

Urban Water Management Plan
Big Bear City
Community Services District

Prepared for Big Bear City Community Services District
Big Bear City, California

May 5, 2014



Daniel B. Stephens & Associates, Inc.

3916 State St., Suite 1A • Santa Barbara, California 93105



Daniel B. Stephens & Associates, Inc.

**Urban Water Management Plan
Big Bear City Community Services District**

**Prepared for
Big Bear City Community Services District
Big Bear City, California**

May 5, 2014

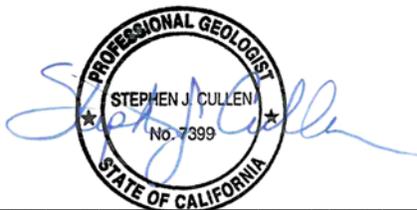
Contact Information

Jerry Griffith
Big Bear City Community Services District
Water Department Superintendent
Phone: (909) 584-4008
Email: jgriffith@bbccsd.org

Brianna Hoeft
Daniel B. Stephens & Associates, Inc.
Phone: (805) 683-2409
Fax: (805) 683-2419
Email: bhoeft@dbstephens.com

Certification

The material and data in this report were prepared under the supervision and direction of the California state licensed professionals listed below, consistent with generally accepted practices of the environmental industry.



Stephen J. Cullen, Ph.D., P.G.
Daniel B. Stephens & Associates, Inc.

Brianna Hoeft
Daniel B. Stephens & Associates, Inc.



Table of Contents

Section	Page
Acronyms and Abbreviations	iii
1. Introduction	1-1
1.1 Plan Preparation and Coordination	1-1
1.2 Plan Adoption, Submittal, and Implementation.....	1-1
2. System Description	2-1
2.1 Service Area Physical Description.....	2-1
2.2 Existing and Projected Population.....	2-1
3. System Demands.....	3-1
3.1 Water Demands.....	3-1
3.2 Baselines and Targets.....	3-2
3.3 Water Use Reduction Plan	3-3
4. System Supplies	4-1
4.1 Groundwater Basin.....	4-1
4.2 Groundwater Supply System.....	4-1
4.3 Transfer Opportunities.....	4-2
4.4 Recycled and Desalinated Water	4-3
5. Water Supply Reliability	5-1
5.1 Water Quality and Climate Impacts	5-1
5.2 Supply and Demand Comparison.....	5-2
5.3 Low-Income Housing.....	5-3
6. Water Shortage Contingency Plan.....	6-1
6.1 Water Supply Shortage Stages Measures and Restrictions.....	6-2
6.2 Expected Water Savings due to Water Supply Shortage Stages.....	6-6
7. Demand Management Measures.....	7-1
References.....	R-1



List of Figures

Figure

- 2-1 Water Service Area

List of Tables

Table

- 1-1 Coordination with Appropriate Agencies
- 2-1 Current and Projected Population
- 3-1 Current and Historic Water Use
- 3-2 Water Deliveries - Actual
- 3-3 Water Deliveries - Projected
- 3-4 Projected Water Use
- 3-5 System Water Loss
- 3-6 Base Period Ranges
- 3-7 Base Daily Per Capita Water Use - 10-year Range
- 3-8 Base Daily Per Capita Water Use - 5-year Range
- 5-1 Spring and Slant Well Production
- 5-2 Vertical Well Production

List of Appendices

Appendix

- A Urban Water Management Plan Act
- B Public Review and Adoption Documents
- C Water Shortage Contingency Plan



Acronyms and Abbreviations

°F	degrees Fahrenheit
ac-ft	acre-feet
ac-ft/yr	acre-feet per year
Basin	Bear Valley Groundwater Basin
BBARWA	Big Bear Area Regional Wastewater Agency
BBCCSD	Big Bear City Community Service District
BBLDWP	Big Bear Lake Department of Water and Power
BBMWD	Big Bear Municipal Water District
Board	Big Bear City Community Service District Board of Directors
DBS&A	Daniel B. Stephens & Associates, Inc.
DMMs	Demand Management Measures
DWR	California Department of Water Resources
EPA	U.S. Environmental Protection Agency
feet bgs	feet below ground surface
gpcd	gallons per capita per day
gpd	gallons per day
gpm	gallons per minute
SCAG	Southern California Association of Governments
UWMPA	Urban Water Management Plan Act
UWMP	Urban Water Management Plan
WMP	Water Master Plan



1. Introduction

Under California Water Code Division 6 Part 2.6 (§10610 - 10656), The Urban Water Management Planning Act (UWMPA) requires urban water suppliers that supply more than 3,000 acre-feet (ac-ft) of water annually, or serve more than 3,000 connections, to submit an Urban Water Management Plan (UWMP). The UWMP must detail the supplier's long-term resource planning over a 20 year period, and must be submitted to the Department of Water Resources (DWR) every 5 years. Big Bear City Community Services District (BBCCSD) is required to develop a UWMP. The UWMPA is included in Appendix A.

This UWMP has been prepared in compliance with California Water Code and will be submitted to DWR within 30 days after approval by BBCCSD Board of Directors (Board). Information used in this text has been obtained from BBCCSD staff, and/or extracted from the 2000 BBCCSD UWMP and the 2010 BBCCSD Water Master Plan (WMP).

1.1 Plan Preparation and Coordination

The UWMP was prepared by Daniel B. Stephens & Associates, Inc. (DBS&A) in conjunction and approval from BBCCSD. DBS&A referenced the DWR "Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan" (DWR, 2011). The UWMPA requires coordination with other appropriate agencies in the area. Table 1-1 summarizes the external outreach with neighboring agencies.

1.2 Plan Adoption, Submittal, and Implementation

Regulation requires BBCCSD to hold a public hearing regarding this UWMP, and notify any city or county to which BBCCSD supplies water. Notification of UWMP review must be made at least 60 days prior to the public hearing. On April 20, 2011, BBCCSD notified San Bernardino County of the UWMP update. The UWMP was available for public review more than two weeks prior to the public meeting. Notification for the public meeting was published in the local newspaper and will be held on May 19, 2014. Copies of the notifications and adoption documentation are included in Appendix B. The adopted UWMP will be available for public



Daniel B. Stephens & Associates, Inc.

review and submitted to the California State Library and San Bernardino County within 30 days of submittal to DWR.



2. System Description

2.1 Service Area Physical Description

BBCCSD is located in Big Bear City in southwest San Bernardino County, southern California. Water is supplied to BBCCSD customers via groundwater derived from the Bear Valley Groundwater Basin (Basin). BBCCSD and the Basin are located in the San Bernardino Mountains. Ground elevations range between 6,710 and 7,100 feet above mean sea level. Figure 2-1 shows the water service area boundary and surrounding area.

BBCCSD was created by a formation and consolidation election on August 23, 1966. Initially, BBCCSD was the result of consolidation of three separate agencies including the Big Bear City Sanitation District (waste collection), the Big Bear Fire Protection District, and the Big Bear City Street Lighting District. In 1967, the shareholders of the former Big Bear City Mutual Service Company voted to relinquish ownership and operation of their water system to BBCCSD. Currently, BBCCSD provides water, sewer, fire protection/emergency medical services, solid waste (trash collection), and street lighting services. The BBCCSD encompasses 21.13 square miles.

In Big Bear City, according to BBCCSD records from 1950 to 2006, the mean annual maximum and minimum temperatures are (measured at the BBCCSD) 64.9 degrees Fahrenheit (°F) and 31.9°F, respectively. Average winter temperatures range in the 30's (°F), and average summer temperatures range in the 60's (°F). The mean annual measured precipitation is 14.5 inches.

2.2 Existing and Projected Population

The service area is primarily residential, and experiences an influx of part-time population and vacationers enjoying the summer and winter recreational facilities within and adjacent to the service area.

San Bernardino County has one of the highest projected annual growth rates in southern California: 2.37 percent per year between 2000 and 2030 according to population forecasts



published by the Southern California Association of Governments (SCAG). According to SCAG, projected growth in the vicinity of Big Bear City is more modest. Big Bear City lies within Census Tract 114, which includes portions of unincorporated San Bernardino County to the east of Big Bear Lake. Based on data published by SCAG for Census Tract 114, the estimated annual growth rate is approximately 0.95 percent over the same period.

Another population projection for the region was published in the 2007 Bear Valley Community Plan by the San Bernardino County Land Use Services Department. Growth in population, households, and employment was projected for the combined communities of Big Bear City, Fawnskin, Sugarloaf, Erwin Lake, Baldwin Lake, Lake Williams, and Moonridge. Population growth was projected as 1.8 percent. These communities are more representative of the BBCCSD Service Area, and less conservative, than the Census Tract 114 data used by SCAG.

The 2000 UWMP estimated the full-time population served by BBCCSD at 7,884. Based on the 1.8 percent growth between 2000 and 2030 projected in the 2007 Bear Valley Community Plan, the service population will increase to 13,464 by 2030 (Table 2-1).

Due to the recreational nature of the Big Bear City economy, occupancy within the service area fluctuates seasonally, typically peaking in July and at the lowest level during the winter. Big Bear City has the potential to experience large demand changes. However, population and recreation fluctuations are anticipated to remain constant relative to previous years.



3. System Demands

3.1 Water Demands

Per capita water usage from 1995 to 2010 varied from 172 (1995) to 104 (2010) gallons per capita per day (gpcd). Overall, per capita consumption has decreased and is most likely due to conservation efforts made by BBCCSD. Beginning in 1979, BBCCSD implemented a water metering program and all water services are currently metered. Table 3-1 is a summary of BBCCSD's per capita water usage from 1995 to 2010. Water supply and demand data has been extracted from the most current BBCCSD records.

In 2010, BBCCSD supplied 1,095 ac-ft of water to the service area with 6,009 connections. The population was estimated to be 9,424, resulting in a per capita consumption rate of 104 gpcd. Table 3-2 summarizes BBCCSD's water deliveries, connections, and system losses for 2005 and 2010.

Over the past 28 years, from 1982 to 2010, the number of new service connections has increased at an annual average rate of 1.34 percent. Based on input from BBCCSD staff, the annual growth rate over the next 5 years is expected to be much lower, at approximately 0.25 percent. The projected number of service connections in 2030 is 7,901 connections, based upon BBCCSD input and the historical service connection growth rate.

Future water demand was determined from the projected new connections and average daily demands detailed in the 2010 WMP for near-term development in 2014 and ultimate development in 2030. An estimated 330 connections will be added by 2015, totaling 6,339 connections with an average demand of 1,307 acre-feet per year (ac-ft/yr). By 2030, an estimated 1,892 connections will have been added, totaling 7,901 connections with an average demand of 1,620 ac-ft/yr. Table 3-3 summarizes BBCCSD's projected future water demand, connections, and system losses. Per capita consumption for 2015 and 2030 was calculated based on the projected population growth rate, development, and demand. Water demand for 2020 and 2025 were calculated based on a constant increase from the 2015 to 2030 estimates.



Table 3-4 summarizes the projected future service area population, production, and the resulting projected per capita water use over the planning period.

Water loss, or unaccounted-for water, is the difference between water production and water consumption. Typical sources of water loss include leaks or breaks in pipes, inaccurate meters, illegal connections, fire suppression flow, maintenance, and unmetered water use for construction, landscaping, street sweeping, and dust control, among other uses. Table 3-5 displays BBCCSD system loss from 2001 to 2010. BBCCSD has an average 11 percent system loss between 2001 and 2010. This average was used to estimate system losses for 2015 to 2030 as shown in Table 3-3.

The 2010 WMP estimates non-residential demand to be approximately 13 percent of total consumption based on data from 2000 to 2008. The relative number of non-residential connections is quite small, but their consumption was found to be more significant and make up almost half of the top users. BBCCSD does not serve industrial or agricultural water use sectors.

3.2 Baselines and Targets

Senate Bill (SB)x7-7 of the California Water Conservation Act of 2009 establishes an overall goal of reducing per capita water use by 20 percent by 2020. BBCCSD is required to calculate and report its baseline per capita water use, 2020 water use target, and interim 2015 target in order to comply with SBx7-7. If a supplier used 10 percent or more recycled water in 2008, the baseline can be determined with a 15-year consecutive period between 1990 and 2010. BBCCSD does not use recycled water and therefore must establish a 10-year baseline between 1995 and 2010. Under SBx7-7, BBCCSD is also required to establish a 5-year baseline between 2003 and 2010 to determine the minimum required reduction in water use (used in target confirmation). BBCCSD's 10-year baseline was established from 1995 to 2004 and the 5-year baseline was established from 2003 to 2007. Table 3-6 summarizes the base period ranges for BBCCSD. BBCCSD's 10-year baseline is 142 gpcd, and the 5-year baseline is 119 gpcd. Table 3-7 and Table 3-8 summarize the population, daily system gross water use,



and the per capita consumption for each year of the 10-year and 5-year baseline periods, respectively.

The DWR developed four target methods for water suppliers to determine water use targets. Method 1 is a 20 percent reduction from the 10-year baseline, resulting in 113 gpcd for BBCCSD. The minimum water use reduction is defined as 95 percent of the established 5-year gpcd (119 gpcd). A 95 percent reduction of the 5-year baseline results in a minimum water use reduction of 113 gpcd. The minimum reduction is equal to the Method 1 target and no adjustments are required for BBCCSD to meet their water conservation target and comply with the minimum reduction requirement. Method 3 requires a 95 percent reduction of the 20x2020 Water Conservation Plan hydrologic region target. BBCCSD is in the south coast region and must meet a target of 142 gpcd. However, the minimum water use reduction of 113 gpcd must still be met. BBCCSD does not have the necessary data and records available to implement Method 2 (performance standards) or Method 4 (water savings) and independent of the method, BBCCSD must still meet the minimum water use target of 113 gpcd by 2020.

In conclusion, whether using Method 1 or Method 3, the water conservation target for 2020 is 113 gpcd. The interim target for 2015 is the mid-point value between the 10-year baseline and the 2020 target, which for BBCCSD is 127 gpcd.

3.3 Water Use Reduction Plan

Projected per capita water use for 2015 and 2020 are below the water use targets of SBx7-7. The 2015 interim target is 127 gpcd and the projected water use is 113 gpcd. The 2030 target is 113 gpcd and the projected water use is 107 gpcd. Projected water use is summarized in Table 3-4. Therefore, BBCCSD is projected to meet the water use targets by maintaining their current water conservation methods.



4. System Supplies

BBCCSD's sole source of water supply is groundwater developed through springs, vertical wells and horizontal (slant) wells, and is currently delivered to its customers through 6,018 service connections. The distribution system and major facilities include four reservoirs with a total capacity of 6.25 million gallons, 81.7 miles of pipeline, 10 active vertical wells, 2 slant wells, 2 springs, 6 booster stations, a fluoride blending system, an iron and manganese treatment facility, 418 fire hydrants, chlorination at seven locations, and more than 1,600 gate valves.

4.1 Groundwater Basin

The Bear Valley Groundwater Basin is roughly 14 miles long from east to west and 7 miles wide from north to south. There are two lakes in the middle of the Basin: perennial Big Bear Lake and the ephemeral Baldwin Lake. Surface drainage within the Basin flows to one of the two lakes, mostly to Big Bear Lake. Big Bear Lake empties on the west into Bear Creek, which is a tributary of the Santa Ana River. Baldwin Lake sits in a local closed depression and does not empty to any other body of water.

Groundwater is primarily found within unconsolidated alluvial deposits. The water-bearing deposits have been divided into upper, middle, and lower aquifers, with the upper and middle aquifers being the primary producers. Recharge to the Basin is from percolation of precipitation and runoff and underflow from fractured crystalline rocks, adjacent to and beneath the alluvium. Groundwater levels generally correlate with annual fluctuation of precipitation. Storage capacity is estimated by DWR at 42,000 ac-ft (DWR, 2004). The Basin is not adjudicated or in overdraft conditions.

4.2 Groundwater Supply System

There are 13 vertical wells; however 2 wells are inactive due to low production rates and 1 well is inactive due to a broken shaft. The inactive well with the broken shaft is not currently in use, but is in the process of being replaced. The 10 active vertical wells have a current capacity of approximately 1,614 gpm. Specific well design capacity is detailed in the WMP. Pumps lift



groundwater into the transmission system from the vertical wells. Active wells are linked into the BBCCSD's supervisory control and data acquisition (SCADA) system, which includes instrumentation and control equipment for monitoring, communications, alarm, control, display, and reporting functions.

Production from the slant wells and springs is closely tied to precipitation and highly dependent on the hydrogeology of the locality. Van Dusen Wells 1 and 2 comprise the active slant wells. The slant wells flow under gravity into the BBCCSD system. Van Dusen Wells 1 and 2 are near locations where springs historically flowed from granitic bedrock fractures in Van Dusen Canyon. Both wells are completed with steel piping and redwood boxes. Van Dusen Well 1 was advanced 395 feet into the mountainside and Van Dusen Well 2 was advanced 400 feet into the mountainside.

BBCCSD also extracts groundwater from two natural springs, Greenspot Spring and Fish Hatchery Spring. Flows from the natural springs are diverted to a reservoir and enter the reservoir through a common line and meter.

4.3 Transfer Opportunities

In 1995, BBCCSD entered into an agreement to provide emergency interties with Big Bear Lake Department of Water and Power (BBLDWP). The interties consist of two adjacent hydraulically connected fire hydrants, one maintained by BBCCSD and the other by BBLDWP. Each intertie has a capacity of 1,000 gpm.

Emergency connections are typically used during times of natural or manmade disasters; in addition, the two agencies may transfer water during repairs and maintenance. There are no formal agreements regarding water transfer. Each transfer is evaluated individually. However, if the interties are sized appropriately and institutional arrangements are made, a more formal transfer agreement could be implemented.

BBCCSD has been granted a variance by the State of California for an elevated fluoride concentration. BBCCSD may exceed the current state fluoride MCL of 2 mg/L and deliver a



fluoride concentration of 3 mg/L to its customers. However, this variance may interfere with the development of water transfer agreements, because adjacent water districts may be held to a stricter standard.

Discharge of water from the BBCCSD system does occur from the Greenspot Reservoir to overflow waste during times of low demand with naturally high production from Greenspot and Hatchery Springs. BBCCSD has installed an overflow meter to document this formerly unaccounted water.

BBCCSD has no imported water connections. The nearest potentially available imported water wholesaler is Crestline Lake Arrowhead Water Agency, and the distance and mountainous terrain make a potential intertie cost prohibitive. Other area water agencies for potential intertie and transfer include:

- Big Bear Lake Municipal Water District, which manages Big Bear Lake primarily for recreation, and does not have any consumptive surface flow water rights.
- Bear Valley Mutual Water Company, which owns consumptive lake water rights.
- Big Bear Area Regional Wastewater Agency, which currently collects potential recycled water directly from the BBCCSD Service Area.

4.4 Recycled and Desalinated Water

As mentioned, BBCCSD provides solely supplier-produced groundwater to its service area. BBCCSD does not currently supply recycled water to its customers, and does not plan to add recycled water sources over this current planning horizon. The Big Bear Area Regional Wastewater Agency (BBARWA) owns and operates the wastewater treatment facility located east of Big Bear City on the south shore of Baldwin Lake. Wastewater is collected from the entire Big Bear Valley area, which consists of the City of Big Bear Lake, BBCCSD and Fawnskin (County Service Area 53B).



BCCSD maintains and operates its own wastewater collection system. Wastewater is received at BCCSD's BBARWA Lake Pumping Station and then pumped to the BBARWA interceptor system for transport to the Regional Treatment Plant. BCCSD represents approximately 48 percent of the connections to BBARWA (BBARWA, 2013a).

Currently, the treated wastewater is discharged downhill through a pipeline to Lucerne Valley where the water is used for farmland irrigation. In 2010, the total effluent sent to Lucerne Valley was 1,062,076,000 gallons (3,259 ac-ft). Since August 7, 1980 through December 31, 2010 the total amount of effluent sent to Lucerne Valley was 26,765,644,000 gallons (82,141 ac-ft) (BBARWA, 2013a). BBARWA has completed a recycled water master plan for the Big Bear Valley and discusses developing a local recharge system to enhance groundwater supply and water quality (BBARWA, 2013a).

Development of desalinated water is not being considered for the current planning period, due to the availability of groundwater to meet the projected demand.

To summarize, BCCSD has not used and does not plan to purchase water, transfer/exchange water in significant quantities, or utilize surface, recycled or desalinated water during the current planning period.



5. Water Supply Reliability

UWMPs must address the reliability of the water supply, vulnerability to seasonal or climatic shortage, and provide data for an average and single dry water year as well as multiple dry years during the planning period.

5.1 Water Quality and Climate Impacts

A number of factors can affect groundwater supply reliability within Bear Valley Basin. Reliable published climate projections are not yet available for the service area, but will likely affect available groundwater supply.

Water quality within the Basin is generally very good. Water quality issues tend to be limited to elevated fluoride in the eastern part of the Basin. Fluoride appears to be concentrated in the deepest alluvial aquifers, as indicated by zone testing in pilot boreholes for recently constructed water wells. Several BCCSD wells exhibit high fluoride concentrations. Although treatment was considered, BCCSD opted to blend the high fluoride concentration sources with low fluoride concentration sources to meet prevailing health standards. BCCSD currently holds a variance from the State of California to exceed the prevailing fluoride MCL of 2 mg/L up to a concentration of 3 mg/L. The current fluoride blending system has been successfully operational since June 1990. Of the 10 active vertical wells, 8 wells pump to reservoir for fluoride blending.

Well 8 is fitted with a Kinetico groundwater treatment system which involves a two-step process of oxidation and filtration to remove iron and manganese. Localized contaminants, namely trichloroethylene have been reported in increasing concentrations in recent years in a few wells near the east end of the airport. The source(s) of this contaminant is not yet known and the highest trichloroethylene concentrations have been detected in Well 3, which is currently inactive. Trichloroethylene has not been detected since 2008, and was not detected after treatment. These water quality issues are not anticipated to hinder the groundwater supply for delivery to BCCSD customers.



5.2 Supply and Demand Comparison

The reliability of BBCCSDs water service to its customers during the UWMP planning period must be assessed during normal, dry, and multiple dry years. The gravity-fed springs and slant wells have an increased ability to produce water when groundwater table elevations are higher. To assess normal and dry years, the past and current production from springs and slant wells has been reviewed. Table 5-1 shows the combined spring and slant well production from 1988 to 2010. In 1992, BBCCSD ended a seven year drought. During the drought, annual gravity fed production was the lowest in 1990 at 164 ac-ft. The driest multi-year period on BBCCSD record is 1988 to 1990 at an average gravity-fed production of 210 ac-ft. Median gravity-fed production from 1988 to 2010 occurred in 1997 at 461 ac-ft per year.

During multiple dry years, production from slant wells and springs will decrease, requiring most of the production to be pumped from the vertical wells. Table 5-2 shows vertical well production from 1990 to 2010. From 1990 to 2010 production from slant wells and springs has ranged from 13 percent to 87 percent with a median of 40 percent. The active vertical wells have the combined capacity to pump 1,614 gpm (2,605 ac-ft/yr). Under multiple dry year conditions, vertical well production would be required to account for 87% of demand. The highest projected water demand is 1,620 ac-ft in 2030. Under dry year conditions, vertical well production must meet 1,409 ac-ft/yr. System capacities are able to meet this demand under multiple dry year conditions. Sufficient groundwater and system pumping capacities exist to meet future supply needs under normal, dry, and multiple-dry-year conditions.

DWR estimates the groundwater storage capacity of the Basin to be 42,000 ac-ft (DWR, 2004). During dry years, less rainfall results in decreased recharge to the Basin. However, water remains available in the Basin due to the aquifers containing more water in storage than the perennial yield. As detailed in the WMP, the perennial yield has been estimated by Geoscience at 4,800 to 5,625 ac-ft/yr, at 15,796 ac-ft/yr by USGS Basin Characterization Model (BCM), and at 9,571 ac-ft/yr by USGS INFILv3. DBS&A analyzed total Basin recharge by using distributed parameter watershed model (DPWM) and found the adjusted estimate of median (midpoint) total recharge to be at least 8,959 ac-ft/yr, and the adjusted estimate of mean (average) total recharge to be at least 16,531 ac-ft/yr.



The Basin is divided into 11 subunits. Within the Basin, BBCCSD has water available to them from Erwin, Van Dusen, West Baldwin, and East Baldwin subunits. Flow from these four subunits is directed toward Baldwin Lake and contribute to almost 60 percent of the Basin recharge (DBSA, 2010). Perennial yield for these four subunits have been estimated by Geoscience at 2,290 to 2,900 ac-ft/yr, at 9,166 ac-ft/yr by USGS BCM, and at 5,600 ac-ft/yr by USGS INFILv3. BBLDWP also produces water from the Erwin subunit and private wells produce a minor amount across the Basin.

In BBLDWP's UWMP, the highest projected water demand for 2030 is 3,019 ac-ft/yr under single dry year conditions (BBLDWP, 2012). Combined with BBCCSD's highest projected demand (1,409 ac-ft/yr) and assuming a demand less than 372 ac-ft/yr from private wells, the projected Basin water demand is below the lower limit of the most conservative perennial yield estimate of 4,800 to 5,625 ac-ft/yr. With continued proper groundwater management, the Basin is expected to contain an adequate supply during normal, dry, and multiple dry year conditions.

5.3 Low-Income Housing

The UWMPA requires urban water suppliers to include projected water use for single-family and multifamily residential housing needs for lower income households within the service area. At this time, BBCCSD does not have a housing element identifying planned low-income housing developments.



6. Water Shortage Contingency Plan

The following section discusses the BBCCSD's existing four "water-supply shortage stages" and their declaration processes.

BBCCSD shall monitor the supply and demand for water regularly during mandatory compliance water supply shortage stages, to determine the level of conservation required at the implementation or termination of each stage. Each declaration of the Board implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall remain in effect until the Board so otherwise declares. The Board is authorized to terminate any of the water shortage contingency stages (Stages 1 through 4) based upon an appropriate change in the conditions evaluated at the onset of the stages.

A. Stage 1 - Threatened Water Shortage

The Board may, following a noticed public hearing, declare a Stage 1 Threatened Water Shortage based on an evaluation of conditions that have the potential to impair the BBCCSD's ability to meet the water demands of its customers, such conditions include depth to water in supply wells, the ability to blend or treat supply water to below the State Maximum Contaminant Level (MCL), duration of drought, time of year, and the potential for existing recharge. Declaration of a Stage 1 Water Shortage Alert will be recited in a motion, resolution or ordinance declaring a Threatened Water Shortage. No public hearing shall be required in the event of a Water Supply Shortage Emergency.

B. Stage 2 - Water Shortage Alert

The Board may, following a noticed public hearing, declare a Stage 2 Water Shortage Alert based on based on an evaluation of conditions that have the potential to further impair the BBCCSD's ability to meet the water demands of its customers such as (at a minimum) depth to water in supply wells, the ability to blend or treat supply water to below the State Maximum Contaminant Level (MCL), duration of drought, time of year, and the potential for existing recharge. Declaration of a Stage 2 Water Shortage Alert will be recited in a motion, resolution



or ordinance declaring a Water Shortage Alert. No public hearing shall be required in the event of a Water Supply Shortage Emergency.

C. Stage 3 - Water Shortage Warning

The Board may, following a noticed public hearing, declare a Stage 3 Water Shortage Alert based on based on an evaluation of conditions that have the potential to greatly impair the District's ability to meet the water demands of its customers such as (at a minimum) depth to water in supply wells, the ability to blend or treat supply water to below the State Maximum Contaminant Level (MCL), duration of drought, time of year, and the potential for existing recharge. Declaration of a Stage 3 Water Shortage Alert will be recited in a motion, resolution or ordinance declaring a Water Shortage Warning. No public hearing shall be required in the event of a Water Supply Shortage Emergency.

D. Stage 4 - Water Supply Shortage Emergency

The Board may, following a noticed public hearing, declare a Stage 4 Water Shortage Alert based on based on an evaluation of conditions that have the potential to impair the District's ability to meet the water demands of its customers such that a water supply shortage is threatened. Conditions that will be evaluated include (at a minimum) depth to water in supply wells, the ability to blend or treat supply water to below the State Maximum Contaminant Level (MCL), duration of drought, time of year, and the potential for existing recharge. Declaration of a Stage 4 Water Shortage Alert will be recited in a motion, resolution or ordinance declaring a Threatened Water Supply Shortage Emergency. No public hearing shall be required in the event of an Emergency Water Supply Shortage.

6.1 Water Supply Shortage Stages Measures and Restrictions

The following section discusses the measures and restrictions for each of the District's four water supply shortage stages.



A. Stage 1 Restrictions. The following restrictions and prohibitions on water use shall be imposed and complied with by the District Water Users during Stage 1. During Stage 1, the District may impose any or all of the following restrictions or conditions on the use of water, as the circumstances may require:

1. *Landscape Irrigation*.
 - a. Landscape watering with sprinklers between 9:00 a.m. and 6:00 p.m. is prohibited. This prohibition extends to all nurseries, golf courses, and public facilities.
 1. Landscape irrigation must be limited to what is necessary and shall not be excessive.
 2. This prohibition shall not extend to those facilities using subsurface or drip irrigation.
 3. Water shall not be allowed to run off into the streets or other impervious surfaces.
 - b. Turf irrigation is prohibited between November 1 and April 1 of each year.
2. *Aesthetic uses*.
 - a. Decorative ponds, fountains and waterways having a capacity in excess of twenty (20) gallons shall not be filled with water from the District's water system.
3. *Other outdoor uses*.
 - a. Waste of water is prohibited.
 - b. Sidewalks, driveways, buildings, and windows shall not be washed off with hoses, except as required for sanitary purposes. Reduction of washing of other impervious surfaces is recommended.
 - c. Non-commercial washing of automobiles, trucks, trailers, boats, airplanes and other mobile equipment shall be done with a handheld hose or bucket. Handheld hoses shall be equipped with an automatic shutoff nozzle.
4. *Commercial and industrial uses*.
 - a. Washing of automobiles, trucks, trailers, boats, airplanes and other mobile equipment is permitted.



- b. Restaurants shall not to serve water to customers except when specifically requested by the customer.
 - c. Voluntary reduction of water use in commercial and industrial processes is recommended.
 - d. All new commercial car, airplane, and boat washes shall be constructed with water recycling systems.
5. *Domestic use.*

Voluntary reduction for indoor domestic use is recommended by any means available.
6. *Essential and utility uses.*
 - a. *Fire fighting.* No restrictions.
 - b. *Medical use by health care facilities.* No restrictions.
7. No water shall be used for private construction purposes, including water used for dust control or compaction. Use of reclaimed or recycled water is exempt from this reduction measure.
8. All water leaks shall be repaired immediately.

B. Stage 2 Restrictions. During Stage 2, the following restrictions and prohibitions on water uses shall be imposed on and complied with by all Water Users and are in addition to, and include, all water uses restricted or prohibited in Stage 1.

1. The District recommends that all existing customers with landscaping presently in place reduce their turf area and/or replace it with low water use plants and drip irrigation, or native plants that need little or no watering.
2. Any person installing new landscaping shall not install turf in excess of twenty five (25) percent of the available landscape area and shall not install more than one thousand (1,000) square feet of turf and shall use low water plants. Drip irrigation is highly recommended for use in new landscaping projects.
3. Persons may irrigate on Designated Days only.

C. Stage 3 Restrictions. In addition to the mandatory requirements set forth in Stages 1 and 2, the following restrictions shall be imposed on and complied with by all Water Users during Stage 3.



1. No residences shall use in excess of one hundred (100) gallons per day. This amount may, upon petition to the District, be increased by fifty (50) gallons per day per person for residences which the District determines based on the facts set forth in petition have more than two (2) persons living full time in a single residence.
2. Mandatory water rationing levels shall be determined for commercial establishments by the District's General Manager on a case-by-case basis and such determination. Once such a determination is made, commercial establishments shall not exceed use limitations so established.
3. All Water Users shall reduce turf to twenty-five (25) percent of the available landscape area which shall not exceed more than one thousand (1,000) square feet of turf on a parcel or lot.
4. No Water User shall install any new landscaping.
5. Any Water User who exceeds the one hundred (100) gallons per day per residence limitation, as adjusted for additional residence members, or the commercial water usage limitation as determined by the District, shall pay a water surcharge equal to twice the amount of the Water User's entire water bill at standard rates.

D. Stage 4 Restrictions. When Stage 4 is declared, the following restrictions and prohibitions shall be imposed and complied with. Such restrictions are in addition to all restrictions imposed in Stages 1, 2, and 3.

1. No Water User may irrigate turf or landscape plants.
2. No Water User may irrigate trees and shrubs except by drip irrigation or hand watering.
3. No new landscaping plants shall be installed, except such landscaping plants as are required for erosion control by the County Building and Safety Department.
4. In addition to the surcharge charged under Stage 3, the District also may install a flow restrictor on property where a Water User is wasting water and/or shut-off water service for those water users who repeatedly exceed the District's mandatory water use limitation of 100 gallons per day per



residence, as adjusted for additional residence members. The provisions for a shut-off of water service are defined in Ordinance No. 75, adopted by the Board of Directors on October 13, 1987.

5. All private washing of cars, airplanes, and boats or any other vehicles is prohibited. This prohibition does not include washing by a commercial establishment that uses solely reclaimed water to wash the vehicles.
6. In industrial, commercial and other uses, additional restrictions may be imposed if conditions warrant.

6.2 Expected Water Savings due to Water Supply Shortage Stages

The following section discusses the expected water savings due to each of the District's four water supply shortage stages.

- A. The District expects to realize a goal of a five (5) to ten (10) percent reduction in overall water usage after a Stage 1 condition is declared by the Board.
- B. The District expects to realize a goal of a fifteen (15) percent reduction in overall water usage after a Stage 2 condition is declared by the Board.
- C. The District expects to realize a goal of a twenty-five (25) percent reduction in overall water usage after a Stage 3 condition is declared by the Board.
- D. The District shall impose water conservation measures that will result in a forty (40) percent reduction in overall water use after a Stage 4 condition is declared by the Board.



7. Demand Management Measures

The UWMPA requires the evaluation of demand management measures (DMMs) to support BBCCSD's water conservation efforts. The 14 specific DMMs identified in the UWMPA to be addressed are:

- A. Water survey programs for single-family residential and multifamily residential customers
- B. Residential plumbing retrofit
- C. System water audits, leak detection, and repair
- D. Metering with commodity rates for all new connections and retrofit of existing connections
- E. Large landscape conservation programs and incentives
- F. High-efficiency washing machine rebate programs
- G. Public information programs
- H. School education programs
- I. Conservation programs for commercial, industrial, and institutional accounts
- J. Wholesale agency programs
- K. Conservation pricing
- L. Water conservation coordinator
- M. Water waste prohibition
- N. Residential ultra-low-flush toilet replacement

Because BBCCSD is not a wholesale urban water supplier, BBCCSD is not required by UWMPA to address DMM, item J. California Urban Water Conservation Council (CUWCC) members in compliance with the CUWCC Memorandum of Understanding have the option to submit their annual reports in lieu of describing the above DMMs. BBCCSD is not a member of CUWCC and therefore must address all DMMs excluding J.



A. Water Survey Programs for Single-family Residential and Multifamily Residential Customers

This program consists of water audits for residential customers. BBCCSD currently conducts surveys on an as-needed basis. If a meter read is abnormally high, BBCCSD staff checks the residence for indoor plumbing and outdoor irrigation system leaks at no cost to the customer.

B. Residential Plumbing Retrofit

From 1990 to 1992, BBCCSD conducted an internal audit program that involved the retrofitting of toilet and showerheads with up-to-date, water saving plumbing fixtures. The program consisted of the following:

- 1,829 toilets retrofitted in 1,204 single family homes.
- 131 toilets retrofitted in 55 commercial buildings.
- 25 toilets retrofitted in 7 multi-family residential buildings.
- 1,145 shower heads and 444 faucet aerators replaced.

Current building codes require installation of low flow and water saving appliances and plumbing fixtures on new construction. The majority of full time BBCCSD residential customers with outdated toilets have converted to low flow toilets through this program.

BBCCSD currently implements a toilet retrofit program. Water savings from this DMM are generally from the full time residents in the area. Part time residents do not use enough water to offer this program to low volume users in a cost effective manner. A minimum of 800 cubic feet (CCF) bi-monthly average water use is required in order for customers to qualify. Existing toilets must be 3.5 gallons per flush (gpf) or greater and replacement toilets must be 1.6 gpf or less, UL Plumbing Mark listed, and Uniform Plumbing Code approved. Eligibility and post replacement inspections are required to certify installation for new low-flow toilets. A completed Toilet Retrofit / Rebate Application form must then be submitted to BBCCSD. A \$75 credit (per toilet) is available for existing homes and businesses and is limited to two toilet replacements per home or business.



C. System Water Audits, Leak Detection, and Repair

To increase system efficiency and assure that unnecessary water loss before sales are kept to a minimum, BBCCSD checks for leaks in meter boxes and in the system. Leak detection companies are also contracted periodically as-needed to check for system leaks. On an annual basis, BBCCSD staff conducts regular inspections for leaks in its' approximate 82 miles of system pipeline. In order to minimize water loss, BBCCSD keeps adequate staff on duty to respond quickly to calls on pipe ruptures, leaks, and repairs and locates and utilizes all control/shut-off valves so that leaks can be corrected in a timely manner.

System water audits are performed on a semi-annual basis to determine the cost/benefit ratio of a system-wide leak detection survey. In 1985, a leak detection and repair survey was performed. A 110 gpm leak was detected and repaired, which equated to a 180 acre-foot annual savings.

D. Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

Beginning in 1979, BBCCSD implemented a water metering program which required a water meter on all services for new development using BBCCSD water. The program also called for metering of all services on lots with a change of ownership and all consumers who use large quantities of water. Ordinance Nos. 29 and 4S were enacted to declare goals pertaining to water meters. Currently all water services are metered. BBCCSD charges a minimum bi-monthly base rate (no water usage) which constitutes the fixed portion of the customers' water bill, and is considered to be an availability charge for providing its customers access to water at all times. This base rate charge compensates BBCCSD for costs incurred in producing and delivering water. The tiered rates provide incentive to reduce water consumption. Additionally, the metering of connections provides for accurate measurement of usage trends and lost water production.

Below is the water bi-monthly base rate and tiered consumption rates for a standard 5/8" meter with a unit defined as 100 cubic feet (748 gallons):



- 0 units = \$57.66
- 1 - 24 units = \$1.48
- 25 - 40 units = \$1.86
- 40+ units = \$2.21

During a third or fourth stage water shortage emergency, customers may be assessed a penalty charge for exceeding their water allotments as dictated by Ordinance No.107 for stage 3 and 4 emergencies as follows:

"Any water user who exceeds the one hundred (100) gallons per day per residence limitation, as adjusted for additional residence members, or the commercial water usage limitation as determined by the District, shall pay a water surcharge equal to twice the amount of water user's entire bill at standard rates."

Under stage 4 water shortage, the BBCCSD is authorized to install a flow restrictor or terminate water service for those users who repeatedly incur the penalty charge for exceeding their mandatory water use limitation.

E. Large Landscape Conservation Programs and Incentives

The tiered water rates encourage customers to minimize water usage, including landscape irrigation, to keep water bills to a minimum. On occasion, BBCCSD meets with large landscape customers. BBCCSD has gone to Big Bear High School to speak with maintenance personnel regarding sprinkler head repair. BBCCSD has a demo garden at their main office for customers to encourage residents to learn more about native drought-tolerant plants and more efficient water use in landscaping. BBCCSD also has a trailer demonstration garden that is presented at public events. BBCCSD plans to continue operation of the demonstration garden and education of the public regarding efficient water use in landscaping.

F. High-Efficiency Washing Machine Rebate Programs

This program would provide financial incentives to qualifying customers who install high-efficiency washing machines. BBCCSD does not currently offer a rebate program for the



installation of high-efficiency washing machines. Full time residents would provide the greatest water savings, while offering rebates to part-time residents would likely not be economical. BBCCSD will explore the possibility of a high-efficiency washing machine rebate program once plumbing retrofits have been exhausted.

G. Public Information Programs

In 1985, BBCCSD began a public water conservation awareness program. BBCCSD provided water savings kits, general mailings, radio advertisements, and public signs to increase public awareness of the need and importance of water conservation in the Big Bear area. In 1987, BBCCSD adopted Ordinance No. 75, which restricted water use and limited new water connections to the system. Since adopting this ordinance, BBCCSD has been involved in continued public awareness through programs such as news media advertising, elementary school classroom presentations, and all possible water related expositions and functions. Currently, BBCCSD attends local events with a trailer demonstration garden to give the public suggestions on plants and landscaping to promote water conservation. BBCCSD also sponsors the local Xeriscape Garden Tour of the Big Bear Valley featuring homes with water wise yards. BBCCSD currently has no method of evaluation of the effectiveness of this DMM other than review of water usage versus production.

H. School Education Programs

This program has previously been implemented by BBCCSD by providing educational presentations to the local elementary schools in the Big Bear area on an annual basis. This program is not currently active. There is no current method of analyzing the effectiveness of this program other than continued observation of water production and usage. Savings are assumed for future years due to education of young consumers by informing them of the importance of water conservation and ramifications of excess uses of water.

I. Conservation Programs for Commercial, Industrial, and Institutional Accounts

BBCCSD does not have conservation programs for commercial or institutional accounts and does not have any industrial accounts. The tiered water rates encourage commercial and



institutional customers to minimize water usage to avoid costly water bills. As discussed in DMM B, from 1990 to 1992, BBCCSD conducted an internal audit program that involved the retrofitting of toilet and showerheads with up-to-date, water saving plumbing fixtures. The program consisted of the following:

- 1,829 toilets retrofitted in 1,204 single family homes.
- 131 toilets retrofitted in 55 commercial buildings.
- 25 toilets retrofitted in 7 multi-family residential buildings.
- 1,145 shower heads and 444 faucet aerators replaced.

Current building codes require installation of low flow and water saving appliances and plumbing fixtures on new construction.

J. Wholesale Agency Programs

Not applicable, BBCCSD is not a wholesale agency.

K. Conservation Pricing

Refer to DMM D.

L. Water Conservation Coordinator

Currently, BBCCSD does not have a water conservation coordinator and does not have a need to hire one at this time. Water conservation efforts are successfully managed by current BBCCSD staff.

M. Water Waste Prohibition

BBCCSD has a Drought Contingency Plan. The Drought Contingency Plan is included as Appendix C and is discussed further in Section 6.



Daniel B. Stephens & Associates, Inc.

N. Residential Ultra-low-flush Toilet Replacement Programs

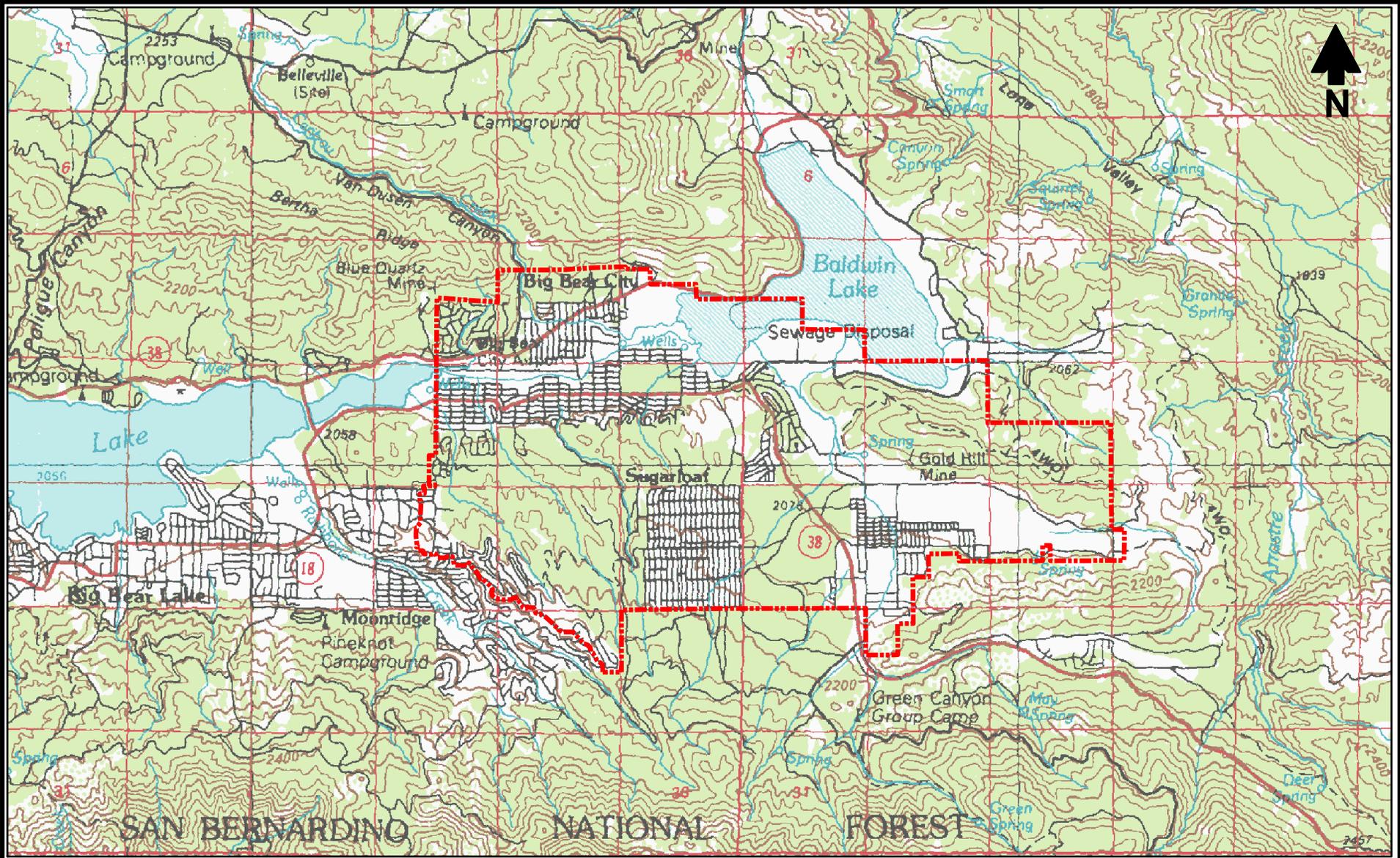
Refer to DMM B.



References

- Big Bear Area Regional Wastewater Agency (BBARWA). 2013. Service area and flow summary. <<http://www.bbarwa.org/index.html>> Accessed April 2013.
- Big Bear Area Regional Wastewater Agency (BBARWA). 2013. Water supply and documents. <<http://www.bigbearwatersolutions.org>> Accessed April 2013.
- Big Bear City Community Services District. 2001. 2000 Urban Water Management Plan. March 20, 2001.
- California Department of Water Resources (DWR). 2004. Bear Valley Basin. California's Groundwater Bulletin 118. February 27, 2004.
- California Department of Water Resources (DWR). 2011. Final Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan. March 2011.
- Carollo Engineers, Inc. 2010. 2010 Urban Water Management Plan City of Big Bear Lake Department of Water and Power. Prepared for City of Big Bear Lake Department of Water and Power. July 2012.
- Daniel B. Stephens & Associates, Inc. (DBS&A). 2010. Water Master Plan Big Bear City Community Services District. Prepared for Big Bear City Community Services District. January 12, 2010.
- San Bernadino County. 2007. Bear Valley Community Plan. Adopted March 13, 2007. Effective April 12, 2007.

Figure



0 3000 6000 Feet



Explanation

 Service area boundary

**BIG BEAR CITY COMMUNITY SERVICES DISTRICT
Water Service Area**



Daniel B. Stephens & Associates, Inc.
5/16/2013

JN WR11.0040

Tables



Table 1-1. Coordination with Appropriate Agencies

Coordinating Agencies	Participated in Developing the Plan	Commented on the Draft	Attended Public Meetings	Was Contacted for Assistance	Was Sent a Copy of the Draft Plan	Was Sent a Notice of Intention to Adopt	Not involved / No information
San Bernardino County					X	X	
Big Bear Area Regional Wastewater Agency					X		
Big Bear Municipal Water District					X		
City of Big Bear Lake Department of Water and Power					X		
City of Big Bear Lake Planning Department					X		
Crestline Lake Arrowhead Water Agency					X		

Table 2-1. Population - Current and Projected

	2010	2015	2020	2025	2030
Service Area Population	9,424	10,303	11,264	12,315	13,464

Source: San Bernardino County, 2007



Table 3-1. Current and Historic Water Use

Year	Service Area Population	Production (ac-ft)	Per Capita Water Use (gpcd)
1995	5,989	1,151	172
1996	6,368	1,102	155
1997	6,747	1,140	151
1998	7,126	1,080	135
1999	7,505	1,159	138
2000	7,884	1,375	156
2001	8,026	1,233	137
2002	8,170	1,224	134
2003	8,317	1,102	118
2004	8,467	1,162	122
2005	8,620	1,101	114
2006	8,775	1,126	115
2007	8,933	1,238	124
2008	9,093	1,163	114
2009	9,257	1,124	108
2010	9,424	1,095	104

ac-ft = acre-feet

gpcd = gallons per capita per day

Population Source: BBCCSD, 2000 and San Bernardino County, 2007



Table 3-2. Water Deliveries - Actual

Water use sectors	2005		2010	
	# of connections	Volume (ac-ft)	# of connections	Volume (ac-ft)
Water Metered	5,815	968	6,009	926
Single family	--	--	--	--
Multi-family	--	--	--	--
Commercial	--	--	--	--
Industrial	0	0	0	0
Institutional/governmental	--	--	--	--
Landscape	--	--	--	--
Agriculture	0	0	0	0
System Losses	--	133	--	169
Total	5,815	1,101	6,009	1,095

ac-ft = acre-feet
 -- = not applicable

Table 3-3. Water Deliveries - Projected

Water use sectors	2015		2020		2025		2030	
	# of connections	Volume (ac-ft)						
Water Metered	6,339	1,160	6,822	1,253	7,342	1,346	7,901	1,438
Single family	--	--	--	--	--	--	--	--
Multi-family	--	--	--	--	--	--	--	--
Commercial	--	--	--	--	--	--	--	--
Industrial	0	0	0	0	0	0	0	0
Institutional/governmental	--	--	--	--	--	--	--	--
Landscape	--	--	--	--	--	--	--	--
Agriculture	0	0	0	0	0	0	0	0
System Losses	--	147	--	158	--	170	--	182
Total	6,339	1,307	6,822	1,411	7,342	1,516	7,901	1,620

ac-ft = acre-feet
 -- = not applicable



Table 3-4. Projected Water Use

Year	Service Area Population	Production (ac-ft)	Per Capita Water Use (gpcd)
2015	10,303	1,307	172
2020	11,264	1,411	155
2025	12,315	1,516	151
2030	13,464	1,620	104

ac-ft = acre-feet

gpcd = gallons per capita per day

Population Source: San Bernardino County, 2007

Table 3-5. System Water Loss

Year	Water supplied / Production (ac-ft)	Water metered / Consumption (ac-ft)	% Loss
2001	1,233	1,131	8
2002	1,224	1,120	8
2003	1,102	998	9
2004	1,162	1,024	12
2005	1,101	968	12
2006	1,126	1,003	11
2007	1,238	1,084	12
2008	1,163	1,004	14
2009	1,124	1,015	10
2010	1,095	926	15

ac-ft = acre-feet



Table 3-6. Base Period Ranges

Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	1,090	ac-ft
	2008 total volume of delivered recycled water	0	ac-ft
	2008 recycled water as a percent of total deliveries	0	percent
	Number of years in base period	10	years
	Year beginning base period range	1995	--
	Year ending base period range	2004	--
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2003	--
	Year ending base period range	2007	--

ac-ft = acre-feet
 -- = not applicable



Table 3-7. Base Daily Per Capita Water Use - 10-year Range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	1995	5,989	1.03	169.8
Year 2	1996	6,368	0.98	155.3
Year 3	1997	6,747	1.02	150.8
Year 4	1998	7,126	0.96	135.3
Year 5	1999	7,505	1.03	137.9
Year 6	2000	7,884	1.23	155.7
Year 7	2001	8,026	1.10	137.1
Year 8	2002	8,170	1.09	133.7
Year 9	2003	8,317	0.98	118.3
Year 10	2004	8,467	1.04	122.5
Base Daily Per Capita Water Use				142

mgd = million gallons per day

gpcd = gallons per capita per day

Population Source: BBCCSD, 2000 and San Bernardino County, 2007

Table 3-8. Base Daily Per Capita Water Use - 5-year Range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	8,317	0.98	118
Year 2	2004	8,467	1.04	123
Year 3	2005	8,620	0.98	114
Year 4	2006	8,775	1.01	115
Year 5	2007	8,933	1.11	124
Base Daily Per Capita Water Use				119

mgd = million gallons per day

gpcd = gallons per capita per day

Population Source: San Bernardino County, 2007



Table 5-1. Spring and Slant Well Production

Year	Totals (ac-ft/yr)
1988	260.42
1989	206.41
1990	163.88
1991	288.72
1992	499.73
1993	921.66
1994	689.71
1995	947.85
1996	644.16
1997	460.83
1998	890.27
1999	684.75
2000	456.36
2001	312.68
2002	205.87
2003	188.87
2004	155.56
2005	854.27
2006	814.28
2007	500.78
2008	330.40
2009	295.77
2010	542.61

ac-ft/yr = acre-feet per year

Table 5-2. Vertical Well Production

Year	Totals (ac-ft/yr)
1990	809.91
1991	582.39
1992	439.93
1993	132.31
1994	375.20
1995	203.62
1996	458.17
1997	679.63
1998	189.37
1999	473.92
2000	919.11
2001	920.62
2002	1017.63
2003	913.52
2004	1006.02
2005	246.78
2006	312.11
2007	737.21
2008	832.79
2009	828.68
2010	552.39

ac-ft/yr = acre-feet per year

Appendix A

Urban Water Management Plan Act

Established: [AB 797, Klehs, 1983](#)

Amended: [AB 2661, Klehs, 1990](#)

[AB 11X, Filante, 1991](#)

[AB 1869, Speier, 1991](#)

[AB 892, Frazee, 1993](#)

[SB 1017, McCorquodale, 1994](#)

[AB 2853, Cortese, 1994](#)

[AB 1845, Cortese, 1995](#)

[SB 1011, Polanco, 1995](#)

[AB 2552, Bates, 2000](#)

[SB 553, Kelley, 2000](#)

[SB 610, Costa, 2001](#)

[AB 901, Daucher, 2001](#)

[SB 672, Machado, 2001](#)

[SB 1348, Brulte, 2002](#)

[SB 1384, Costa, 2002](#)

[SB 1518, Torlakson, 2002](#)

[AB 105, Wiggins, 2004](#)

[SB 318, Alpert, 2004](#)

[SB 1087, Florez, 2005](#)

[SBX7 7, Steinberg, 2009](#)

CALIFORNIA WATER CODE DIVISION 6 PART 2.6. URBAN WATER MANAGEMENT PLANNING

CHAPTER 1. GENERAL DECLARATION AND POLICY

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.
- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
- (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
- (9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

- (a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
- (b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
- (c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

CHAPTER 2. DEFINITIONS

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "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 subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

CHAPTER 3. URBAN WATER MANAGEMENT PLANS

Article 1. General Provisions

10620.

- (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).
- (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.
- (c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.
- (d)
 - (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.
 - (2) 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.
- (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
- (f) 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.

10621.

- (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.
- (b) Every urban water supplier required to prepare a plan pursuant to this part shall 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. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.
- (c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Article 2. Contents of Plans

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

- (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. 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.
- (b) 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 (a). 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, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.
 - (2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which 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.

For basins that have not been adjudicated, 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.

- (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.

- (4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
- (c) 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:
- (1) An average water year.
 - (2) A single dry water year.
 - (3) Multiple dry water years.

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.

- (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.
- (e)
- (1) 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.

- (2) The water use projections shall be in the same five-year increments described in subdivision (a).
- (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
- (1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:
 - (A) Water survey programs for single-family residential and multifamily residential customers.
 - (B) Residential plumbing retrofit.
 - (C) System water audits, leak detection, and repair.
 - (D) Metering with commodity rates for all new connections and retrofit of existing connections.
 - (E) Large landscape conservation programs and incentives.
 - (F) High-efficiency washing machine rebate programs.
 - (G) Public information programs.
 - (H) School education programs.
 - (I) Conservation programs for commercial, industrial, and institutional accounts.
 - (J) Wholesale agency programs.
 - (K) Conservation pricing.
 - (L) Water conservation coordinator.
 - (M) Water waste prohibition.
 - (N) Residential ultra-low-flush toilet replacement programs.
 - (2) A schedule of implementation for all water demand management measures proposed or described in the plan.

- (3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.
 - (4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
- (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
- (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
 - (2) Include a cost-benefit analysis, identifying total benefits and total costs.
 - (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
 - (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.
- (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), 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.

- (i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- (j) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).
- (k) Urban water suppliers that rely 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), including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

10631.5. The department shall take into consideration whether the urban water supplier is implementing or scheduled for implementation, the water demand management activities that the urban water supplier identified in its urban water management plan, pursuant to Section 10631, in evaluating applications for grants and loans made available pursuant to Section 79163. The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

- (a) 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.

- (b) 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.
- (c) 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.
- (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
- (e) 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.
- (f) Penalties or charges for excessive use, where applicable.
- (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), 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.
- (h) A draft water shortage contingency resolution or ordinance.
- (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

10633. 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, and shall include all of the following:

- (a) A description of 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.
- (b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

- (c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
- (d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
- (e) 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.
- (f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
- (g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. 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.

Article 2.5 Water Service Reliability

10635.

- (a) 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.

- (b) 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.
- (c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.
- (d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Articl 3. Adoption and Implementation of Plans

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. 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. 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. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644.

- (a) An urban water supplier shall file with the department and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be filed with the department and any city or county within which the supplier provides water supplies within 30 days after adoption.
- (b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the outstanding elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has filed its plan with the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

10645. 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.

CHAPTER 4. MISCELLANEOUS PROVISIONS

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

- (a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.
- (b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water

supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

10657.

- (a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water supplier is eligible for funds made available pursuant to any program administered by the department.
- (b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

Appendix B

Public Review and Adoption Documents



**Big Bear City Community Services District
Notice of Public Hearing
2010 Urban Water Management Plan**

Pursuant to California Water Code (CWC) section 10642 and 10608, a public hearing will be held on the 2010 Urban Water Management Plan (2010 UWMP).

The Big Bear City Community Services District (District) will conduct a public hearing on May 5, 2014 at 5:30 p.m. in the board room located at 139 E. Big Bear Blvd., Big Bear City CA 92314 to receive public comment relative to the proposed 2010 UWMP and the water conservation baseline and targets associated with the Water Conservation Act of 2009. The CWC requires all urban water suppliers within the state serving 3000 or more connections to prepare an Urban Water Management Plan. This will be an update to the Districts 2000 UWMP. The 2010 UWMP complies with recent amendments to the CWC. A copy of the 2010 Final Draft UWMP is available, during normal business hours, at the District office. You can also access this document at the District website at www.bbccsd.org. For questions concerning the document, contact Jerry Griffith at (909)585-2565. Written comments are requested by the end of business on May 2, 2014 and can be sent to Jerry Griffith at PO Box 558, Big Bear City, CA 92314.

Publish 04/23/14 and 04/30/14



**Big Bear City Community Services District
Notice of Public Hearing
2010 Urban Water Management Plan**

Pursuant to California Water Code (CWC) section 10642 and 10608, a public hearing will be held on the 2010 Urban Water Management Plan (2010 UWMP).

The Big Bear City Community Services District (District) will conduct a public hearing on May 5, 2014 at 5:30 p.m. in the board room located at 139 E. Big Bear Blvd., Big Bear City CA 92314 to receive public comment relative to the proposed 2010 UWMP and the water conservation baseline and targets associated with the Water Conservation Act of 2009. The CWC requires all urban water suppliers within the state serving 3000 or more connections to prepare an Urban Water Management Plan. This will be an update to the Districts 2000 UWMP. The 2010 UWMP complies with recent amendments to the CWC. A copy of the 2010 Final Draft UWMP is available, during normal business hours, at the District office. You can also access this document at the District website at www.bbccsd.org. For questions concerning the document, contact Jerry Griffith at (909)585-2565. Written comments are requested by the end of business on May 2, 2014 and can be sent to Jerry Griffith at PO Box 558, Big Bear City, CA 92314.

Publish 04/23/14 and 04/30/14

90 PUBLIC NOTICES



**Big Bear City Community Services District
Notice of Public Hearing
2010 Urban Water Management Plan**

Pursuant to California Water Code (CWC) section 10642 and 10608, a public hearing will be held on the 2010 Urban Water Management Plan (2010 UWMP).

The Big Bear City Community Services District (District) will conduct a public hearing on May 5, 2014 at 5:30 p.m. in the board room located at 139 E. Big Bear Blvd., Big Bear City CA 92314 to receive public comment relative to the proposed 2010 UWMP and the water conservation baseline and targets associated with the Water Conservation Act of 2009. The CWC requires all urban water suppliers within the state serving 3000 or more connections to prepare an Urban Water Management Plan. This will be an update to the Districts 2000 UWMP. The 2010 UWMP complies with recent amendments to the CWC. A copy of the 2010 Final Draft UWMP is available, during normal business hours, at the District office. You can also access this document at the District website at www.bbccsd.org. For questions concerning the document, contact Jerry Griffith at (909)585-2565. Written comments are requested by the end of business on May 2, 2014 and can be sent to Jerry Griffith at PO Box 558, Big Bear City, CA 92314.

Publish 04/23/14 and 04/30/14

RESOLUTION 2014-04

**RESOLUTION OF THE BIG BEAR CITY COMMUNITY SERVICES DISTRICT
ADOPTING THE 2010 URBAN WATER MANAGEMENT PLAN**

WHEREAS, The California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, prepare an Urban Water Management Plan, the primary objective of the plan is for the conservation and efficient use of water, and

WHEREAS, the District is an urban supplier of water providing water to over 5,300 customers, and

WHEREAS, the plan shall be periodically reviewed, and that the District shall make any amendments or changes to its plan which are indicated by the review, and

WHEREAS, the plan must be adopted after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption, and

WHEREAS, the District has therefore, prepared and circulated, for public review, a draft 2010 Urban Water Management Plan, and a properly noticed public hearing regarding said plan was held by the District on May 5, 2014.

WHEREAS, the District did prepare and shall file said plan with the California Department of Water Resources by June 4, 2014.

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE BIG BEAR CITY COMMUNITY SERVICES DISTRICT AS FOLLOWS:

Section 1. In all respects, the recitals above are true and correct.

Section 2. The 2010 Urban Water Management Plan is hereby adopted and ordered filed with the secretary; the District Manager is hereby authorized and directed to file the Urban Water Management Plan with the California Department of Water Resources within 30 days after this date.

PASSED, APPROVED, and ADOPTED by the Big Bear City Community Services District Board of Directors at its regular meeting held the 5th day of May 2014, by the following vote:

AYES: DIRECTORS: NEWSOME, OXANDABOURE, TERRY, WALSH
NOES: DIRECTORS: NONE

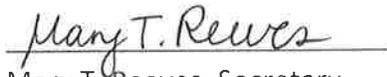
ABSENT: DIRECTORS: GREEN
ABSTAINS: DIRECTORS: NONE



Karyn Oxandaboure

Karyn Oxandaboure, President
of the Board of Directors

ATTEST:



Mary T. Reeves

Mary T. Reeves, Secretary
of the Board of Directors

Appendix C

Water Shortage Contingency Plan

Table of Contents

Section	Page
1. Declaration of Purpose and Principles.....	1
2. Public Education.....	1
3. Coordination with Regional Water Planning Groups	2
4. Shortage Declaration Process.....	2
5. Criteria for Terminating Water Shortage Contingency Stages	3
6. Water Supply Shortage Stages Measures and Restrictions.....	3
7. Expected Water Savings due to Water Supply Shortage Stages	7
8. Application	7
9. Definitions.....	7
10. Public Notification Procedures	10
11. Enforcement	10
12. Exceptions.....	11
13. Reservations of Rights.....	12
14. Water Connection Limitations.....	12

Big Bear City Community Services District Drought Contingency Plan

1. Declaration of Purpose and Principles

The Big Bear City Community Services District (the "District") provides water service to persons within the District. The District's potable water resources are limited and should be preserved, especially during times of declared water shortages, and therefore, the Board has determined that it is necessary to adopt a water conservation program.

The District is authorized by Water Code Section 350 et seq. to declare a water shortage emergency and by Water Code Sections 375-378 to adopt water conservation programs. The District declared a water shortage within the District after a public hearing at a regular meeting of the District on April 15, 2002 in Ordinance No. 205. Under State law the District is authorized after declaration of a water shortage emergency to restrict the use of District water and to prohibit the waste or use of District water during such periods for any purpose other than domestic use, sanitation, fire protection or such other uses as may be determined by the District to be necessary.

The District finds and determines that the adoption of water conservation rules and regulations are necessary to:

1. Protect the health, safety, and welfare of the inhabitants of the District,
2. Assure the maximum beneficial use of the water supplies of the District, and
3. Assure that there will be sufficient water supplies to meet the basic needs of human consumption, sanitation, and fire protection.

The District finds that the specific rules, regulations, and restrictions established herein are necessary in the event of a water supply shortage.

2. Public Education

The District will periodically provide the public with information about the Plan, including conditions under which stage of the Plan is to be initiated or terminated and the conservation response

measures to be implemented in each stage. This information will be provided by means of public events, website, press releases, bill inserts, etc.

3. Coordination with Regional Water Planning Groups

In the event that a potential water shortage is projected, the District will make efforts to reasonably communicate with and, as appropriate, collaborate with local, county, regional, state, and federal water planning groups and agencies.

4. Shortage Declaration Process

The following section discusses the District’s four water supply shortage stages and their declaration processes.

The District shall monitor the supply and demand for water regularly during mandatory compliance water supply shortage stages to determine the level of conservation required by the implementation or termination of each stage. Each declaration of the Board implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall remain in effect until the Board so otherwise declares.

A. Stage 1 - Threatened Water Shortage

The Board may, following a noticed public hearing, declare a Stage 1 Threatened Water Shortage based on an evaluation of conditions that have the potential to impair the District's ability to meet the water demands of its customers such as depth to water in supply wells, the ability to blend or treat supply water to below the State Maximum Contaminant Level (MCL), duration of drought, time of year, and the potential for existing recharge. Declaration of a Stage 1 Water Shortage Alert will be recited in a motion, resolution or ordinance declaring a Threatened Water Shortage. No public hearing shall be required in the event of a Water Supply Shortage Emergency.

B. Stage 2 - Water Shortage Alert

The Board may, following a noticed public hearing, declare a Stage 2 Water Shortage Alert based on based on an evaluation of conditions that have the potential to further impair the District's ability to meet the water demands of its customers such as (as a minimum) depth to water in supply wells, the ability to blend or treat supply water to below the State Maximum Contaminant Level (MCL), duration of drought, time of year, and the potential for existing recharge Declaration of a Stage 2 Water Shortage Alert will be recited in a motion, resolution

or ordinance declaring a Water Shortage Alert. No public hearing shall be required in the event of a Water Supply Shortage Emergency.

C. Stage 3 - Water Shortage Warning

The Board may, following a noticed public hearing, declare a Stage 3 Water Shortage Alert based on based on an evaluation of conditions that have the potential to greatly impair the District's ability to meet the water demands of its customers such as (as a minimum) depth to water in supply wells, the ability to blend or treat supply water to below the State Maximum Contaminant Level (MCL), duration of drought, time of year, and the potential for existing recharge. Declaration of a Stage 3 Water Shortage Alert will be recited in a motion, resolution or ordinance declaring a Water Shortage Warning. No public hearing shall be required in the event of a Water Supply Shortage Emergency.

D. Stage 4 - Water Supply Shortage Emergency

The Board may, following a noticed public hearing, declare a Stage 4 Water Shortage Alert based on based on an evaluation of conditions that have the potential to impair the District's ability to meet the water demands of its customers such that a water supply shortage is threatened. Conditions that will be evaluated include (as a minimum) depth to water in supply wells, the ability to blend or treat supply water to below the State Maximum Contaminant Level (MCL), duration of drought, time of year, and the potential for existing recharge. Declaration of a Stage 4 Water Shortage Alert will be recited in a motion, resolution or ordinance declaring a Threatened Water Supply Shortage Emergency. No public hearing shall be required in the event of an Emergency Water Supply Shortage.

5. Criteria for Terminating Water Shortage Contingency Stages

The Board is authorized to terminate any of the water shortage contingency stages (Stages 1 through 4) based upon an appropriate change in the conditions evaluated at the onset of the water shortage contingency stages. The order to terminate any water supply shortage stage shall be published a minimum of one time in a newspaper of general circulation in the District.

6. Water Supply Shortage Stages Measures and Restrictions

The following section discusses the measures and restrictions for each of the District's four water supply shortage stages.

A. Stage 1 Restrictions. The following restrictions and prohibitions on water use shall be imposed and complied with by the District Water Users during Stage 1. During Stage 1, the District may impose any or all of the following restrictions or conditions on the use of water, as the circumstances may require:

1. *Landscape Irrigation*.
 - a. Landscape watering with sprinklers between 9:00 a.m. and 6:00 p.m. is prohibited. This prohibition extends to all nurseries, golf courses, and public facilities.
 1. Landscape irrigation must be limited to what is necessary and shall not be excessive.
 2. This prohibition shall not extend to those facilities using subsurface or drip irrigation.
 3. Water shall not run off into the streets or other impervious surfaces.
 - b. Turf irrigation is prohibited between November 1 and April 1 of each year.
2. *Aesthetic uses*.
 - a. Decorative ponds, fountains and waterways having a capacity in excess of twenty (20) gallons shall not be filled with water from the District's water system.
3. *Other outdoor uses*.
 - a. Waste is prohibited.
 - b. Sidewalks, driveways, buildings, and windows shall not be washed off with hoses, except as required for sanitary purposes. Reduction of washing of other impervious surfaces is recommended.
 - c. Noncommercial washing of automobiles, trucks, trailers, boats, airplanes and other mobile equipment shall be done with a handheld hose or bucket. Handheld hoses shall be equipped with an automatic shutoff nozzle.
4. *Commercial and industrial uses*.
 - a. Washing of automobiles, trucks, trailers, boats, airplanes and other mobile equipment is permitted.
 - b. Restaurants shall not to serve water to customers except when specifically requested by the customer.

- c. Voluntary reduction of water use in commercial and industrial processes is recommended.
 - d. All new commercial car, airplane, and boat washes shall be constructed with recycling water systems.
5. *Domestic use.*
- Voluntary reduction for indoor domestic use is recommended by any means available.
6. *Essential and utility uses.*
- a. *Fire fighting.* No restrictions.
 - b. *Medical use by health care facilities.* No restrictions.
7. No water shall be used for private construction purposes, including water used for dust control or compaction. Use of reclaimed or reused water is exempt from this reduction measure.
8. All water leaks shall be repaired immediately.

B. Stage 2 Restrictions. During Stage 2, the following restrictions and prohibitions on water uses shall be imposed on and complied with by all Water Users and are in addition to, and include, all water uses restricted or prohibited in Stage 1.

- 1. The District recommends that all existing customers with landscaping presently in place reduce their turf area and/or replace it with low water use plants and drip irrigation, or native plants that need little or no watering.
- 2. Any person installing new landscaping shall not install turf in excess of twenty five (25) percent of the available landscape area and shall not install more than one thousand (1,000) square feet of turf and shall use low water plants. Drip irrigation is highly recommended for use in new landscaping projects.
- 3. Persons may irrigate on Designated Days only.

C. Stage 3 Restrictions. In addition to the mandatory requirements set forth in Stages 1 and 2, the following restrictions shall be imposed on and complied with by all Water Users during Stage 3.

- 1. No residences shall use in excess of one hundred (100) gallons per day. This amount may, upon petition to the District, be increased by fifty (50) gallons per day

per person for residences which the District determines based on the facts set forth in petition have more than two (2) persons living full time in a single residence.

2. Mandatory water rationing levels shall be determined for commercial establishments by the District's General Manager on a case-by-case basis and such determination. Once such a determination is made, commercial establishments shall not exceed use limitations so established.
3. All Water Users shall reduce turf to twenty-five (25) percent of the available landscape area which shall not exceed more than one thousand (1,000) square feet of turf on a parcel or lot.
4. No Water User shall install any new landscaping.
5. Any Water User who exceeds the one hundred (100) gallons per day per residence limitation, as adjusted for additional residence members, or the commercial water usage limitation as determined by the District, shall pay a water surcharge equal to twice the amount of the Water User's entire water bill at standard rates.

D. Stage 4 Restrictions. When Stage 4 is declared, the following restrictions and prohibitions shall be imposed and complied with. Such restrictions are in addition to all restrictions imposed in Stages 1, 2, and 3.

1. No Water User may irrigate turf or landscape plants.
2. No Water User may irrigate trees and shrubs except by drip irrigation or hand watering.
3. No new landscaping plants shall be installed, except such landscaping plants as are required for erosion control by the County Building and Safety Department.
4. In addition to the surcharge charged under Stage 3, the District also may install a flow restrictor on property where a Water User is wasting water and/or shut-off water service for those water users who repeatedly exceed the District's mandatory water use limitation of 100 gallons per day per residence, as adjusted for additional residence members. The provisions for a shut-off of water service are defined in Ordinance No. 75, adopted by the Board of Directors on October 13, 1987.

5. All washing of cars, airplanes, and boats or any other vehicles is prohibited. This prohibition does not include washing by a commercial establishment that uses solely reclaimed water to wash the vehicles.
6. In industrial, commercial and other uses, additional restrictions may be imposed if conditions warrant.

7. Expected Water Savings due to Water Supply Shortage Stages

The following section discusses the expected water savings due to each of the District's four water supply shortage stages.

- A. The District expects to realize a goal of a five (5) to ten (10) percent reduction in overall water usage after a Stage 1 condition is declared by the Board.
- B. The District expects to realize a goal of a fifteen (15) percent reduction in overall water usage after a Stage 2 condition is declared by the Board.
- C. The District expects to realize a goal of a twenty-five (25) percent reduction in overall water usage after a Stage 3 condition is declared by the Board.
- D. The District shall impose water conservation measures that will result in a forty (40) percent reduction in overall water use after a Stage 4 condition is declared by the Board.

8. Application

The water shortage contingency measures of this Plan shall apply to all persons, customers, and properties utilizing potable water provided by the District. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, agencies, associations, and all other legal entities.

9. Definitions

For the purposes of this Plan, the following definitions shall apply:

- A. "Aesthetic use" means the use of water for fountains, waterfalls and landscape lakes and ponds where the use is entirely ornamental and serves no other functional purpose.

B. "Board" means the Board of Directors of the District.

C. "Commercial and industrial uses" means the use of water integral to the production of primary goods and services provided by industrial or commercial facilities. Industrial facilities include facilities that perform the process-specific activities including cooling, oiler feed, cleaning and washing, pollution control, extraction and separation of desirable material from products and waste materials and the incorporation of water into final products. Commercial facilities include, but are not limited to, food service facilities, hotels, retail facilities and nursery operations.

D. "Designated Days" means a water use restriction limiting the days on which water may be used for landscape irrigation. The following system applies to determine the day within each calendar week that the use is permitted:

1. Residences, buildings and premises with even-numbered street addresses may use water as described in this Chapter on even numbered calendar days.
2. Residences, buildings and premises with odd-numbered street addresses: may use water as described in this Chapter on odd numbered calendar days.

E. "District" means the Big Bear City Community Services District.

F. "Domestic use" means the use of water, other than outdoor uses, for personal needs or for household purposes, including drinking, bathing, cooling, heating, cooking, sanitation or cleaning, whether the use occurs in a residence or in a commercial or industrial facility.

G. "Drip Irrigation" means a method of irrigation whereby water is applied directly to the base or roots of the plant without the loss of water to surrounding dirt or vegetation.

H. "Existing facility" means a swimming pool, hot tub or any similar facility, including residential and private facilities, installed during any period for which a water conservation plan stage has not been declared or during a stage which, together with all preceding and succeeding stages, has been rescinded. This term does not include pools specifically maintained to provide habitat for aquatic life.

I. "Existing landscaping plant" means a landscaping plant planted during any period for which a water conservation plan stage has not been declared or during a stage which, together with all preceding and succeeding stages, has been rescinded.

J. "Handheld hose" means a hose attended by one person, fitted with a manual or automatic shutoff nozzle.

K. "Health care facility" means any hospital, clinic, nursing home or other health care or medical research facility.

L. "Impervious surface area" means any structure or any street, driveway, sidewalk, patio or other surface area covered with brick, paving, tile or other impervious material.

M. "Landscape irrigation" means the application of water to grow landscaping plants.

N. "Landscaping plant" means any plant, including any tree, shrub, vine, herb, flower, succulent, ground cover or grass species, that is used for landscaping purposes or for the support of intensive recreational areas including playgrounds and playing fields.

O. "New facility" means a swimming pool, hot tub or any similar facility, including residential and private facilities, installed during any water conservation plan stage. When that stage, together with all other stages which precede or succeed that stage in a continuous time period, is rescinded, the new facility will be treated thereafter as an existing facility. This term does not include wading pools or pools specifically maintained to provide habitat for aquatic life.

P. "New landscaping plant" means a landscaping plant planted during any water conservation plan stage. When that stage, together with all other stages which precede or succeed that stage in a continuous time period, is rescinded, the new landscaping plant will be treated thereafter as an existing landscaping plant.

Q. "Other outside use" means the use of water outdoors for the maintenance, cleaning and washing of structures and mobile equipment, including automobiles and boats, and the washing of streets, driveways, sidewalks, patios and other similar areas.

R. "Reclaimed Water" or "Reclaimed or Reused Water" means any water which, as a result of the treatment of domestic wastewater, is suitable for a direct beneficial use or a controlled use that would not otherwise occur.

S. "Turf" means any landscaped area that sustains primarily varieties of grasses.

T. "Water" means water supplied by the District.

U. "Waste" means any unreasonable or nonbeneficial use of water, or any unreasonable method or use of water, including, but not limited to, the specific uses prohibited and restricted by this Plan as hereinafter set forth. Waste includes, but is not limited to, allowing water to run off into a gutter, ditch or drain or failing to repair a controllable leak.

V. "Water Supply Shortage Emergency" means any Water Supply Shortage caused by an earthquake, loss of electrical power, pipeline breakage, or any other threatened or existing water shortage caused by a disaster or facility failure which results in the District's inability to meet the water demands of its customers.

W. "Water Supply Shortage" means a water shortage such that the ordinary demands and requirements of water customers cannot be satisfied without depleting the water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

X. "Water User" means any person, firm, partnership, association, corporation or political entity using water obtained from the water system of the District.

10. Public Notification Procedures

When the District determines that a potable water shortage condition exists, any or all of the following notification procedures may be implemented:

A. Notify the general public and influential local decision-makers what the situation is, actions to be taken, what the customers are intended to achieve, and how these actions are to be implemented.

B. The public at large will be informed of the situation and what must be done. Contact can be made through billing inserts, special mailings, telephone contact, e-mail, roadway signage, water conservation booths, speaker's bureau, community association meetings, newsletters, and education programs, etc. Literature should be provided on the potable water shortage condition, conservation methods, and water-saving devices.

C. Use of media in all its available forms will be employed as appropriate. This would include public service announcements on radio and cable television as well as press releases in local newspapers.

D. Posting of all pertinent information on the District's web page.

11. Enforcement

Failure to comply with the provisions of this Plan shall constitute a misdemeanor punishable under Water Code Section 377.

A person who knowingly or intentionally violates or causes the violation of any restriction or prohibition on the use of water or related activities contained in any stage of this Plan shall be deemed guilty of a misdemeanor and, upon conviction, shall be punished by a fine as follows:

1. First Offense: Fifty dollars (\$50.00)
2. Second Offense: One hundred dollars (\$100.00)
3. Third Offense: Two hundred fifty dollars (\$250.00)
4. Fourth Offense and Subsequent Offenses: Five hundred dollars (\$500.00) and/or by imprisonment in the county jail for not more than thirty (30) days.

In addition to the provisions of this Section, the District reserves the right to take such civil enforcement action or other action as may be available or appropriate to compel compliance with the provisions of this Plan.

12. Exceptions

A. Application for Exception Permit. The District may grant permits for uses of water otherwise prohibited under this Plan if it finds and determines that special circumstances make compliance impossible or that restrictions herein would either:

1. Cause an unnecessary and undue hardship to the Water User or the public; or
2. Cause an emergency condition affecting the health, sanitation, fire protection or safety of the Water User or the public.

B. Such exceptions may be granted only upon application therefore. Upon granting any such exception permit, the District may impose any conditions it determines to be just and proper.

C. The District may also grant a one-time extension in the following circumstances:

1. Use of water to establish lawn or other vegetation requiring seed germination.
2. Use of water blasting as preparation for house painting.
3. Use of water to prepare for driveway sealing.

13. Reservations of Rights

The rights of the District hereunder shall be cumulative to any other right of the District to discontinue service. All monies collected by the District pursuant to any of the penalty provisions of this Plan shall be deposited in the Operating Fund as reimbursement for the District's costs and expenses of administering and enforcing this Plan.

14. Water Connection Limitations

A. Stages 1 and 2. Under Water Supply Shortage Stages 1 and 2, the District will allow a maximum of twenty-four (24) connections per quarter not to exceed ninety-six (96) new water connections within each twelve (12) month period following the determinations that Stages 1 and 2 water conditions exist. Under Stages 1 and 2, the District will allow each customer a maximum of three (3) new service connections per quarter.

B. Stage 3. Under Water Supply Shortage Stage 3, the District will allow a maximum of no more than eighteen (18) new water connections per quarter, not to exceed seventy-two (72) new water connections within each twelve (12) month period following the determination that Stage 3 water conditions exist. Under Stage 3, the District will allow each customer a maximum of two (2) new service connections per quarter. In Stage 3, the Board may limit connections to less than seventy-two (72) if it determines that conditions so warrant. In Stage 3 the actual reduction in new connections shall be determined by the Board at a noticed public hearing.

C. Stage 4. Under Water Supply Shortage Stage 4, the District will reduce new water connections to a maximum of no more than fifteen (15) new water connections per quarter not to exceed sixty (60) new water connections within each twelve (12) month period following the determination that Stage 4 conditions exist, if it determines that conditions so warrant. Under Stage 4, the District will allow each customer a maximum of one (1) new service connection per quarter. In Stage 4 the actual reduction in new connections shall be determined by the Board at a noticed public hearing.

D. For purposes of this Section, the term quarter means the three-calendar-month period ending on March 31, June 30, September 30, or December 31 of any year.