the manner in which water quality affects water management strategies and supply reliability.	Water supply reliability assessment	n/a	24
x	x	7.2	Section 7.2	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the Supplier with the total projected water use over the next 20 years.	Water supply reliability assessment	7-2, 7-3, and 7-4	26
x	x	7.2	Section 7.2.3	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water supply reliability assessment	n/a	34
x	x	7.3	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water supply reliability assessment	n/a	34
x	x	7.3	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive years.	Water supply reliability assessment	n/a	34
x	x	7.3	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water supply reliability assessment	n/a	35
x	x	7.3	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the Supplier with the total projected water use for the drought period.	Water supply reliability assessment	7-5	35
x	x	7.3	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water supply reliability assessment	n/a	35
x	x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	41
x	x	8	Chapter 8	10632(a)(1)	Provide an analysis of water supply reliability (from Guidebook Chapter 7) in the WSCP.	Water shortage contingency planning	n/a	41
x	x	8.2	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the Supplier will use each year to determine its water reliability.	Water shortage contingency planning	n/a	41
x	x	8.2	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the Supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water shortage contingency planning	n/a	30

x	x	8.3	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10%, 20%, 30%, 40%, 50% shortage, and greater than 50% shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water shortage contingency planning	n/a	41
x	x	8.3	Section 8.3	10632(a)(3)(B)	Suppliers with an existing WSCP that uses different water shortage levels must cross reference their categories with the six standard categories.	Water shortage contingency planning	8-1	42
x	x	8.4	Section 8.4	10632(a)(4)(A)	Suppliers with WSCPs that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water shortage contingency planning	8-2	41
x	x	8.4	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water shortage contingency planning	8-3	42
x	x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	42
x	x	8.4	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to State-mandated prohibitions are appropriate to local conditions.	Water shortage contingency planning	Table 8-3	42
x	x	8.4	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water shortage contingency planning	8-2 and 8-3	46
x	x	8.4	Section 8.4.6	10632.5	The UWMP shall include a seismic risk assessment and mitigation plan.	Water shortage contingency plan	n/a	43
x	x	8.5	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water shortage contingency planning	n/a	43
x	x	8.5	Section 8.5	10632(a)(5)(B), 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water shortage contingency planning	n/a	43
x	n/a	8.6	Section 8.6	10632(a)(6)	Retail Supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water shortage contingency planning	n/a	n/a
x	x	8.7	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the Supplier to enforce shortage response actions.	Water shortage contingency planning	n/a	44
x	x	8.7	Section 8.7	10632(a)(7)(B)	Provide a statement that the Supplier will declare a water shortage emergency per Water Code Chapter 3. *Water Shortage Emergencies* .	Water shortage contingency planning	n/a	44
x	x	8.7	Section 8.7	10632(a)(7)(C)	Provide a statement that the Supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water shortage contingency planning	n/a	43
x	x	8.8	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	44
x	x	8.8	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	44
x	n/a	8.8	Section 8.8	10632(a)(8)(C)	Retail Suppliers must describe the cost of compliance with Water Code Chapter 3.3, *Excessive Residential Water Use During Drought* .	Water shortage contingency planning	n/a	n/a
x	n/a	8.9	Section 8.9	10632(a)(9)	Retail Suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data are collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water shortage contingency planning	n/a	n/a
x	x	8.10	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the WSCP to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water shortage contingency planning	n/a	45
x	n/a	8.11	Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water shortage contingency planning	n/a	n/a
x	x	8.12	Section 8.12	10632(c)	Make available the WSCP to customers and any city or county where it provides water within 30 days after adoption of the plan.	Water shortage contingency planning	n/a	52
x	n/a	9.1	Sections 9.1	10631(e)(1)	Retail Suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand management measures	n/a	n/a
n/a	x	9.2	Sections 9.2	10631(e)(2)	Wholesale Suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and Supplier assistance program.	Demand management measures	n/a	50
x	n/a	10	Chapter 10	10608.26(a)	Retail Suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan adoption, submittal, and implementation	n/a	n/a
x	x	10.2	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the Supplier provides water that the Supplier will be reviewing the UWMP and considering amendments or changes to the plan.	Plan adoption, submittal, and implementation	10-1	52
x	x	10.4	Section 10.4	10621(f)	Each urban water Supplier shall update and submit its 2025 plan to DWR by July 1, 202 6.	Plan adoption, submittal, and implementation	n/a	52
x	x	10.2	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the Supplier made the UWMP and WSCP available for public inspection, published notice of the public hearing, and held a public hearing about the UWMP and WSCP.	Plan adoption, submittal, and implementation	n/a	53
x	x	10.2	Section 10.2.2	10642	The Supplier is to provide the time and place of the hearing to any city or county within which the Supplier provides water.	Plan adoption, submittal, and implementation	10-1	53
x	x	10.3	Section 10.3.2	10642	Provide supporting documentation that the UWMP and WSCP has been adopted as prepared or modified.	Plan adoption, submittal, and implementation	n/a	53

x	x	10.4	Section 10.4	10644(a)	Provide supporting documentation that the Supplier has submitted their UWMP to the California State Library.	Plan adoption, submittal, and implementation	n/a	53
x	x	10.4	Section 10.4	10644(a)(1)	Provide supporting documentation that the Supplier has submitted their UWMP to any city or county within which the Supplier provides water no later than 30 days after adoption.	Plan adoption, submittal, and implementation	n/a	53
x	x	10.4	Sections 10.4.1 and 10.4.2	10644(a)(2)	The UWMP, or amendments to the UWMP, submitted to DWR shall be submitted electronically.	Plan adoption, submittal, and implementation	n/a	53
x	x	10.7	Section 10.7.2	10644(b)	If revised, submit a copy of the WSCP to DWR within 30 days of adoption.	Plan adoption, submittal, and implementation	n/a	53
x	x	10.5	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its UWMP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	53
x	x	10.5	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its WSCP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	53
x	x	10.6	Section 10.6	10621(c)	If Supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan adoption, submittal, and implementation	n/a	53

APPENDIX B

2025 UWMP WORKING GROUP MEETING DOCUMENTS

HBMWD 2025 UWMP Working Group Meeting #1

Tuesday, March 24, 2026 11:12 AM

Meeting Date: 3/24/2026 10:00 AM
Location: Microsoft Teams Meeting
Link to Outlook Item: *click here*
Invitation Message
Content
Participants

- **HBMWD 2025 UWMP Working Group**
- Annmarie Behan, HBMWD, Associate Engineer
- Chris Harris, HBMWD Director of Finance and HR
- Orrin Plocher, Freshwater Environmental Services - Consultant for HBMWD and Eureka UWMP Preparation
- Kelly Allen, - Eureka Director of Public Works
- Michael Hanson, - Eureka Deputy Director of Public Works - Utilities Operations
- Kristin Galt, Eureka Public Works Analyst
- Doug Culbert, Arcata Dept of Env Services
- Rachel Hernandez, Arcata Wastewater Operations Compliance Manager
- Scott Sinnott, - Arcata Environmental Compliance Technician
- Sam King, MCSD - GIS Analyst (working with James Henry - Operations Director)
- Terrence Williams, HCSD GM
- Ana Rodriguez, HCSD Utilities Planner

Notes

- HBMWD Introduction of staff (AB)
  - ✓ AB and CH
- Participant check-in, (AB)
  - ✓ See above Participants
- HBMWD potential water rights changes in 2029 (CH)
  - ✓ Petition for change on going - this would involve dedicating additional water to the river for environmental beneficial use.
  - ✓ Permit up for review in 2029. District intends to apply for licensing. The District does not use that much water relative to other agencies in the state so we would be low priority for State review.
  - ✓ District has rights for 75 MGD and we use 8-10 MGD so our water rights will very likely be trimmed down.
- HBMWD UWMP status report, (OP)
  - ✓ HBMWD is 70-80% complete
- HBMWD UWMP schedule, (OP)

10.1 Plan Completion Timeline

Notice of preparation to cities and counties that the Supplier will be reviewing the UWMP and considering amendments to the plan.	February __ 2026
60 Day Notification of UWMP Review and Adoption Hearing. Legal Notice of Public Hearing (The Time-Standard, Mad River Union, and North Coast Journal Inc.)	April __, 2026
Legal Notice of Public Hearing (from The Time-Standard, Mad River Union, and North Coast Journal Inc.	April __, 2026
Public Hearing and Adoption 2025 UWMP	June ___, 2026
Submit the 2025 UWMP to the Department of Water Resources by July 1, 2026	June ___, 2026
Submittal to other agencies	July ____,2026
Submittal the Districts 2025 UWMP and WSCP to the California Public Utilities Commission as part of its general rate case filings.	July ____,2026

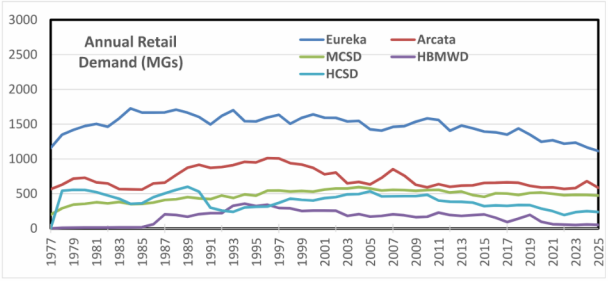
Updated schedule

Notice of preparation to cities and counties that the Supplier will be reviewing the UWMP and considering amendments to the plan, 60-days prior to public hearing	February 2, 2026
Legal Notice of Public Hearing (The Time-Standard, Mad River Union, and North Coast Journal Inc.)	May __, 2026
Legal Notice of Public Hearing (from The Time-Standard, Mad River Union, and North Coast Journal Inc.	May __, 2026
Public Hearing and Adoption 2025 UWMP	June ___, 2026
Submit the 2025 UWMP to the Department of Water Resources by July 1, 2026	June ___, 2026
Submittal to other agencies	June ____,2026
Submittal the Districts 2025 UWMP and WSCP to the California Public Utilities Commission as part of its general rate case filings.	June ____,2026

- Individual retailer UWMP status reports, (Group)
  - ✓ Arcata – started working on it, compiled 5 year data and started working on notifications
  - ✓ Eureka - ~50% complete
  - ✓ HCSD – started working on it, needs to collect some data, hope to get done in late April
  - ✓ MCSD - ~30% done, needs to collect some more data, 60-day notification complete
- HBMWD Population projections, (OP)
  - ✓ Based on percentage of County population
- Retailer status and methodology of population projections; (Group)
  - ✓ Eureka - based on census
  - ✓ HCSD - based on census, updated annually based on connection count, projections based on last decade of growth ~0.5%

- ✓ Arcata???
- ✓ MCSD???

- HBMWD supply projections, (OP)



Updated

Maximum Historic Use (1977-2025)	Arcata	Eureka	HCSD	MCSD
Max MGY	1012.5	1726.5	599.9	594.6
Max MGD	2.8	4.7	1.6	1.6
% of Contract	92%	68%	57%	63%
Max Contract MGD (2017)	3.0	7.0	2.9	2.6
Max Contract MGY	1095	2555	1058.5	949

- Agency Demand Projections, (Group)
  - ✓ Arcata - depends on the university and their student projections. There is one data center in town now, but so far hasn't affected usage. Exploring additional data centers
  - ✓ Eureka - low income housing being constructed in the parking lots are the primary developments
  - ✓ HCSD - annexed some property for construction of 300 living units. ~20-30yr development horizon
  - ✓ MCSD - town center ~5 yrs development horizon

- Open Group dialogue -- agencies can ask each other questions about UWMP approach and specifics. (Group)
  - ✓ No questions
- Goals for next meeting. (Group)
  - ✓ Compare demands versus supply

APPENDIX C

NOTICE OF PREPARATION TO NEIGHBORING MUNICIPALITIES

HUMBOLDT BAY MUNICIPAL WATER DISTRICT

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

February 4, 2026

Hank Seemann, Humboldt County Public Works, hseemann@co.humboldt.ca.us
John Ford, Humboldt County Planning Department, jford@co.humboldt.ca.us
Rachel Hernandez, City of Arcata, rhernandez@cityofarcata.org
Kelly Allen, City of Eureka, kallen@eurekaca.gov
TK Williams, Humboldt Community Services District, twilliams@humboldtcsd.org
Pat Kaspari, McKinleyville Community Services District, pkaspari@mckinleyvillecsd.com
Jennie Short, City of Blue Lake, citymanager@bluelake.ca.gov
Rick Hanger, Fieldbrook-Glendale Community Services District, gm@fgcsd.org
Chris Drop, Manila Community Services District, manilacsd1@sbcglobal.net

Subject: Re: 60-Day Notice Regarding Review of HBMWD's Urban Water Management Plan

California Water Code (CWC) 10621 (b) requires an urban water supplier who is preparing an Urban Water Management Plan (UWMP) 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. CWC further requires each urban water supplier to coordinate the preparation of its UWMP with other appropriate area agencies including other water suppliers that share the same water sources, water management agencies, and other relevant public agencies.

This letter is Humboldt Bay Municipal Water District's (HBMWD's) notice to your agency that HBMWD is in the process of reviewing and updating its UWMP. As with the 2020 UWMP, HBMWD is preparing its 2025 UWMP and will be collaborating with the City of Arcata, the City of Eureka, Humboldt Community Services District, and McKinleyville Community Services District. 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 call me at (707) 443-5018.

Sincerely,

Annmarie Behan, P.E., G.E.
Associate Engineer
Humboldt Bay Municipal Water District

cc: Michiko Mares and Chris Harris, HBMWD, gm@hbmwd.com and harris@hbmwd.com

APPENDIX D

NOTICE OF PUBLIC HEARING

The Times-Standard
PO Box 3580
Eureka, CA 95502
707-441-0571
legals@times-standard.com

2096953

HUMBOLDT BAY MUNICIPAL WATER DISTRICT - LEGAL
PO BOX 95
EUREKA, CA 95502

Legal No. **0006578580**

The Humboldt Bay Municipal Water District (HBMWD) will hold a public hearing on Thursday, June 10, 2021, at 1:30 pm at the District office, 828 7th Street in Eureka. The meeting can be viewed via Zoom at: https://us02web.zoom.us/j/89192432697?pwd=eFZMc0tITExmck1sTjVUWGRORHdGUT09	June 11, 2026
The meeting will include discussion on the HBMWD 2020 Urban Water Management Plan (UWMP). The UWMP was prepared for the State of California Department of Water Resources in accordance with the California Urban Water Management Planning Act of 1983 (AB 797) (UWMP Act) as amended and the Water Conservation Bill of 2009. The UWMP will establish HBMWD's compliance with California Water Code, Division 6, Part 2.6, for all urban water suppliers who provide municipal water to more than 3,000 customers or supply its customers with more than 3,000 acre-feet of water. The UWMP describes the District's water supplies and conservation efforts. The purpose is to ensure that adequate water supplies are available to meet existing and future demands over a 20-year planning horizon. Plans are available for public review at the District office. Please direct comments or questions to:	2025 UWMP
John Friedenbach, General Manager PO Box 95 Eureka, CA 95502 (707) 443-5018 office@hbmwd.com 5/30 &6/6/2021	Annmarie

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA
County of Humboldt

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-mentioned matter. I am the principal clerk of the printer of THE TIMES-STANDARD, a newspaper of general circulation, printed and published daily in the City of Eureka, County of Humboldt, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Humboldt, State of California, under the date of June 15, 1967, Consolidated Case Numbers 27009 and 27010; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit,

05/30/2021, 06/06/2021

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Eureka, California,
This 16th day of June, 2021

Robin Imholte

Advertising Order Confirmation

Ad Number	Ad Size	Color	Production Color	Ad Attributes	Production Method	Production Notes
0006966968-01	2 X 54 Li				AdBooker	

External Ad Number	Pick Up	Ad Type	Released for Publication
		Legal Liner	

The Humboldt Bay Municipal Water District (District) will hold a public hearing on Thursday, June 11, 2026, at 1:00 pm at the District office, 828 7th Street in Eureka, California. The meeting will also be available via teleconference. Teleconference connection information will be posted at http://www.hbmwd.com prior to the meeting.

The meeting will include discussion on the District's 2025 Urban Water Management Plan (UWMP). The UWMP was prepared for the State of California Department of Water Resources in accordance with the California Urban Water Management Planning Act of 1983 (AB 797) (UWMP Act) as amended and the Water Conservation Bill of 2009. The UWMP will establish HBMWD's compliance with California Water Code, Division 6, Part 2.6, for all urban water suppliers who provide municipal water to more than 3,000 customers or supply its customers with more than 3,000 acre-feet of water. The UWMP describes the District's water supplies and conservation efforts. The purpose is to ensure that adequate water supplies are available to meet existing and future demands over a 20-year planning horizon. Plans are available for public review at the District office. Please direct comments or questions to:
Annmarie Behan, Associate Engineer
P.O. Box 95
Eureka, CA 95502
(707) 443-5018
behan@hbmwd.com

Product	Requested Placement	Requested Position	Run Dates	# Inserts
Eureka Times Standard	Legals CLS NC	Notice of Hearing NC - 1076~	05/10/26, 05/17/26	2

Order Charges:

Net Amount	Tax Amount	Total Amount	Payment Amount	Amount Due
367.18	0.00	367.18	0.00	**$367.18**

Please note: If you pay by bank card, your card statement will show "CAL NEWSPAPER ADV" or "CALIFORNIA NEWSPAPER ADVERTISING SERVICES", depending on the type of card used.

Advertising Order Confirmation

Ad Order Number	Customer	Payor Customer	PO Number
0006966968	HUMBOLDT BAY MUNICIPAL WATER DISTRICT - LEGA	HUMBOLDT BAY MUNICIPAL WATER DISTRICT -	
Sales Representative	**Customer Account**	**Payor Account**	**Ordered By**
Denise Irish	2096953	2096953	Contessa Dickson
Order Taker	**Customer Address**	**Payor Address**	**Customer Fax**
Melanie Irmer	PO BOX 95 EUREKA, CA 95502	PO BOX 95 EUREKA, CA 95502	
Order Source	**Customer Phone**	**Payor Phone**	**Customer EMail**
Select Source	707-443-5018	707-443-5018	contessa@hbmwd.com

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Ready	

Tear Sheets	Affidavits	Blind Box	Materials	Promo Type	Special Pricing
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APPENDIX E

PUBLIC HEARING DOCUMENTS

BOARD OF DIRECTORS
Humboldt Bay Municipal Water District
Agenda for Regular and Closed Session Meetings of the Board of Directors
828 7th Street, Eureka, CA 95501

District Mission

Humboldt Bay Municipal Water District safeguards and sustainably delivers clean and reliable water to our community while protecting our natural resources and providing a resilient water supply for present and future generations.

Members of the public may join the meeting online through Teams meeting:

https://teams.microsoft.com/meet/283007626948995?p=zXkOQg7KNRRwEjGdIZ
Meeting ID: 283 007 626 948 995 **Passcode:** qA7bh2wC

Or participate by phone: +1 323-433-2201
Phone conference ID: 534 302 689#

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

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

Document Availability: Materials related to an item on this agenda that have been submitted to the HBMWD Board of Directors within 72-hours prior to this meeting, are available for public inspection in the HBMWD's Office at 828 7th Street, Eureka, California, during normal business hours, and can be viewed on our website at www.hbmwd.com.

Disability Notice: In compliance with the Americans with Disability Act, if you require a disability-related modification or accommodation to participate in this public meeting, please call (707) 443-5018. Notification 48-hours prior to the meeting will enable the District to make reasonable arrangements to ensure accessibility to this meeting.

AGENDA
REGULAR BUSINESS MEETING
Thursday, June 11, 2026
1:00 p.m.
828 7th Street
Eureka, CA 95501

1. Call to Order

1.1. Roll Call
1.2. Pledge of Allegiance
1.3. Accept Agenda

2. Public Comment: Members of the public are invited to address the Board on items not listed on the agenda that are within the scope and jurisdiction of the District. The Public may also request an item appearing on the Consent Calendar to be pulled and discussed separately. At the discretion of the President, comments may be limited to three minutes per person. The public will be allowed to address items on the agenda when the Board takes up that item. Under the Brown Act, the Board may not take action on any item which does not appear on the agenda. The Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

3. Consent Calendar: These matters are routine in nature and are usually approved by a combined single motion unless an item is pulled for discussion. Single motion and vote approving 2 recommendations.

3.1. Approve the Draft Minutes of the Regular Board Meeting of May 14, 2026
3.2. Approve the Draft Minutes of the Special Board Meeting of May 20, 2026
3.3. Approve LAFCO Independent Special District Election Ballot
3.4. Approve Single Audit Report for Fiscal Year Ended June 30, 2025
3.5. Approve the 2026 Annual Water Supply & Demand Assessment

4. Presentations:

4.1. NONE

5. Discussion and Action:

5.1. Public Hearing: Resolution 2025-04 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) —
  5.1.a. Discuss and Consider Adoption of Resolution No. 2026-04: Adoption of the District's 2025 Urban Water Management Plan and Water Shortage Contingency Plan and Authorization to Staff to Submit the Approved Plans to California Department of Water Resources.

5.2. Discuss and consider Approval or Resolution 2026-05 – Annual Limit for Appropriations

5.3. Discuss and Consider Approval of Resolution 2026-06 – Adopting a Conflict-of-Interest Policy

5.4. Discuss and Consider Approval or Resolution 2026-07 - Supporting the Association of California Water Agencies' Vision for Our Water Future Initiative

5.5. Discuss and Consider Approval of May Financial Statement & Vendor Detail Report

5.6. Discuss and Consider Approval of the FY27 Budget

5.7. Discuss and Consider Approval of Amended and Restated General Manager Employment Agreement

5.8. Discuss and Consider Approval of Items pulled from Consent Calendar

6. Reports:

6.1. Staff Report
  6.1.a. Operations Report
  6.1.b. Management Report

6.2. Active Ad-Hoc Committee Reports
  6.2.a. Instream Flow Dedication – 5/7
  6.2.b. General Manager Evaluation – 5/4

6.3. Director Reports - General Director Comments
  6.3.a. Vice-President Woo
  6.3.b. Director Wheeler
  6.3.c. Director Stevens
  6.3.d. Director Rupp

6.3.e. President Fuller

6.4. Organizations on which HBMWD Serves

6.4.a. Association of CA Water Agencies (ACWA)

6.4.b. Association of CA Water Agencies/Joint Powers Insurance Authority (ACWA-JPIA)

7. Discussion of Future Agenda Items:

7.1. Information Management System

7.2. Artificial Intelligence Policy

8. Adjournment:

The next Regular Meeting of the Board of Directors will be held at 1:00 PM on Thursday, July 9, 2026.

AGENDA

CLOSED SESSION MEETING

Thursday, June 11, 2026
To Immediately Follow Regular Business Meeting
828 7th Street, Eureka, CA 95501

1. Call to Order:

1.1. Roll Call

2. Public Comment: Members of the public are invited to address the Board on items listed on the Closed Session agenda. The Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

3. Announcement of Closed Session Agenda:

3.1. CONFERENCE WITH REAL PROPERTY NEGOTIATORS
Property: portion of Trinity County APN 020-330-005
Agency negotiator: Michiko Mares, General Manager; Ryan Plotz, District Counsel
Negotiating parties: Humboldt Trinity Recreation Alliance (HTRA), a nonprofit organization
Under negotiation: price and terms of payment

3.2 PUBLIC EMPLOYEE PERFORMANCE EVALUATION
Title: General Manager

4. Adjourn to Closed Session:

5. Announcements from Closed Session:

6. Adjournment:

(The Board will discuss Closed Session agenda items in the Boardroom)

RESOLUTION NO. 2026-04

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE HUMBOLDT BAY MUNICIPAL WATER DISTRICT ADOPTING THE DISTRICT'S 2025 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the Urban Water Management Planning Act of 1983, as amended (California Water Code Division 6, Part 2.6) requires the preparation and submission to the California Department of Water Resources of an Urban Water Management Plan by all water suppliers that qualify as urban water suppliers as defined by the act; and

WHEREAS, the Humboldt Bay Municipal Water District qualifies as an urban water supplier as defined by the Urban Water Management Planning Act; and

WHEREAS, the Urban Water Management Planning Act, as amended, requires urban wholesale water suppliers to include in their Urban Water Management Plans an assessment of present and proposed future measures, programs, and policies to support achievement of urban water use efficiency goals established under the Water Conservation Act of 2009 (SBX7-7) and the Making Water Conservation a California Way of Life Act (Senate Bill 606 and Assembly Bill 1668 of 2018); and

WHEREAS, the Urban Water Management Planning Act requires the submission of Urban Water Management Plans in years ending in 5 and 0; and

WHEREAS, the Humboldt Bay Municipal Water District last prepared and submitted an Urban Water Management Plan in 2020; and

WHEREAS, the 2025 Urban Water Management Plan and Water Shortage Contingency Plan must be adopted by July 1, 2026, after public review and hearing, and filed with the Department of Water Resources within 30 days of adoption; and

WHEREAS, the Urban Water Management Planning Act, as amended, requires the urban water supplier to include a Water Shortage Contingency Plan in and adopt it as part of the Urban Water Management Plan (California Water Code §10632), and to make both Plans available for public inspection and subject to public hearing prior to adoption (California Water Code §10642); and

WHEREAS, the Humboldt Bay Municipal Water District has therefore prepared and made available for public review a draft of the 2025 Urban Water Management Plan, incorporating the District's Water Shortage Contingency Plan adopted as part of the 2020 UWMP cycle (carried forward pursuant to California Water Code §10632(b)) as Chapter 8, and a properly noticed public hearing regarding both Plans was held by the Board of Directors on June 11, 2026.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Humboldt Bay Municipal Water District adopts the 2025 Urban Water Management Plan and Water Shortage Contingency

Plan and authorizes their submission to the California Department of Water Resources and to any city or county within which the District provides water supplies, within 30 days of adoption.

PASSED and ADOPTED by the Board of Directors of the Humboldt Bay Municipal Water District this 11th day of June, 2026, by the following vote:

AYES: 5
NOES: 0
ABSENT: 0
ABSTAIN: 0

Michelle Fuller, President

ATTEST:

Contessa Dickson, Board Secretary

APPENDIX F

HUMBOLDT BAY MUNICIPAL WATER DISTRICT
WATER SHORTAGE CONTINGENCY PLAN

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.

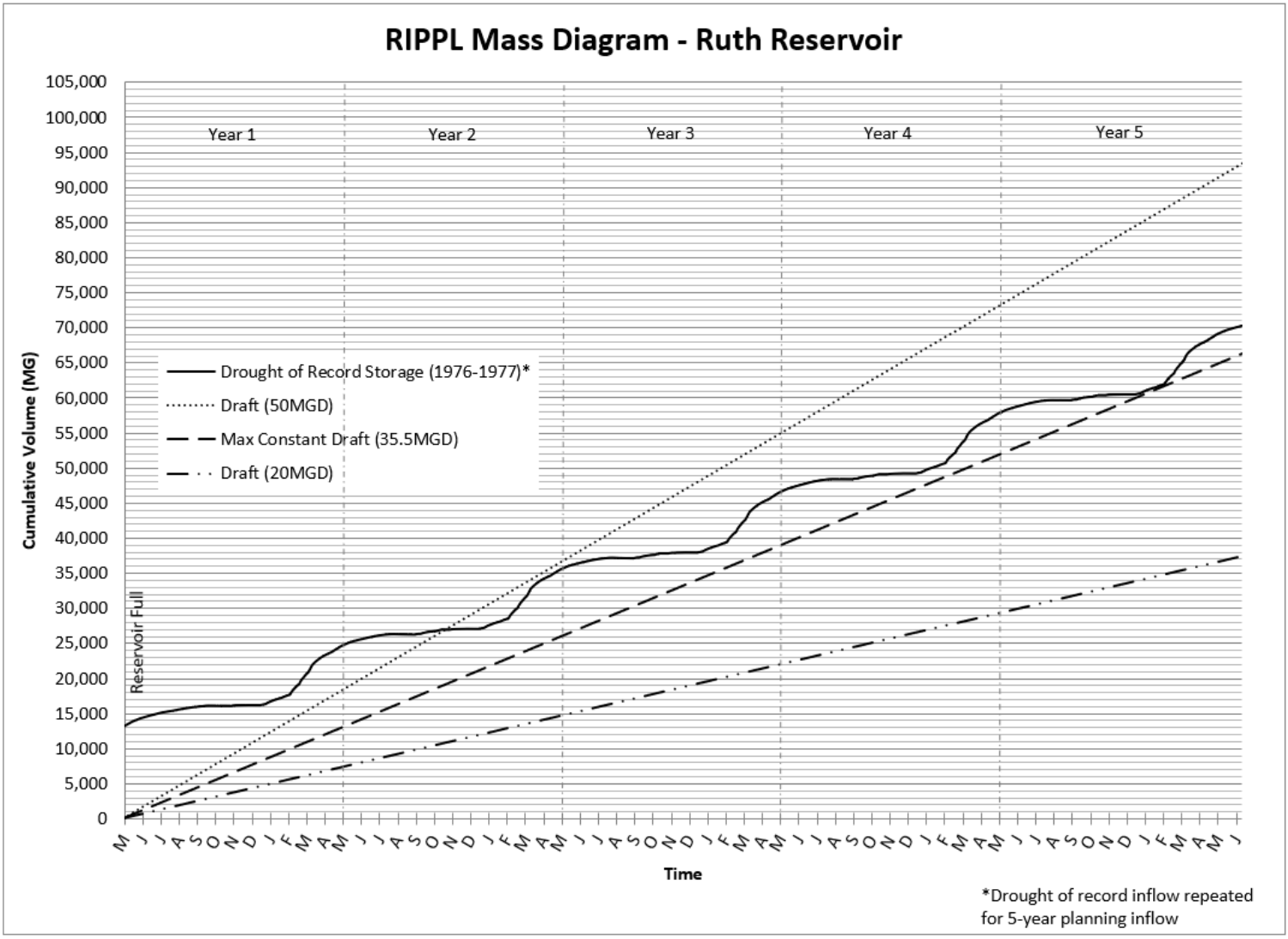


Figure 6. Rippl Mass Diagram for 5-year planning period

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

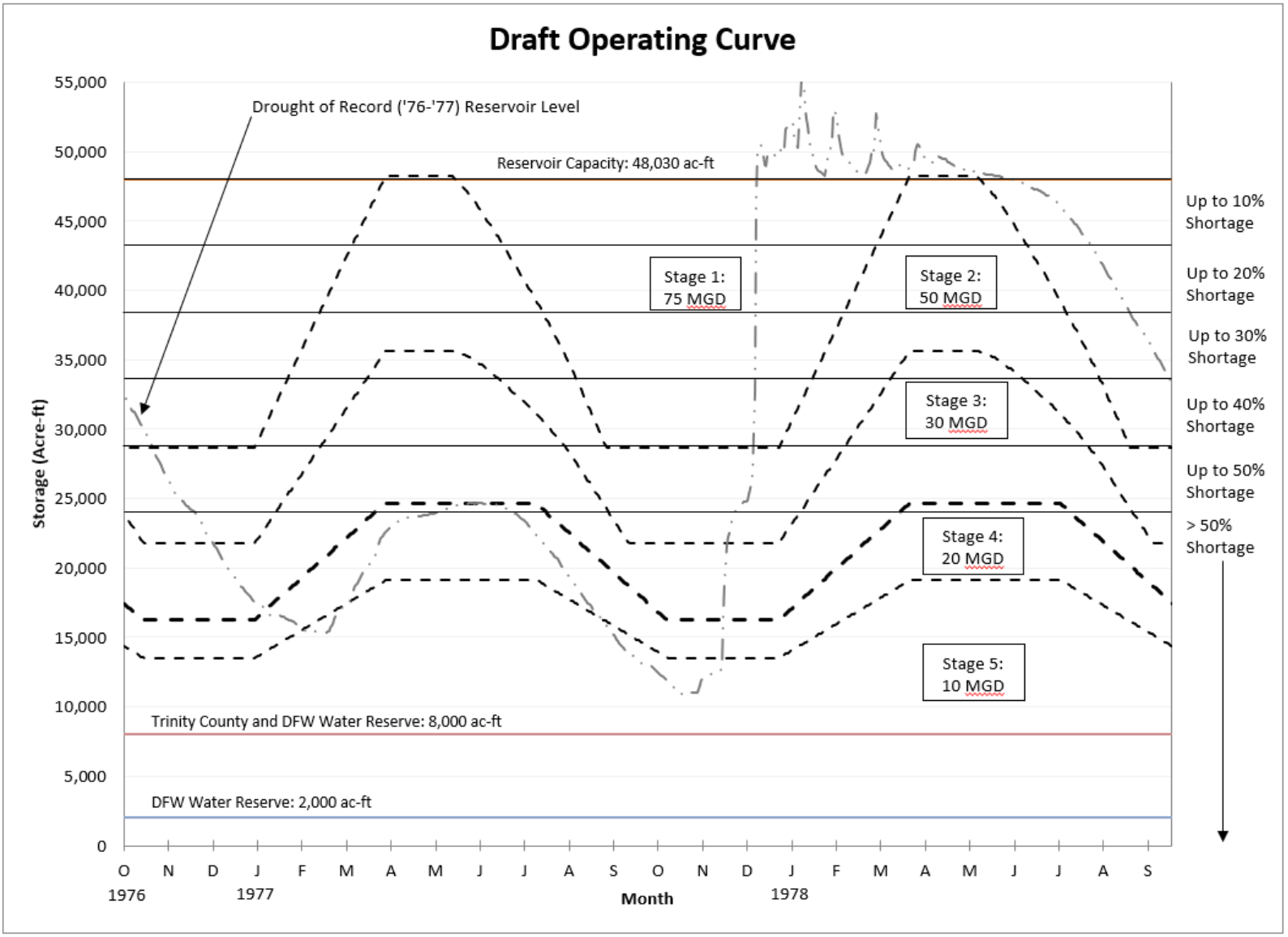
Stage	Domestic Reduction	Industrial Reduction	Total Percent Supply Reduction	Delivered Water (Municipal, MGD)	Delivered Water (Industrial, MGD)	Total Delivered (MGD)	Maximum Draft (MGD)
1	0%	0%	0%	10	40	50	75
2	5%	5%	5%	9.5	38	47.5	50
3	10%	50%	42%	9	20	29	30
4	20%	70%	60%	8	12	20	20
5	30%	95%	82%	7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



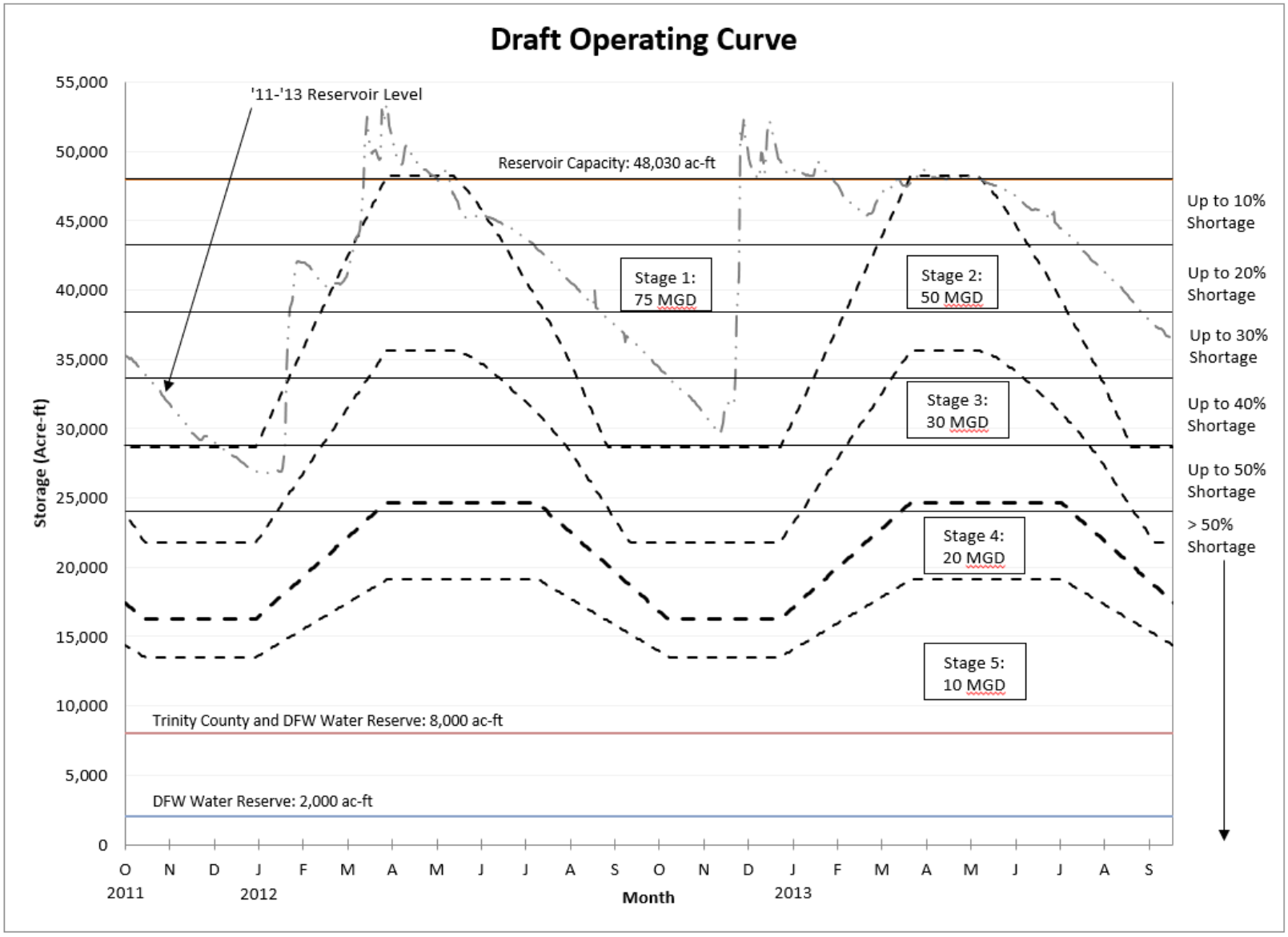


Figure 8: Ruth Lake operating curves with 2011-2013 Reservoir Levels

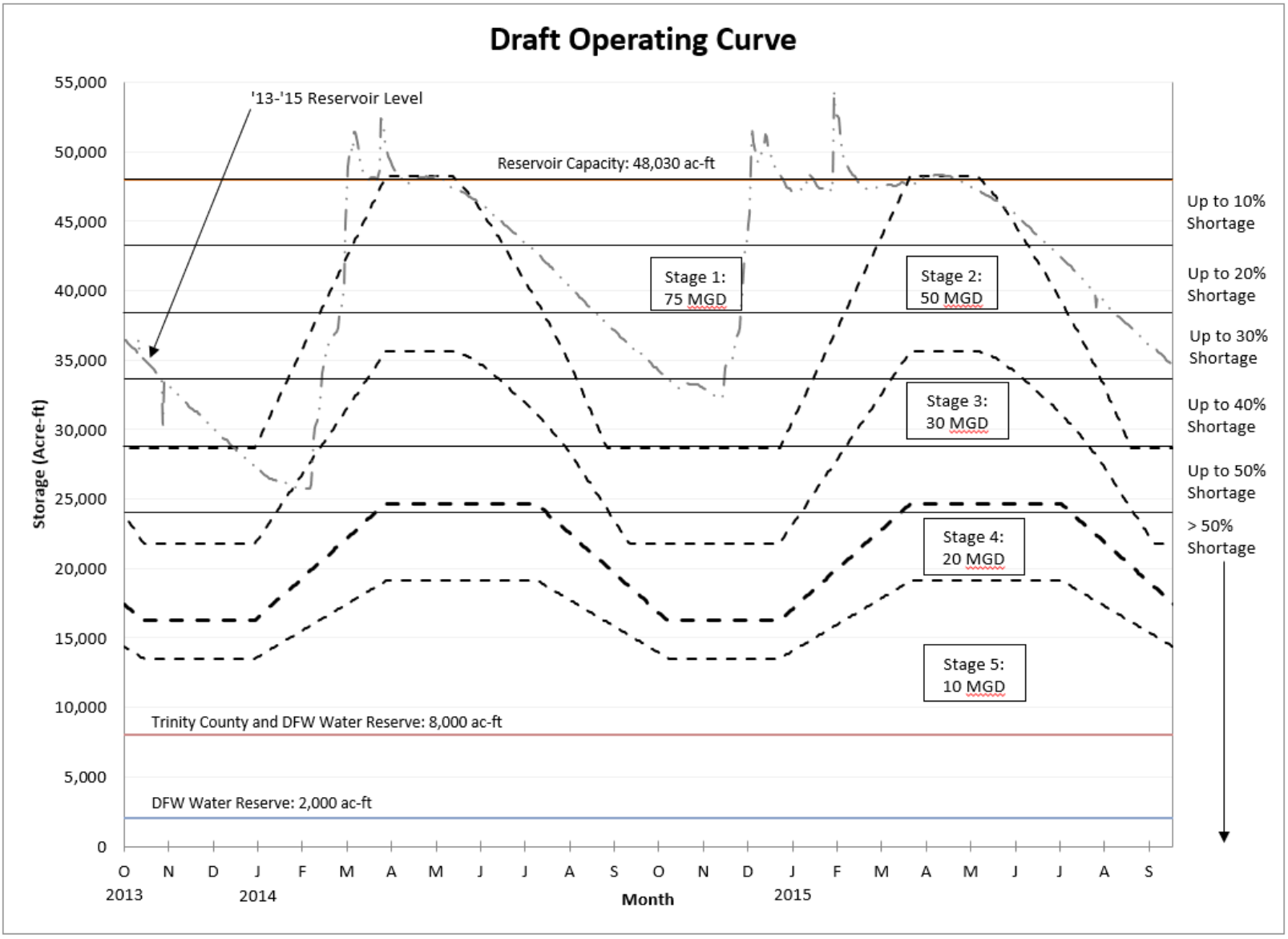


Figure 9: Ruth Lake operating curves with 2013-2015 Reservoir Levels

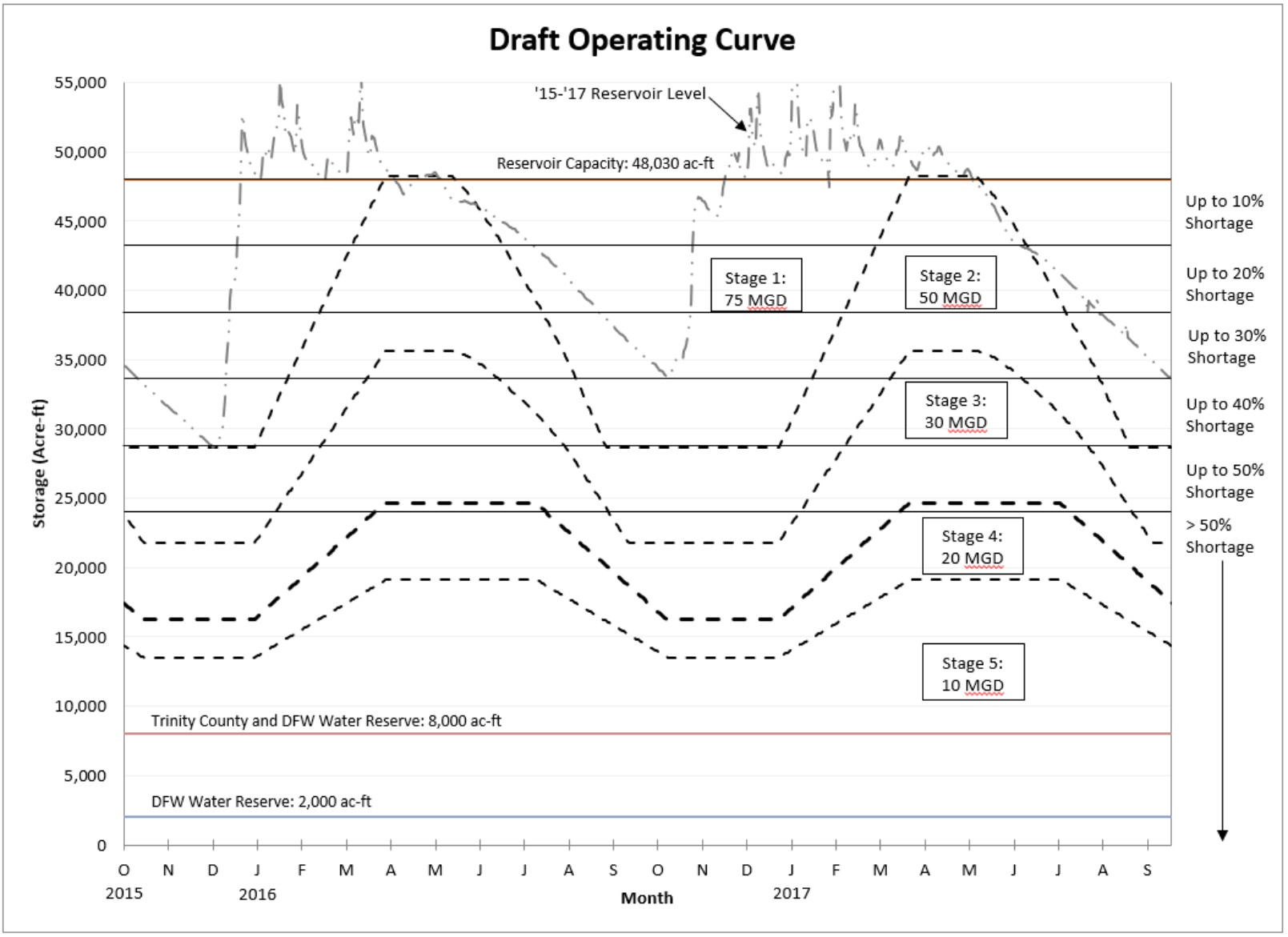


Figure 10: Ruth Lake operating curves with 2015-2017 Reservoir Levels

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.

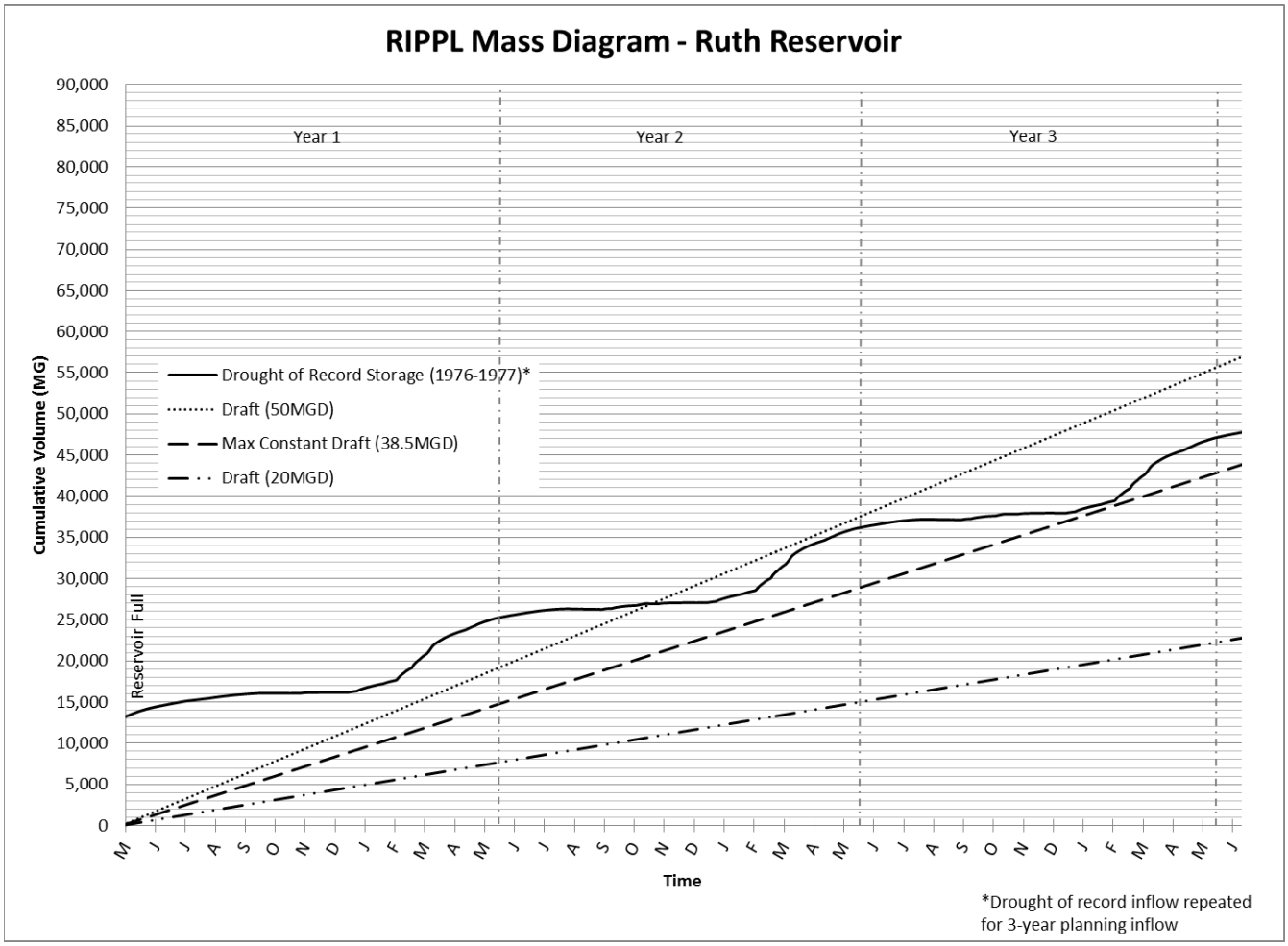


Figure 11: Rippl Mass Diagram with '76-'77 drought hydrologic information repeated for a three-year planning period

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.