

**2015 URBAN WATER MANAGEMENT PLAN**  
**FOR THE**  
**CITY OF EUREKA, CALIFORNIA**



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Prepared by:  
Orrin Plocher and Stan Thiesen  
of



**Freshwater Environmental Services**

78 Sunny Brae Center  
Arcata, California 95521  
Phone (707) 839-0091

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## **1.0 INTRODUCTION AND OVERVIEW**

This Urban Water Management Plan (UWMP) has been prepared for the City of Eureka (COE) in compliance with requirements of the California Department of Water Resources (DWR) pursuant to the Urban Water Management Planning Act (UWMP Act) and the Water Conservation Bill of 2009. COE recognizes that water planning is an essential function of water suppliers that becomes critical as California grapples with ongoing drought and expected long-term climate changes.

This update was prepared and adopted during the spring of 2016. The data used for preparing this report comes primarily from COE and Humboldt Bay Municipal Water District's (HBMWD's) operational records. Current and projected population figures for the COE service area are based on data from the 2010 census.

It should be noted that COE is located in a high rainfall, moderate temperature climate with abundant water supplies.

### **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 inform 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:

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

## 2.0 PLAN PREPARATION

This Section provides information on the COE process for developing the 2015 UWMP, including efforts in coordination and outreach.

### 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).*

COE has greater than 3,000 water connections (customers), is an urban water supplier, and is required to prepare and submit a 2015 UWMP under CWC 10617. COE is a Public Water System (PWS) and provide water to HCSO which is also a PWS (CA1210009). COE is one of several PWS that is provided water from a regional wholesale water provider, HBMWD (Table 2-1).

### 2.2 Regional Planning

The Urban water suppliers that are supplied water from HBMWD meet on an ongoing basis to coordinate public education activities and preparation of individual UWMPs. COE is preparing an individual UWMP, (Table 2-2).

### 2.3 Fiscal or Calendar Year and Units of Measure

COE is reporting water data on a calendar year basis. Water volume data will be reported in million gallons for the entire 2015 UWMP, (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).*

COE provided their wholesaler HBMWD with their projected water demand from each source, in five-year increments for 20 years and HBMWD provided COE quantification of water supplies available in 5 year increments for 20 years, (Table 2-4).

**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)).*

The urban water suppliers that are supplied water from HBMWD meet on an ongoing basis to coordinate public education activities and preparation of individual UWMPs. COE is preparing an individual UWMP.

## **2.5 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)).

COE provided notices of preparation of the 2015 UWMP to Humboldt County, HCSD, and HBMWD. Copies of the notification letters are included in Appendix A.

### **3.0 SYSTEM DESCRIPTION**

This Section includes a description of the COE service area, climate, Public Water System, and COE organizational structure and history.

#### **3.1 General Description**

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

The City of Eureka is located in Humboldt County, California (Figure 1) and services municipal water users within the existing city limits. City limits include 17.1 square miles of land. The Eureka area experiences a average high annual rainfall. Certain regions in the area may experience more than 100 inches of precipitation annually. Historically, water supply in the area has not been a problem and it is not foreseen to be a limiting factor in the future. Eureka currently supplies water to approximately 10,000 direct customers (Figure 2). Eureka also sells water to HCSD. The number of services supplied with water by Eureka has remained relatively constant. Eureka purchases water from HBMWD. HBMWD presently maintains facilities sufficient to provide 17.9 MG of water per day to domestic water customers.

The COE supplies water to 10,004 active connections (2015). Approximately 8,779 residential connections (7,957 single family, 790 multi-family), and 1,225 connections are commercial. There are no industrial or agricultural connections.

In 2015, a total of 1,034.14 million gallons of water was distributed to its customer base.

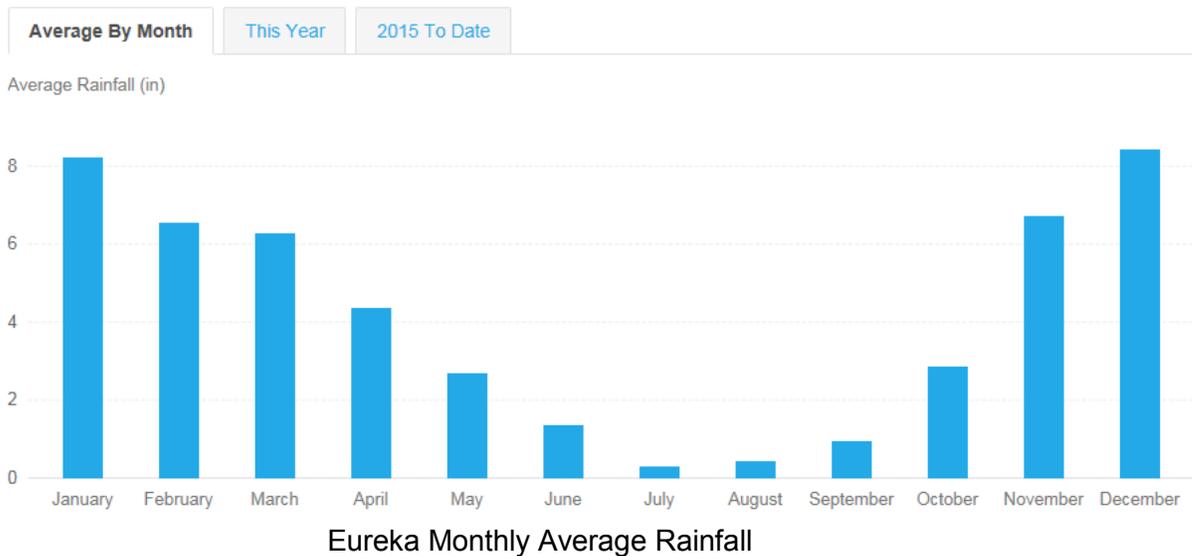
#### **3.2 Service Area Boundary**

The COE service area boundary is shown on Figure 2.

#### **3.3 Service Area Climate**

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

The COE weather is typical of coastal Northern California, characterized by moderate temperatures, frequent fog and moderate to heavy participation. Humboldt County's watersheds receive high annual rainfall. Eureka has had an average rainfall of 49.15 inches over the last 30 years, which is 26% more than the average nationwide and 99% more than the average in California (<https://rainfall.weatherdb.com/l/36/>), (Data from National Oceanographic and Atmospheric Administration (NOAH)).



Ruth Lake, in Trinity County, where HBMWD operates the R.W. Matthews Dam and the Ruth Reservoir (Ruth Lake), average rainfall is 61 inches per year and 26 inches of snow per year (<http://www.wrcc.dri.edu/cqi-bin/cliMAIN.pl?ca3130>). Some mountainous areas within the region receive more than 100 inches of rain per year.

### 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).

A Geographic Information System (GIS) coverage of the COE drinking water distribution service area was used with 2010 US Census Bureau population and connection data to determine the persons per residential connection. The calculated persons per residential connection was multiplied by the number of residential connections to estimate the population from 1996 – 2015. Humboldt County Planning Department indicated a population growth projection in the County of 0.8%. The Humboldt County Planning Department growth projection of 0.8% was used to generate population projections from 2016 – 2035, (Table 3-1).

### 3.5 Other Demographic Factors

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

The City of Eureka is primarily urban residential in nature, which makes up approximately 88% of total COE connections and represents approximately 65% of the total water distributed. Water supplied to COE customers consists entirely of water supplied by HBMWD.

The customer base for the COE water distribution in 2015 is described in the table below:

<b>Type of Service Connection</b>	<b>Number of Service Connections</b>
Single-family residential	7,957
Multi-family residential	790
Commercial	1,225
Industrial	0
Landscape irrigation	0
Other (outside of city limits residential)	32
Agricultural irrigation	0
Total Connections	10,004

## 4.0 SYSTEM WATER USE

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

### 4.1 Recycled versus Potable and Raw Water Demand

The COEs water demand is met with potable water purchased from HBMWD and use of recycled water in the processes of its wastewater treatment plant and in the irrigation of the landscaping of this facility.

### 4.2 Water Use by Sector

**Requirement:** *Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:*

- (A) Single-family residential
- (B) Multifamily.
- (C) Commercial.
- (D) Industrial.
- (E) Institutional and governmental.
- (F) Landscape.
- (G) Sales to other agencies.
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
- (I) Agricultural. (CWC 10631 (e)(1))

2015 retail demand for potable and raw water by use type is included in Table 4-1.

Demand projections by use sector (Table 4-2) were estimated over the planning horizon using the following steps:

1. Population projections were made over the planning horizon as described in Section 3.4;
2. The most recent 5-year average residential gallons per capita per day (R-GPCD) (64.5) was used to project the total residential volume from the population projections (2016-2035);
3. The most recent 5-year average single family demand volume as a % of total residential demand volume (81%) was used to project single family residential demand volume from the total residential demand volume (estimated in step 2);
4. The most recent 4-year average commercial/institutional demand volume as a % of total residential volume (59%) was used to project commercial/ institutional volume from total residential demand volume (estimated in step 2); and
5. The most recent 5-year average volume of water sold outside of City limits (approximately 30 residential connections) demand volume as a % of total residential demand volume (1.13%) was used to project irrigation volume from the total residential volume (estimated in step 2).

### 4.3 Distribution System Water Losses

**Requirement:** Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (CWC 10631 (e)(1))

(j) Distribution system water loss.

*For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update. (CWC 10631 (1)(A)).*

*The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association. (CWC 10631 (B)).*

COE utilized the AWWA water loss methodology to evaluate distribution system losses for calendar year 2015. COE performed an AWWA water loss audit (V5.0) for the calendar year 2015 (Appendix B). The results from the 2015 AWWA water loss audit indicate a total loss of 31.638 million gallons, or 4.2 % of the total water volume supplied to COE and 1.6% of the operating cost of the water system. (Table 4-4).

### 4.4 Water Use for Lower Income Households

**Requirement:** *The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier. (CWC 10631.1 (a)).*

According the Humboldt County General Plan Housing Element, 2014, low income and very low income households have an income less than 80% of the median household income. According the 2014 Humboldt County General Plan Housing Element 42% of the households are classified as low and very low income. Water use projections include projected water use for single-family and multi-family residential housing needed for lower income, (Table 4-1 and 4-5).

## 5.0 BASELINES AND TARGETS

This Section describes COE's methods for calculating their baseline and target water consumption. COE will demonstrate that they have achieved the 2015 interim water use target, and are on track for achieving their 2020 water use target.

### 5.1 Definitions

**Daily per Capita Water Use** - the amount of water used per person per day. In the UWMP calculations, this is total water use within a service area, divided by population and is measured in gallons.

**Gallons per Capita per Day (GPCD)** – This is the “Daily per Capita Water Use” measured in gallons. Therefore, the term commonly used when referring to “Daily per Capita Water Use” is “Gallons Per Capita per Day” or “GPCD.”

**GPCD** - The total water use within a service area (residential, commercial, institutional, etc...) minus allowable exclusions, divided by the population. This is used in UWMPs for purposes of the Water Conservation Act of 2009.

**R-GPCD** - The estimated residential water use in a service area divided by population. R-GPCD is used in drought reporting to SWRCB for purposes of complying with the Governor's drought declarations and executive orders in 2014 and 2015 (as of the publication of this Guidebook).

### 5.2 Updating Calculations from 2010 UWMP

***Requirement:** An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6. (CWC 10610.20 (g)).*

COE updated the population estimates and projections used in the 2015 UWMP based on 2010 US Census data in combination with historic residences per connections data. The updated population estimates and projections were used to update the baseline averages and the 2020 water use target (goal).

### 5.3 Baseline Periods

***Requirement: (e)** An urban retail water supplier shall include in its urban water management plan due in 2010. . . the baseline daily per capita water use...along with the bases for determining those estimates, including references to supporting data. (CWC 10608.20 (e)).*

*An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610). (CWC 10608.20 (g)).*

In 2008, the COE did not have at least 10% of its 2008 measured retail water demand met through recycled water and therefore used a 10-year baseline. The first base period (10-year continuous period) was selected from 1995 to 2004. The average gallons/capita day (GPCD) for the 10-year base period was 135 GPCD. Using Method # 1 (80% of the 10 year baseline average GPCD 135) to calculate the 2020 GPCD goal for the District results in 108 GPCD. The updated interim target goal for 2015 is 122 GPCD.

The actual 2015 GPCD is 107 which meets the interim target goal for 2015. The City of Eureka is in compliance with the 2015 interim goal.

#### 5.4 Service Area Population

**Requirement:** *An urban retail water supplier shall include in its urban water management plan due in 2010...the baseline per capita water use,...along with the bases for determining those estimates, including references to supporting data. (CWC 10608.20 (e)).*

*When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections. (CWC 10608.20 (f)).*

The City of Eureka services area matches the city boundary except for approximately 30 residential services connections outside of the city limits. The service area population estimates and projections were derived by the following steps:

1. The 2010 US Census data was used to determine the population within the city limits in 2010.
2. The 2000 US Census data was used to determine the population within the city limits in 2000.
3. The population for the years between 2000 and 2010 were determined by dividing the difference in population from 2010 and 2000 (1,063) by the number of years in the interval (10) resulting in (106.3). The population between 2000 and 2010 was estimated to increase by 106.3 persons for each of the years. The annual change of population (106.3) was also used to estimate the population for years prior to 2000.
4. The average persons per residential connection was determined to be 3.113. The population of the area serviced outside of city limits was estimated by multiplying the number of connections by 3.113 persons per residential connection.
5. The service area population was estimated by adding the population estimate for the City of Eureka to the population estimate of persons serviced outside of the city limits.
6. The service area populations for 2011 – 2015 were estimated by multiplying the number of persons per residential connection (3.113) by the number of residential connections.
7. Humboldt County Planning Department indicated a population growth projection in the County of 0.8%. The Humboldt County Planning Department growth projection of 0.8% was used to generate population projections from 2016 – 2035.

#### 5.5 Gross Water Use

**Requirement:** *“Gross Water Use” means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:*

- (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier*
- (2) The net volume of water that the urban retail water supplier places into long term storage*
- (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier*

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24. (CWC 10608.12 (g)).

The COE receives treated water into a large reservoir. Water from the reservoir is treated to maintain chlorination and add fluoridation and then enters the distribution system. Gross water use is the water that is metered as it leaves the reservoir and enters the distribution system.

### 5.6 Baseline Daily Per Capita Water Use

Baseline daily per capita water use was calculated by dividing the gross water use (Section 5.5) by the service area population (Section 5.4) for each year of the baseline periods as seen below. The 10 year baseline period selected starts in 1995 and ends in 2004. The average GPCD for the 10-year baseline is 135.

<b>SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)</b>				
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Annual Gross Water Use</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use (GPCD)</b>
<b>10 to 15 Year Baseline GPCD</b>				
Year 1	1995	26,577	1,367	141
Year 2	1996	26,336	1,301	135
Year 3	1997	26,121	1,346	141
Year 4	1998	25,978	1,244	131
Year 5	1999	26,080	1,297	136
Year 6	2000	26,234	1,291	135
Year 7	2001	26,340	1,318	137
Year 8	2002	26,443	1,321	137
Year 9	2003	26,547	1,263	130
Year 10	2004	26,650	1,230	126
<b>10-15 Year Average Baseline GPCD</b>				<b>135</b>

The 5-year baseline period selected starts in 2003 and end in 2007. The average GPCD for the 5-year baseline is 125.

5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2003	26,547	1,263	130
Year 2	2004	26,650	1,230	126
Year 3	2005	26,756	1,204	123
Year 4	2006	26,862	1,192	122
Year 5	2007	26,972	1,214	123
5 Year Average Baseline GPCD				<b>125</b>

### 5.7 2015 and 2020 Targets

**Requirement:** *An urban retail water supplier shall include in its urban water management plan due in 2010. . . urban water use target, interim urban water use target,...along with the bases for determining those estimates, including references to supporting data (CWC 10608.20(e))*

*An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan...(CWC 10608.20(g))*

City of Eureka updated its 2020 urban water use target and is summarized in the table below:

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target*	Calculated 2020 Target <i>Fm Appropriate Target Table</i>	Confirmed 2020 Target
125	119	108	108
* Maximum 2020 Target is 95% of the 5 Year Baseline GPCD			
NOTES:			

City of Eureka updated its 2015 urban water use interim target and is summarized in the table below:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
108	135	122
NOTES:		

**5.8 2015 Compliance Daily per Capita Water Use (GPCD)**

**Requirement:** *“Compliance daily per-capita water use” means the gross water use during the final year of the reporting period... (CWC 10608.12(e))*

*Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015. (CWC 10608.24(a))*

*An urban retail water supplier shall include in its urban water management plan due in 2010 . . . compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data. (CWC 10608.20(e))*

COE's 2015 interim target is 122 GPCD. COE's 2015 GPCD was actually 107. The City of Eureka has achieved compliance with daily per-capita water use for 2015 and is on track to be in compliance with the 2020 GPCD target, (Table 5-1, and 5-2).

## 6.0 SYSTEM SUPPLIES

This Section describe 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.

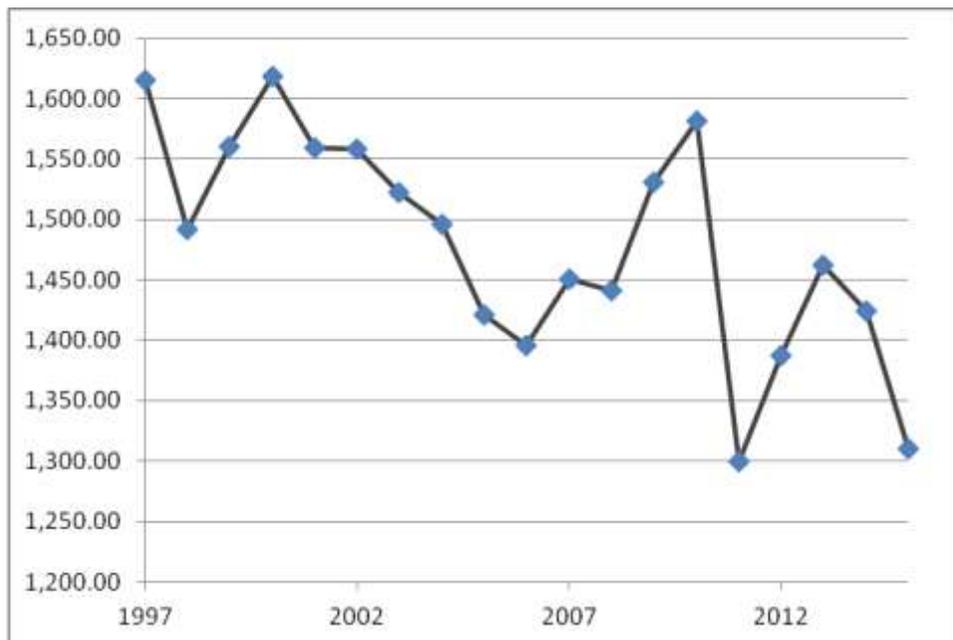
### 6.1 Purchased or Imported Water

The City of Eureka purchases water from HBMWD that comes from wells located in the bed of the Mad River. These wells, termed "Ranney Wells" because of their patented construction, draw water from the sands and gravels of the riverbed at depths ranging from 60 to 90 feet. This naturally filtered water is then disinfected by chlorination, filtered again, and delivered without any further treatment, to retail customers. The Department of Health Services (DOHS) classified HBMWD's water supplied to domestic customers as groundwater.

The City of Eureka has vested water rights to 1,883.42 MGY of water from the Mad River. HBMWD is able to deliver 1,883.42 MGY to the City. Projected demand for 2035 is 1,596 MGY, keeping water purchases for Eureka well below their vested water rights.

According to HBMWD documents, they currently have water rights to divert 75 million gallons per day (MGD) from the Mad River. The HBMWD also owns and operates the R.W. Matthews Dam impounding water in Ruth Lake. HBMWD manages releases from the dam to ensure sufficient supplies downstream throughout the year.

The historic volumes of water purchased from HBMWD are shown in the graph below in millions of gallons per year (1997-2015).



## 6.2 Groundwater

**Requirement:** *If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan: (2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. (CWC 10631(b))*

The City of Eureka does not use or plan to use groundwater as a source of water (Table 6-1).

**Requirement:** *If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:*

*(1) A copy of any groundwater management plan adopted by the urban water supplier...or any other specific authorization for groundwater management.*

*(2) ...For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. (CWC 10631(b))*

The City of Eureka has not identified groundwater as an existing or planned source of water.

**Requirement:** *For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. (CWC 10631(b)(2))*

The City of Eureka has not identified groundwater as an existing or planned source of water.

**Requirement:** *...If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:*

*(3) 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. (CWC 10631(b))*

The City of Eureka has not identified groundwater as an existing or planned source of water.

## 6.3 Surface Water

The City of Eureka does not use, or plan to use, self-supplied surface water as part of its water supply.

#### 6.4 Stormwater

The City of Eureka does not currently or plan to intentionally divert stormwater for beneficial reuse.

#### 6.5 Wastewater and Recycled Water

**Requirement:** *The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area. (CWC, 10633)*

The City of Eureka owns and operates a wastewater collection and treatment facility serving City of Eureka customers and customers in the HCSD adjacent to City Limits. All of the wastewater flows from the City (excluding storm water runoff) are collected and treated at the Elk River Wastewater Treatment Plant to secondary treatment standards. Depending on the intended use, all of this secondary wastewater may be suitable for reuse.

**Requirement:** *(Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal. (CWC, 10633(a))*

The City treated 1,733.75 MGs of wastewater in 2015. The City utilizes recycled water in the processes of its wastewater treatment plant and in the irrigation of the landscaping of this facility. Approximately 27 MGY of reclaimed water is used in this manner. The remainder of the treated wastewater is discharged to Humboldt Bay during ebb tide.

Current wastewater treatment at the Elk River Plant includes the following processes:

- Primary Sedimentation
- Trickling Filter/Solids Contact
- Chlorination/Dechlorination
- Discharge to Humboldt Bay on ebb tides

*(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. (CWC, 10633(b))*

The City treated an average of 4.75 MGD in 2015 all of which meet the UWMP recycled water standard.

*(Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use. (CWC, 10633(c))*

Currently the City of Eureka is using 18.24 MGY for irrigation of landscaping at the wastewater treatment facility and an additional 9.12 MGY for cooling water at the wastewater treatment facility (Table 6.3).

**Requirement:** (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses. (CWC, 10633(d))

Potential recycled water uses for the City of Eureka include irrigating agricultural areas to the east and south of the treatment plant, wildlife and wetlands areas adjacent to the treatment plant, and the Municipal Golf Course east of the treatment plant. Due to the high annual rainfall and mild summer temperatures in this area, irrigation with recycled water is not economically feasible due to the cost of infrastructure investment and the marginal benefit of irrigating for a few months out of the year.

The wildlife and wetland areas adjacent to the wastewater treatment plant receive urban runoff and drain to the Elk River. Augmenting the storm water supply with recycled water would require the designation of new wastewater outfalls and associated permitting by the Regional Water Quality Control Board (Table 6-4, 6-5 and 6-6).

**Requirement:** (Describe) the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision. (CWC, 10633(e))

The City of Eureka does not plan to use recycled water in the future.

## **6.6 Desalinated Water Opportunities**

**Requirement:** Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply. (CWC, 10631(h))

Development and utilization of desalinated water is deemed unnecessary at this time.

## **6.7 Exchanges or Transfers**

**Requirement:** Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis. (CWC, 10631(d))

The City of Eureka does not anticipate seeking short nor long term transfer or exchanges of water to meet the anticipated consumption demand.

## **6.8 Future Water Projects**

**Requirement:** ...The urban water supplier shall include a detailed description of expected future projects and programs... that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program. (CWC, 10631(g))

The City of Eureka has vested water rights to 1,883.42 MGY of water from the Mad River. HBMWD can deliver 1,883.42 MGY to the City. Projected demand for 2035 is 1,596 MGY, keeping water purchases for Eureka well below their vested water rights. Currently the City of Eureka is not considering projects or programs that would increase the amount of water supply available.

### **6.9 Summary of Existing and Planned Sources**

*Requirement: ...Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (CWC, 10631(b))*

The existing sources of water used in 2015 are included in Table 6-8. Current plans are to continue using purchased water from HBMWD, (Table 6-8).

## 7.0 WATER SUPPLY RELIABILITY

This Section describes the reliability of The City of Eureka's water supply and project the reliability out 20 years. This description will be provided for normal, single dry years and multiple dry years.

### 7.1 Constraints on Water Sources

**Requirement:** *For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable. (CWC, 10631(c)(2))*

*The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability. (CWC 10634)*

The City of Eureka relies on one water source, HBMWD (wholesaler). The City of Eureka has vested water rights to 1,883.42 MGY of water from the Mad River. HBMWD delivers 1,883.42 MGY by contract to the City. This source is available at a consistent level of use and is not limited by, environmental, water quality, or climatic factors. The City of Eureka has no specific plans to supplement or replace the existing source of water.

### 7.2 Reliability by Type of Year

**Requirement:** *Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:*

- (A) an average water year,*
- (B) a single dry water year,*
- (C) multiple dry water years. (CWC 10631(c)(1))*

HBMWD performed an analysis of the Ruth Lake storage capacity in 2015 that is included as Appendix C. The Ruth Lake Storage Capacity Analysis assumed a four year repetition of the 1976-1977 hydrology (driest years on record with only 10% of average discharge) and found that Ruth Lake has sufficient supply to provide 36.5 million gallons per day for four years, which is almost four times the current total demand and reliably provide twice the current demand indefinitely.

### 7.3 Supply and Demand Assessment

**Requirement:** *Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available*

*data from state, regional or local agency population projections within the service area of the urban water supplier. (CWC 16035 (a))*

## **Purchased Water from HBMWD**

The following section is from the HBMWD Water Shortage Contingency Planning Document (Appendix D).

### **Minimum Supply Next Three Years**

The three water years between October 1989 and September 1992 represent the driest three-year period recorded for the District (HBMWD, Ruth Lake):

- Rainfall for this period averaged 42 inches per year (60% of normal).
- Of the three water years, the driest year for rainfall was water year 1990/1991 with 37 inches (53% of normal).
- Flows into Ruth Lake above Zenia averaged 69,000 AFY, or 40% of normal (173,000 AFY).
- The runoff for the watershed above the District's diversion facilities was 371,300 AFY, or 37% of normal (982,600 AFY).
- Despite the diminished rainfall and runoff, rainfall was more than sufficient to refill the reservoir each year.
- Reservoir volume during this period averaged 37,000 AF which is 77% of capacity (48,030 AF) and 90% of normal (41,000 AF).

A plot of reservoir levels over the course of each respective water year from October 1989 through September 1992 .....shows that even in the three driest consecutive years of record, the reservoir still reached maximum capacity for each of the respective years and generally remained full for months each year. 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 three years are hydrologically the same as the driest three consecutive years of record, the minimum available supply would be greater than the full reservoir level of 48,030 acre-feet for each year, (Tables 7-1, 7-2, 7-3, and 7-4).

## **7.4 Regional Supply Reliability**

**Requirement:** *An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions. (CWC 10620 (f))*

The City of Eureka will continue performing annual AWWA water loss audits to track overall system performance and will focus on evaluating the production and sales data process to better understand their water balance.

## 8.0 WATER SHORTAGE CONTINGENCY PLANNING

This Section describes Eureka's staged plan for dealing with water shortages, including a catastrophic supply interruption.

The City of Eureka is one of several water suppliers that receives water from HBMWD (wholesaler). HBMWD has a Water Shortage Contingency Plan that governs their actions during a water shortage emergency and under various specific conditions will reduce the amount of water available to the water suppliers (retailers). At the time HBMWD reduces the water allocations to retailers it is up to each of the retailers to determine how to accomplish those reductions. Eureka Municipal Code (EMC) 53.35-53.44 lists a range of water use restrictions and includes enforcement/penalty authority for violation of the water use restrictions. EMC 53.35-53.44 was designed to be flexible and able to be implemented in a wide range of water shortage situations (Appendix E). The City of Eureka also adopted a revised "Water Shortage Contingency Plan" in 2015 (Appendix F) that defines stages based on the authority, prohibitions and actions in EMC 53.35-53.44.

### 8.1 Stages of Action

**Requirement:** *Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage. (CWC 10632 (a)(1))*

The following stages and reduction are contained in the City of Eureka Water Shortage Contingency Plan:

#### Stage 1

- Water waste prohibited as defined in City ordinance 53.40

#### Stage 2

- Voluntary conservation

#### Stage 3 (10% - 15% water use reduction goal)

- The application of potable water to driveways and sidewalks is prohibited.
- Filling swimming pools, hot tubs, or spas is prohibited.
- Outdoor ornamental or turf irrigation during or within 48 hours of measurable precipitation is prohibited.
- Outdoor irrigation of ornamental landscapes or turf is restricted to Sundays, Tuesdays, Thursdays, and Saturdays.
- Serving drinking water other than upon request at eating and drinking establishments is prohibited.
- Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guestroom using clear and easily understood language.
- The City shall not issue written or oral commitments for new or expanded water service.

Stage 4 (Reduce water usage by 16% - 30%)

- Water usage allocations:
  - Priority 1: Minimum health and safety allocations for interior residential and emergency care facilities within the City Limits;
  - Priority 2: Commercial, industrial, and institutional/governmental operations where water is used for manufacturing and for minimum health and safety requirements for employees and visitors in order to maintain jobs and economic base;
  - Priority 3: Large landscaped areas; and
  - Priority 4: New connections.

Stage 5 (Reduce water usage up to 50%)

- Mandatory water rationing

**Requirement:** *Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code. (CWC 10632 (b))*

*“Swimming pool” or “pool” means any structure intended for swimming or recreational bathing that contains water over 18 inches deep. “Swimming pool” includes in-ground and aboveground structures and includes, but is not limited to, hot tubs, spas, portable spas, and non-portable wading pools. (Health and Safety Code Section 115921)*

EMC 53-41 prohibits the filling of swimming pools (stage 3). COE is not aware of any water features that are artificially supplied with water supplied by COE, including ponds, lakes, waterfalls, and fountains

## 8.2 Penalties, Charges, Other Enforcement of Prohibitions

**Requirement:** *Penalties or charges for excessive use, where applicable. (CWC 10632 (a)(6))*

During any Water Shortage Stage the City of Eureka has enforcement authority and the authority levy penalties and charges. EMC 53-42 includes enforcement provisions:

*A. Each police officer of the city, in connection with his duties imposed by law, shall diligently enforce the provisions of this subchapter.*

*B. The Manager and all employees of the city shall have the duty and are authorized to enforce the provisions of this subchapter and shall have all the powers and authority set forth in Cal. Penal Code § 836.5, including the power to issue written notices to appear.*

EMC 53.44 provides the authority to disconnect a water service if a water user is cited with a misdemeanor for prohibited water use.

### 8.3 Consumption Reduction Methods

**Requirement:** Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply. (CWC 10632 (a)(5))

Stage 4 includes the water use allocations, contained in EMC Ordinance 53-41 (2). Stage 5 of the Water Shortage Contingency Plan (50% reduction) includes mandatory water rationing EMC Ordinance 53-41 (2).

### 8.4 Determining Water Shortage Reduction

**Requirement:** A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis. (CWC 10632 (a)(9))

All City of Eureka service connections are metered and can easily be compared to historical consumption data to determine actual reduction in water use during a period of water shortage. Actual reductions in water use are measured by monthly by monitoring monthly water productions totals and monthly water distribution totals.

### 8.5 Revenue and Expenditure Impacts

**Requirement:** An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments. (CWC 10632 (a)(7))

Reduced revenue is expected during a period of water shortage as indicated in the table below:

	20% Volumetric Sales Reduction	30% Volumetric Sales Reduction	50% Volumetric Sales Reduction
<b>Anticipated Net Reduction in Revenue (12-months) as % of Total Revenue</b>	<b>5.75%</b>	<b>8.47%</b>	<b>14.22%</b>
<b>Anticipated Net Reduction in Revenue (6-months) as % of Total Revenue</b>	<b>2.87%</b>	<b>4.23%</b>	<b>7.11%</b>
<b>Anticipated Net Reduction in Revenue (3-months) as % of Total Revenue</b>	<b>1.44%</b>	<b>2.12%</b>	<b>3.55%</b>

COE maintains a reserve fund for such emergencies which would be used to supplement water sale revenue for short term water shortage. In the event of long term water shortage, excess water use penalties may be implemented to reduce reserve fund depletion and promote water conservation.

## 8.6 Resolution or Ordinance

**Requirement:** *A draft water shortage contingency resolution or ordinance. (CWC 10632 (a)(8))*

A copy of COE's "Resolution of The City Council of The City of Eureka Implementing Water Shortage Emergency Regulations" dated April 21, 2015 is attached (Appendix F).

## 8.7 Catastrophic Supply Interruption

**Requirement:** *Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster. (CWC 10632 (a)(3))*

The following summarizes catastrophic supply interruption plans that the City has in place to respond to non-drought related events:

- Possible Catastrophe (Summary of Actions).
- Regional Power Outage (Emergency Operations Plan-Power Outage Procedures).
- System Failure (Operations Plan for Water Supply, Treatment, and Distribution System).
- Earthquake (Emergency Operations Plan).
- Acts of Terrorism (Emergency Operations Plan-Security Procedures/Vulnerability Assessment Plan).

## 8.8 Minimum Supply Next Three Years

**Requirement:** *An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply. (CWC 10632 (a)(2))*

HBMWD performed an analysis of the Ruth Lake storage capacity in 2015 that is included as Appendix C. The Ruth Lake Storage Capacity Analysis assumed a four year repetition of the 1976-1977 hydrology (driest years on record with only 10% of average discharge) and found that Ruth Lake has sufficient supply to provide 36.5 million gallons per day for four years, which is almost four times the current total demand and reliable provide twice the current demand indefinitely, (Table 8-4).

## 9.0 DEMAND MANAGEMENT MEASURE

This Section will describe the City of Eureka's efforts to promote conservation and to reduce demand on their water supply and will specifically address several demand management measures.

### 9.1 Demand Management Measures for Retail Agencies

**Requirement:** (A) *The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.*

(B) *The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:*

- (i) *Water waste prevention ordinances.*
- (ii) *Metering.*
- (iii) *Conservation pricing.*
- (iv) *Public education and outreach.*
- (v) *Programs to assess and manage distribution system real loss.*
- (vi) *Water conservation program coordination and staffing support.*
- (vii) *Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented. (CWC 10631 (f))*

Water Waste Prevention Ordinance - The City of Eureka has a municipal code that prohibits the waste of water. EMC 53.40 states "No person or customer shall cause or permit water waste as defined in § 53.36."

EMC 53.36 defined water waste as:

- Water use in outdoor areas resulting in runoff. The use of water which allows water to run off to a gutter, ditch, or drain.
- The excessive use, loss, or escape of water through breaks, leaks or malfunctions in the water user's plumbing or distribution facilities.
- The washing of vehicles, building exteriors, sidewalks, driveways, parking areas, tennis courts, patios or other paved areas without the use of a positive shut-off nozzle on the hose, which results in excessive runoff.

Furthermore, the COE has a program designed to alert customers when excessive water use is detected. This is designed to help customers detect leaks and keep water costs down to end users.

Metering - All COE customer sectors are metered including separate meters for single-family residential, commercial, industrial and educational facilities. All customers are on meters and are billed by volume used.

Conservation Pricing - The COE's water billing pricing structure consists of a service charge for water availability (base charge) and quantity use charges (consumption charge). There is no inclining use (tiered) charges associated with COE's pricing structure at this time. The City of Eureka has abundant water supplies and relies on water rate revenues to operate. Implementing conservation measures would reduce operating revenue (other than leak reduction).

Public Education and Outreach - The COE supports initiatives to inform the public about water conservation. As a retail customer of HBMWD, indirect contributions are made regularly to the California Water Awareness Campaign and the Water Education Foundation (WEF). As part of the WEF's Water Awareness Month, HBMWD has co-sponsored radio public service announcements with water awareness and water conservation messages. In the future, HBMWD will continue these efforts to raise public awareness of water conservation issues in a similar manner.

The City has created a site on its web page to promote water use awareness and water conservation. In addition, the City created a promotional campaign that targets reducing water use by producing water awareness and conservation brochures and running monthly public service announcements on the radio. This DMM will continue into the future.

Programs To Assess And Manage Distribution System Real Loss - COE has meters on all services and sources. Due to the water distribution system's age and area seismic activities, the COE routinely monitors for leaks, conducts distribution system repair and meter calibration activities. Totalizers connected to the COE's control system measure and record production rates, receiving rates, as well as delivery rates. These readings are taken continuously and are monitored at all times by COE staff. The City of Eureka also conducts valve exercising annually to ensure that all valving works properly and therefore allows for a distribution system check. The COE has completed an AWWA Water Loss Audit for calendar year 2015 and is committed to annual water loss audits. As a result of the 2015 AWWA Water Loss Audit, COE will be reviewing data collection and reporting processes for water production and sales with a goal of improving the data quality. COE will measure the effectiveness of this DMM by ongoing monitoring of system loss.

Water Conservation Program Coordination And Staffing Support - The Public Works Director has been assigned as the District Conservation Coordinator and has overall responsibility for oversight and implementation of the water conservation program(s).

Rebate Program Water Saving Appliances - The City provides rebates for water efficient appliances including clothes washers and low-flow toilets.

## 9.2 Implementation over the Past Five Years

**Requirement:** Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1)(A) ... a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.  
(CWC 10631(f)(2))

Over the past five years the City of Eureka has focused water conservation efforts on public education and outreach programs.

Public Education and Outreach - In the past five years the City of Eureka has coordinated public education and outreach with the other regional water retailers that are supplied water by HBMWD. This coordinated outreach included:

- Recording of 7 different 30-second radio ads highlighting different water conservation messages for broadcast on 3 radio stations over a six-month period (May-Oct 2014 and 2015);
- Staffing a booth at the Humboldt County Fair that promotes water conservation (2014 and 2015);
- Staffing a booth at the Sequoia Park Zoo for the education foundation that promotes water conservation and at several other local community events, and
- Made water conservation presentations to various local civic groups such as local Daughters of the America Revolution; Soroptomist International of Eureka.

Programs To Assess And Manage Distribution System Real Loss -COE has completed AWWA Water Loss Audits for calendar year 2015. Based on results of the audits COE has focused efforts on refining data collection and reporting, and assessing the condition of system interties that connect COE to the HCSD water system. COE has also been working continually with the water billing software and software provider to be able to generate meaningful reliable monthly water distribution volumes.

Rebate Program Water Saving Appliances - The City provides rebates for water efficient appliances including clothes washers and low-flow toilets.

### **9.3 Planned Implementation to Achieve Water Use Targets**

**Requirement:** *Provide a description of the supplier's water demand management measures. This description shall include all of the following:*

*(1)(A) ...The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20. (CWC 10631(f))*

COE is on track for meeting the 2020 water use goal. To maintain water conservation in the service area COE will continue to emphasize public education and outreach with other water retailers and programs to assess and manage distribution real loss.

Public Education and Outreach - To achieve the water use target for 2020 COE will continue to coordinate public education and outreach with the other regional water retailers that are supplied water by HBMWD. This coordinated outreach include a new series of radio adds that promote water conservation and plans for annual staffing of a booth at the Humboldt County Fair that promotes water conservation.

Programs To Assess And Manage Distribution System Real Loss - COE will continue to conduct annual AWWA water loss audits and focus on correcting detected water leaks and improving the billing system to generate monthly distribution reports that can be used to monitor the effectiveness of various system corrections.

Rebate Program Water Saving Appliances - The City will continue to provide rebates for water efficient appliances including clothes washers and low-flow toilets.

## 10.0 PLAN ADOPTION, SUBMITAL AND IMPLEMENTATION

This Section describes the steps taken by COE to adopt and submit the UWMP and to make it publicly available. This chapter will also include a discussion of COE's plan to implement the UWMP.

### 10.1 Inclusion of All 2015 Data

The City of Eureka's 2015 UWMP includes all of the 2015 data based on a calendar year.

### 10.2 Notice of Public Hearing

***Requirement:** Every urban water supplier required to prepare a plan shall... at least 60 days prior to the public hearing on the plan ... 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))*

*The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area...(CWC 10642)*

COE provided written notice of their UWMP review and updating at least 60 days prior to the public hearing. A copy of the 60 day notice letters are included as Appendix A, (Table 10-1).

### 10.3 Notice to the Public

***Requirement:** Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection...Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code...(CWC 10642)*

***Government Code 6066** Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.*

Notice to the public was provided per the above guidelines prior to the public hearing. A copy of the notice to the public is included in Appendix G.

### 10.4 Public Hearing and Adoption

***Requirement:** Prior to adopting a plan, the urban water supplier shall hold a public hearing thereon. (CWC 10642)*

*In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:*

- (1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.*

- (2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.
- (3) Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target. (CWC 10608.26)

...After the hearing, the plan shall be adopted as prepared or as modified after the hearing. (CWC 10642)

The City of Eureka's 2015 UWMP, was adopted by the City of Eureka's City Council on July 5, 2016 by Resolution 2016-46 (Appendix H), and will be submitted to the DWR.

### 10.5 Plan Submittal

**Requirement:** An urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016. (CWC 10641 (d))

The City of Eureka will submit a copy of the approved 2015 UWMP to the department by July 1, 2016.

**Requirement:** An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. (CWC 10644(a)(1))

Within 30 days of approval COE will provide a copy of the plan to the California State Library.

**Requirement:** The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan. (CWC 10635)

COE will provide a copy of the plan to the HCSD and Humboldt County.

### 10.6 Public Availability

**Requirement:** Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.. (CWC 10645)

COE will make a copy of the plan available at their office and on their webpage.

## TABLES

**Table 2-1 Retail Only: Public Water Systems**

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
CA1210004	City of Eureka	10,004	1,034
<b>TOTAL</b>		<b>10,004</b>	<b>1,034</b>

NOTES: Volume in Millions of gallons.

Table 2-2: Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable drop down list</i>
<input checked="" type="checkbox"/>	<b>Individual UWMP</b>	
	<input type="checkbox"/> Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/> Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	<b>Regional Urban Water Management Plan (RUWMP)</b>	
NOTES:		

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
<input type="checkbox"/>	Agency is a wholesaler
<input checked="" type="checkbox"/>	Agency is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables Are in Calendar Years
<input type="checkbox"/>	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	MG
NOTES:	

**Table 2-4 Retail: Water Supplier Information Exchange**

The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.

Wholesale Water Supplier Name *(Add additional rows as needed)*

Humboldt Bay Municipal Water District (HBMWD)

NOTES:

**Table 3-1 Retail: Population - Current and Projected**

Population Served	2015	2020	2025	2030	2035	2040(opt)
	27,428	28,543	29,703	30,911	32,167	

2015 projection based on 2010 Census data and persons per connection. 2020-2035 based on 0.80% growth (Humboldt County General Plan).

**Table 4-1 Retail: Demands for Potable and Raw Water - Actual**

Use Type <i>(Add additional rows as needed)</i>	2015 Actual		
<i>Drop down list</i> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description <i>(as needed)</i>	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Single Family		Drinking Water	477
Multi-Family		Drinking Water	107
Commercial		Drinking Water	440
Industrial		Drinking Water	
Other	Residential outside City Limits	Drinking Water	10
<b>TOTAL</b>			<b>1,034</b>
NOTES:			

**Table 4-2 Retail: Demands for Potable and Raw Water - Projected**

Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>				
		2020	2025	2030	2035	2040-opt
<p><b><u>Drop down list</u></b>  <i>May select each use multiple times</i>  <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i></p>						
Single Family		551	573	597	621	
Multi-Family		123	128	133	138	
Commercial	Commercial/institutional	400	416	433	451	
Industrial		0	0	0	0	
Other	Sales out or City Limits	8	8	8	9	
Sales/Transfers/Exchanges to other agencies	Sales to HCSD	250	250	250	250	
Losses	System-wide losses	107	111	115	119	
<b>TOTAL</b>		1,438	1,486	1,535	1,588	0

Total system losses (transmission and distribution losses).

**Table 4-3 Retail: Total Water Demands**

	2015	2020	2025	2030	2035	2040 <i>(opt)</i>
Potable and Raw Water <i>From</i> <i>Tables 4-1 and 4-2</i>	1,034	1,438	1,486	1,535	1,588	0
Recycled Water Demand* <i>From</i> <i>Table 6-4</i>	27	27	27	27	27	0
<b>TOTAL WATER DEMAND</b>	1,061	1,465	1,513	1,562	1,615	0

*\*Recycled water demand fields will be blank until Table 6-4 is complete.*

NOTES:

**Table 4-4 Retail: 12 Month Water Loss Audit Reporting**

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	31.6375

*\* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*

NOTES:Real system loss (physical loss).

**Table 4-5 Retail Only: Inclusion in Water Use Projections**

<p>Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i></p>	<p>No</p>
<p>If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.</p>	
<p>Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i></p>	<p>Yes</p>
<p>NOTES:</p>	

**Table 5-1 Baselines and Targets Summary**  
*Retail Agency or Regional Alliance Only*

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	1995	2004	135	122	108
5 Year	2003	2007	125		

\*All values are in Gallons per Capita per Day (GPCD)

NOTES:

**Table 5-2: 2015 Compliance**

*Retail Agency or Regional Alliance Only*

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD <i>From Methodology 8</i>					2015 GPCD* <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2015 GPCD*		
107	122				0	107	107	Yes

*\*All values are in Gallons per Capita per Day (GPCD)*

NOTES:

Table 6-1 Retail: Groundwater Volume Pumped						
<input checked="" type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
<i>Add additional rows as needed</i>						
<b>TOTAL</b>		0	0	0	0	0
NOTES:						

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
<input type="checkbox"/>	There is no wastewater collection system. The supplier will not complete the table below.					
100	Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>					
100	Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
<i>Add additional rows as needed</i>						
City of Eureka	Metered	1,350	City of Eureka	Elk River Treatment Plant	Yes	No
HCS D	Metered	382	City of Eureka	Elk River Treatment Plant	Yes	No
<b>Total Wastewater Collected from Service Area in 2015:</b>		1,732				
NOTES: HCS D-Humboldt Community Services District						

**Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015**

<input type="checkbox"/> No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level <i>Drop down list</i>	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
<i>Add additional rows as needed</i>										
GREATER EUREKA AREA ELK RIVER	Humboldt Bay	Discharge only occurs at ebb tide to	LB821510HUM	Ocean outfall	Yes	Secondary, Disinfected - 23	1,732	1,732		
<b>Total</b>							1,732	1,732	0	0
NOTES:										

**Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area**

<input checked="" type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.								
Name of Agency Producing (Treating) the Recycled Water:	City of Eureka							
Name of Agency Operating the Recycled Water Distribution System:	City of Eureka							
Supplemental Water Added in 2015								
Source of 2015 Supplemental Water								
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)								
Golf course irrigation								
Commercial use								
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other (Provide General Description)								
<b>Total:</b>			0	0	0	0	0	0
*IPR - Indirect Potable Reuse								
NOTES:								

**Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual**

<input checked="" type="checkbox"/>	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.	
Use Type	2010 Projection for 2015	2015 Actual Use
Agricultural irrigation	18	0
Landscape irrigation (excludes golf courses)		
Golf course irrigation		
Commercial use		
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Surface water augmentation (IPR)		
Direct potable reuse		
Other		
<b>Total</b>	<b>18</b>	<b>0</b>

NOTES: 2015 recycled water was incorrectly classified. The actual has been changed to "0".

**Table 6-6 Retail: Methods to Expand Future Recycled Water Use**

<input checked="" type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
<i>Add additional rows as needed</i>			
<b>Total</b>			0
NOTES:			

**Table 6-7 Retail: Expected Future Water Supply Projects or Programs**

<input checked="" type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
<input type="checkbox"/>	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 agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Agency <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Agency Name</i>				

*Add additional rows as needed*


NOTES:

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
<i>Drop down list</i> <i>May use each category multiple times.</i> <i>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Actual Volume	Water Quality <i>Drop Down List</i>	Total Right or Safe Yield <i>(optional)</i>
<i>Add additional rows as needed</i>				
Purchased or Imported Water	From HBMWD	1,311	Drinking Water	
<b>Total</b>		<b>1,311</b>		<b>0</b>
NOTES:				

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply <i>Report To the Extent Practicable</i>									
<i>Drop down list</i> <i>May use each category multiple times.</i> <i>These are the only water supply categories that will be recognized by the WUdata online submittal tool</i>		2020		2025		2030		2035		2040 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
<i>Add additional rows as needed</i>											
Purchased or Imported Water	From HBMWD	1,883		1,883		1,883		1,883			
Recycled Water		27		27		27		27			
	<b>Total</b>	1,910	0	1,910	0	1,910	0	1,910	0	0	0
NOTES: HBMWD-Humboldt Bay Municipal Water District. Vested water rights for 1,883 MGY.											

**Table 7-1 Retail: Basis of Water Year Data**

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year			100%
Single-Dry Year	1976	1883	100%
Multiple-Dry Years 1st Year	1976	1883	100%
Multiple-Dry Years 2nd Year	1976	1883	100%
Multiple-Dry Years 3rd Year	1976	1883	100%
Multiple-Dry Years 4th Year <i>Optional</i>			
Multiple-Dry Years 5th Year <i>Optional</i>			
Multiple-Dry Years 6th Year <i>Optional</i>			
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES:			

**Table 7-2 Retail: Normal Year Supply and Demand Comparison**

	2020	2025	2030	2035	2040 (Opt)
Supply totals (autofill from Table 6-9)	1,910	1,910	1,910	1,910	0
Demand totals (autofill from Table 4-3)	1,465	1,513	1,562	1,615	0
Difference	445	397	348	295	0
NOTES:					

**Table 7-3 Retail: Single Dry Year Supply and Demand Comparison**

	2020	2025	2030	2035	2040 (Opt)
Supply totals	1,883	1,883	1,883	1,883	
Demand totals	1,464	1,513	1,562	1,614	
Difference	419	370	321	269	0

NOTES:

**Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison**

		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	1,883	1,883	1,883	1,883	
	Demand totals	1,462	1,510	1,559	1,611	
	Difference	421	373	324	272	0
Second year	Supply totals	1,883	1,883	1,883	1,883	
	Demand totals	1,462	1,510	1,559	1,611	
	Difference	421	373	324	272	0
Third year	Supply totals	1,883	1,883	1,883	1,883	
	Demand totals	1,462	1,510	1,559	1,611	
	Difference	421	373	324	272	0
Fourth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

NOTES:

**Table 8-1 Retail  
Stages of Water Shortage Contingency Plan**

Stage	Complete Both	
	Percent Supply Reduction <sup>1</sup> <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>

*Add additional rows as needed*

1	10%	Water waste prohibited always in effect.
2	10%	Voluntary conservation
3	10-15%	When the Manager determines that water available is insufficient
4	16-30%	When the Manager determines that water available is insufficient
5	50%	When the Manager determines that water available is insufficient

<sup>1</sup> *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*

NOTES:

is insufficient  
is insufficient  
is insufficient

**Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses**

Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
<i>Add additional rows as needed</i>			
1	Other	Water waste prohibited	Yes
2	Other	Voluntary conservation	No
3	Other - Prohibit use of potable water for washing hard surfaces		Yes
3	Other water feature or swimming pool restriction	Filling prohibited	Yes
3	Landscape - Limit landscape irrigation to specific days		Yes
3	CII - Restaurants may only serve water upon request		Yes
3	CII - Lodging establishment must offer opt out of linen service		Yes
NOTES:			

**Table 8-3 Retail Only:  
Stages of Water Shortage Contingency Plan - Consumption Reduction Methods**

Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
-------	---	--

*Add additional rows as needed*

4	Other	Water allocations depending of priority
5	Other	Water rationing

NOTES:

**Table 8-4 Retail: Minimum Supply Next Three Years**

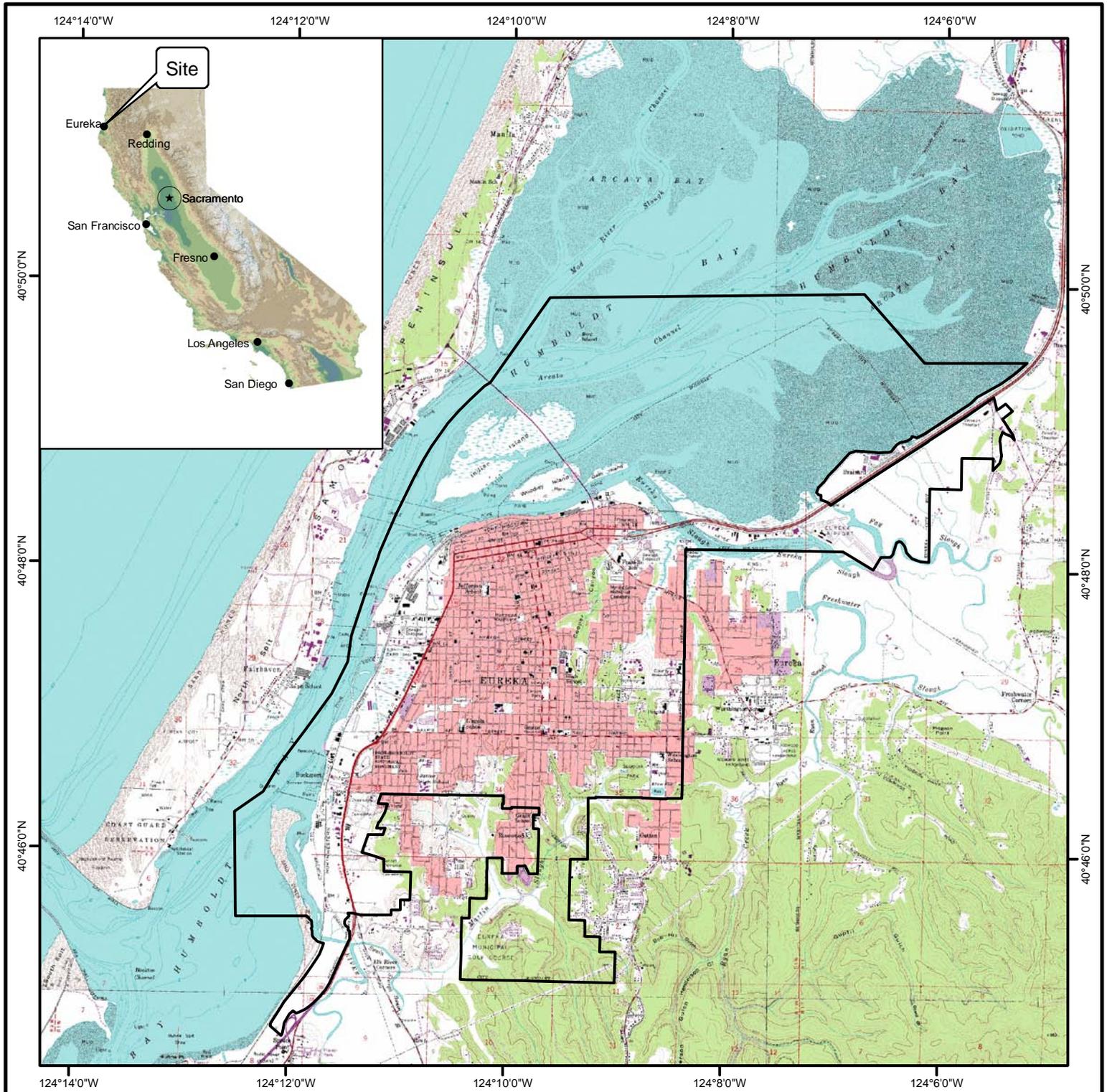
	2016	2017	2018
Available Water Supply	1,883	1,883	1,883

NOTES:

**Table 10-1 Retail: Notification to Cities and Counties**

City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
HCS D	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HBMWD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
Humboldt County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

## FIGURES



**LEGEND**

□ Eureka City Limits

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

ALL LOCATIONS APPROXIMATE

City of Eureka  
2015 UWMP

Figure 1  
Site Location Map  
Eureka, California



**Freshwater Environmental Services**

Date: 4-29-16

By: SJT



**LEGEND**

 Eureka City Limits

Base Image Data Source: USDA-FSA Aerial Photography Field Office Color Digital Ortho Photo Quad dated June, 2014.

ALL LOCATIONS APPROXIMATE

City of Eureka  
2015 UWMP

Figure 2  
Site Location Map  
2014 Aerial Image



**Freshwater Environmental Services**

Date: 4-29-16

By: SJT

**APPENDIX A**  
**NOTICE OF PREPARATION TO NEIGHBORING MUNICIPALITIES**



# CITY OF EUREKA

PUBLIC WORKS DEPARTMENT

531 K Street • Eureka, California 95501-1146

DATE 1-27-16

TO: David Hull, General Manager, Humboldt Community Services District  
Robert Wall, Humboldt County Planning Department  
Paul Helliker, General Manager, Humboldt Bay Municipal Water District

RE: Notice Regarding Review of the City of Eureka Urban Water Management Plan

California Water Code (CWC) 10621(b) requires an urban water supplier preparing an Urban Water Management Plan to notify any city or county within which the supplier provides water, 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 the City of Eureka's notice to your agency that the City of Eureka is in the process of reviewing and updating its UWMP. As with the 2010 UWMP, the City of Eureka is reviewing and updating the 2015 UPMP in collaboration with Humboldt Bay Municipal Water District, City of Arcata, 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 contact me at (707) 441-4360.

Sincerely

Daniel Duncan  
Deputy Public Works Director – Utility Operations

Cc: Brian Gerving

## UTILITIES OPERATIONS DIVISION

Wastewater Treatment	(707) 441-4364	Pretreatment	(707) 441-4362
Water Treatment	(707) 441-4234	Water Quality Laboratory	(707) 441-4363
FAX - Wastewater Treatment	(707) 441-4366	FAX - Water Treatment	(707) 441-4265



## CITY OF EUREKA

### PUBLIC WORKS DEPARTMENT

531 K Street • Eureka, California 95501-1146 • Fax 707-441-4202  
Administration: 707-441-4203 • Engineering: 707-441-4194  
Building: 707-441-4155 • Utility Operations: 707-441-4364  
[publicworks@ci.eureka.ca.gov](mailto:publicworks@ci.eureka.ca.gov) • [www.ci.eureka.ca.gov](http://www.ci.eureka.ca.gov)

June 6, 2016

To: David Hull, General Manager, Humboldt Community Service District  
Robert Wall, Humboldt County Planning Department  
Paul Helliker, Humboldt Bay Municipal Water District

Re: Notice Regarding Public Hearing on the City of Eureka Urban Water Management Plan.

California Water Code (CWC) 10621(b) requires an urban water supplier 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 conducting a public hearing and considering adoption.

NOTICE IS HEREBY GIVEN of a public hearing for the purpose of receiving public comment and testimony regarding the Draft City of Eureka 2015 Urban Water Management Plan (UWMP). The City will hold this public meeting in compliance with requirements of the California Department of Water Resources (DWR) pursuant to the UWMP Act and the Water Conservation Bill of 2009 to solicit the input of the public. The public hearing will also be held for the purposes to solicit input for the City's intention to approve the 2015 UWMP. A copy of the Draft 2015 UWMP is available at the City office for review.

The City will hold this public hearing on July 5, 2016 at 6 PM at Eureka City Hall.

Any and all interested parties are invited to attend and be heard at this public hearing. We welcome your participation in the revision of the City of Eureka's 2015 Urban Water Management Plan. Please contact me at (707) 441-4290 if you have any questions.

Sincerely,

Brian Issa

Deputy Public Works Director – Field Operations

#### **Engineering**

Construction  
Development  
Transportation

#### **Field Operations**

Water Distribution  
Wastewater Collection  
Equipment Operations

#### **Building**

Construction Regulation  
Code Enforcement

#### **Utility Operations**

Water and Wastewater Treatment  
Stormwater  
Pretreatment

**APPENDIX B**  
**AWWA WATER LOSS AUDIT, CITY OF EUREKA 2015**



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0  
American Water Works Association  
Copyright © 2014, All Rights Reserved.

Click to access definition  
 Click to add a comment

Water Audit Report for: **City of Eureka**  
Reporting Year: **2015**    1/2015 - 12/2015

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

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

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

### WATER SUPPLIED

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

Volume from own sources:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value=""/>	MG/Yr
Water imported:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="2"/>	<input type="text" value="1,069.270"/>	MG/Yr
Water exported:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="4"/>	<input type="text" value="219.550"/>	MG/Yr

### Master Meter and Supply Error Adjustments

Pcnt:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="radio"/>	<input type="radio"/>	<input type="text" value=""/>	MG/Yr
Value:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="2"/>	<input type="radio"/>	<input type="radio"/>	<input type="text" value=""/>	MG/Yr
	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="radio"/>	<input type="radio"/>	<input type="text" value=""/>	MG/Yr

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

**WATER SUPPLIED:**    **849.720** MG/Yr

### AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="4"/>	<input type="text" value="942.170"/>	MG/Yr
Billed unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="1"/>	<input type="text" value=""/>	MG/Yr
Unbilled metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="2"/>	<input type="text" value="29.290"/>	MG/Yr
Unbilled unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value="10.622"/>	MG/Yr

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

**AUTHORIZED CONSUMPTION:**    **982.081** MG/Yr

Check input values; WATER SUPPLIED should be greater than AUTHORIZED CONSUMPTION

### WATER LOSSES (Water Supplied - Authorized Consumption)

**-132.361** MG/Yr

### Apparent Losses

Unauthorized consumption:     MG/Yr

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

Customer metering inaccuracies:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="3"/>	<input type="text" value="14.794"/>	MG/Yr
Systematic data handling errors:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value="2.355"/>	MG/Yr

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

**Apparent Losses:**    **19.274** MG/Yr

Check input values; APPARENT LOSSES should be less than WATER LOSSES

### Real Losses (Current Annual Real Losses or CARL)

**Real Losses = Water Losses - Apparent Losses:**    **-151.635** MG/Yr

**WATER LOSSES:**    **-132.361** MG/Yr

### NON-REVENUE WATER

**NON-REVENUE WATER:**    **-92.450** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="158.9015152"/>	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="9,800"/>	
Service connection density:	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value="62"/>	conn./mile main	

Are customer meters typically located at the curbstop or property line?     (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure:     psi

### COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="10"/>	<input type="text" value="\$7,623,082"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="6"/>	<input type="text" value="\$2.06"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="4"/>	<input type="text" value="\$2,618.61"/>	\$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

Click here:  for help using option buttons below

Pcnt:    Value:  MG/Yr

Use buttons to select percentage of water supplied OR value

Pcnt:    Value:  MG/Yr

MG/Yr

MG/Yr



# AWWA Free Water Audit Software: System Attributes and Performance Indicators

Water Audit Report for: City of Eureka  
 Reporting Year: 2015 | 1/2015 - 12/2015

\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 41 out of 100 \*\*\*

System Attributes:

	Apparent Losses:	19.274	MG/Yr	
+	Real Losses:	(151.635)	MG/Yr	
=	<u>Water Losses:</u>	<u>(132.361)</u>	MG/Yr	

? Unavoidable Annual Real Losses (UARL): 52.04 MG/Yr

Annual cost of Apparent Losses: \$53,076

Annual cost of Real Losses: -\$397,072 Valued at **Variable Production Cost**  
 Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	-10.9%	
		Non-revenue water as percent by cost of operating system:	-3.1%	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	5.39	gallons/connection/day
		Real Losses per service connection per day:	-42.39	gallons/connection/day
		Real Losses per length of main per day*:	N/A	
		Real Losses per service connection per day per psi pressure:	-0.69	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): -151.63 million gallons/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: -2.91

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

**APPENDIX C**  
**RUTH LAKE STORAGE CAPACITY ANALYSIS, 2015**



## HUMBOLDT BAY MUNICIPAL WATER DISTRICT

828 SEVENTH STREET, PO BOX 95 • EUREKA, CALIFORNIA 95502-0095

OFFICE 707-443-5018 ESSEX 707-822-2918

FAX 707-443-5731 707-822-8245

EMAIL [OFFICE@HBMWD.COM](mailto:OFFICE@HBMWD.COM)

### BOARD OF DIRECTORS

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ALDARON LAIRD, VICE-PRESIDENT  
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SHERI WOO, DIRECTOR

### GENERAL MANAGER

CAROL RISCHÉ

May 12, 2015

Thomas Howard  
Executive Director  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814

Re: Drought Emergency Water Conservation Regulations - Application for Lower Conservation Target

Dear Mr. Howard,

The purpose of this letter is to apply for a lower conservation target in accordance with Section 865, (c) (2) of the Drought Emergency Conservation Regulations.

The Humboldt Bay Municipal Water District (HBMWD) is a wholesale water supplier which serves seven municipalities, four of which are Urban Water Suppliers and three of which are small public water systems. HBMWD also serves 180 retail customers directly outside the service jurisdiction of the municipalities.

This application is made on behalf of two sets of water purveyors, as follows:

- 1) HBMWD and the four Urban Water Suppliers that are served by HBMWD are subject to specific conservation standards outlined in the regulations. These parties are the City of Arcata, the City of Eureka, the Humboldt Community Services District, the McKinleyville Community Services District, and HBMWD for its 180 retail customers.
- 2) The three small water systems HBMWD serves – the City of Blue Lake, the Fieldbrook-Glendale Community Services Districts, and Manila Community Services District. These agencies are required by the regulations either to reduce “potable water production” by 25% or limit outdoor irrigation of ornamental landscapes and turf with potable water to no more than two days per week. These agencies will be limiting outdoor irrigation to no more than two days per week. Because these agencies share the same water source as HBMWD and the four Urban Water Suppliers, we believe that it is appropriate that these agencies also only be required to reduce their water use by 4% in 2015 from the 2013 baseline, rather than the 25% that is indicated in the regulations.

The remainder of this letter addresses two points: 1) a historical look at HBMWD's water supply and how it has performed during this historic drought, and 2) a demonstration that HBMWD has in excess of a four-year reserve supply to meet the needs of the seven municipalities.

### **HBMWD's Supply – How it Performed During the Drought**

HBMWD's source of supply is Ruth Lake and the Mad River located in Trinity and Humboldt Counties (see Attachment 1, watershed map). HBMWD holds appropriative water rights for storage and diversion (Permits 11714 and 11715). The Mad River watershed is isolated and not connected to any other watershed. There are no imports or exports to/from the watershed.

The District has not experienced a water shortage at any time during the prolonged drought which has affected most of California. Ruth Lake filled to capacity four times this season - in December, February, March and April (see Attachment 2). Ruth Lake also filled beyond capacity each of the last four years of the State's historic drought (see Attachment 3).

Ruth Lake was designed to provide a safe yield of 75 million gallons/day (MGD) assuming the two successive driest years of record. For many years, HBMWD served not only its municipal customers, but also two large industrial customers (pulp mills) who used 40 - 50 MGD. These industrial customers are long gone, and HBMWD now supplies only its municipal customers who in total use approximately 10 MGD.

In summary, Ruth Lake has filled to capacity each and every year of the prolonged drought, and has capacity to serve demands well in excess of HBMWD's current municipal needs.

### **HBMWD's Water Supply - How Many Years it will Last**

Given that Ruth Lake currently has approximately 48,000 acre-feet in storage, it has capacity to serve the region's need for over four years assuming absolutely no inflows.

If we assume a continued repetition of 1976-77 hydrology (driest years on record with only 10% of average annual discharge), Ruth Lake has sufficient supply to: 1) reliably serve 36.5 MGD for four years, which is almost four times the current municipal demand, and 2) reliably serve twice our current demand *indefinitely*. These results are documented in the Ruth Reservoir Storage Capacity Analysis conducted by the District's Engineer, GHD, (see Attachment 4).

### **Conclusion**

Since Ruth Lake has approximately 48,000 acre-feet in storage and the capacity to serve the region's need for over four years assuming absolutely no inflows, the District believes that our region should only be required to reduce water use by 4%. Therefore, HBMWD respectfully requests the lower conservation target in accordance with Section 865, (c) (2) of the Drought Emergency Conservation Regulations for the City of Arcata, the City of Eureka, the Humboldt Community Services District, the McKinleyville Community Services District, and HBMWD for its 180 retail customers.

HBMWD also requests a similar conservation target for the City of Blue Lake, the Fieldbrook-Glendale Community Services District, and the Manila Community Services District to the extent the SWRCB expects a certain reduction when these small entities report their water use data in December.

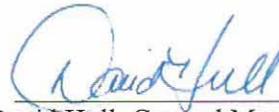
Thank you for your consideration. Please call me if you have any questions at (707) 443-5018.

Sincerely,

HBMWD, the four Urban Water Suppliers and the three smaller water systems that HBMWD serves



Carol Rische, General Manager  
Humboldt Bay Municipal Water District



David Hull, General Manager  
Humboldt Community Services District



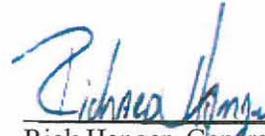
Greg Orsini, General Manager  
McKinleyville Community Services District



Mark Andre, Director of Environmental Services  
City of Arcata



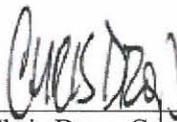
Brian Gerving, Public Works Director  
City of Eureka



Rick Hanger, General Manager  
Fieldbrook–Glendale Community Services District



John Berchtold, City Manager  
City of Blue Lake



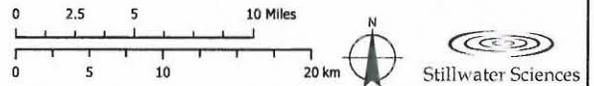
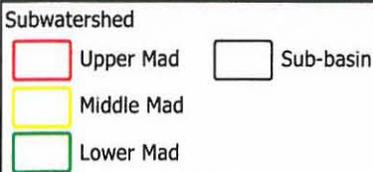
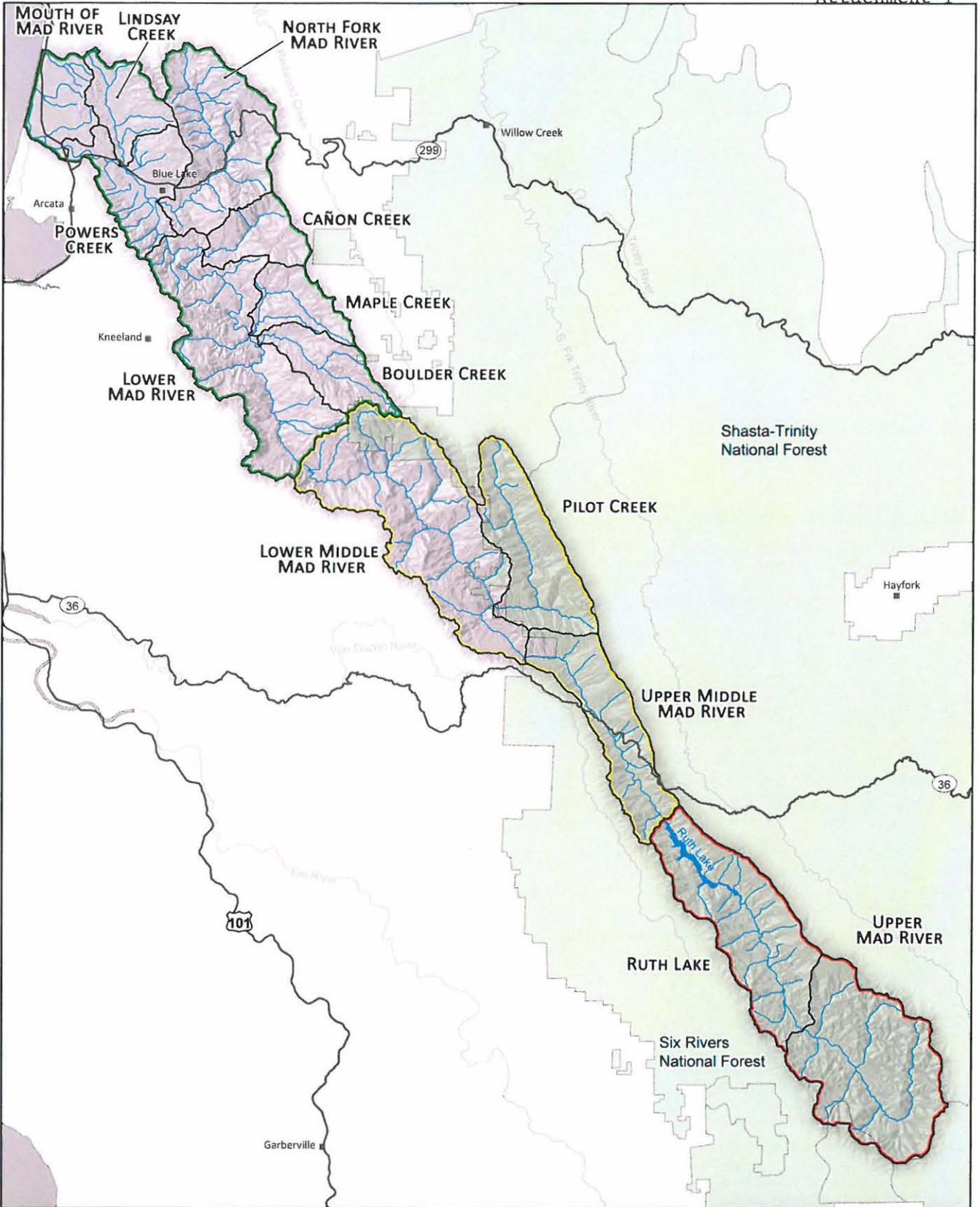
Chris Drop, General Manager  
Manila Community Services District



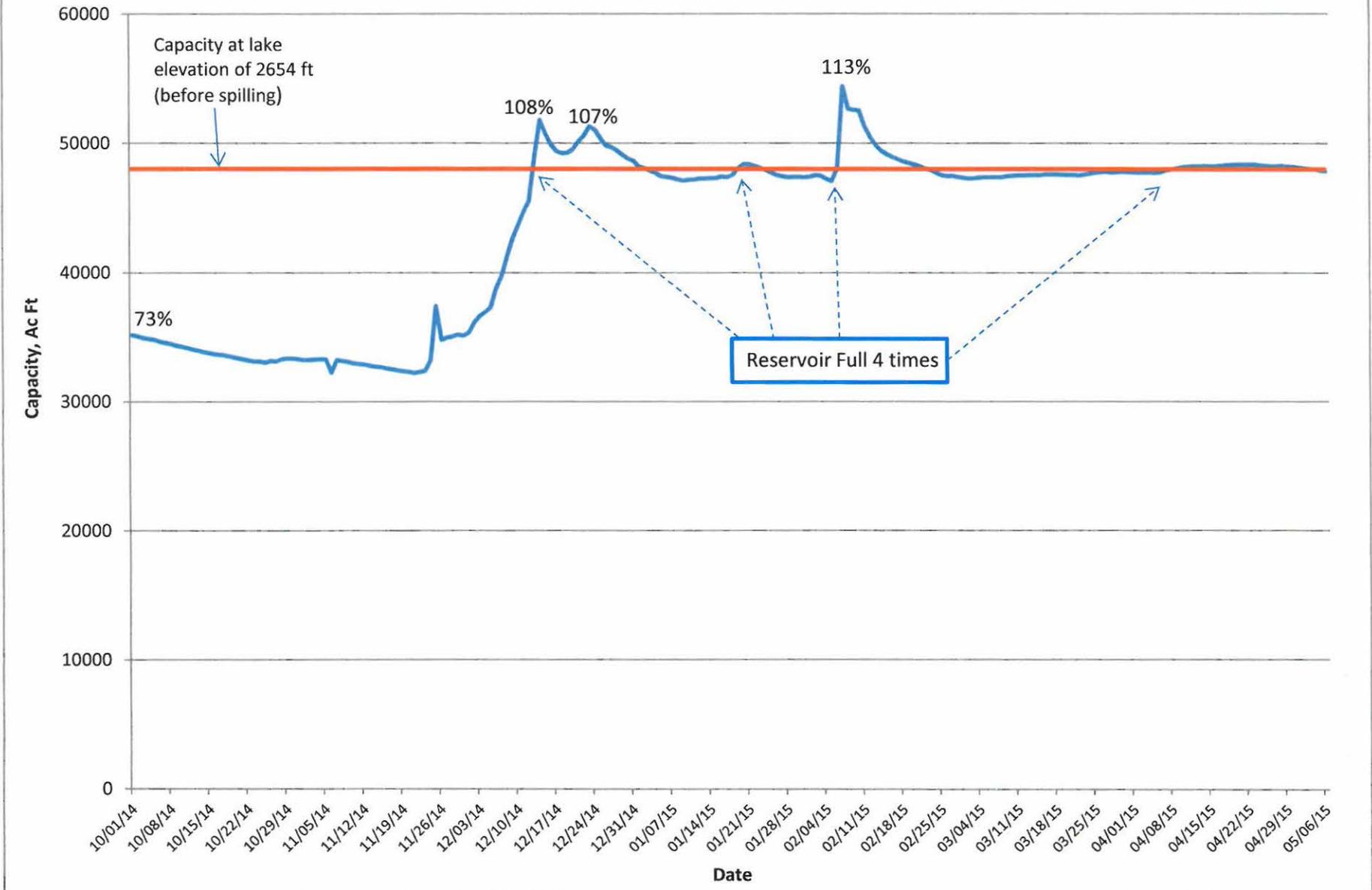
cc: HBMWD Municipal Customers  
Humboldt County Board of Supervisors  
Senator Mike McGuire and Assemblymember Jim Wood  
Zuey Goosby, John Woolley and Tom Wesloh, Local Legislative Representatives  
David Aladjem  
Pat Kaspari



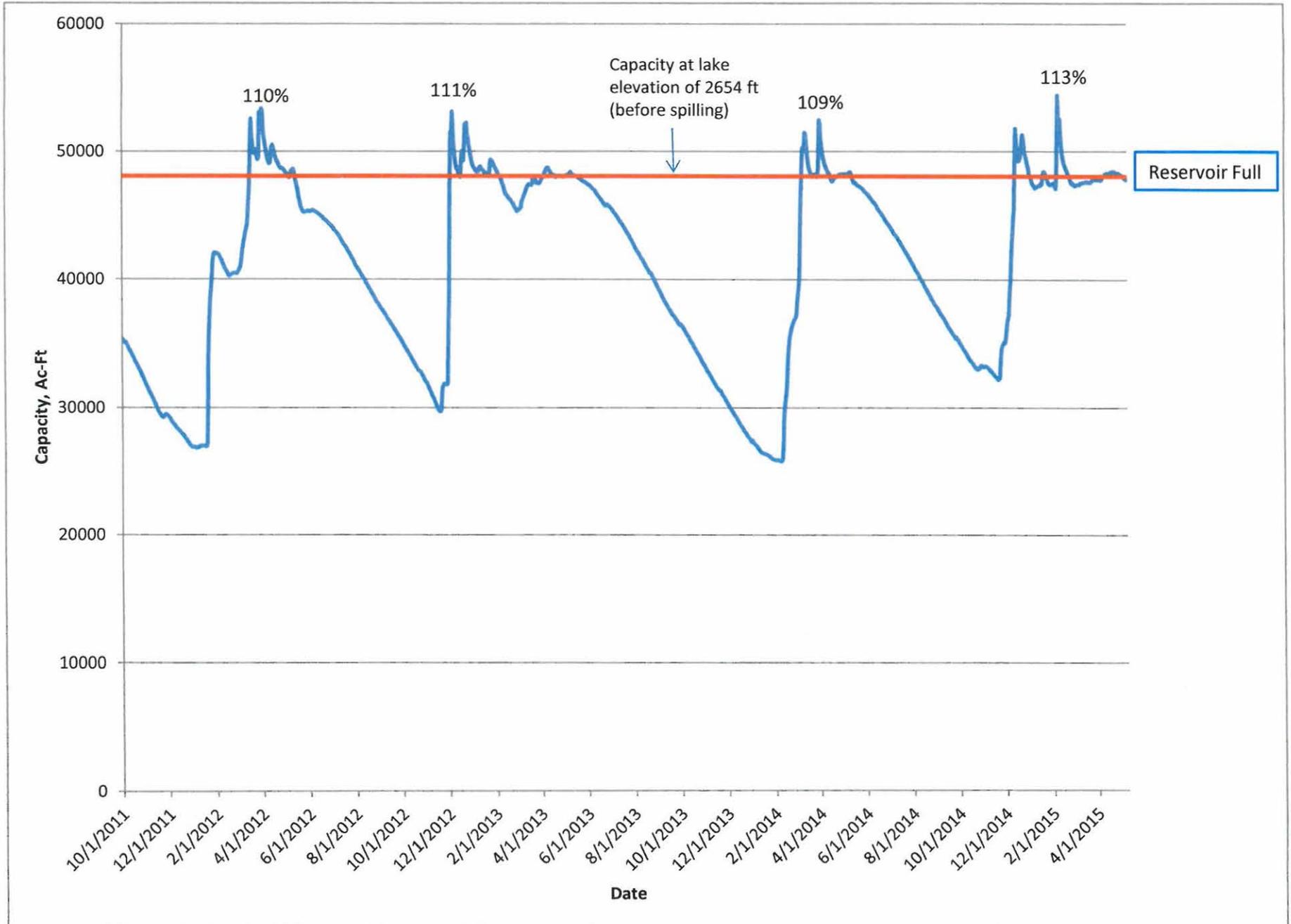
# Mad River Watershed and Sub-basins



# HBMWD Ruth Reservoir Capacity WY 2014-2015



# HBMWD Ruth Reservoir Capacity WY 2011 - 2015



## Humboldt Bay Municipal Water District Ruth Reservoir Storage Capacity Analysis

The following analysis was performed to assess the storage capacity/years of storage of Humboldt Bay Municipal Water District's Ruth Reservoir versus the total current Municipal water demand under drought conditions. A Rippl Mass Diagram for Ruth Lake Reservoir was prepared that reflects a four year synthetic drought equal to the drought of record for the reservoir. The total Municipal water demand was then plotted on the Rippl Diagram to assess whether current demand would exceed supply and what is the maximum demand that can be provided under four year drought conditions.

The analysis demonstrates that the reservoir has sufficient capacity to provide up to 36.5 Million Gallons per Day (MGD) of water for four years under drought conditions, which is over three times the current Municipal demand of 10 MGD.

### Background and Analysis

A Rippl Diagram is useful in understanding the cumulative inflow to the reservoir plotted against time for various inflows and is typically used to determine the safe yield of a reservoir. It allows the inflow and resulting cumulative storage of the reservoir under drought conditions to be compared to the cumulative storage required for various draft (demand) rates, and is used to establish a maximum, constant draft rate, or safe yield, that can be achieved over the course of the planning period. In this case, we wanted to determine what constant draft rate can be accommodated by the reservoir over a four year drought period. To do this we needed to establish a synthetic four year drought, as the reservoir has not experienced an actual drought that has lasted more than 18-months. The 1976-1977 drought is the drought of record for the reservoir. During this drought, Ruth reservoir was filled in May of 1976, but there was no appreciable rain until November 18, 1977, when a couple large storms refilled the reservoir over a couple of days. The cumulative flow for the Mad River for the years of record is shown in Figure 1, and the extent of the 1976-1977 drought is dramatic, even when compared to the flows from the current years of drought.

In order to analyze what a four year drought would look like, we took the actual hydrograph for the 1976-77 drought from May 18, 1976 to November 1, 1977, and duplicated that data every 18-months for four total years. This is a very conservative assumption, and as mentioned, the reservoir has never experienced a drought anywhere near this extreme. Additional assumptions made during the development of the Rippl mass diagram include:

- The reservoir begins full with 48,030 acre-ft of water on May 17 (as it did during the drought of record, and as it is this year);
- Inflow to the reservoir during the drought of record was extended from an 18 month drought to a 4-year planning period;
- Evaporative losses were estimated based on reservoir levels during the drought of record;
- Storage volumes reserved for the Department of Fish and Wildlife (2,000 ac-ft) and Trinity County (6,000 ac-ft) are not available for use (8,000 ac-ft total);
- Demand is taken directly from the reservoir.

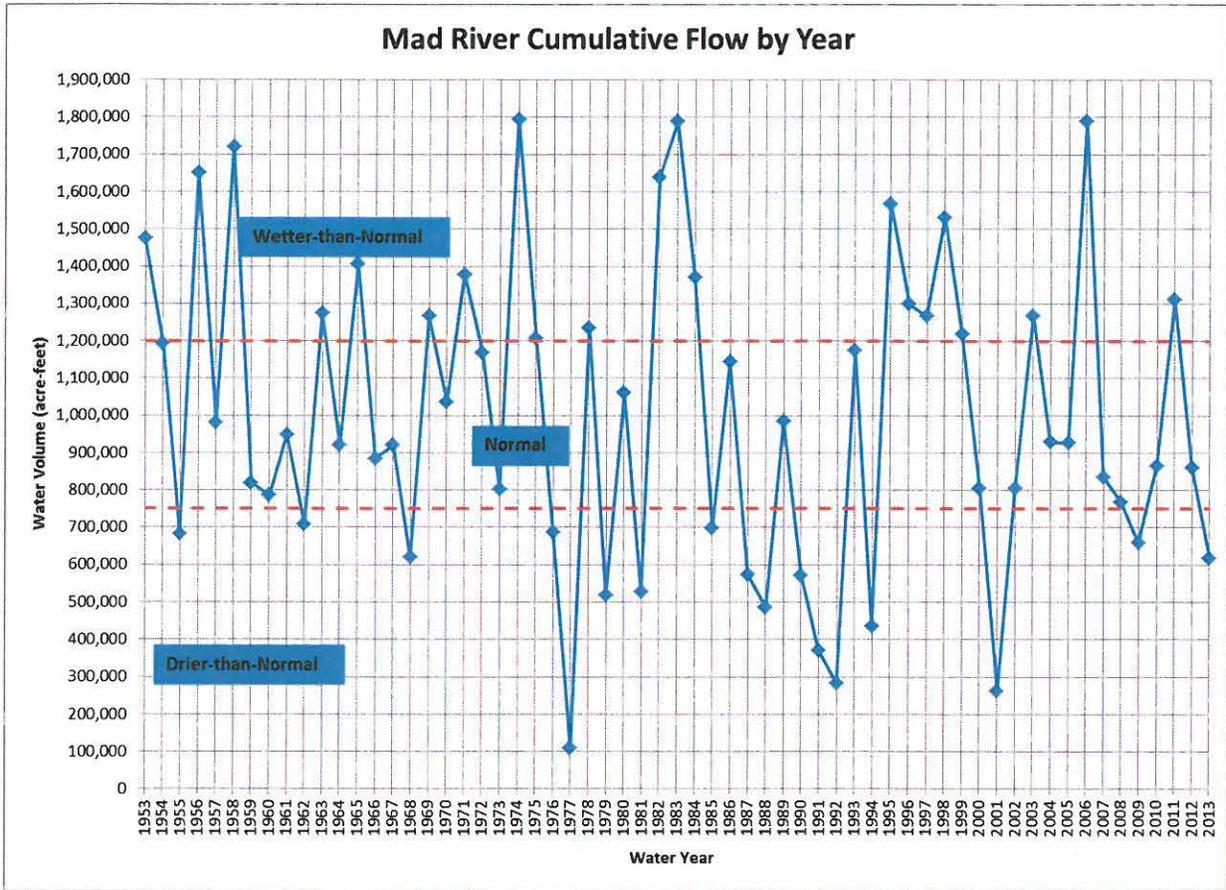


Figure 1 - Mad River Cumulative Flow by Water Year

The drought of record storage was determined using Equation 1.

$$S_i = S_{i-1} + I \tag{EQ-1}$$

Where:

$S_i$  = Storage (MG)

$i_{1-730}$  = Time Step(day)

$I$  = net inflow (MG)

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

The cumulative storage required for draft rates was determined using Equation 2.

$$S_i = S_{i-1} + D \tag{EQ-2}$$

Where:

$S_i$  = Storage (MG)

$i_{1-730}$  = Time Step(day)

$D$  = Demand (MG)

As stated above, it was assumed that these constant draft rates are coming directly out of the reservoir, which is also a very conservative assumption. In actuality, during a large portion of the water year, water that the District extracts from the Mad River at Essex is not necessarily directly related to the releases at Ruth, but is contributed to the Mad River by the majority of the Mad River watershed that occurs below Ruth Lake and Matthews Dam.

The storage line generated from the synthetic storage hydrograph was then plotted along with the various draft rates to generate the Rippl Mass Diagram shown in Figure 2. The domestic water usage that the District provides to their customers currently peaks at approximately 10 MGD, so a line corresponding to a 10-MGD Draft Rate was plotted on the Rippl Diagram. Draft rates corresponding to 20-MGD and 30-MGD were also added to the diagram.

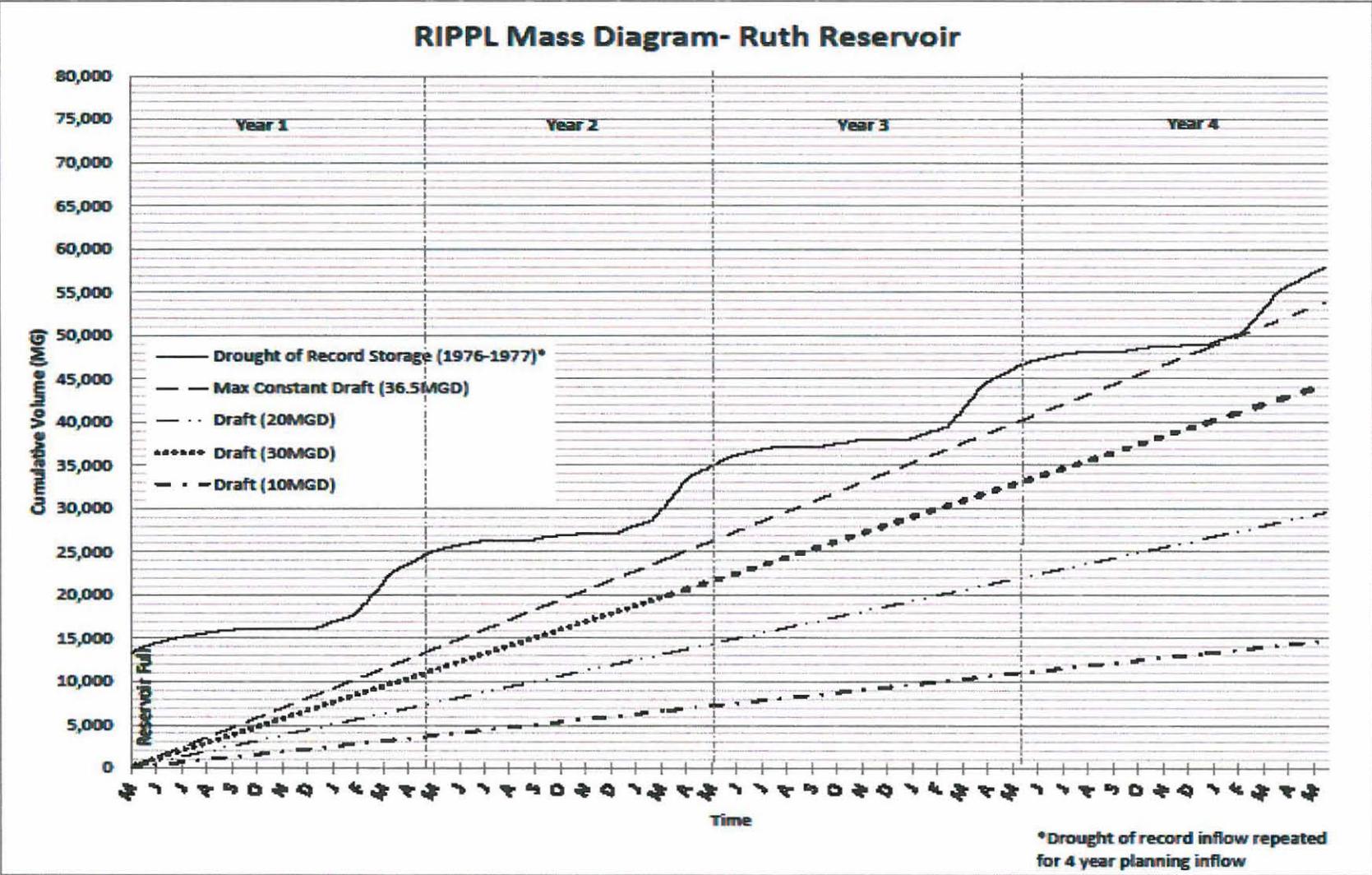
### Conclusion

The point where the Draft Rate line intersects with the Storage Line is the point where draft rates equal or exceeds storage, or where the reservoir would be emptied. As shown on the Rippl Diagram, the 10-, 20-, and 30-MGD lines never intersect the Storage Line, and the reservoir can therefore provide over 30-MGD of constant drafting even during a four year drought. The maximum constant draft rate of 36.5-MGD was calculated, and this draft rate intersects the Storage Line in approximately January of the fourth year of the drought. The reservoir does begin to fill after this point, but the Safe Yield of the reservoir during a four year drought of record is 36.5 MGD, which is over three times what the peak domestic water usage rate is for the District. Therefore, the District's Ruth Reservoir can easily supply their domestic water customers their current 10-MGD demands, even under a four year drought condition.



Patrick Kaspari, P.E.  
District Engineer

FIGURE 2 – Rippl Mass Diagram



**APPENDIX D**  
**HBMWD WATER SHORTAGE CONTINGENCY PLAN UPDATE, 2015**

# Appendix C – Water Shortage Contingency Plan Update

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# 1 Water Shortage Contingency Planning

## 1.1 Plan Overview and Coordination

### 1.1.1 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 less than 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 million gallons per day (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 design for a safe yield of 75 MGD per year, using the 1923-24 drought of record. A copy of the applicable sections of the original Bechtel design report is included as Appendix A. 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 '76-'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. A copy of this study is included as Appendix B. The recent drought (2013-2015) caused the District to revisit this safe yield value as further detailed in Section 1.2.

### **1.1.2 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 would be convened as necessary to address drought conditions or other significant events which could result in a supply shortfall. It is composed of representatives of the District and each of its wholesale customers. The committee'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.

## **1.2 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, four 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 4-year planning period;
- The total inflow to the reservoir can be estimated by scaling the inflow at the Zenia Bridge gage station by a factor equal to the ratio of watershed area contributing to the gage station site to the watershed area contributing to the reservoir spillway (1.2 or 121 mi<sup>2</sup>/93.8 mi<sup>2</sup>);
- Evaporative losses can be estimated based on reservoir levels during the drought of record;
- Demand is taken directly from the reservoir (i.e. there are no contributing flows downstream of the reservoir).

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)

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

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 36.5 MGD over the four-year planning period was calculated based on the drought of record inflow (see Figure 1).

The Rippl diagram shows that a maximum constant draft rate of 36.5 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 4-year planning cycle. Inflow for the second through fourth 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 third and fourth year. 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 570 MG of cumulative storage volume in February of the fourth drought year. At this point, approximately 15 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.

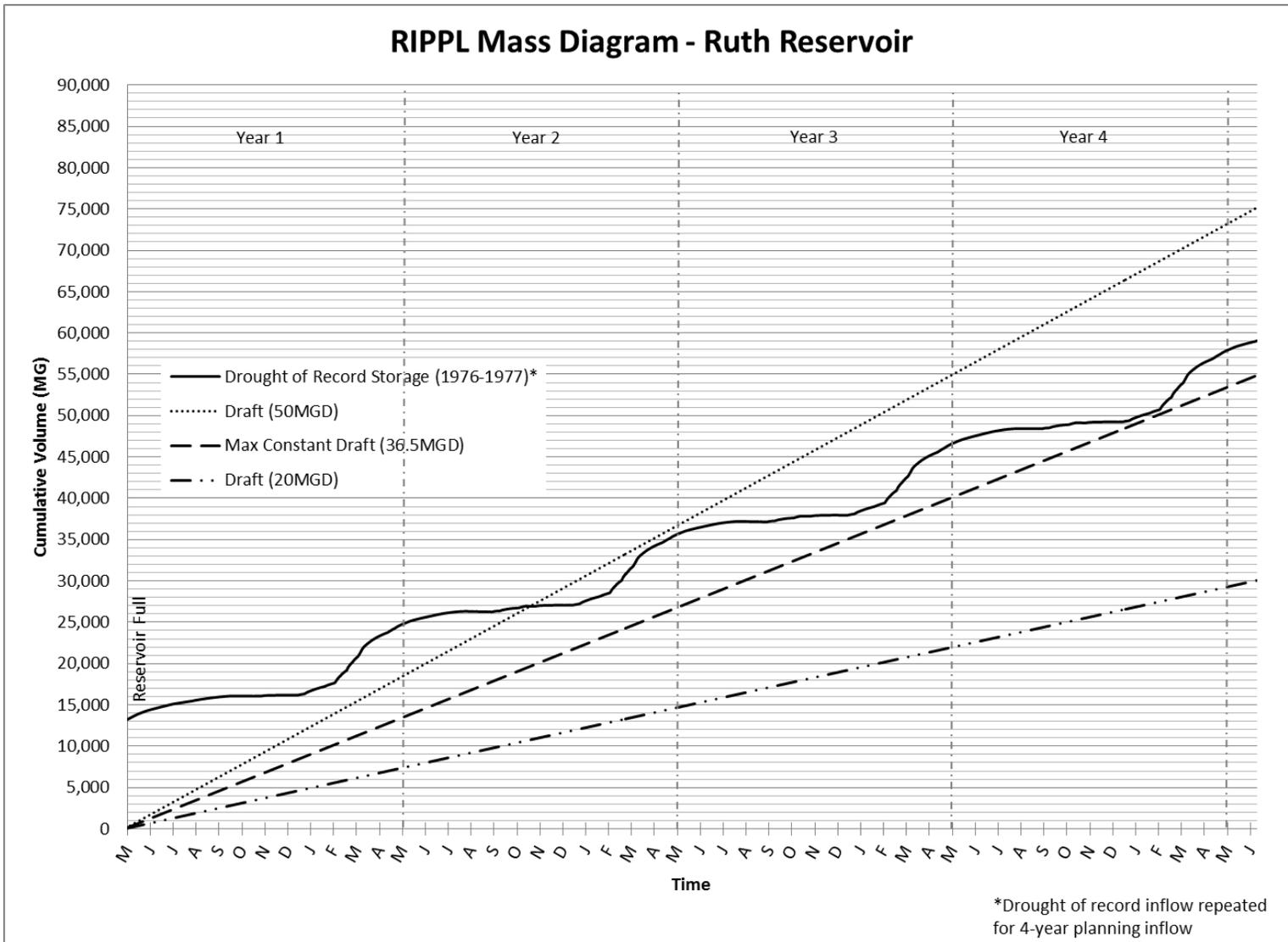


Figure 1. Rippl Mass Diagram

### 1.3 Stages of Action

There are five defined drought action stages (see Table 2). 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.

#### 1.3.1 Stages and Conditions

An analysis was performed to develop updated 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 2). 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 2. For example, if the reservoir storage level was at 25,000 acre-feet in November, 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 1).

**Table 1: Mad River Flow Requirements for Fish**

<b>Period</b>	<b>Flow at Hwy 299 Bridge (cfs)</b>
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 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 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 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 1.

**Table 2: Drought Triggers Action Table**

<b>Stage</b>	<b>Domestic Reduction</b>	<b>Industrial Reduction</b>	<b>Total Percent Supply Reduction</b>	<b>Delivered Water (Municipal, MGD)</b>	<b>Delivered Water (Industrial, MGD)</b>	<b>Total Delivered (MGD)</b>	<b>Maximum Draft (MGD)</b>
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 2) 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 (1969-2013). 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 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 2. 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.

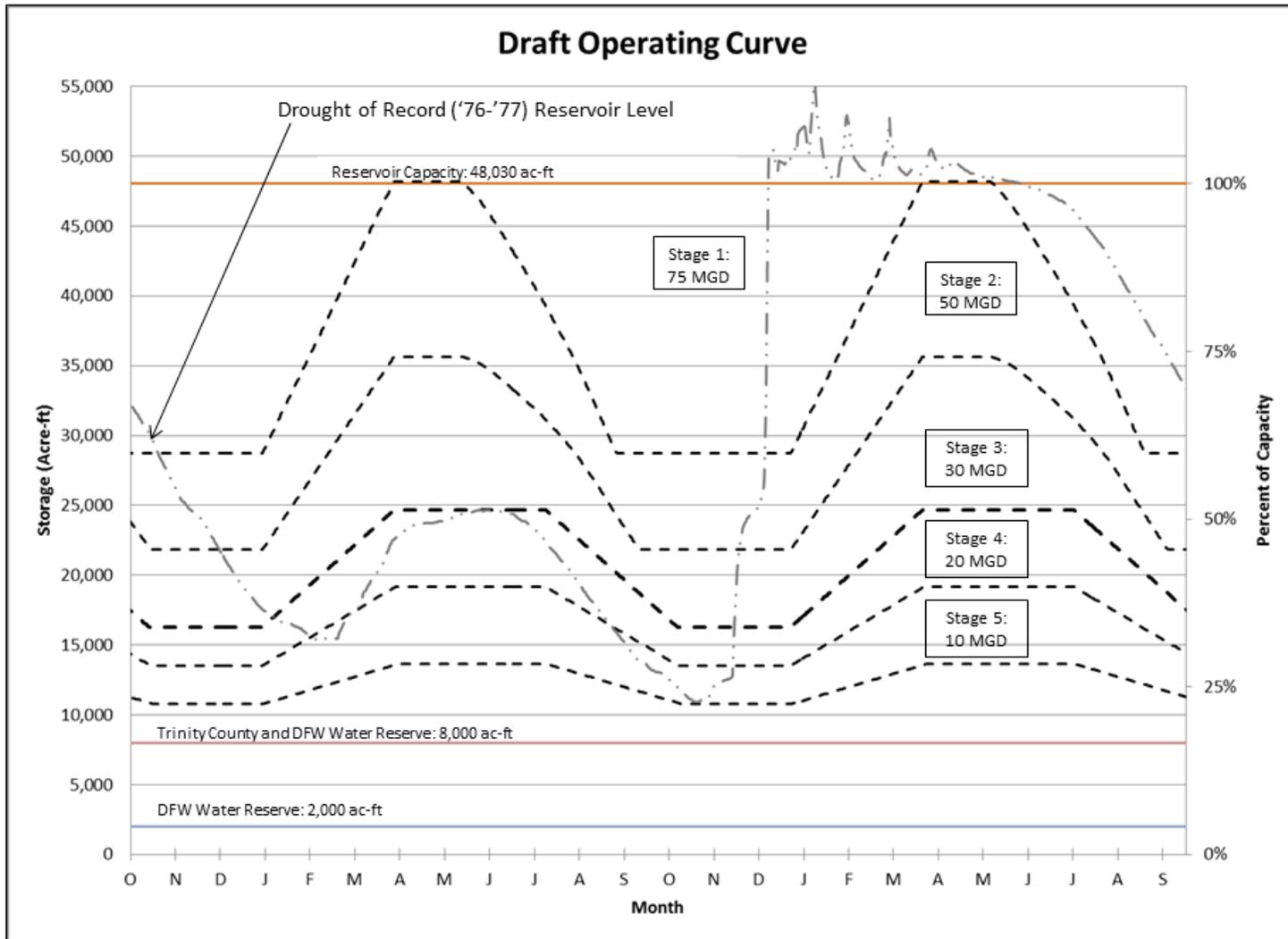


Figure 2: Ruth Lake operating curves

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 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%. 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.

**1.4 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.

**1.5 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 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 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

## 1.6 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 delivered to its municipal customers, 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 1.1. Table 4 gives a summary of the consumption reduction methods and the stages when the method will take effect.

**Table 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

## 1.7 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 35 kW (kilowatt) generator and the second is a 2 MW (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.

### 1.8 Revenue and Expenditure Impacts

Each wholesale customer must gage 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.

### 1.9 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 D.

### 1.10 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’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 5 summarizes possible catastrophe events and the actions that would be taken or plans that would be implemented for each scenario.

**Table 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)

### 1.11 Minimum Supply Next Three Years

The three water years between October 1989 and September 1992 represent the driest three-year period recorded for the District:

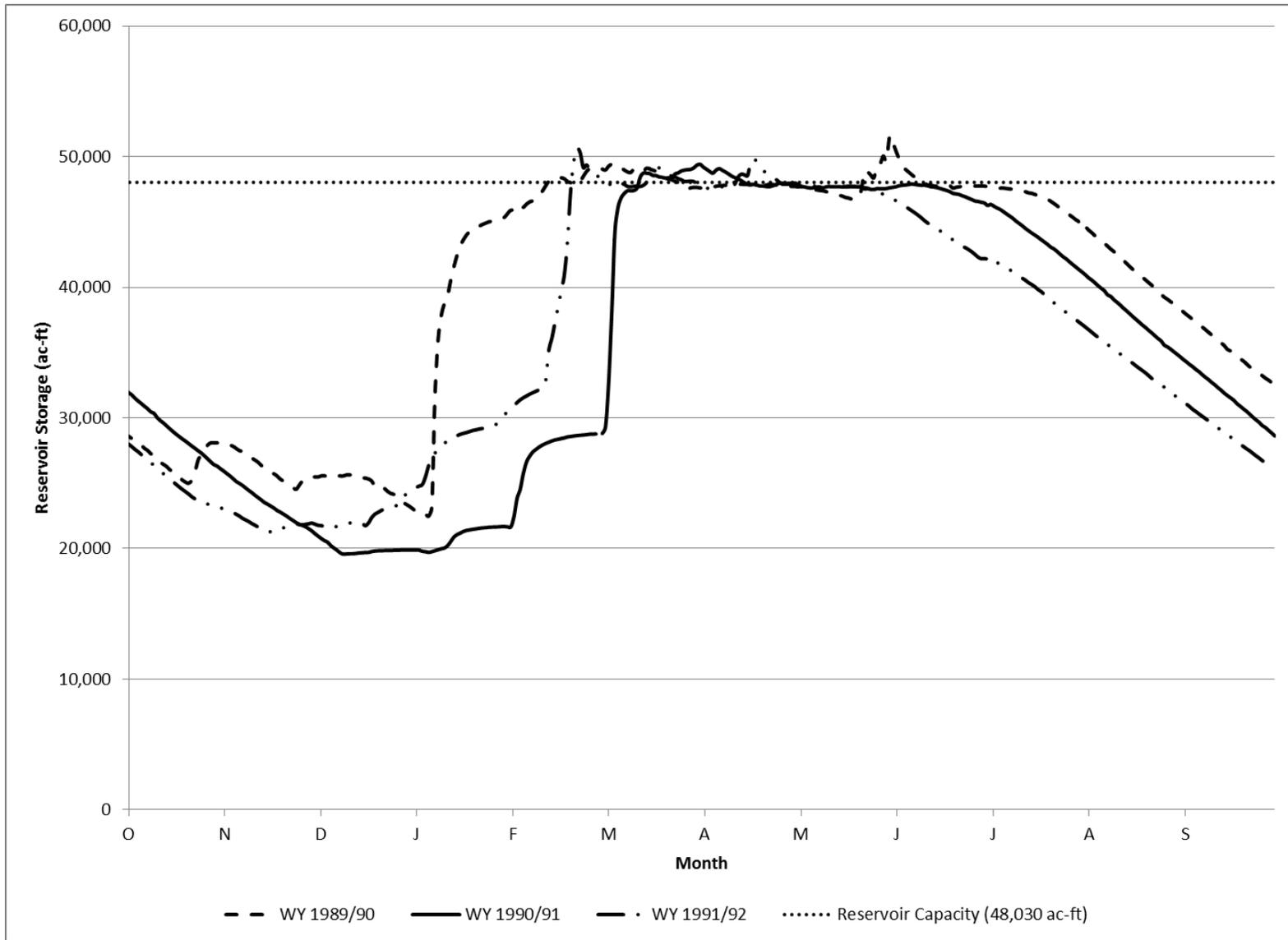
- Rainfall for this period averaged 42 inches per year (60% of normal).
- Of the three water years, the driest year for rainfall was water year 1990/1991 with 37 inches (53% of normal).
- Flows into Ruth Lake above Zenia averaged 69,000 AFY, or 40% of normal (173,000 AFY).
- The runoff for the watershed above the District's diversion facilities was 371,300 AFY, or 37% of normal (982,600 AFY).
- Despite the diminished rainfall and runoff, rainfall was more than sufficient to refill the reservoir each year.
- Reservoir volume during this period averaged 37,000 AF which is 77% of capacity (48,030 AF) and 90% of normal (41,000 AF).

A plot of reservoir levels over the course of each respective water year from October 1989 through September 1992 is given as Figure 3. This figure shows that even in the three driest consecutive years of record, the reservoir still reached maximum capacity for each of the respective years and generally remained full for months each year. 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 three years are hydrologically the same as the driest three 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 6.

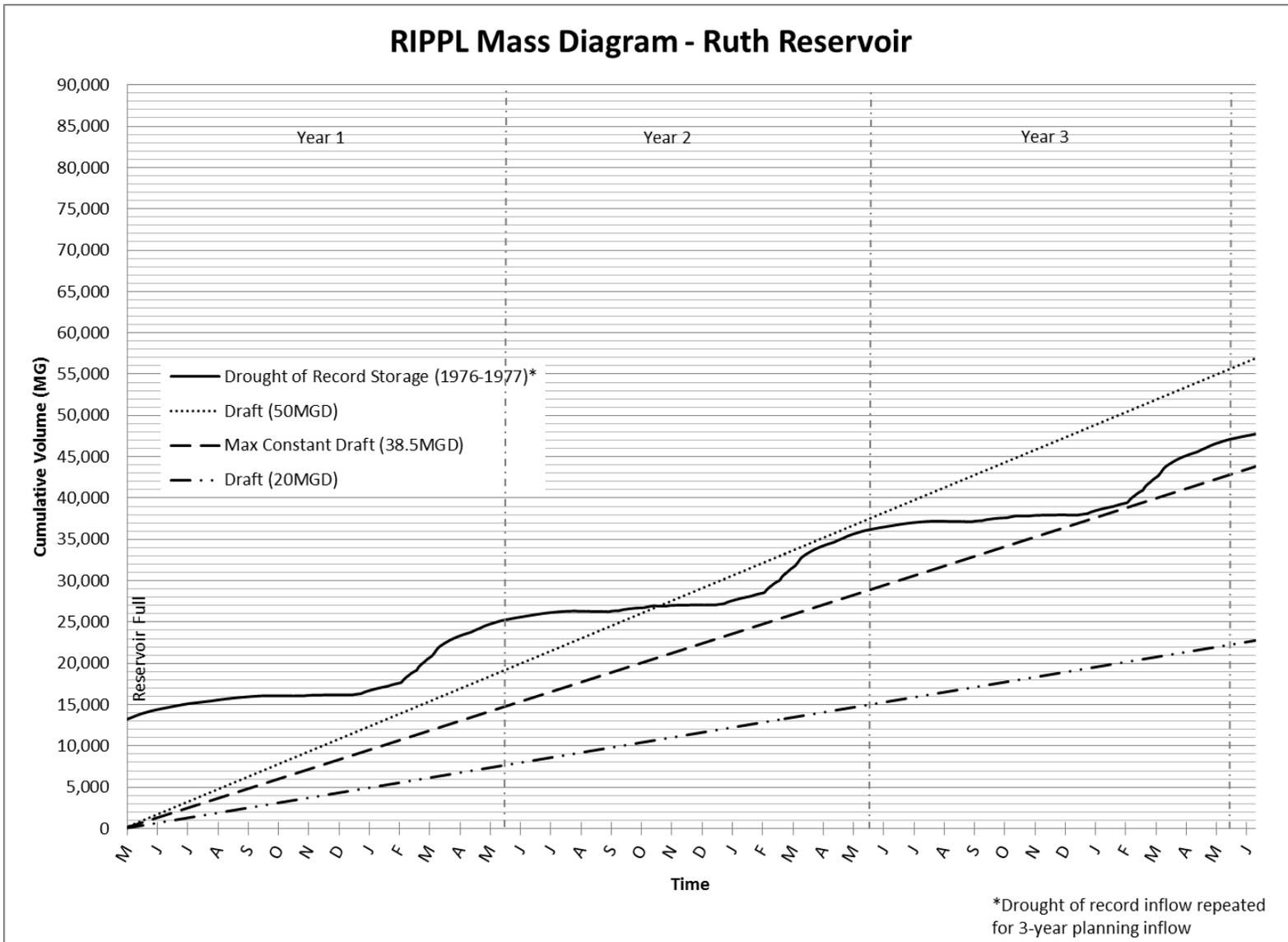
**Table 6: Minimum Supply Next Three Years**

	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Available Water Supply</b>	> 48,030 AF	> 48,030 AF	> 48,030 AF

A Rippl mass diagram was generated (Figure 4) using the same assumptions as given in Section 1.2 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 3: Ruth reservoir water storage levels for the driest three consecutive years of record**



**Figure 4: Rippl Mass Diagram with '76-'77 drought hydrologic information repeated for a three-year planning period**

**APPENDIX E**  
**EUREKA MUNICIPAL CODE (EMC 53.35-53.44)**

### **§ 53.35 PURPOSE.**

A) From time to time it may be necessary that Council declare that a water shortage emergency condition prevails in the area served by the city. During such Council-declared water shortages, this subchapter is intended to allocate equitably the water available to human consumption, sanitation, and fire protection.

(B) The specific uses regulated or prohibited in this subchapter are nonessential and, if allowed, would constitute wastage of water and should be prohibited pursuant to Cal. Water Code §§ 350 et seq. and 71640 et seq. and the common law.

('63 Code, § 5-7.01) (Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87)

### **§ 53.36 DEFINITIONS.**

For the purpose of this subchapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

**CITY.** The City of Eureka, California.

**COUNCIL.** The elected Council of the city.

**CUSTOMER.** Any person using water supplied by the city.

**MANAGER.** The City Manager of the city.

**NONESSENTIAL USE.** Any use not required for human consumption, sanitation, or fire protection.

**NONESSENTIAL USER.** Any user other than a domestic residential customer or facility providing for health and safety.

**OUTDOOR SURFACE.** Any patio, porch, veranda, driveway, or sidewalk.

**PERSON.** Any person, firm, partnership, association, corporation, company, or organization of any kind.

**WATER.** Potable water provided by the city through its distribution system.

**WATER WASTE.**

(1) Water use in outdoor areas resulting in runoff. The use of water which allows water to run off to a gutter, ditch, or drain.

(2) The excessive use, loss, or escape of water through breaks, leaks or malfunctions in the water user's plumbing or distribution facilities.

(3) The washing of vehicles, building exteriors, sidewalks, driveways, parking areas, tennis courts, patios or other paved areas without the use of a positive shut-off nozzle on the hose, which results in excessive runoff.

('63 Code, § 5-7.02) (Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87; Am. Ord. 742-C.S., passed 6-2-09)

### **§ 53.37 APPLICATION.**

The provisions of this subchapter shall apply to all customers of the city using water both in and outside the city limits, regardless of whether any causing water shall have a contract for water service with the city.

('63 Code, § 5-7.03) (Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87; Am. Ord. 742-C.S., passed 6-2-09)

### **§ 53.38 LARGE WATER USERS.**

No person whose historic monthly average water use of any three-month period exceeds 50,000 gallons per month, called “large water user” in this subchapter, shall irrigate, sprinkle, or water any shrubbery, trees, lawns, grass, ground covers, plants, vines, gardens, vegetables, flowers, or any other vegetation during a declared water shortage except as assigned by the Manager after consultation with individual large water users.

(‘63 Code, § 5-7.04) (Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87; Am. Ord. 742-C.S., passed 6-2-09) [Penalty, see § 53.99](#)

### **§ 53.39 SITE DESIGN REVIEW.**

(A) During a declared water shortage, no planting or landscaping required by the design review process or other city action shall be implemented unless the Manager determines that the health, safety, or welfare of the public might be endangered.

(B) Single pass cooling systems, non-recirculating systems in all new conveyer car washes and commercial laundry systems and non-recycling decorative water fountains are prohibited in all new water services.

(‘63 Code, § 5-7.05) (Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87; Am. Ord. 742-C.S., passed 6-2-09) [Penalty, see § 53.99](#)

### **§ 53.40 WATER WASTE PROHIBITED.**

No person or customer shall cause or permit water waste as defined in § [53.36](#).

(‘63 Code, § 5-7.06) (Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87; Am. Ord. 742-C.S., passed 6-2-09) [Penalty, see § 53.99](#)

### **§ 53.41 NONESSENTIAL USES; LIMITATIONS.**

(A) *Prohibited.*

(1) Whenever the Manager determines that the water available to the city is insufficient to permit nonessential uses and that all water then available to the city should be used solely for human consumption, sanitation, and fire protection, he may order and direct, individually or collectively, that nonessential uses shall not be permitted by any person or customer. While such order is in effect, no person or customer shall fill with city-furnished water any swimming pool, wash any car or any outdoor surface, irrigate, sprinkle, or water any shrubbery, trees, lawns, grass, ground covers, plants, vines, gardens, vegetables, flowers, or any other vegetation, or allow any other nonessential use of water as designated by order of the Manager. Violations shall be punished as set forth in § [53.99](#)(B) of this chapter.

(2) The Manager shall use every available means to inform customers that such order is in effect.

(‘63 Code, § 5-7.07)

(B) *Limited amount of water delivered to customers.* Whenever the Manager determines the water available to the city is insufficient to meet the demands of customers of the city and that all water available to the city should be protected for human consumption, sanitation, and fire protection, he may order that limits be imposed on individual

consumption as determined and specified by resolution of the Council, including penalties in addition to those set forth in § [53.99](#)(B) of this subchapter.

('63 Code, § 5-7.08)

(Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87) [Penalty, see § 53.99](#)

#### **§ 53.42 ENFORCEMENT.**

(A) Each police officer of the city, in connection with his duties imposed by law, shall diligently enforce the provisions of this subchapter.

(B) The Manager and all employees of the city shall have the duty and are authorized to enforce the provisions of this subchapter and shall have all the powers and authority set forth in Cal. Penal Code § 836.5, including the power to issue written notices to appear. ('63 Code, § 5-7.10) (Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87)

#### **§ 53.43 OPERATIVE DATES.**

(A) Section [53.41](#) shall become operative each time the Council by resolution declares that a water emergency condition prevails pursuant to Cal. Water Code, §§ 350 et seq.

(B) Section [53.41](#) shall become inoperative from the time when the Council by resolution determines that a water shortage no longer exists until the Council, if ever, subsequently declares that another water shortage prevails.

('63 Code, § 5-7.11) (Ord. 274-C.S., passed 5-17-87; Am. Ord. 465-C.S., passed 12-31-87; Am. Ord. 742-C.S., passed 6-2-09)

#### **§ 53.44 DISCONNECTION FOR VIOLATION.**

The Manager shall forthwith direct and cause the disconnection of the water service of any person or customer cited for a misdemeanor under this subchapter. Such service shall be restored only upon the payment of the turn-on charge fixed by the Council, as provided in this code.

('63 Code, § 5-7.09) (Ord. 274-C.S., passed 5-17-77; Am. Ord. 465-C.S., passed 12-31-87; Am. Ord. 742-C.S., passed 6-2-09)

**APPENDIX F**  
**EUREKA WATER SHORTAGE CONTINGENCY PLAN**

# AGENDA SUMMARY

<b>RE: WATER SHORTAGE CONTINGENCY PLAN UPDATES</b>	<b>FOR AGENDA DATE: APRIL 21, 2015</b>  <b>AGENDA ITEM NO:</b> 9
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**RECOMMENDATION:**

1. Adopt a Resolution of the City Council of the City of Eureka Implementing Water Shortage Emergency Regulations.

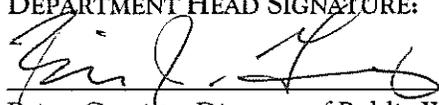
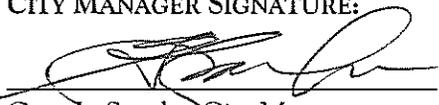
In light of an ongoing drought affecting much of the state, the State Water Resources Control Board (Water Board) adopted new emergency regulations on March 17, 2015. These regulations extend an earlier action by the Water Board by an additional 270 days, the maximum allowed under state law. Along with the extension, additional requirements have been added to the regulations with the goal of further reducing potable water usage by California residents.

Shortly after the Water Board's regulations were formalized by the Office of Administrative Law on March 27, Governor Brown issued an Executive Order which will trigger further action by the Water Board in the coming months. Staff is currently working with Humboldt Bay Municipal Water District (HBMWD) and its other municipal customers to analyze the forthcoming regulations.

*(continued)*

*Attachments:                     Proposed Resolution  
   Updated Water Shortage Contingency Plan  
   Adopted Water Board Regulations  
   HBMWD Letter to the Water Board re: Conservation Policy Framework*

**FISCAL IMPACT:**     No Fiscal Impact     Included in Budget     Additional Appropriation

<b>DEPARTMENT HEAD SIGNATURE:</b>  Brian Gerving, Director of Public Works	<b>CITY MANAGER SIGNATURE:</b>  Greg L. Sparks, City Manager
---	--

<b>REVIEWED BY:</b> City Attorney	<b>DATE:</b> _____	<b>INITIALS:</b> _____
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**Council Action:**

Ordinance No.	Resolution No.
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<b>RE: WATER SHORTAGE CONTINGENCY PLAN UPDATES</b>	<b>FOR AGENDA DATE: APRIL 21, 2015 AGENDA ITEM NO.:</b> <i>Page 2</i>
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**SUMMARY** *(continued)*

In addition to extending the 2014 emergency regulations, the Water Board implemented the following requirements:

- Irrigating outdoors during and within 48 hours following measureable rainfall is prohibited.
- Restaurants are prohibited from serving water to their customers unless the customer requests it.
- Hotels and motels must offer their guests the option to not have their linens and towels laundered daily, and prominently display this option in each guest room.
- Outdoor irrigation of ornamental landscapes or turf with potable water shall be limited to a finite number of days per week.

Staff proposes updating the City's Water Shortage Contingency Plan as reflected in Exhibit 'A.' By updating the plan and declaring a Stage 3 water shortage, the City will be in compliance with the Water Board's emergency regulations.

As the Water Board continues to finalize its proposed regulations regarding the Governor's April 1 Executive Order, staff will coordinate with HBMWD and its other municipal customers. The efforts of the group are twofold. First, a request has been made to consider alternate regulations for the District's customers given the area's unique water supply characteristics. Second, regardless of the success of this request, the group will strive to ensure that the regulations are enforced in a manner that is as uniform as possible.

Based on the Water Board's schedule for adoption of the next round of regulations, staff anticipates returning to Council in late May or early June with additional information for consideration.

**RESOLUTION NO. 2015-**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EUREKA  
IMPLEMENTING WATER SHORTAGE EMERGENCY REGULATIONS**

**WHEREAS**, on March 17, 2015, the State Water Resources Control Board (Water Board) adopted Resolution No. 2015-0013 *"To Adopt Emergency Regulations for Statewide Urban Water Conservation"*; and

**WHEREAS**, the Water Board requires water suppliers to activate their Water Shortage Contingency Plan to a level where certain restrictions are mandatory in order to comply with the emergency regulations; and

**WHEREAS**, the City's water shortage contingency plan information is codified as Eureka Municipal Code (EMC) Sections 53.35-53.44 of the City's Municipal Code and entitled *"Water Shortage and Water Waste Regulations;"* and

**WHEREAS**, to make the provisions of EMC 53.35-53.44 effective, the City Council must adopt a Resolution to that effect.

**NOW THEREFORE, BE IT RESOLVED** by the City Council of the City of Eureka that a water emergency condition prevails pursuant to EMC 53.43 and as declared by the State Water Resources Control Board; and

1. The revised "Water Shortage Contingency Plan" attached hereto as Exhibit 'A' is hereby adopted; and
2. It is hereby declared that the City is presently in a Stage 3 water shortage and all accompanying conservation measures shall be taken; and
3. The taking of any action prohibited in the Stage 3 water shortage provisions, in addition to any other applicable civil or criminal penalties, is an infraction, punishable by a fine of up to five hundred dollars (\$500) for each day in which the violation occurs.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Eureka in the County of Humboldt, State of California, on the 21<sup>st</sup> day of April, 2015 by the following vote:

AYES: COUNCILMEMBERS  
NOES: COUNCILMEMBERS  
ABSENT: COUNCILMEMBERS  
ABSTAIN: COUNCILMEMBERS

---

Frank J. Jäger, Mayor of the City of Eureka

*Attest:*

---

Pamela J. Powell, City Clerk

*Approved as to Administration:*

*Approved as to form:*

---

Greg L. Sparks, City Manager

---

Cyndy Day-Wilson, City Attorney

# Water Shortage Contingency Plan

## FIVE STAGES OF WATER SHORTAGE

### Stage 1

- Water waste prohibited as defined in City ordinance 53.40

### Stage 2

- Voluntary conservation

### Stage 3

- 10% - 15% water use reduction goal
- The application of potable water to driveways and sidewalks is prohibited.
- Filling swimming pools, hot tubs, or spas is prohibited.
- Outdoor ornamental or turf irrigation during or within 48 hours of measurable precipitation is prohibited.
- Outdoor irrigation of ornamental landscapes or turf is restricted to Sundays, Tuesdays, Thursdays, and Saturdays.
- Serving drinking water other than upon request at eating and drinking establishments is prohibited.
- Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guestroom using clear and easily understood language.
- The City shall not issue written or oral commitments for new or expanded water service.

### Stage 4

- Reduce water usage by 16% - 30%
- Water usage allocations:
  - a. Priority 1: Minimum health and safety allocations for interior residential and emergency care facilities within the City Limits
  - b. Priority 2: Commercial, industrial, and institutional/governmental operations where water is used for manufacturing and for minimum health and safety requirements for employees and visitors in order to maintain jobs and economic base
  - c. Priority 3: Large landscaped areas
  - d. Priority 4: New connections

### Stage 5

- Reduce water usage up to 50%
- Mandatory water rationing

**State of California  
Office of Administrative Law**

In re:  
State Water Resources Control Board

Regulatory Action:

Title 23, California Code of Regulations

Adopt sections: 863, 864, 865

Amend sections:

Repeal sections:

NOTICE OF APPROVAL OF EMERGENCY  
REGULATORY ACTION

Government Code Sections 11346.1 and  
11349.6; Water Code Section 1058.5

OAL File No. 2015-0320-01 EE

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The State Water Resources Control Board (SWRCB) submitted this emergency readoption action to keep in effect the three emergency regulations adopted in OAL file no. 2014-0718-01E, and to further amend two of the emergency regulations, in title 23 of the California Code of Regulations pertaining to drought emergency water conservation.

OAL approves this emergency regulatory action pursuant to sections 11346.1 and 11349.6 of the Government Code and section 1058.5 of the Water Code.

This emergency regulatory action is effective on 3/27/2015 and will expire on 12/23/2015. The Certificate of Compliance for this action is due no later than 12/22/2015.

Date: 3/27/2015



Richard L. Smith  
Senior Attorney

For: DEBRA M. CORNEZ  
Director

Original: Thomas Howard  
Copy: David Rose

# EMERGENCY

STATE OF CALIFORNIA—OFFICE OF ADMINISTRATIVE LAW  
NOTICE PUBLICATION/REGULATIONS SUBMISSION

(See instructions on reverse)

For use by Secretary of State only

STD. AGO (REV. 01-2013)

OAL FILE NUMBERS	NOTICE FILE NUMBER	REGULATORY ACTION NUMBER	EMERGENCY NUMBER
	Z-		2015-0320-01EE

**ENDORSED - FILED**  
In the office of the Secretary of State  
of the State of California

MAR 27 2015

1:37 P.M.

For use by Office of Administrative Law (OAL) only

2015 MAR 20 AM 8:42

OFFICE OF ADMINISTRATIVE LAW

NOTICE	REGULATIONS
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AGENCY WITH RULEMAKING AUTHORITY State Water Resources Control Board	AGENCY FILE NUMBER (if any)
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### A. PUBLICATION OF NOTICE (Complete for publication in Notice Register)

1. SUBJECT OF NOTICE	TITLE(S)	FIRST SECTION AFFECTED	2. REQUESTED PUBLICATION DATE
3. NOTICE TYPE <input type="checkbox"/> Notice re Proposed Regulatory Action <input type="checkbox"/> Other	4. AGENCY CONTACT PERSON	TELEPHONE NUMBER	FAX NUMBER (Optional)
<b>OAL USE ONLY</b> ACTION ON PROPOSED NOTICE <input type="checkbox"/> Approved as Submitted <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Disapproved/Withdrawn	NOTICE REGISTER NUMBER	PUBLICATION DATE	

### B. SUBMISSION OF REGULATIONS (Complete when submitting regulations)

1a. SUBJECT OF REGULATION(S) Drought Emergency Water Conservation	1b. ALL PREVIOUS RELATED OAL REGULATORY ACTION NUMBER(S) OAL File No. 2014-0718-01-E
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2. SPECIFY CALIFORNIA CODE OF REGULATIONS TITLE(S) AND SECTION(S) (Including title 26, if toxics related)	
SECTION(S) AFFECTED (List all section number(s) individually. Attach additional sheet if needed.)	ADOPT 863, 864, 865 AMEND <del>863, 864, 865</del> per agency request REPEAL
TITLE(S) 23	

3. TYPE OF FILING	4. ALL BEGINNING AND ENDING DATES OF AVAILABILITY OF MODIFIED REGULATIONS AND/OR MATERIAL ADDED TO THE RULEMAKING FILE (Cal. Code Regs. title 1, §44 and Gov. Code §11347.1)
<input type="checkbox"/> Regular Rulemaking (Gov. Code §11346) <input type="checkbox"/> Resubmittal of disapproved or withdrawn nonemergency filing (Gov. Code §511349.3, 11349.4) <input type="checkbox"/> Emergency (Gov. Code, §11346.1(b))	<input type="checkbox"/> Certificate of Compliance: The agency officer named below certifies that this agency complied with the provisions of Gov. Code §511346.2-11347.3 either before the emergency regulation was adopted or within the time period required by statute. <input type="checkbox"/> Resubmittal of disapproved or withdrawn emergency filing (Gov. Code, §11346.1)

5. EFFECTIVE DATE OF CHANGES (Gov. Code, §§ 11343.4, 11346.1(d); Cal. Code Regs., title 1, §100)	6. CHECK IF THESE REGULATIONS REQUIRE NOTICE TO, OR REVIEW, CONSULTATION, APPROVAL OR CONCURRENCE BY, ANOTHER AGENCY OR ENTITY
<input type="checkbox"/> Effective January 1, April 1, July 1, or October 1 (Gov. Code §11343.4(a)) <input checked="" type="checkbox"/> Effective on filing with Secretary of State <input type="checkbox"/> \$100 Changes Without Regulatory Effect <input type="checkbox"/> Effective other (Specify)	<input checked="" type="checkbox"/> Department of Finance (Form STD. 399) (SAM 56660) per agency request <input type="checkbox"/> Fair Political Practices Commission <input type="checkbox"/> State Fire Marshal

7. CONTACT PERSON David Rose	TELEPHONE NUMBER 916-341-5196	FAX NUMBER (Optional) 916-341-5199	E-MAIL ADDRESS (Optional) david.rose@waterboards.ca.gov
---------------------------------	----------------------------------	---------------------------------------	--

8. I certify that the attached copy of the regulation(s) is a true and correct copy of the regulation(s) identified on this form, that the information specified on this form is true and correct, and that I am the head of the agency taking this action, or a designee of the head of the agency, and am authorized to make this certification.

SIGNATURE OF AGENCY HEAD OR DESIGNEE <i>Thomas Howard</i>	DATE 3/18/15
TYPED NAME AND TITLE OF SIGNATORY Thomas Howard, Executive Director, State Water Resources Control Board	

For use by Office of Administrative Law (OAL) only

ENDORSED APPROVED

MAR 27 2015

Office of Administrative Law

## ADOPTED TEXT OF EMERGENCY REGULATION

### Article 22.5. Drought Emergency Water Conservation.

#### Sec. 863. Findings of Drought Emergency.

(a) The State Water Resources Control Board finds as follows:

- (1) On January 17, 2014, the Governor issued a proclamation of a state of emergency under the California Emergency Services Act based on drought conditions;
- (2) On April 25, 2014, the Governor issued a proclamation of a continued state of emergency under the California Emergency Services Act based on continued drought conditions;
- (3) The drought conditions that formed the basis of the Governor's emergency proclamations continue to exist;
- (4) The present year is critically dry and has been immediately preceded by two or more consecutive below normal, dry, or critically dry years; and
- (5) The drought conditions will likely continue for the foreseeable future and additional action by both the State Water Resources Control Board and local water suppliers will likely be necessary to further promote conservation.

Authority: Section 1058.5, Water Code.

References: Sections 102, 104 and 105, Water Code.

#### Sec. 864. ~~Prohibited Activities~~End-User Requirements in Promotion of Water Conservation.

(a) To promote water conservation, each of the following actions is prohibited, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency:

- (1) The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;
- (2) The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;
- (3) The application of potable water to driveways and sidewalks; and
- (4) The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system;
- (5) The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall; and
- (6) The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased.

(b) To promote water conservation, operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guestroom using clear and easily understood language.

~~(b)~~(c) The taking of any action prohibited in subdivision (a) or the failure to take any action required in subdivision (b) of this section, in addition to any other applicable civil or criminal penalties, is an infraction, punishable by a fine of up to five hundred dollars (\$500) for each day in which the violation occurs.

Authority: Section 1058.5, Water Code.

References: Sections 102, 104 and 105, Water Code.

#### Sec. 865. Mandatory Actions by Water Suppliers.

(a) The term "urban water supplier," when used in this section, refers to a supplier that meets the definition set forth in Water Code section 10617, except it does not refer to suppliers when they are functioning solely in a wholesale capacity, but does apply to suppliers when they are functioning in a retail capacity.

(b)(1) To promote water conservation, each urban water supplier shall implement all requirements and actions of the stage of its water shortage contingency plan that ~~imposes~~includes mandatory restrictions on the number of days that outdoor irrigation of ornamental landscapes or turf with potable water is allowed, or shall amend its water shortage contingency plan to include mandatory restrictions on the number of days that outdoor irrigation of ornamental landscapes or turf with potable water is allowed and implement these restrictions within forty-five (45) days. Urban water suppliers with approved alternate plans as described in subdivision (b)(2) are exempted from this requirement.

~~(2) As an alternative to subdivision (b)(1), a~~An urban water supplier may submit a request to the Executive Director for approval of an alternate plan that includes allocation-based rate structures that satisfies the requirements of chapter 3.4 (commencing with section 370) of division 1 of the Water Code, and the Executive Director may approve such an alternate plan upon determining that the rate structure, in conjunction with other measures, achieves a level of conservation that would be superior to that achieved by implementing limitations on outdoor irrigation of ornamental landscapes or turf with potable water by the persons it serves to no more than two days per week.

(c) To promote water conservation, each urban water supplier that does not have a water shortage contingency plan that restricts the number of days that outdoor irrigation of ornamental landscapes and turf with potable water is allowed, or has been notified by the Department of Water Resources that its water shortage contingency plan does not meet the requirements of Water Code section 10632 shall, ~~within thirty-fourty-five (3045) days~~, limit outdoor irrigation of ornamental landscapes or turf with potable water by the persons it serves to no more than two days per week ~~or shall implement another mandatory conservation measure or measures intended to achieve a comparable reduction in water consumption by the persons it serves relative to the amount consumed in 2013.~~

(d) In furtherance of the promotion of water conservation each urban water supplier shall:

(1) Provide prompt notice to a customer whenever the supplier obtains information that indicates that a leak may exist within the end-users exclusive control.

(2) pPrepare and submit to the State Water Resources Control Board by the 15<sup>th</sup> of each month a monitoring report on forms provided by the Board. The monitoring

report shall include the amount of potable water the urban water supplier produced, including water provided by a wholesaler, in the preceding calendar month and shall compare that amount to the amount produced in the same calendar month in 2013. ~~Beginning October 15, 2014, The monitoring report shall specify the population served by the urban water supplier, the percentage of water produced that is used for the residential sector, descriptive statistics on water conservation compliance and enforcement efforts, and the number of days that outdoor irrigation is allowed. †~~The monitoring report shall also estimate the gallons of water per person per day used by the residential customers it serves. ~~In its initial monitoring report, each urban water supplier shall state the number of persons it serves.~~

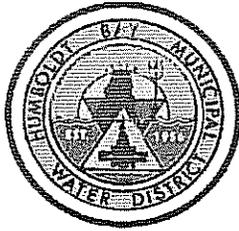
(e) To promote water conservation, each distributor of a public water supply, as defined in Water Code section 350, that is not an urban water supplier shall, within ~~thirty~~ forty-five (45) days, take one or more of the following actions:

(1) Limit outdoor irrigation of ornamental landscapes or turf with potable water by the persons it serves to no more than two days per week; or

(2) Implement another mandatory conservation measure or measures intended to achieve a ~~comparable~~ 20 percent reduction in water consumption by the persons it serves relative to the amount consumed in 2013.

Authority: Section 1058.5, Water Code.

References: Sections 102, 104, 105; 350; 10617 and 10632, Water Code.



## HUMBOLDT BAY MUNICIPAL WATER DISTRICT

828 SEVENTH STREET, PO BOX 95 • EUREKA, CALIFORNIA 95502

OFFICE 707-443-5018 ESSEX 707-822-2918

FAX 707-443-5731 707-822-8245

EMAIL [OFFICE@HBMWD.COM](mailto:OFFICE@HBMWD.COM)

BOARD OF DIRECTORS  
ALDARON LAIRD, PRESIDENT  
BARBARA HECATHORN, VICE-PRESIDENT  
BRUCE RUPP, SECRETARY-TREASURER  
KAITLIN SOPOCI-BELKNAP, DIRECTOR  
SHERI WOO, DIRECTOR

April 13, 2015

GENERAL MANAGER  
CAROL RISCHÉ

VIA Email: [Jessica.bean@waterboards.ca.gov](mailto:Jessica.bean@waterboards.ca.gov)

Jessica Bean  
State Water Resource Control Board  
1001 I Street  
Sacramento, CA 95814

Re: Comments on Emergency Rulemaking regarding April 1, 2015 Executive Order

Dear Ms. Bean,

The Humboldt Bay Municipal Water District (District) submits these comments for the emergency rule making under the Governor's Executive Order dated April 1, 2015.

The District supplies wholesale water to three cities (Arcata, Blue Lake, and Eureka) and four community services districts (Fieldbrook-Glendale, Humboldt, Manila, and McKinleyville) for ultimate delivery to retail customers.

We respectfully request that the SWRCB introduce flexibility into its regulatory program to achieve the desired or necessary level of water conservation. Like last year, the District finds itself in a very unique position during this exceptional drought period of having more than sufficient water supplies. The purpose of this letter is twofold: 1) to provide a summary of our unique water supply availability during this historic California drought, and 2) to request that the SWRCB strive to develop a reduced and more flexible regulatory approach that takes into consideration local supply/demand conditions such as ours. We understand the desire on the part of the Administration for all of urban California to "do its part," but we respectfully suggest that demanding water conservation when we have several years' of supplies fails to meet the constitutional mandate that the waters of the state be "put to beneficial use to the fullest extent of which they are capable."

### Summary of Unique Water Supply Availability

1) The District has not experienced a water shortage at any time during the prolonged drought which has affected most of California. The District's source of supply -Ruth Reservoir -has filled to capacity four times this season (in December, February, March and again in April) despite Humboldt County's classification as D-2 Severe Drought by the National Drought Mitigation Center. This is not unusual; Ruth Reservoir has filled to capacity each and every year of the State's four-year drought.

Due to the District's full reservoir and reduced demands, the District is not experiencing any water shortage, and has sufficient water supply to carry it through multiple future drought years. **Assuming zero rainfall recharge to our reservoir, we have determined we have reservoir capacity of 3 years or until April 2018 to meet 100% of our municipal customer demands and instream flow requirements.** This highly reliable supply surpasses statements from the Administration that Californians should conserve water to be prepared for an extended drought; our customers are already in that very beneficial position.

Our reservoir is located 75 miles above our point of diversion on the Mad River and only 7 miles from the ocean. This catchment and diversion configuration results in stream flow enhancement through our normal operations. In fact, we believe our District is the only one in California with an approved Aquatic Habitat Conservation Plan.

We pride ourselves on our cooperative relationships with our local California Department of Fish & Wildlife and National Marine Fisheries area representatives. In fact, the CDFW has been conducting Didson imagery in the river at our diversion facilities. With this equipment, they have documented that there has been a return of a summer run of steelhead in the river. We point this information out to assure the SWRCB that our operations are consistent with fishery resource goals and policy and that we have a well-managed watershed.

Furthermore, as reported in our Urban Water Management Plan, the District's reservoir was able to serve all of the District's water needs during our region's driest three-year period on record (October 1989 to September 1992), and this was before the 80% reduction in demand that resulted from the closing of our local pulp mills in the 1990's.

Our four largest municipal customers: City of Arcata, City of Eureka, Humboldt Community Service District and McKinleyville Community Service District comprise 86% of our demand. These municipalities have implemented extensive conservation measures in response to the previous drought Executive Order and Emergency Regulations. Their Residential Gallons per Capita Day or R-GPCD's are listed below for September 2014.

R-GPCD				
September 2014				
Arcata	Eureka	HCS D	McKCS D	Region Combined
51	81	67	72	69

On a blended basis (i.e., accounting for population and water use) our regional gpcd is 69. Our water conservation measures and a responsive constituency demonstrate our good stewardship of our local resources.

Moreover, additional conservation by our service region cannot currently benefit any other California water district as we are geographically isolated with no connecting infrastructure to either the Federal or State water systems. Therefore, creating additional supply duration through unprecedented conservation measures will not benefit the state. The only benefit will be to further extend our current 3 year supply which is only accessible within our local region around Humboldt Bay. **As noted above, preventing our ratepayers from using water to which they are entitled, with a thriving fishery and a very resilient and reliable water supply, would violate the provisions of Article X, Section 2 of the California Constitution.**

2) The District, in fact, has surplus water available. Last year, the District filed for a Temporary Urgency Change Petition with the SWRCB to change the place of use of our water right permit to accommodate delivery of bulk water to small communities and tribes in outlying areas who experienced acute water shortages. In this way, we are using our water to meet local needs as well as the environment and water supply reliability.

Finally, it is important to note the potential financial impact of the proposed water conservation regulations to our District and seven municipal wholesale customers. In our case, approximately 60% of our retail water deliveries are to a single industrial customer, DG Power, which is a co-generation plant that generates green energy. In an era where renewable energy is becoming ever more important, we do not believe that reducing deliveries to this customer is warranted. Moreover, because of the limited population and economic base in Humboldt County, water rates are one of the few ways that we can finance the needed capital improvements (including additional water conservation) in our water delivery systems. Imposing reductions in water use, therefore, will have the perverse effect of undermining our water supply reliability by undermining the financial stability of our retailers.

Please understand that we fully support efficient use of water and voluntary conservation practices at all times. However, imposing mandatory regulations and/or high water-use reductions do not provide any drought relief or benefit to our service territory. As a result of our unique situation with a multi-year supply of surplus water and no means to benefit any other water district within the state, our District respectfully requests that the SWRCB: 1) allow a reduced percentage of 10% reduction in potable urban water use for our service area; and 2) introduce flexibility into the new emergency regulations to account for varying local water supply conditions.

Sincerely,

*Carol Rische*

Carol Rische, General Manager  
Humboldt Bay Municipal Water District



*David Hull*

David Hull, Manager  
Humboldt Community Services District



*Greg Orsini*

Greg Orsini, Manager  
McKinleyville Community Services District



*Erik Lust*

Erik Lust, Water/Wastewater Superintendent  
City of Arcata

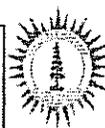
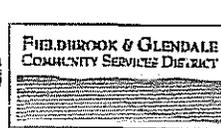


*Brian Gerving*

Brian Gerving, Public Works Director  
City of Eureka



Cc: Senator Mike McGuire  
Assemblymember Jim Wood  
Humboldt County Board of Supervisors  
Wholesale Municipal Customers  
Zuey Goosby and Deanna Sisk, Local Legislative Representatives  
Greater Eureka Chamber of Commerce  
Dorie Lannie, Humboldt County Drought Task Force  
Tim Quinn and David Boland, ACWA  
Bob Marino, DG Fairhaven Power



**APPENDIX G**  
**NOTICE OF PUBLIC HEARING FROM THE LOCAL NEWSPAPER**

# Advertising Order Confirmation

<u>Ad Order Number</u> 0005750291	<u>Customer</u> CITY OF EUREKA - LEGAL	<u>Payor Customer</u> CITY OF EUREKA - LEGAL	<u>PO Number</u>
<u>Sales Representative</u> Meredith Aldrich	<u>Customer Account</u> 2091017	<u>Payor Account</u> 2091017	<u>Ordered By</u>
<u>Order Taker</u> Meredith Aldrich	<u>Customer Address</u> 531 K ST EUREKA, CA 95501	<u>Payor Address</u> 531 K ST EUREKA, CA 95501	<u>Customer Fax</u>
<u>Order Source</u> Select Source	<u>Customer Phone</u> 707-441-4112	<u>Payor Phone</u> 707-441-4112	<u>Customer EMail</u> sasbury@ci.eureka.ca.gov
<u>Current Queue</u> Ready	<u>Invoice Text</u> Public Hearing Notice draft city UWMP 7/7/2016	<u>Ad Order Notes</u>	
<u>Tear Sheets</u> 0	<u>Affidavits</u> 0	<u>Blind Box</u> _____ <u>Materials</u> _____	<u>Promo Type</u> _____ <u>Special Pricing</u> _____

# Advertising Order Confirmation

Ad Number 0005750291-01    Ad Size 2 X 61 Li    Color    Production Color    Ad Attributes    Production Method AdBooker    Production Notes

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

**CITY OF EUREKA  
NOTICE OF PUBLIC HEARING**

**NOTICE IS HEREBY GIVEN** of a public hearing for the purpose of receiving public comment and testimony regarding the **draft City of Eureka Urban Water Management Plan (UWMP)**. The City will hold this public meeting in compliance with requirements of the California Department of Water Resources (DWR) pursuant to the UWMP Act and the Water Conservation Bill of 2009 to solicit the input of the public.

The UWMP Act (California Water Code §10610 et seq.) requires urban water suppliers to report, describe, and evaluate the following four areas: water deliveries and uses; water supply sources; efficient water uses; and demand management measures (DMMS), including implementation strategy and schedule.

Beginning June 8, 2016, copies of the UWMP will be available for public review during regular business hours at the City of Eureka Public Works offices at 531 K Street, or on the City of Eureka's website.

Following the public review period, the City of Eureka will hold a public hearing to consider all comments received and adoption of the UWMP. This hearing will be held at the regularly scheduled City Council Meeting scheduled for **July 5, 2016 at 6:00 PM** at Eureka City Hall, 531 K Street. Questions on the UWMP can be directed to Brian Issa, deputy Director of Public Works (707) 441-4290 or email: [bissa@ci.eureka.ca.gov](mailto:bissa@ci.eureka.ca.gov). 6/8, 22/2016

<u>Product</u>	<u>Requested Placement</u>	<u>Requested Position</u>	<u>Run Dates</u>	<u># Inserts</u>
Eureka Times Standard	Legals CLS NC	General Legal NC - 1076~	06/08/16, 06/22/16	2

<b>Order Charges:</b>	<u>Net Amount</u>	<u>Tax Amount</u>	<u>Total Amount</u>	<u>Payment Amount</u>	<u>Amount Due</u>
	311.86	0.00	311.86	0.00	<b>\$311.86</b>

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.

**APPENDIX H**  
**COE RESOLUTION 2016-46**

**RESOLUTION NO. 2016-46**

**RESOLUTION OF THE CITY COUNCIL  
OF THE CITY OF EUREKA ADOPTING THE 2015 URBAN WATER MANAGEMENT  
PLAN**

WHEREAS, on September 21, 1983, the State of California enacted Assembly Bill 797, known as the "urban Water Management Plan Act", which, as amended, required that urban retail suppliers of potable water for municipal purposes serving more than 3,000 customer or retailing more than 3,000 acre feet of water annually adopt Urban Water Management Plans by December 31, 1985, and every five years thereafter adopt updated plans for the conservation and efficient use of water; and

WHEREAS, The City's most recent Urban Water Management Plan update was adopted on July 19, 2011; and

WHEREAS, The City has held a public hearing on the Plan as required under Water Code § 10642;

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Eureka, to adopt the 2015 Urban Water Management Plan Update and direct the Public Works Director to file copies of the Plan with the State Department of Water Resources. If the State Department of Water Resources requires any revisions prior to acceptance of the Urban Water Management Plan, any such Plan revisions shall be approved by the Director of Public Works prior to resubmittal.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Eureka in the County of Humboldt, State of California, on the 5th day of July, 2016 by the following vote:

AYES: COUNCILMEMBERS BRADY, ATKINS, BERGEL, CIARABELLINI,  
ARROYO

NOES: COUNCILMEMBERS

ABSENT: COUNCILMEMBERS

  
\_\_\_\_\_  
Frank J. Jäger, Mayor of the City of Eureka

Attest:

  
\_\_\_\_\_  
Pamela J. Powell, City Clerk

Approved as to Administration:

  
\_\_\_\_\_  
Greg L. Sparks, City Manager

Approved as to form:

  
\_\_\_\_\_  
Cyndy Day-Wilson, City Attorney

**APPENDIX I**  
**SBX7-7 TABLES**

**SB X7-7 Table 0: Units of Measure Used in UWMP\***

*(select one from the drop down list)*

Million Gallons

*\*The unit of measure must be consistent with Table 2-3*

NOTES:

**SB X7-7 Table-1: Baseline Period Ranges**

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	1,211	Million Gallons
	2008 total volume of delivered recycled water	0	Million Gallons
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period <sup>1</sup>	10	Years
	Year beginning baseline period range	1995	
	Year ending baseline period range <sup>2</sup>	2004	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range <sup>3</sup>	2007	
<sup>1</sup> If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.			
<sup>2</sup> The ending year must be between December 31, 2004 and December 31, 2010.			
<sup>3</sup> The ending year must be between December 31, 2007 and December 31, 2010.			
NOTES:			

**SB X7-7 Table 2: Method for Population Estimates****Method Used to Determine Population**  
(may check more than one)

<input type="checkbox"/>	<b>1. Department of Finance (DOF)</b> DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input checked="" type="checkbox"/>	<b>2. Persons-per-Connection Method</b>
<input type="checkbox"/>	<b>3. DWR Population Tool</b>
<input checked="" type="checkbox"/>	<b>4. Other</b> DWR recommends pre-review

NOTES:2010 US Census data, GIS analysis for borders, projected based

**SB X7-7 Table 3: Service Area Population**

Year	Population	
<b>10 to 15 Year Baseline Population</b>		
Year 1	1995	26,577
Year 2	1996	26,336
Year 3	1997	26,121
Year 4	1998	25,978
Year 5	1999	26,080
Year 6	2000	26,234
Year 7	2001	26,340
Year 8	2002	26,443
Year 9	2003	26,547
Year 10	2004	26,650
<i>Year 11</i>		
<i>Year 12</i>		
<i>Year 13</i>		
<i>Year 14</i>		
<i>Year 15</i>		
<b>5 Year Baseline Population</b>		
Year 1	2003	26,547
Year 2	2004	26,650
Year 3	2005	26,756
Year 4	2006	26,862
Year 5	2007	26,972
<b>2015 Compliance Year Population</b>		
<b>2015</b>		27,428
NOTES:		

**SB X7-7 Table 4: Annual Gross Water Use \***

	Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>Fm SB X7-7 Table(s) 4-A</i>	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>Fm SB X7-7 Table 4-B</i>	Water Delivered for Agricultural Use	Process Water <i>Fm SB X7-7 Table(s) 4-D</i>	
<b>10 to 15 Year Baseline - Gross Water Use</b>								
Year 1	1995	1366.71	0	0	0	0	0	1,367
Year 2	1996	1301.1	0	0	0	0	0	1,301
Year 3	1997	1346	0	0	0	0	0	1,346
Year 4	1998	1243.5	0	0	0	0	0	1,244
Year 5	1999	1297	0	0	0	0	0	1,297
Year 6	2000	1290.5	0	0	0	0	0	1,291
Year 7	2001	1317.7	0	0	0	0	0	1,318
Year 8	2002	1320.9	0	0	0	0	0	1,321
Year 9	2003	1262.8	0	0	0	0	0	1,263
Year 10	2004	1230.3	0	0	0	0	0	1,230
Year 11	0	0			0		0	0
Year 12	0	0			0		0	0
Year 13	0	0			0		0	0
Year 14	0	0			0		0	0
Year 15	0	0			0		0	0
<b>10 - 15 year baseline average gross water use</b>								<b>865</b>
<b>5 Year Baseline - Gross Water Use</b>								
Year 1	2003	1,263			0		0	1,263
Year 2	2004	1,230			0		0	1,230
Year 3	2005	1,204			0		0	1,204
Year 4	2006	1,192			0		0	1,192
Year 5	2007	1,214			0		0	1,214
<b>5 year baseline average gross water use</b>								<b>1,221</b>
<b>2015 Compliance Year - Gross Water Use</b>								
<b>2015</b>		1,069			0		0	1,069

\* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

**SB X7-7 Table 4-A: Volume Entering the Distribution System(s)**

Complete one table for each source.

<b>Name of Source</b>	Purchased Water
-----------------------	-----------------

**This water source is:**

- The supplier's own water source
- A purchased or imported source

<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
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**10 to 15 Year Baseline - Water into Distribution System**

Year 1	1995	1366.71		1,367
Year 2	1996	1301.10		1,301
Year 3	1997	1346.00		1,346
Year 4	1998	1243.50		1,244
Year 5	1999	1297.00		1,297
Year 6	2000	1290.50		1,291
Year 7	2001	1317.70		1,318
Year 8	2002	1320.90		1,321
Year 9	2003	1262.80		1,263
Year 10	2004	1230.30		1,230
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0

**5 Year Baseline - Water into Distribution System**

Year 1	2003	1262.80		1,263
Year 2	2004	1230.30		1,230
Year 3	2005	1204.10		1,204
Year 4	2006	1191.70		1,192
Year 5	2007	1214.40		1,214

**2015 Compliance Year - Water into Distribution System**

<b>2015</b>	1069.27		1,069
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\* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES:

<b>SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)</b>				
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Annual Gross Water Use</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use (GPCD)</b>
<b>10 to 15 Year Baseline GPCD</b>				
Year 1	1995	26,577	1,367	141
Year 2	1996	26,336	1,301	135
Year 3	1997	26,121	1,346	141
Year 4	1998	25,978	1,244	131
Year 5	1999	26,080	1,297	136
Year 6	2000	26,234	1,291	135
Year 7	2001	26,340	1,318	137
Year 8	2002	26,443	1,321	137
Year 9	2003	26,547	1,263	130
Year 10	2004	26,650	1,230	126
<i>Year 11</i>	0	0	0	
<i>Year 12</i>	0	0	0	
<i>Year 13</i>	0	0	0	
<i>Year 14</i>	0	0	0	
<i>Year 15</i>	0	0	0	
<b>10-15 Year Average Baseline GPCD</b>				<b>135</b>
<b>5 Year Baseline GPCD</b>				
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Gross Water Use</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use</b>
Year 1	2003	26,547	1,263	130
Year 2	2004	26,650	1,230	126
Year 3	2005	26,756	1,204	123
Year 4	2006	26,862	1,192	122
Year 5	2007	26,972	1,214	123
<b>5 Year Average Baseline GPCD</b>				<b>125</b>
<b>2015 Compliance Year GPCD</b>				
<b>2015</b>		27,428	1,069	107
NOTES:				

**SB X7-7 Table 6:** Gallons per Capita per Day  
*Summary From Table SB X7-7 Table 5*

10-15 Year Baseline GPCD	135
5 Year Baseline GPCD	125
2015 Compliance Year GPCD	107
NOTES:	

**SB X7-7 Table 7: 2020 Target Method***Select Only One*

Target Method		Supporting Documentation
<input checked="" type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator

NOTES:

**SB X7-7 Table 7-A: Target Method 1**

20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
135	108

NOTES:

**SB X7-7 Table 7-E: Target Method 3**

Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
<input checked="" type="checkbox"/>		North Coast	137	130
<input type="checkbox"/>		North Lahontan	173	164
<input type="checkbox"/>		Sacramento River	176	167
<input type="checkbox"/>		San Francisco Bay	131	124
<input type="checkbox"/>		San Joaquin River	174	165
<input type="checkbox"/>		Central Coast	123	117
<input type="checkbox"/>		Tulare Lake	188	179
<input type="checkbox"/>		South Lahontan	170	162
<input type="checkbox"/>		South Coast	149	142
<input type="checkbox"/>		Colorado River	211	200
<p align="center"><b>Target</b> <i>(If more than one region is selected, this value is calculated.)</i></p>				<p align="center"><b>0</b></p>
<p>NOTES:</p>				

**SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target**

5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target*	Calculated 2020 Target <i>Fm Appropriate Target Table</i>	Confirmed 2020 Target
125	119	108	108

\* Maximum 2020 Target is 95% of the 5 Year Baseline GPCD

NOTES:

**SB X7-7 Table 8: 2015 Interim Target GPCD**

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
108	135	122

NOTES:

**SB X7-7 Table 9: 2015 Compliance**

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD		
107	122	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	0	106.80602	106.80602	YES

NOTES:

**Errata Sheet for Minor Corrections to  
(City of Eureka) 2015 Urban Water Management Plan (UWMP)**

This errata sheet logs minor content errors that were identified after final adoption of the *(City of Eureka)* 2015 UWMP. DWR has determined that these corrections are minor and do not require the UWMP to be amended.

**X** These data errors have been corrected in the Department of Water Resources (DWR) UWMP database at <http://wuedata.water.ca.gov>.

**X** This errata sheet has been filed with the UWMP in all locations where it is made publicly available, including the California State Library.

Name and agency of the person filing errata sheet:

Brian Issa

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Name

City of Eureka

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Agency

#	Description of Correction	Location	Rationale	Date Error Corrected
1	Recycled water use was incorrectly classified for 2015. Projected water use updated to "0".	Page 17	Recycled water use was incorrectly classified for 2015.	November 28, 2016
2	Table 6-3 removed water volume used for internal re-use.	Page 52	The water used for internal re-use is not considered a recycled use by DWR and should, therefore, not be included in this DWR standardized table.	November 28, 2016
3	Table 6-4 removed water volume used for internal re-use.	Page 53	The water used for internal re-use is not considered a recycled use by DWR and should, therefore, not be included in this DWR standardized table.	November 28, 2016
4	Table 6-5 removed water volume used for internal re-use.	Page 54	The water used for internal re-use is not considered a recycled use by DWR and should, therefore, not be included in this DWR standardized table.	November 28, 2016