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**Appendix I Water Shortage Contingency Plan & Customer Actions by Water Shortage Stage**

# WATER SHORTAGE CONTINGENCY PLAN

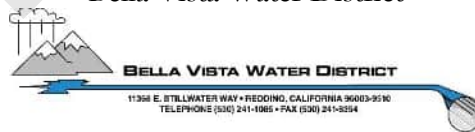
FOR

## BELLA VISTA WATER DISTRICT

*Revised June 2021*

Prepared for:

Bella Vista Water District



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## 1 - PURPOSES AND PRINCIPLES OF PLAN

The purpose of the Bella Vista Water District (BVWD or District) Water Shortage Contingency Plan (WSCP) is to provide a methodology for analyzing water supply reliability, establishing water shortage stages, identifying appropriate response actions, and documenting protocols for enforcing the WSCP. This WSCP was prepared according to requirements in Sections 10632 & 10635 of the California Water Code. **Table 1** below shows the required components of a WSCP, the relevant water code section, and where they are found in this document.

**Table 1: Water Shortage Contingency Plan Requirements**

Topic	CA Water Code Section	WSCP Section
Water Supply Reliability Analysis	WC 10632 (a.1)	Section 2
Annual Assessment Procedures	WC 10632 (a.2)	Section 2
Water Shortage Stages	WC 10632 (a.3)	Section 3 Table 2
Shortage Response Actions	WC 10632 (a.4) WC 10632 (b)	Section 4
Communication Protocols	WC 10632 (a.5)	Section 5
Compliance and Enforcement	WC 10632 (a.6)	Section 6
Legal Authorities	WC 10632 (a.7)	Section 7
Financial Consequences of WSCP	WC 10632 (a.8)	Section 8
Monitoring and Reporting	WC 10632 (a.9)	Section 9
WSCP Refinement Procedures	WC 10632 (a.10)	Section 10

The District first adopted a WSCP in 1992 and has updated it several times since then. This updated WSCP includes changes from the 2015 WSCP to meet new State requirements and better serve the District and its water users. All the water uses that are regulated or prohibited under this Plan are considered to be non-essential. Therefore, the continuation of such uses during times of water shortage or other emergency water supply conditions is deemed to constitute a waste of water, which subjects the offender(s) to penalties, as set forth in the WSCP.

## 2 - PROCEDURES FOR CONDUCTING ASSESSMENT

### 2.1 Decision Making Process

#### Regulatory Requirement

§10632(a.2.A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.

§10632 (a.2.B) (iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.

In 2005, BVWD entered a long-term (25-year) renewal contract with the United States Bureau of Reclamation (USBR, Reclamation) (*Contract No. 14-06-200-851A-LTR1*) that authorizes the District to divert up to 24,578 AF annually, subject to shortage provisions, from the Sacramento River via the Central Valley Project (CVP). This is the primary water source for the District. However, Reclamation is often unable to deliver the full contract quantities due to hydrological conditions and environmental regulations. Therefore, the CVP allocations would serve as the primary determinant as to whether the District would expect to see a supply shortage. Traditionally March 1<sup>st</sup> marks the commencement of the water year for CVP supplies and is also the tentative date for the District to first consider implementing water shortage stages.

Additionally, several hydrologic datasets act as early predictors of the allocation the District can expect from Reclamation. These include the following:

1. Lake Shasta Reservoir Storage
2. Northern Sierra Precipitation and Snowpack
3. Sacramento Valley 40-30-30 Water Year Index
4. Shasta Lake Unimpaired Inflow
5. Regional and national drought indices (lower priority due to the general nature of their predictions)

Refer to the District's 2020 Drought Contingency Plan (Chapter 3 – Drought Monitoring Plan) for additional details on these data sources.

The District Engineer is responsible for collecting and analyzing various hydrologic datasets and assessing water demands versus anticipated supplies. The District Manager will be updated regularly, and the District Board of Directors will also be provided informative briefings at monthly Board meetings.

### 2.2 Data Inputs and Assessment Methodology

#### Current Year Demand

#### Regulatory Requirement

§10632 (a.2.B) (i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

When assessing current demands, BVWD typically looks at the average of the last three years of unconstrained demand due to the requirements of the USBR M&I Water Shortage Policy. A “Normal Supply” is also defined as the average supply during the last three years of unconstrained supplies. As a result, years with water restrictions are not included in the average. When necessary, other considerations such as new growth, weather, etc. will be considered in estimating demand.

## Quantification of Water Supply

### **Regulatory Requirement**

§10632 (a.2.B) The key data inputs and assessment methodology used to evaluate the urban water supplier’s water supply reliability for the current year and one dry year.

§10632 (a.2.B) (iii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

§10632 (a.2.B) (v) A description and quantification of each source of water supply.

BVWD maintains a Federal Water Contract with surface water diverted from the Sacramento River. In 2005, the District entered a long-term (25-year) Water Service renewal contract with the USBR (*Contract No. 14-06-200-851A-LTR1*) that authorizes the District to divert up to 24,578 AF from the Sacramento River supply via the Central Valley Project (CVP). USBR typically announces the initial allocation in February and may refine it over the next several months. The BVWD, also maintains a long-term transfer agreement with the Anderson-Cottonwood Irrigation District (ACID) for 1,536 AF/Y of CVP water, but this is reduced by 25% to 1,152 in Shasta Critical Years<sup>1</sup>. Lastly, the District relies on groundwater pumping from 5 wells for a combined production of approximately 12 acre-feet/day but runs its wells on a limited basis producing less than 300 AF in a normal year.

In order to augment supply on behalf of agricultural customers that would otherwise be subjected to significant shortages, the District adopted a Supplemental Water Program in April of 2009. This program was prompted from frequent, unreliable water supplies as a result of the evolving regulatory environment. The goal of the Program is to acquire additional water supplies in shortage years on behalf of the District’s agricultural customers. Participation is on a voluntary basis, and therefore does not obligate the entire customer class. For example, those customers that have permanent crops may choose to participate, while others with pasture irrigation or annual row crops may choose to idle or fallow during shortages.

In the winter months and early spring, District staff reviews the CVP supply forecast, estimates demands, and determines the interest for additional water supplies in the upcoming water year. Once the Supplemental Water Program is activated, District staff then identifies, negotiates, and acquires needed supplies based on the applications received. The most likely source of supplemental water is from willing sellers that are also Central Valley Project contractors. Once a supply of water is obtained, the District then works with the appropriate agencies to obtain necessary approvals, schedule delivery, and transfer the water into the District.

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<sup>1</sup> Shasta Critical Year is a term defined in specific water contracts. In general, a Shasta Critical Year occurs when the forecasted inflow to Shasta Lake for a particular water year is equal to or below 3.2 million acre-feet.

## Existing Infrastructure Constraints

### **Regulatory Requirement**

§10632 (a.2.B) (iii) Existing infrastructure capabilities and plausible constraints.

The District has a water system that consists of three treated water storage tanks, nine pumping plants, a main treatment plant, five wells, and over 200 miles of pipeline ranging from 4-inch in diameter to 54-inches. All the water is pumped for delivery within the District's local service area. Additionally, surface water is pumped from the Sacramento River at the Wintu Pumping Plant, which is located outside of the District's boundary. From the Wintu Pumping Plant, water is sent to a Surge Tank and then to the Water Treatment Plant (WTP). All water previously described is used for domestic or agricultural purposes.

Plausible constraints could include the following:

1. Distribution System. As additional wells are added at the southern ends of the distribution system, there may be locally high head losses and limited conveyance capacity until the well water reaches larger transmission lines.
2. Water Storage. Water storage is currently limited. During certain times of the year the District only has several hours' worth of storage. Storage could also be problematic if the District is relying solely on its wells and day-to-day flows vary widely due to varying irrigation demands (i.e., large irrigators using water once or twice a week) or if a widespread power outage occurs (see the discussion under Power below). Storage could also become inadequate if the District installs more well capacity.
3. Power. Power outages due to downed power lines or Public Safety Power Shutoff (PSPS) events are a significant problem. The District does not have excess storage to meet demands during an outage if only well water is available. Nor does the District have backup generators at any of its wells. The District only has one portable generator; thus, it could only be used to run one well at a time. In addition, only three District wells have transfer switches for the connection of a portable generator.

Without additional storage, a power outage affecting multiple wells would require switching the District to surface water use until power could be restored. If the Water Treatment Plant has been off-line for more than a few days, it would require four to six hours to bring the plant back online and begin delivery of treated surface water into the distribution system.

Depending on water demands and storage volumes at the time that the outage occurs, the District could quickly exhaust its operational storage and some customers could experience reduced pressures or water outages.

4. Transfers of non-federal (non-project) water. Water transferred to the District from a source other than from another Central Valley Project contractor requires a Warren Act contract that is negotiated with Reclamation in order to utilize federal facilities for the conveyance of non-project water. Additionally, Reclamation requires a separate power contract for conveyance pumping of non-project water through federal facilities (i.e., the Wintu Pumping Plant) since it is not eligible for project use energy.

## Seismic Risk Assessment

### Legal Requirements

#### **CWC 10632.5**

(a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.

(b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.

(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.

The District is located in an area of moderate seismicity, in the less seismically active western half of Shasta County. The county is subject to low and moderate ground shaking but has not sustained significant property damage or loss of life due to earthquakes in the past 120 years of records. However, the November 26, 1998 local magnitude ML 5.2 earthquake centered near Keswick Dam, west of the District, rocked the District's four-million-gallon water tank on its foundation causing bent anchor bolts and deformed washers. This was the largest recorded earthquake since USGS monitoring began in 1981 and is believed to have been the largest earthquake in the area since 1878.

The 2017 Shasta County Local Hazard Mitigation Plan states that earthquake activity in the area has not been a serious hazard in the past and is unlikely to become a serious hazard in the future. Soils in the area are not classified as being at risk of liquefaction so any earthquake damage would most likely be due to ground shaking rather than ground failure. The county enforces the California Building Code, which is applicable to new structures and based on predicted earthquake intensities, to minimize risk of loss of life and property damage due to seismic activity. The City of Redding has run earthquake scenarios calculating six percent Building Damage Ratios (repair cost divided by replacement cost, as a percentage) for older structures in the city's downtown and three percent for all other areas of the city. The District service area includes part of the northeastern part of Redding, but not downtown, corresponding to the three percent Building Damage Ratio. A copy of the Shasta County Local Hazard Mitigation Plan can be found at <https://www.co.shasta.ca.us/docs/libraries/public-works-docs/hmp-documents/shasta-county-hazard-mitigation-plan-november-2017.pdf>. A copy of the section of the Shasta County Local Hazard Mitigation Plan pertaining to seismic risk ("Section 4.34 Earthquake") is included in **Appendix R**.

All of the District's pump stations, wells, treatment facilities, and its main office have been constructed to meet California's earthquake standards. Nearly all of the facilities either have been extensively modified or built since 1990 to meet existing earthquake standards.

In 2000, the District completed seismic improvements on its four-million-gallon storage tank. The Improvements included the installation of sixty 2-inch anchor bolts and strengthened anchor bolt chairs to bring the tank installation up to the current AWWA tank design standards. In 2015, the District performed seismic improvements on the Surge Tank on Hilltop Drive to also bring that

tank installation up to the current ANSI/AWWA D100 Standard for steel tank design. The Improvements on the Surge Tank included the installation of thirty-five 2-inch anchor bolts and strengthened anchor bolt chairs.

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### 3 - WATER SHORTAGE STAGES

#### Regulatory Requirement

**§10632 (a.3.A)** Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers’ water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

As outlined in the new Water Code requirements (10632 a & b.), Water Shortage Contingency Plans must include or be adapted to the six standard water shortage levels, which correspond to the progressive ranges of <10%, 10-20%, 20-30%, 30-40%, 40-50%, and 50+%. These six stages are described in **Table 2**. Stages 5 and 6 can be declared for a short-term (<45 days) or long-term (>45 days) shortage. The various Response Actions that correspond with these stages are addressed in **Section 4** of this plan.

**Table 2: Updated Stages of Water Shortage**

Stage	Supply Reduction	Water Supply Condition
1	0%-10%	Normal Water Supply (90% to 100% of Normal Water Production)
2	10%-20%	Moderate Water Shortage (80% to 90% of Normal Water Production)
3	20%-30%	Severe Water Shortage (70% to 80% of Normal Water Production)
4	30%-40%	Extreme Water Shortage (60% to 70% of Normal Water Production)
5A	40%-50%	Critical I Water Shortage-Short Term (50% to 60% of Normal Water Production)
5B	40%-50%	Critical I Water Shortage-Long Term (50% to 60% of Normal Water Production)
6A	50+%	Critical II Water Shortage-Short Term (Less than 50% of Normal Water Production)
6B	50+%	Critical II Water Shortage-Long Term (Less than 50% of Normal Water Production)

Notes:

1 – Short term conditions occur for 45 days or less and may be attributed to infrastructure, water quality, or power issues, as well as hydrologic conditions. Long-term conditions are greater than 45 days and are typically due to hydrologic conditions.

2 – “Normal Water Production” refers to the average water production during the last 3 years with unconstrained supplies.

## 4 - SHORTAGE RESPONSE ACTIONS

### 4.1 Response Actions by Water Shortage Stage

#### Regulatory Requirement

§10632 (a.4) Shortage response actions that align with the defined shortage levels

The existing response actions have been reviewed and updated for thoroughness, compliance with existing regulations, and applicability during potential times of drought, most recently observed in 2015 and 2021. The declaration of a Stage is made by the District's General Manager or his/her designee and subject to ratification by the District's Board of Directors in a regular or special session. Typically, all the Response Actions are enacted when a stage is declared; however, the District may adjust the required water use reductions or elect to exclude certain Response Actions when the water shortage stage is declared. Following are the standard Response Actions for each water shortage stage.

#### **Stage 1. Below Normal Water Supply (90% to 100% of Normal Water Production)**

*Stage 1. Below Normal Water Supply* is categorized with a possible reduction percentage of up to 10%. Response Actions may include:

- Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited (*District Policy Manual Section 143*).
- Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.
- Free-flowing hoses are prohibited for all uses. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
- Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if warranted due to the severity of the problem or shall not be utilized until repaired.
- All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leakproof.
- Swimming pool and spa covers encouraged to prevent evaporative water loss.
- Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations.
- Washing streets, parking lots, driveways, or sidewalks, except as necessary for health, aesthetic, or sanitary purposes, is prohibited.
- To reduce evaporation, between March 1 and October 31 the use of sprinkler irrigation systems for all landscape irrigation systems shall be limited to be between the hours of 7:00 p.m. and 9:00 a.m. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 15 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.
- Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).
- Use of potable water for the irrigation of turf or high-water use plants within public street medians and parkways is prohibited.

### ***Stage 2. Moderate Water Shortage (80% to 90% of Normal Water Production)***

*Stage 2. Moderate Water Shortage* is categorized with a possible reduction percentage of 10-20%. All Stage 1 Response Actions are required plus the following:

- Reduce water use by the following specified percentages: Residential and Rural by 10-20%, Multi-family and Public/Institutional customers by 10-20%, commercial customers by 5-10%, and Landscape Irrigation by 15-25%.
- Customers with “smart” irrigation timers or controllers are asked to set their controllers to achieve 90 to 95% of the evapotranspiration (ET) rate.
- Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased shall serve water only upon request.
- Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.
- Water use overuse penalties may be implemented.
- Users of construction meters and fire hydrant meters will be monitored for efficient water use.

Penalties: Water use exceeding the customer’s water shortage allocation will be charged at the applicable overuse penalty rate. Any customer in violation of Stage 2 requirements (other than exceeding their water allocation) shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 2 requirements after notice and warning is provided shall be punishable by an administrative fine per day or per occurrence as set in Appendix A of the District’s Policy Manual.

### ***Stage 3. Severe Water Shortage (70% to 80% of Normal Water Production)***

*Stage 3. Severe Water Shortage* is categorized with a possible reduction percentage of 20-30%. All the Response Actions in Stage 2 are required plus the following new Response Actions:

- Outdoor irrigation of ornamental landscapes and turf with potable water shall be limited to 3 days a week. Customers whose street addresses end with an odd number may water on Wednesday, Friday, and Sunday. Customers whose street addresses end with an even number may water on Tuesday, Thursday, and Saturday.
- The application of potable water to outdoor landscapes during or within 48 hours after rainfall of 0.20 inches or more is prohibited.
- Flushing of water mains, sewers, or fire hydrants is prohibited except for emergencies and essential operations.
- Water overuse penalties may be implemented; or modified, if already implemented a previous stage.
- Motor vehicles and equipment shall be washed only with buckets or with hoses equipped with automatic shutoff nozzles.

The following Response Actions replace previous less stringent actions:

- Leaking customer pipes or faulty sprinklers shall be repaired within two (2) working days or less if warranted due to the severity of the problem.

- Reduce water use by the following specified percentages: Residential and Rural by 20-30%, Multi-family and Public/Institutional customers by 20-30%, commercial customers by 20%, and Landscape Irrigation by 25-35%.
- Customers with “smart” irrigation timers or controllers are asked to set their controllers to achieve 75% of the evapotranspiration (ET) rate. Drip irrigation systems are excluded from this requirement.

Penalties: Water use exceeding the customer’s water shortage allocation will be charged at the applicable overuse penalty rate. Any customer in violation of Stage 3 requirements (other than exceeding their water allocation) shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 3 requirements after notice and warning is provided shall be punishable by an administrative fine per day or per occurrence as set in Appendix A of the District’s Policy Manual.

***Stage 4 Extreme Water Shortage (60% to 70% of Normal Water Production)***

*Stage 4. Extreme Water Shortage* is categorized with a possible reduction percentage of 30-40%. All the Response Actions in Stage 3 are required plus the following new Response Actions:

- Water use for ornamental ponds, fountains, or other ornamental water feature for aesthetic purposes is prohibited except where necessary to support aquatic life.
- The application of potable water to driveways and sidewalks is prohibited.
- The installation of new turf or landscaping is prohibited.
- Irrigation of ornamental turf with potable water on public street medians is prohibited.
- Water use or overuse penalties may be implemented; or modified, if already implemented a previous stage.
- New connections to the District’s water distribution system will be allowed but their water use shall be restricted to the minimum requirements for personal health and safety.

The following Response Actions replace previous less stringent actions:

- Leaking customer pipes or faulty sprinklers shall be repaired within 24 hours or less if warranted due to the severity of the problem.
- Reduce water use by the following specified percentages: Residential and Rural by 30-40%, Multi-family and Public/Institutional customers by 30-40%, commercial customers by 30%, and Landscape Irrigation by 35-50%.

Penalties: Water use exceeding the customer’s water shortage allocation will be charged at the applicable overuse penalty rate. Any customer in violation of Stage 4 requirements (other than exceeding their water allocation) shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 4 requirements after notice and warning is provided shall be punishable by an administrative fine per day or per occurrence as set in Appendix A of the District’s Policy Manual.

### ***Stage 5A Critical I Water Shortage Short-Term (50% to 60% of Normal Water Production)***

*Stage 5A Critical I Water Shortage* is categorized with a possible reduction percentage of 40-50%. A short-term declaration is for water shortage conditions expected for a duration of 45 days or less. All the Response Actions in Stage 4 are required plus the following new Response Actions:

- Water use for ornamental ponds and fountains is prohibited.
- No potable water from the District's system shall be used for construction purposes including but not limited to dust control, compaction, or trench jetting.

The following Response Actions replace previous less stringent actions:

- Leaking customer pipes or faulty sprinklers shall be repaired within 24 hours. Water service will be suspended until repairs are made.
- Reduce water use by the following specified percentages: Residential and Rural 40% to 50% or more, Multi-family and Public/Institutional customers reduce water use by 40% to 50% or more, commercial customers by 30%, and Landscape Irrigation by 50%.
- Water for flow testing and construction purposes from water agency fire hydrants and blow-offs is prohibited.
- Water overuse penalties will be implemented.

Penalties: Water use exceeding the customer's water shortage allocation will be charged at the applicable overuse penalty rate. Any customer in violation of Stage 5 requirements (other than exceeding their water allocation) shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 5 requirements after notice and warning is provided shall be punishable by an administrative fine per day or per occurrence as set in Appendix A of the District's Policy Manual.

### ***Stage 5B Critical I Water Shortage Long-Term (50%-60% of Normal Water Production)***

*Stage 5B Critical II Water Shortage* is categorized with a possible reduction percentage of 40-50%. A long-term declaration is for water shortage conditions expected for a duration of 45 days or more. All the Response Actions in Stage 5A are required plus the following that replace previous less stringent actions:

- Motor vehicles and equipment shall be washed only at commercial establishments that use recycled or reclaimed water.

Penalties: Water use exceeding the customer's water shortage allocation will be charged at the applicable overuse penalty rate. Any customer in violation of Stage 5 requirements (other than exceeding their water allocation) shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 5 requirements after notice and warning is provided shall be punishable by an administrative fine per day or per occurrence as set in Appendix A of the District's Policy Manual.

### ***Stage 6A Critical II Water Shortage Short-Term (less than 50% of Normal Water Production)***

*Stage 6A Critical II Water Shortage* is categorized with a possible reduction percentage of 50+%. A short-term declaration is for water shortage conditions expected for a duration of 45 days or less. All the Response Actions in Stage 5B are required plus the following new Response Actions:

- Landscape irrigation is prohibited.

The following Response Actions replace previous less stringent actions:

- Leaking customer pipes or faulty sprinklers shall be repaired immediately. Water service will be suspended until repairs are made.
- Reduce water use by the following specified percentages: Residential and Rural by 50% or more, Multi-family and Public/Institutional customers by 50% or more, commercial customers by 30% or more, and Landscape Irrigation by 100%.
- Water use overuse penalties will be implemented; or modified, if already implemented a previous stage.
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Penalties: Water use exceeding the customer's water shortage allocation will be charged at the applicable overuse penalty rate. Any customer in violation of Stage 6 requirements (other than exceeding their water allocation) shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 6 requirements after notice and warning is provided shall be punishable by an administrative fine of \$500.00 per day or per occurrence.

### ***Stage 6B Critical II Water Shortage Long-Term (less than 50% of Normal Water Production)***

*Stage 6B Critical II Water Shortage* is categorized with a possible reduction percentage of 50+%. A long-term declaration is for water shortage conditions expected for a duration of 45 days or more. All the Response Actions in Stage 6A are required plus the following new Response Actions:

- No commitments ("will serves") will be made to provide service for new water service connections.

Penalties: Water use exceeding the customer's water shortage allocation will be charged at the applicable overuse penalty rate. Any customer in violation of Stage 6 requirements (other than exceeding their water allocation) shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 6 requirements after notice and warning is provided shall be punishable by an administrative fine of \$500.00 per day or per occurrence.

## **4.2 Artificial Water Features**

### **Regulatory Requirement**

§10632 (a.10) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including
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ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

Artificial water features, herein defined as ponds, lakes, waterfalls, fountains, and other water features for aesthetic purposes, are treated separately from swimming pools and spas in the Response Actions. Evaporation losses from swimming pools and spas can be reduced through the use of covers, yet this is generally not feasible with other artificial water features. Swimming pools can also provide an important source of cooling in the hot local climate.

### 4.3 Locally Appropriate Supply Augmentation Actions

#### Regulatory Requirement

§10632 (a.4.A) Locally appropriate supply augmentation actions.

The BVWD has a Water Service Contract with Reclamation for Central Valley Project water; however, it should be noted that while the District's water service contract with the Reclamation provides for rescheduling of water, the Reclamation has denied all of the District's requests to carry-over water from year to year, thus eliminating any safety net possible from storing wet year water for use in future dry years.

Additionally, the District maintains its long-term agreement with Anderson-Cottonwood Irrigation District (ACID); however, these allocations have the potential to be reduced by 25% under ACID's Water Settlement Contract with the Reclamation. As previously addressed, the BVWD has a sufficient water supply during normal and wet years; however, it is considerably disadvantaged during dry years as it relies almost exclusively on its CVP supply.

Groundwater pumping can account for a significant amount of the local supply as the five District wells may produce upwards of 12 acre-feet/day. This has the potential to decrease during particularly dry years. Use of groundwater in droughts is an important supply augmentation measure. Lastly, the District has relied on and participated in short-term water transfers; however, these opportunities are limited, particularly in dry years.

### 4.4 Locally Appropriate Demand Reductions

#### Regulatory Requirement

§10632 (a.4.B) Locally appropriate demand reduction actions to adequately respond to shortages.

The District has taken into consideration specific social and geographical aspects of Shasta County in developing the Response Actions. For instance, the District is comprised mostly of large rural residential parcels, and consequently, the vast majority of water is used outdoors, much more so than in other urban agencies. As a result, most of the Response Actions focus on outdoor water use. In addition, due to the very high summer temperatures in the region, restrictions are placed on daytime irrigation.

### 4.5 Locally Appropriate Operational Changes

#### Regulatory Requirement

§10632 (a.4.C) Locally appropriate operational changes.

During normal water years, demands are primarily met with surface water and supplemented with well water, as needed. During a critical drought, this would switch to providing water primarily from wells that are supplemented with surface water. This would be a major operational change and require daily visits to the wells for O&M versus once or twice weekly during a normal year. All the wells also have iron and manganese removal systems that require filter backwashing on a regular basis and periodic removal of settled sludge. Thus, with higher groundwater use in a drought, wellhead treatment operations will require substantially more labor.

## 4.6 Mandatory Restrictions

### Regulatory Requirement

§10632 (a.4.D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.

In 2015 the State Water Resources Control Board released mandatory water restrictions during the drought that included the following:

- No irrigation with potable water of ornamental turf on public street medians
- No irrigation with potable water outside of newly constructed homes and buildings not in accordance with emergency regulations or other requirements established by the Building Standards Commission and the Department of Housing and Community Development
- No washing of sidewalks and driveways with potable water
- No runoff allowed when irrigating with potable water
- Hoses must have an automatic shutoff nozzle when washing cars
- No use of potable water in decorative water features that do not recirculate the water
- No outdoor irrigation during and within 48 hours following measurable rainfall
- Restaurants may not serve water to customers unless they request it
- Hotels and motels must offer guests the option to not have their linens and towels laundered daily and prominently display this option in each room

The District's response actions (see Section 4.1) include all these measures and go beyond them with other measures related to: beneficial water use, timely leak repair, swimming pools and spas, smart irrigation systems, dedicated irrigation days, construction water, water system flushing, penalties for violations of the required response actions, water overuse penalties, and restrictions on new water connections.

## 4.7 Gap Between Supply and Demand

### Regulatory Requirement

§10632 (a.4.E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

Each water shortage stage includes response actions that are estimated to provide the needed water savings required. These response actions have also been refined over time and proven to generally provide the reductions needed. If prohibitions at any stage do not result in the required water savings,

the District can simply go to the next stage. The District also has flexibility to enforce only some of the response actions in a stage, providing the opportunity to make small adjustments when needed.

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## 5 - COMMUNITY OUTREACH

### 5.1 Current and Predicted Shortages

#### Regulatory Requirement

§10632 (a.5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all the following:  
(A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.

The BVWD has identified the four following categories as significant points of discussion, regarding current and predicted drought shortages.

- Various causes of drought in the area
- Regulatory impacts on water supplies
- Drought impacts on water supplies
- Constraints on water transfers and exchanges

Additionally, the District will utilize the drought indices and hydrologic datasets outlined **Section 2**. Should a potential shortage be anticipated, the public and BVWD customers will be notified via public notices, announcements on the District's web page ([www.bvwd.org](http://www.bvwd.org)), and in their bimonthly billings and warned of the potential for a drought declaration and water conservation measures.

### 5.2 Shortage Response Actions

#### Regulatory Requirement

§10632 (a.5.B) Any shortage Response Actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.  
Any other relevant communications.

The District's Board of Directors will be kept informed of water shortage conditions to enable them to make timely and appropriate decisions on the following actions:

- Coordination with customers on the development and implementation of plans
- Frequent assessment of water shortage status
- Adoption of resolutions to change water storage stages
- Declaration of a water shortage emergency
- Adoption of an Emergency Water Reduction Plan

These actions are communicated to District customers by way of billing inserts, newspaper advertising, on the District's webpage ([www.bvwd.org](http://www.bvwd.org)), and by verbal communication as District staff and personnel interact with the customers.

### 5.3 Plan Availability

#### Regulatory Requirement

§10632 (c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.

The District will make copies of its Water Shortage Contingency available to its customers, the City of Redding, and Shasta County no later than 30 days after adoption of the plan.

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## 6 - CUSTOMER COMPLIANCE AND ENFORCEMENT

### Regulatory Requirement

§10632 (a.6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage Response Actions as determined pursuant to Section 10632.2.

The BVWD Board of Directors, and more specifically the District Engineer, will be responsible for evaluating available data on a consistent basis and adequately determining/implementing the appropriate Response Actions, dependent of the Water Shortage Stage in place.

**Section 4** – Shortage Response Actions outlines the various water conservation measures during each water shortage stage, as well as the various enforcements. The penalties for each stage are also outlined in this section and in Appendix A of the District Policy Manual and can vary significantly depending on the activated Water Shortage Stage.

Customers may request an exemption or variance or may appeal enforcement with the General Manager in accordance with the District's Policy Manual. The District's specific policies are outlined below.

Exception and/or Variance Process. Designated staff may, in writing, grant temporary variances for prospective uses of water after determining that, due to unusual circumstances, to fail to grant such variance would cause an emergency or hardship condition affecting health, sanitation, or fire protection of the applicant or the public. The Board of Directors shall ratify or revoke any such variance or adjustment at its next scheduled meeting. Any such variance or adjustment so ratified may be revoked by later action of the Board of Directors. No such variance shall be retroactive or otherwise justify any violation of the water use restrictions occurring prior to issuance of temporary variance. It must be recognized that due to a declared water shortage emergency, the District has limited ability to grant exceptions and/or variances to the Water Shortage Contingency Plan.

## 7 - LEGAL AUTHORITY OF THE PLAN

### Regulatory Requirement

**§10632 (a.7.A)** A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage Response Actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.

This WSCP adheres with the California Water Code 10632. This document is also required by State law as outlined in the Water Code, which states that, “Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan...” (WC 10632). As an established California Water District, BVWD has the authority to implement the WSCP, declare water shortages, and implement shortage response actions including statutory authorities, ordinances, resolutions, and contract provisions.

### 7.1 Declaring a Water Shortage Emergency

#### Regulatory Requirement

**§10632 (a.7.B)** A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.

The BVWD will follow the protocols outlined in this Plan should it become necessary to declare a water shortage emergency. The process will follow the pertinent sections of the California Water Code and be noticed for a public hearing, typically at a Board of Directors meeting.

### 7.2 Supplier Coordination

#### Regulatory Requirement

**§10632 (a.7.C)** A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

The District Manager or designated staff will be available and responsible for coordinating with City and County officials within the District’s service area should there be a necessary proclamation for a local water emergency.

## 8 - REVENUE REDUCTIONS AND EXPENSE INCREASES

The various revenue sources available to the District during droughts include, but are not limited to water sales, system connection fees, interest income, special assessments, reserves, and other non-operating revenues, such as grant funding when available. In addition, there may be special outside funding sources made available to water agencies during a water emergency (e.g., Stages 4 through 6).

### 8.1 Potential Revenue Reductions and Expense Increases

#### Regulatory Requirement

§10632 (a.8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:  
(A) A description of potential revenue reductions and expense increases associated with activated shortage Response Action described in paragraph (4)

Potential revenue reductions may include, but are not limited to:

- Decreased water sales to residential, rural, commercial, and public/institutional users
- Decreased water sales to agricultural water users

Potential expense increases may include, but are not limited to:

- Higher CVP water costs due to reduced water deliveries
- Higher costs for increased groundwater production and treatment
- Higher costs for pumping groundwater from greater depths
- Purchases of higher priced transfer water

### 8.2 Mitigation Actions

#### Regulatory Requirement

§10632 (a.8.B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage Response Actions described in paragraph (4).

Several mitigation actions are specifically tailored to offset or soften the financial impact of drought to the District including the following:

1. M&I Rate Stabilization Fund. The District currently maintains a specific M&I Rate Stabilization Fund to help mitigate the revenue impacts of a prolonged drought. This fund has been built up by placing a small portion of urban water user fees into this fund during normal supply years to help offset higher costs during droughts.
2. Supplemental Water Program. This voluntary program allows agricultural water users to purchase supplemental water supplies secured by the District on behalf of participants. This program is only offered during water shortages and the water costs are always higher than typical District costs. This water is sold at cost to participating Agricultural customers ensuring that the District does not lose money on the transaction.

## 8.3 Cost of Compliance

### Regulatory Requirement

§10632 (a.8.C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.

In a drought emergency, the District anticipates that there will be expenses incurred that would not otherwise be incurred in a normal water year. These include:

- Higher water costs associated with the cost of water transfers or water purchases to augment its water supplies,
- Increased operational and maintenance expenses associated with running its wells more that they are run in a normal year,
- Costs for special notifications to its customers (e.g., printing and mailing of special notices, publishing notices in the paper, advertising using radio or television),
- Costs for special programming of its billing software to implement drought charges and penalties,
- Payroll costs for additional staff or staff overtime to handle a higher-than-normal volume of customer service requests,

In a drought emergency, the District also anticipates that revenues may decrease due to a reduction in water sales.

The District's rate schedules the volumetric rates accurately reflect the unit cost for the production, treatment, and distribution of water to its customers. This means that the reductions in revenues associated with reductions in demand are offset by similar reductions in operational costs. In addition, the District's Supplemental Water Program for its agricultural customers passes through the full costs for the acquisition and delivery of water purchased for agricultural use. Higher water expenses associated with the production of more well water, water transfers, and water purchases are not passed through to the District's M&I customers. Instead, the District maintains a M&I Rate Stabilization Fund that can be tapped to cover increased expenses.

In water shortage emergencies, at Stages 2 and above, the District may impose overuse penalty charges. The intent of these charges is to deter the overuse of water (use in excess of customer allocations). The revenues generated from the overuse charges are used to help offset the increased expenses.

Based on the District's experience during the 2015 drought, the combined effect of having water rates that accurately reflect water costs, passing costs for supplemental agricultural water through to the agricultural water users, having a M&I Rate Stabilization Fund, and the revenues generated from overuse charges the District is well situated to comply with Chapter 3.3 without unacceptable use of existing reserves.

## 9 - MONITORING AND REPORTING REQUIREMENTS

### Regulatory Requirement

§10632 (a.9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

The BVWD currently, and historically, has always been in compliance with the state reporting requirements. The District uses meters to monitor all of the District's water deliveries, which assists in assuring customer compliance. Additionally, the District maintains a protocol for receiving and addressing complaints of non-compliance and misuse.

The procedures for monitoring reductions throughout the six different water shortage stages are outlined below:

1. In normal water supply conditions (Stage 1) production and pumping totals are reported monthly to the District Engineer.
2. During Stage 2, 3, or 4 water shortage conditions, weekly production and pumping amounts are reported to the District Engineer to compare the weekly data to the targets to verify that reduction goals are being met.
3. During Stage 5a, 5b, 6a, or 6b water shortage, a daily production and pumping report is provided to the District Engineer to verify that goals are being met.

## 10 - MONITORING AND EVALUATING THE PLAN

### Regulatory Requirement

§10632 (a.10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

The District first adopted its WSCP in 1992 and has revised and re-adopted it several times to incorporate refinements and improvements. In addition, this WSCP incorporates important lessons learned during the historic drought of 2013-2015. The WSCP will be re-evaluated at least every five years and at the end of each drought period to assess its performance. If deemed necessary, it will be modified and improved based on lessons learned. The Plan may also be updated in the middle of a drought year if needed.

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Table 8 2: Water Shortage Contingency – Mandatory Prohibitions

Customer Actions		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5		Stage 6	
						ST	LT	ST	LT
Water Waste	Water shall be used for beneficial uses only; all unnecessary and wasteful uses of water are prohibited (District Policy Manual Section 143).	✓	✓	✓	✓	✓	✓	✓	✓
	Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.	✓	✓	✓	✓	✓	✓	Landscape Irrigation is Prohibited	
	Free-flowing hoses for all uses shall be prohibited. Customers shall use automatic shutoff devices on any hose or filling apparatus in use.	✓	✓	✓	✓	✓	✓	✓	✓
	Leaking customer pipes or faulty sprinklers shall be repaired within the specified working days or less by Stage after due to the severity of the problem or shall not be utilized until repaired.	5 Days or Less	5 Days or Less	2 Days or Less	24 hours or Less	24 hours or Less		Immediately	
Pools and Water features	All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leakproof.	✓	✓	✓	✓	✓	✓	✓	✓
	Swimming pool and spa covers encouraged to prevent evaporative water loss.	✓	✓	✓	✓	✓	✓	✓	✓
	Potable water use for ornamental ponds and fountains is prohibited.					✓	✓	✓	✓
	Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations.	✓	✓	✓	✓	✓	✓	✓	✓
	Water use for ornamental ponds, fountains, or other ornamental water feature for aesthetic purposes is prohibited except where necessary to support aquatic life.				✓				
	Water use for ornamental ponds and fountains is prohibited.					✓	✓	✓	✓
Buildings and Driveways	Washing streets, parking lots, driveways, or sidewalks, except as necessary for health, aesthetic or sanitary purposes, is prohibited.	✓	✓	✓					

Table 8 2: Water Shortage Contingency – Mandatory Prohibitions

Customer Actions		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5		Stage 6	
						ST	LT	ST	LT
	Application of potable water to driveways and sidewalks is prohibited				✓	✓	✓	✓	✓
Water Use Reductions	Residential and Rural Customers Reductions.	Up to 10%	10-20%	20-30%	30-40%	40-50%	40-50%	50% or more	50% or more
	Multi-family and Public Institutional Customers Reductions	Up to 10%	10-20%	20-30%	30-40%	40-50%	40-50%	50% or more	50% or more
	Commercial Customers Reductions	Up to 10%	5-10%	20%	30%	30%	30%	30% or more	30% or more
	Landscape Irrigation Reductions	Up to 10%	15-25%	25-35%	35-50%	50%	50%	100%	100%
	Water use exceedance tiered pricing or penalties may be implemented.			✓	✓				
	Water use exceedance tiered pricing or penalties will be implemented					✓	✓	✓	✓
Irrigation	To reduce evaporation, between March 1 and October 31 the use of sprinkler irrigation systems for all landscape irrigation systems shall be limited to be between the hours of 7:00 p.m. and 9:00 a.m. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 15 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.	✓	✓	✓	✓	✓	✓	Landscape Irrigation is Prohibited	
	Customers with “smart” irrigation timers or controllers are asked to set their controllers to achieve the specified % of the evapotranspiration (ET) rate.		90-95%	75%	75%	50-75%	50-75%		
	Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).	✓	✓	✓	✓	✓	✓	Landscape Irrigation is Prohibited	

Table 8 2: Water Shortage Contingency – Mandatory Prohibitions

Customer Actions		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5		Stage 6	
						ST	LT	ST	LT
	Landscape irrigation limited to the days per week specified. Customers whose street addresses end with an odd number may water on Wednesday, Friday, and Sunday. Customers whose street addresses end with an even number may water on Tuesday, Thursday, and Saturday.			3 days per week	3 days per week	3 days per week	3 days per week		
	Application of potable water to outdoor landscapes during or within 48 hours after measurable rainfall is prohibited.			✓	✓	✓	✓		
Commercial	Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased shall serve water only upon request.		✓	✓	✓	✓	✓	✓	✓
	Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.		✓	✓	✓	✓	✓	✓	✓
Equipment/Vehicle Washing	Motor vehicles or equipment shall be washed only with buckets or hoses with automatic shutoff nozzles.			✓	✓	✓			
	Motor vehicles and equipment shall be washed only at commercial establishments that use recycled or reclaimed water.						✓	✓	✓
Construction/New Service	Users of construction meters and fire hydrant meters will be monitored for efficient water use.		✓	✓	✓	No Construction Water			
	Water for flow testing and construction purposes from water agency fire hydrants and blow-offs is prohibited.					✓	✓	✓	✓
	Installation of new turf or landscaping is prohibited.				✓	✓	✓	✓	✓
	New connections to the District's water distribution system will be allowed but their water use shall be restricted to the minimum requirements for personal health and safety.				✓	✓	✓	✓	✓
	No potable water from the District's system shall be used for construction purposes including but not limited to dust control, compaction, or trench jetting.					✓	✓	✓	✓

Table 8 2: Water Shortage Contingency – Mandatory Prohibitions

Customer Actions		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5		Stage 6	
						ST	LT	ST	LT
	No commitments (“will serves”) will be made to provide service for new water service connections.								✓
Health & Safety	Flushing of water mains, sewers, or fire hydrants is prohibited except for emergencies and essential operations.			✓		✓	✓	✓	✓
	Water use shall be restricted so as to meet the minimum requirements for personal health and safety.					✓	✓	✓	✓

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**Appendix J Water Shortage Resolutions**

**BELLA VISTA WATER DISTRICT  
COUNTY OF SHASTA**

**Resolution No. 21-03**

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
BELLA VISTA WATER DISTRICT DECLARING A WATER SHORTAGE EMERGENCY  
AND ENACTING APPROPRIATE SHORTAGE MEASURES

\*\*\*\*\*

WHEREAS, the Bella Vista Water District has contracted with the U.S. Bureau of Reclamation for a water supply from the Central Valley Project (CVP) via the Sacramento River in the annual amount of 24,578 acre feet; subject to shortage provisions; and

WHEREAS, California is experiencing dry conditions and 2021 has been designated a “critically dry” year by the U.S. Bureau of Reclamation for Central Valley Project Water Allocation Purposes; and

WHEREAS, the U. S. Bureau of Reclamation has notified the Bella Vista Water District that the District will receive fifty five percent (55%) of Historical Use, defined as the average of the prior 3, unconstrained years, for municipal and industrial (M&I) purposes and five percent (5%) for agricultural use from the Central Valley Project during the 2021 water year; and

WHEREAS, the District used an average of 6,649 acre-feet of its CVP Contract water for municipal and industrial purposes during the prior three, unconstrained water years that included 2017, 2018, and 2019 and without cutbacks by District customers and would expect to use even more during the 2021 water year due to critically dry conditions; and

WHEREAS, the Board of Directors has determined that voluntary water conservation measures will likely not be adequate to accommodate the anticipated demand for water without depleting the water supply available to Bella Vista Water District to the extent that there would be insufficient water for human consumption, sanitation and fire protection.

NOW, THEREFORE, be it resolved by the Board of Directors of the Bella Vista Water District and hereby declared that there is a water shortage emergency and enacts shortage measures in accordance with the District’s adopted Water Shortage Contingency Plan as follows:

**I. PURPOSE**

The purpose of this Resolution is to declare a water shortage emergency and enact appropriate shortage measures, to equitably distribute the available water to the District's customers and to ensure an adequate supply for human consumption, sanitation, and fire protection. This Resolution is adopted pursuant to Water Code Section 350 et seq., and Section 375 et seq.

For all stages of this plan, the Water Allocation Year is from March 1 through February 28. The Water Consumption figures of the 2017 through 2019 water year(s) will establish the historic use baseline quantity (the “prior three unconstrained years”) used for allocation throughout this water shortage.

## **II. RESTRICTIONS AND PROHIBITIONS**

### **A. Residential and Rural Customer Classes**

All District Residential and Rural customers shall receive a quantity equal to 90% of the amount that their average historical use from the prior three unconstrained years for each location and billing period. All District Residential and Rural customers shall receive a minimum quantity of 24 HCF for each billing period as set forth below. Overuse penalty rates shall apply to all use exceeding the 90% allotment or 24 HCF per billing cycle.

### **B. Commercial and Public/Institutional Customers Primarily Non-Landscape**

All Commercial and Public/Institutional accounts except for those determined to be primarily for non-agricultural Landscape Irrigation shall receive an allotment of 90% of the average historical use from the prior three unconstrained years for each billing period. Overuse penalty rates shall apply to all use exceeding the 90% allotment or 24 HCF per billing cycle.

### **C. Commercial and Public/Institutional Customers Primarily Landscape**

All Commercial and Public/Institutional accounts deemed to be primarily for Landscape Irrigation shall receive an allotment of 90% of the average historical use from the prior three unconstrained years for each billing period. Overuse penalty rates shall apply to all use exceeding the 90% allotment or 24 HCF per billing cycle.

### **D. Agriculture Customers**

Agriculture Customers shall receive a quantity equal to 0.50 AF plus 5% of their average historical use from the prior three unconstrained years for the entire water year. Overuse penalty rates shall apply to all water deliveries exceeding the customer's annual allotment. Agriculture Customers that have voluntarily participated in the District's Supplemental Water Program to augment their supply can utilize their Supplemental Supply in addition to their allotment. Overuse penalty rates shall apply to all use exceeding 0.50 AF plus 5% of their average historical use, plus Supplemental Water, if any.

### **E. New service applications**

New service applications may be granted upon the condition that the water shall be used for internal household purposes only and landscaping must be delayed until this resolution is revised or rescinded. New Residential and Rural Customers shall be granted the following for indoor public health and safety use purposes: 24 HCF per bi-monthly billing cycle (e.g. June 1st through July 30<sup>th</sup>). Applicable to all new meter installations purchased with no previous consumption history after the date of this Resolution.

### **F. Construction\Hydrant Water Use**

Construction and/or authorized temporary hydrant water use will be monitored for efficient use for construction related purposes that includes compaction and dust control. Hauled water must be used within the District's boundary. All construction/hydrant water use will be billed at the rate of \$2.00/HCF.

### **G: Water Use Restrictions Declaration – Stage 2**

The following restrictions will apply to all District provided water use as also described and detailed in the District adopted Shortage Contingency Plan:

***Stage 1. Below Normal Water Supply (90% to 100% of Normal Water Production)***

*Stage 1. Below Normal Water Supply* is categorized with a possible reduction percentage of up to 10%. Response Actions may include:

- Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited (*District Policy Manual Section 143*).
- Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.
- Free-flowing hoses are prohibited for all uses. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
- Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if warranted due to the severity of the problem or shall not be utilized until repaired.
- All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leakproof.
- Swimming pool and spa covers encouraged to prevent evaporative water loss.
- Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations.
- Washing streets, parking lots, driveways, or sidewalks, except as necessary for health, aesthetic, or sanitary purposes, is prohibited.
- To reduce evaporation, between March 1 and October 31 the use of sprinkler irrigation systems for all landscape irrigation systems shall be limited to be between the hours of 7:00 p.m. and 9:00 a.m. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 15 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.
- Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).

***Stage 2. Moderate Water Shortage (80% to 90% of Normal Water Production)***

*Stage 2. Moderate Water Shortage* is categorized with a possible reduction percentage of 10-20%.

All Stage 1 Response Actions are required plus the following:

- Reduce water use by the following specified percentages: Residential and Rural by 10-20%, Multi-family and Public/Institutional customers by 10-20%, commercial customers by 5-10%, and Landscape Irrigation by 15-25%.
- Customers with “smart” irrigation timers or controllers are asked to set their controllers to achieve 90 to 95% of the evapotranspiration (ET) rate.
- Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased shall serve water only upon request.
- Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.
- Users of construction meters and fire hydrant meters will be monitored for efficient water use.

Penalties: Any customer in violation of Stage 2 requirements shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 2 requirements after notice and warning is provided shall be punishable by an administrative fine per day or per occurrence as set in Appendix A of the District’s Policy Manual.

### **III. OVERUSE PENALTY**

Beginning with all billings on May 1, 2021 and thereafter for the duration of the enforcement of this Resolution, every customer shall, in addition to the existing water rates, be subject to an Overuse penalty rates for the use of water in excess of allotments allowed in Section II. The penalty amount as determined by the recorded meter reading, shall be as listed below:

Residential, Rural, Commercial, Public Institutional Customers that exceed their allotment described in Section II, will be subject to an Overuse Penalty rate of \$1.38 per HCF.

Agricultural Customers that exceed their allotment described in Section II, will be subject to an Overuse Penalty rate of \$1.38 per HCF or \$601.12 per AF.

### **IV. EXCEPTIONS AND/OR VARIANCES**

The General Manager may, in writing, grant temporary variances for prospective uses of water otherwise prohibited after determining that due to unusual circumstances to fail to grant such variance would cause an emergency condition affecting health, sanitation, or fire protection of the applicant or the public. The Board of Directors shall ratify or revoke any such variance or adjustment at its next scheduled meeting. Any such variance or adjustment so ratified may be revoked by later action of the Board of Directors. No such variance shall be retroactive or otherwise justify any violation of this Resolution occurring prior to issuance of said temporary variance.

It must be recognized that due to the water shortage emergency the District has very limited ability to grant exceptions and/or variances to the Water Shortage Management Plan.

### **V. PUBLIC NOTICE**

a. The Secretary of the Board is directed to publish this Resolution in accordance with Government Code Section 6061 and Water Code Section 375.

b. The Secretary of the Board is directed to publish a summary of this Resolution on the District's internet web site ([www.bvwd.org](http://www.bvwd.org)) and include it in a newsletter sent to each customer in the District.

## VI. DURATION

These restrictions shall remain in full force and effect until the rescission of this Resolution, or modification of a part thereof, by the Board of Directors.

Passed and Adopted this 22<sup>nd</sup> day of March, 2021, by the following vote:

Ayes:

Noes:

Absent:

Abstain:



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Frank Schabarum, President of the Board of  
Directors of Bella Vista Water District

ATTEST:



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David J. Coxey, Secretary of the Board of  
Directors of Bella Vista Water District



**BELLA VISTA WATER DISTRICT**

**RESOLUTION 15-04**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE BELLA VISTA WATER DISTRICT ADOPTING A MUNICIPAL AND INDUSTRIAL WATER SHORTAGE CONTINGENCY PLAN**

\*\*\*\*\*

WHEREAS, the Bella Vista Water District has contracted with the U.S. Bureau of Reclamation for a water supply from the Sacramento River in the annual amount of 24,578 acre feet; and

WHEREAS, the availability of Municipal and Industrial (M&I) water for the Bella Vista Water District may be affected by numerous factors including regulatory mandates imposed by the State Water Resources Control Board and/or reductions in surface water allocations imposed by the United States Bureau of Reclamation (USBR) under the shortage provisions of the District's Water Service Contract, reductions in surface water diversions under the District's long-term transfer agreement with the Anderson-Cottonwood Irrigation District as a result of reduced allocations under their Settlement Contract with the USBR; and

WHEREAS, water production facilities failures, water distribution infrastructure failures, contamination of supply, or other factors may result in emergency conditions that threaten the District's ability to provide for public health and safety; and

WHEREAS, the District's Water Shortage Contingency Plan currently in force does not adequately address all the factors that may limit the District's ability to respond to diminished source capacity or emergency conditions.

WHEREAS, California is experiencing drought conditions for the fourth straight year;

WHEREAS, the U.S. Bureau of Reclamation has notified the Bella Vista Water District that the District will only be supplied 25 percent of its historical M&I water use, the allocated amount being 1,828 acre feet of water from Federal facilities during the 2015-2016 water-year;

WHEREAS, the District used a total of 8,216 acre-feet of M&I water during the 2013-2014 water-year and would expect to use more during the 2015-2016 water-year due to the projections of hotter and drier weather than normal; and,

WHEREAS, the Board of Directors declared a water shortage emergency on February 27, 2014 and that the water shortage emergency is still in effect; and

WHEREAS, the District's water shortage measures currently in force do not adequately address all the factors that may limit the District's ability to respond to diminished source capacity or emergency conditions; and

WHEREAS, it is the desire of the Board of Directors to set forth its policy for water shortages; and

NOW, THEREFORE, be it resolved by the Board of Directors of the Bella Vista Water District that to manage M&I water shortages the following M&I Water Shortage Contingency Plan, shall be enacted and shall read as follows:

## **I. PURPOSE AND INTENT**

The purpose of this Resolution is to establish a Municipal and Industrial (M&I) Water Shortage Contingency Plan (WSCP) in order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions.

Water uses regulated or prohibited under the District's Water Shortage Contingency Plan are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply condition are deemed to constitute a waste of water which subjects the offender(s) to penalties as set forth in the WSCP.

## **II. WATER SHORTAGE CONTINGENCY PLAN**

Upon declaration or amendment by the Board of Directors of the specific Stage in effect, the following mandatory water conservation requirements shall be in effect.

The declaration of Short-Term Stage 4 or Stage 5 water conservation requirements may be declared by the District's General Manager or his/her designee and subject to ratification by the District's Board of Directors in a regular or special session. A short-term declaration is for water shortage conditions expected for a duration of 45 days or less.

Exceedance charges may be imposed on all water usage above the allocated amounts for each customer account at Water Conservation Stages 3 and above.

### **A. STAGE 1 – NORMAL WATER SUPPLY (Water Supplies = 85% to 100% of Normal)**

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if warranted by the severity of the problem, or shall not be utilized until repaired.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. Pool draining and refilling shall be allowed only for

health, maintenance, or structural considerations. Swimming pool and spa covers are encouraged to prevent evaporative water loss.

6. Washing streets, parking lots, driveways, or sidewalks, except as necessary for health, aesthetic or sanitary purposes, is prohibited.
7. Reduce water use by the following specified percentages: Residential, Rural, Multi-family and Public/ Institutional customers reduce water use by 5-15%; commercial customers by 5%; and Landscape Irrigation by 10-20%.
8. To reduce evaporation, the use of sprinkler irrigation systems for all M&I customers shall be limited to between one hour before sunset and one hour after sunrise. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 5 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.
9. Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).

**B. STAGE 2 – MODERATE WATER SHORTAGE (Water Supplies = 70% to 85% of Normal)**

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations. Swimming pool and spa covers are encouraged to prevent evaporative water loss.
6. Washing streets, parking lots, driveways, or sidewalks, except as necessary for health, aesthetic or sanitary purposes, is prohibited.
7. Reduce water use by the following specified percentages: Residential and Rural 15-25%; Multi-family and Public/ Institutional customers reduce water use by 10-20%; commercial customers by 5-10%; and Landscape Irrigation by 15-30%.

8. To reduce evaporation, the use of sprinkler irrigation systems for all M&I customers shall be limited to between one hour before sunset and one hour after sunrise. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 5 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.
9. Customers with “smart” irrigation timers or controllers are asked to set their controllers to achieve 90 to 95% of the evapotranspiration (ET) rate.
10. Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).
11. Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars or other public places where food or drink are served and/or purchased, shall serve water only upon request.
12. Users of construction meters and fire hydrant meters will be monitored for efficient water use.

Penalties: Any customer in violation of Stage 2 requirements shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not timely corrected, any continued violation of mandatory Stage 2 requirements after notice and warning is provided shall be punishable by an administrative fine of \$50.00 per day or per occurrence.

### **C. STAGE 3 – SEVERE WATER SHORTAGE (Water Supplies = 50% to 70% of Normal)**

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within two (2) working days or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations.
6. Washing streets, parking lots, driveways, or sidewalks, except as necessary for health, aesthetic or sanitary purposes, is prohibited.

7. Reduce water use by the following specified percentages: Residential and Rural 25-40%; Multi-family and Public/ Institutional customers reduce water use by 20-30%; commercial customers by 20%; and Landscape Irrigation by 25-50%.
8. To reduce evaporation, the use of sprinkler irrigation systems for all M&I customers shall be limited to between one hour before sunset and one hour after sunrise. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 5 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.
9. Customers with “smart” irrigation timers or controllers are asked to set their controllers to achieve 75% of the evapotranspiration (ET) rate. Drip irrigation systems are excluded from this requirement.
10. Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).

Outdoor irrigation of ornamental landscapes and turf with potable water shall be limited to 3 days a week. Customers whose street addresses end with an odd number may water on Wednesday, Friday and Sunday. Customers whose street addresses end with an even number may water on Tuesday, Thursday and Saturday.

The application of potable water to outdoor landscapes during or within 48 hours after measurable rainfall is prohibited.

11. Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars or other public places where food or drink are served and/or purchased, shall serve water only upon request.
12. Users of construction meters and fire hydrant meters will be monitored for efficient water use. Flushing of water mains, sewers, or fire hydrants is prohibited except for emergencies and essential operations.
13. Water use exceedance tiered pricing will be implemented.
14. Motor vehicles and equipment shall be washed only with buckers or with hoses equipped with automatic shutoff nozzles.
15. Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.

Penalties: Any customer in violation of Stage 3 requirements shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not timely corrected, any continued violation of mandatory Stage 3 requirements after notice and warning is provided shall be punishable by an administrative fine of \$200.00 per day or per occurrence.

**D. STAGE 4 – EXTREME WATER SHORTAGE: SHORT-TERM (Water Supplies = 30% to 50% of Normal)**

The declaration of Short-Term Stage 4 water conservation requirements may be declared by the District's General Manager or his/her designee and subject to ratification by the District's Board of Directors in a regular or special session. A short-term declaration is for water shortage conditions expected for a duration of 45 days or less.

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within 24 hours or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. No potable water from the District's system shall be used to fill or refill artificial lakes, ponds or streams. Water use for ornamental ponds and fountains is prohibited.
6. The application of potable water to driveways and sidewalks is prohibited.
7. Reduce water use by the following specified percentages: Residential and Rural 40-50%; Multi-family and Public/ Institutional customers reduce water use by 30-50%; commercial customers by 30%; and Landscape Irrigation by 50-100%.
8. To reduce evaporation, the use of sprinkler irrigation systems for all M&I customers shall be limited to between one hour before sunset and one hour after sunrise. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 5 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.
9. Customers with "smart" irrigation timers or controllers are asked to set their controllers to achieve 75% of the evapotranspiration (ET) rate. Drip irrigation systems are excluded from this requirement.
10. Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).

Outdoor irrigation of ornamental landscapes and turf with potable water shall be limited to 1 day a week.

The application of potable water to outdoor landscapes during or within 48 hours after measurable rainfall is prohibited.

11. Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars or other public places where food or drink are served and purchased, shall serve water only upon request.
12. Users of construction meters and fire hydrant meters will be monitored for efficient water use. Flushing of water mains, sewers, or fire hydrants is prohibited except for emergencies and essential operations.
13. Water use exceedance tiered pricing will be implemented.
14. Motor vehicles and equipment shall be washed only with buckers or with hoses equipped with automatic shutoff nozzles.
15. Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.
16. The installation of new turf or landscaping is prohibited.
17. Water use shall be restricted so as to meet the minimum requirements for personal health and safety.
18. No new connections to the District's water distribution system will be allowed.

Penalties: Any customer in violation of Stage 4 requirements shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not timely corrected, any continued violation of mandatory Stage 4 requirements after notice and warning is provided shall be punishable by an administrative fine of \$500.00 per day or per occurrence.

**E. STAGE 4 – EXTREME WATER SHORTAGE: LONG-TERM (Water Supplies = 30% to 50% of Normal)**

The declaration of Long-Term Stage 4 water conservation requirements will be by the

District's Board of Directors in a regular or special session. A long-term declaration is for water shortage conditions expected for a duration of more than 45 days.

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.

3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within 24 hours or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. No potable water from the District's system shall be used to fill or refill artificial lakes, ponds or streams. Water use for ornamental ponds and fountains is prohibited.
6. The application of potable water to driveways and sidewalks is prohibited.
7. Reduce water use by the following specified percentages: Residential and Rural 40-50%; Multi-family and Public/ Institutional customers reduce water use by 30-50%; commercial customers by 30%; and Landscape Irrigation by 50-100%.
8. To reduce evaporation, the use of sprinkler irrigation systems for all M&I customers shall be limited to between one hour before sunset and one hour after sunrise. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 5 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.
9. Customers with "smart" irrigation timers or controllers are asked to set their controllers to achieve 75% of the evapotranspiration (ET) rate. Drip irrigation systems are excluded from this requirement.
10. Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).

Outdoor irrigation of ornamental landscapes and turf with potable water shall be limited to 1 day a week.

The application of potable water to outdoor landscapes during or within 48 hours after measurable rainfall is prohibited.

11. Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars or other public places where food or drink are served and purchased, shall serve water only upon request.
12. Users of construction meters and fire hydrant meters will be monitored for efficient water use. Flushing of water mains, sewers, or fire hydrants is prohibited except for emergencies and essential operations.
13. Water use exceedance tiered pricing will be implemented.
14. Motor vehicles and equipment shall be washed only at commercial establishments that use recycled or reclaimed water.

15. Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.
16. The installation of new turf or landscaping is prohibited.
17. Water use shall be restricted so as to meet the minimum requirements for personal health and safety.
18. No new connections to the District's water distribution system will be allowed.

Penalties: Any customer in violation of Stage 4 requirements shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not timely corrected, any continued violation of mandatory Stage 4 requirements after notice and warning is provided shall be punishable by an administrative fine of \$500.00 per day or per occurrence.

**F. STAGE 5 – CRITICAL WATER SHORTAGE: SHORT-TERM (Water Supplies =less than 30% of Normal)**

The declaration of Short-Term Stage 5 water conservation requirements may be declared by the District's General Manager or his/her designee and subject to ratification by the District's Board of Directors in a regular or special session. A short-term declaration is for water shortage conditions expected for a duration of 45 days or less.

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Landscape irrigation is prohibited.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired immediately. Water service will be suspended until repairs are made.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. No potable water from the District's system shall be used to fill or refill artificial lakes, ponds or streams. Water use for ornamental ponds and fountains is prohibited.
6. The application of potable water to driveways and sidewalks is prohibited.
7. Reduce water use by the following specified percentages: Residential and Rural 50% or more; Multi-family and Public/ Institutional customers reduce water use by 50% or more; commercial customers by 50% or more; and Landscape Irrigation by 100%.

8. Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars or other public places where food or drink are served and purchased, shall serve water only upon request.
9. Water for flow testing and construction purposes from water agency fire hydrants and blow-offs is prohibited. No potable water from the District's system shall be used for construction purposes including but not limited to dust control, compaction, or trench jetting.
10. Flushing of sewers or fire hydrants is prohibited except in case of emergency and for essential operations.
11. Water use exceedance tiered pricing and excessive water use fines will be implemented.
12. Motor vehicles and equipment shall be washed only at commercial establishments that use recycled or reclaimed water.
13. Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.
14. The installation of new turf or landscaping is prohibited.
15. Water use shall be restricted so as to meet the minimum requirements for personal health and safety.
16. No new connections to the District's water distribution system will be allowed.

Penalties: Any customer in violation of Stage 5 requirements shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not timely corrected, any continued violation of mandatory Stage 5 requirements after notice and warning is provided shall be punishable by an administrative fine of \$500.00 per day or per occurrence.

**G. STAGE 5 – CRITICAL WATER SHORTAGE: LONG-TERM (Water Supplies =less than 30% of Normal)**

The declaration of Long-Term Stage 5 water conservation requirements will be by the District's Board of Directors in a regular or special session. A long-term declaration is for water shortage conditions expected for a duration of more than 45 days.

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Landscape irrigation is prohibited.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.

4. Leaking customer pipes or faulty sprinklers shall be repaired immediately. Water service will be suspended until repairs are made.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. No potable water from the District's system shall be used to fill or refill artificial lakes, ponds or streams. Water use for ornamental ponds and fountains is prohibited.
6. The application of potable water to driveways and sidewalks is prohibited.
7. Reduce water use by the following specified percentages: Residential and Rural 50% or more; Multi-family and Public/ Institutional customers reduce water use by 50% or more; commercial customers by 50% or more; and Landscape Irrigation by 100%.
8. Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars or other public places where food or drink are served and purchased, shall serve water only upon request.
9. Water for flow testing and construction purposes from water agency fire hydrants and blow-offs is prohibited. No potable water from the District's system shall be used for construction purposes including but not limited to dust control, compaction, or trench jetting.
10. Flushing of sewers or fire hydrants is prohibited except in case of emergency and for essential operations.
11. Water Crisis/Emergency tiered pricing and excessive water use fines will be implemented.
12. Motor vehicles and equipment shall be washed only at commercial establishments that use recycled or reclaimed water.
13. Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.
14. The installation of new turf or landscaping is prohibited.
15. Water use shall be restricted so as to meet the minimum requirements for personal health and safety.
16. No new connections to the District's water distribution system will be allowed and no commitments will be made to provide service for new water service connections.

Penalties: Any customer in violation of Stage 5 requirements shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not timely corrected, any continued violation of mandatory Stage 5 requirements after notice and warning is provided shall be punishable by an administrative fine of \$500.00 per day or per occurrence.

Passed and adopted this 23<sup>rd</sup> day of March 2015 by the following vote:

Ayes: Bambino, Nash, Smith, Waite

Noes: 0

Absent: Steppat

Abstain: 0

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Ted Bambino, President of the Board of  
Board of Directors of Bella Vista Water District

ATTEST:

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David J. Coxey, Secretary of the Board of  
Directors of Bella Vista Water District

DRAFT

**BELLA VISTA WATER DISTRICT  
COUNTY OF SHASTA**

**Resolution No. 15-05**

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
BELLA VISTA WATER DISTRICT REAFFIRMING AND EXTENDING DECLARATION  
OF WATER SHORTAGE EMERGENCY, SUPERSEDING AND REVISING SHORTAGE  
MEASURES

WHEREAS, the Bella Vista Water District has contracted with the U.S. Bureau of Reclamation for a water supply from the Central Valley Project (CVP) via the Sacramento River in the annual amount of 24,578 acre feet; subject to shortage provisions;

WHEREAS, California is experiencing historically dry conditions for a fourth consecutive year and the U.S. Bureau of Reclamation is also projecting this year to be a second consecutive "Shasta Critical Year".

WHEREAS, the U. S. Bureau of Reclamation has notified the Bella Vista Water District that the District will receive zero (0) water for agricultural use and twenty-five percent (25%) of the prior 3 years of historical use for municipal and industrial (M&I) purposes from the Central Valley project during the 2015 water year.

WHEREAS, the District used an average of 7,313 acre-feet of its CVP Contract water for municipal and industrial purposes during the three water years starting March 1, 2011 through February 28, 2014 and, without cutbacks by District customers, would expect to use even more during the 2015 water year due to historically dry conditions;

WHEREAS, the Board of Directors has determined that current water conservation measures in place will not be adequate to accommodate the anticipated demand for water without depleting the water supply available to Bella Vista Water District to the extent that there would be insufficient water for human consumption, sanitation and fire protection.

WHEREAS, on February 27, 2014, the District's Board of Directors conducted a public hearing, declared a water shortage emergency, and adopted Resolution 14-03 Declaring a Water Shortage Emergency and Enacting Appropriate Shortage Measures. Shortage measures were subsequently amended with the Adoption of Resolutions 14-04 and 14-05.

NOW, THEREFORE, be it resolved by the Board of Directors of the Bella Vista Water District and hereby declare that: (1) there is a continuing water shortage emergency, (2) prior adopted Resolutions enacting water shortage measures are hereby superseded, and that the following plan to manage the emergency, numbers I through V, shall be enacted and shall read as follows:

**I. PURPOSE**

The purpose of this Resolution is to supersede the previously adopted water shortage emergency measures, to equitably distribute the available water to the District's customers and to ensure an adequate supply for human consumption, sanitation and fire protection. This Resolution is adopted pursuant to Water Code Section 350 and following, and is effective April 1, 2015.

The Water Consumption figures of the 2011-12 through 2013-14 water years will establish the historic use baseline quantity (the "prior three unconstrained years") to be used as the basis for customer allotments throughout this water shortage until otherwise revised or revoked.

## II. RESTRICTIONS AND PROHIBITIONS

The following water supply allotments shall become effective immediately:

### A. Residential and Rural Customer Classes

All District Rural and Residential customers shall receive a bimonthly allotment equal to the greater of a quantity equal to 75% of the average historical use for the specific metered location from the prior three unconstrained years, or a minimum of 20 HCF for each location and each billing period. Exceedance penalties shall apply to all use exceeding the bimonthly allotment as described in section III.

### B. Commercial and Public/Institutional Customer Classes

All Commercial accounts shall receive a bimonthly allotment equal to 80% of the average historical use from the prior three unconstrained years for each billing period. Excess use penalties shall apply to all use exceeding the bimonthly allotment as described in section III.

Public/Institutional customers shall receive a bimonthly allotment equal to 75% of the average historical use from the prior three unconstrained years for each billing period. Excess use penalties shall apply to all use exceeding the bimonthly allotment as described in section III.

### C. Agriculture and Aquaculture Customer Classes

All Agriculture and Aquaculture customers that also serve a residence (family dwelling) shall receive a base annual allotment equal to 75% of the annual average residential customer historical use from the prior three unconstrained years, which was calculated to be an annual allocation of 268 HCF = 0.61 AF. This allotment shall comprise the customer's allotment for the entire period from April 1, 2015 through February 28, 2016. Excess use penalties shall apply to all use exceeding the customer's annual allotment as described in Section III. Agriculture and Aquaculture customers may voluntarily participate and receive supply augmentation through the District's Supplemental Water Program, if available, which amount shall be in addition to their base annual allotment.

All Agriculture and Aquaculture customers that do not serve a residence (family dwelling) shall receive a zero allotment, however all Agriculture and Aquaculture customers may participate and receive supply augmentation through the District's Supplemental Water Program, if available. Exceedance penalties shall apply to all use exceeding the customer's annual allotment as described in section III.

### D. New Customers

All new Residential and Rural customers shall be granted the following water allotments:

20 HCF (customers billed March 16 - May 15)

20 HCF (customers billed May 16 - July 15)

20 HCF (customers billed July 16 - September 15)

20 HCF (customers billed September 16 - November 15)

20 HCF (customers billed November 16 - January 15)

20 HCF (customers billed January 16 - March 15)

(applicable to all new meter installations after the date of this Resolution and may be granted to accounts with less than 3 years of representative water usage history).

### E. Construction Water

- Construction and hauled water is \$2.50 per HCF within the District.
- No supply for construction or hauled water outside District boundary except for active firefighting purposes or immediate, life threatening emergency purposes.

## F. Water Usage Restrictions

Water usage restrictions shall be as detailed in Stage 3 of the District's Water Shortage Contingency Plan.

Staff shall provide a water supply and usage summary report to the Board at each Regular Board Meeting.

### III. EXCEEDANCE PENALTIES

Beginning with all billings on or after April 1<sup>st</sup>, 2015 for Agricultural Water and on or after June 1, 2015 for all M&I water, and thereafter for the duration of the enforcement of this Resolution, every customer shall, in addition to the existing water rates, be subject to penalties for the use of water in excess of allotments allowed in Section II. The penalty amount as determined by the recorded meter reading, shall be as listed below:

Exceedance Penalty Charge Tier 1 > 100% - 120% of base Allotment = \$1.50/HCF

Exceedance Penalty Charge Tier 2 > 120% of base Allotment = \$2.50/HCF

### IV. EXCEPTIONS AND/OR VARIANCES

Staff may, in writing, grant temporary variances for prospective uses of water after determining that due to unusual circumstances to fail to grant such variance would cause an emergency or hardship condition affecting health, sanitation, or fire protection of the applicant or the public. The Board of Directors shall ratify or revoke any such variance or adjustment at its next scheduled meeting. Any such variance or adjustment so ratified may be revoked by later action of the Board of Directors. No such variance shall be retroactive or otherwise justify any violation of this Resolution occurring prior to issuance of temporary variance.

It must be recognized that due to the severity of the present water shortage emergency, the District has very limited ability to grant any exceptions and/or variances to the Water Shortage Management Plan.

### V. PUBLIC NOTICE

The Secretary of the Board is directed to publish a summary of this Resolution on the District's internet web site ([www.bvwd.org](http://www.bvwd.org)).

### VI. DURATION

These restrictions shall become effective April 1, 2015, and shall remain in full force and effect until the rescission of this Resolution, or modification of a part thereof, by the Board of Directors.

Passed and Adopted this 23<sup>rd</sup> day of March, 2015 by the following vote:

Ayes: Bambino, Nash, Smith, Waite

Noes: 0

Absent: Steppat

Abstain: 0

/// Ted Bambino

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Ted Bambino, President of the Board of  
Directors of Bella Vista Water District

ATTEST:

/// David J. Coxey

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David J. Coxey, Secretary of the Board of  
Directors of Bella Vista Water District

DRAFT

**BELLA VISTA WATER DISTRICT  
COUNTY OF SHASTA**

**Resolution No. 22-02**

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
BELLA VISTA WATER DISTRICT DECLARING A WATER SHORTAGE EMERGENCY  
AND ENACTING APPROPRIATE SHORTAGE MEASURES

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WHEREAS, the Bella Vista Water District has contracted with the U.S. Bureau of Reclamation for a water supply from the Central Valley Project (CVP) via the Sacramento River in the annual amount of 24,578 acre feet; subject to shortage provisions; and

WHEREAS, California is experiencing dry conditions and 2022 has been designated a “critically dry” year by the U.S. Bureau of Reclamation for Central Valley Project Water Allocation Purposes; and

WHEREAS, the U. S. Bureau of Reclamation has notified the Bella Vista Water District that Municipal and industrial water service and repayment contractors north-of-Delta will be provided water for public health and safety needs consistent with the CVP M&I Water Shortage Policy and zero percent (0%) for agricultural use from the Central Valley Project during the 2022 water year; and

WHEREAS, the District used an average of 6,649 acre-feet of its CVP Contract water for municipal and industrial purposes during the prior three, unconstrained water years that included 2017, 2018, and 2019 and without cutbacks by District customers and would expect to use even more during the 2022 water year due to critically dry conditions; and

WHEREAS, the Board of Directors has determined that voluntary water conservation measures will not be adequate to accommodate the anticipated demand for water without depleting the water supply available to Bella Vista Water District to the extent that there would be insufficient water for human consumption, sanitation and fire protection.

NOW, THEREFORE, be it resolved by the Board of Directors of the Bella Vista Water District and hereby declared that there is a water shortage emergency and enacts shortage measures in accordance with the District’s adopted Water Shortage Contingency Plan as follows:

**I. PURPOSE**

The purpose of this Resolution is to declare a water shortage emergency and enact appropriate shortage measures, to equitably distribute the available water to the District’s customers and to ensure an adequate supply for human consumption, sanitation, and fire protection. This Resolution supersedes previously adopted shortage measures and is adopted pursuant to Water Code Section 350 et seq., and Section 375 et seq.

For all stages of this plan, the Water Allocation Year is from March 1 through February 28. The Water Consumption figures of the 2017 through 2019 water year(s) will establish the historic use baseline quantity (the “prior three unconstrained years”) used for allocation throughout this water shortage.

## II. RESTRICTIONS AND PROHIBITIONS

### A. Residential, Rural, Commercial and Public Institutional Customer Classes

All District Residential, Rural, Commercial and Public/Institutional accounts shall receive a quantity equal to 60% of the amount that their average historical use from the prior three unconstrained years for each location and billing period. All District Residential, Rural, Commercial and Public/Institutional accounts shall receive a minimum quantity of 18 HCF for each billing period as set forth below. Overuse penalty rates shall apply to all use exceeding the 60% allotment or 18 HCF per billing cycle.

### B. Agriculture Customers

Agriculture Customers shall receive a public health a safety allocation of 0.25 acre-foot for the entire water year. Overuse penalty rates shall apply to all use exceeding 0.25 acre-feet for the water year, plus Supplemental Water, if any.

### C. New service applications

New service applications may be granted upon the condition that the water shall be used for internal household purposes only and landscaping must be delayed until this resolution is revised or rescinded. New Residential and Rural Customers shall be granted the following for indoor public health and safety use purposes: 18 HCF per bi-monthly billing cycle (e.g. June 1st through July 30<sup>th</sup>). Applicable to all new meter after the date of this Resolution.

### D. Construction/Hydrant Water Use

Construction and/or authorized temporary hydrant water use will be monitored for efficient use for construction related purposes that includes compaction and dust control. Hauled water must be used within the District's boundary. All construction/hydrant water use will be billed at the rate of \$3.00/HCF.

### E: Water Use Restrictions Declaration – Stage 5B

The following restrictions will apply to all District provided water use as also described and detailed in the District adopted Shortage Contingency Plan:

#### ***Stage 1. Below Normal Water Supply (90% to 100% of Normal Water Production)***

Response Actions may include:

- Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited (*District Policy Manual Section 143*).
- Water shall not be applied to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. Care shall be taken not to water past the point of saturation.
- Free-flowing hoses are prohibited for all uses. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
- Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if warranted due to the severity of the problem or shall not be utilized until repaired.
- All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leakproof.
- Swimming pool and spa covers encouraged to prevent evaporative water loss.
- Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations.
- Washing streets, parking lots, driveways, or sidewalks, except as necessary for health, aesthetic, or sanitary purposes, is prohibited.
- To reduce evaporation, between March 1 and October 31 the use of sprinkler irrigation systems for all landscape irrigation systems shall be limited to be between the hours of 7:00 p.m. and

9:00 a.m. Sprinkler irrigation systems may be run outside of these hours for testing, but not for more than 15 minutes per cycle and only long enough to verify proper operation and make sprinkler adjustments.

- Irrigated landscaped areas shall include efficient irrigation systems (e.g., drip irrigation, timed sprinklers, rain sensors, low-flow spray heads, etc.).

### ***Stage 2. Moderate Water Shortage (80% to 90% of Normal Water Production)***

All Stage 1 Response Actions are required plus the following:

- Reduce water use by the following specified percentages: Residential and Rural by 10-20%, Multi-family and Public/Institutional customers by 10-20%, commercial customers by 5-10%, and Landscape Irrigation by 15-25%.
- Customers with “smart” irrigation timers or controllers are asked to set their controllers to achieve 90 to 95% of the evapotranspiration (ET) rate.
- Eating or drinking establishments, including but not limited to: Restaurants, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased shall serve water only upon request.
- Operators of hotels and motels shall offer patrons the option of not having their towels and linens washed daily.
- Users of construction meters and fire hydrant meters will be monitored for efficient water use.

### ***Stage 3. Severe Water Shortage (70% to 80% of Normal Water Production)***

All the Response Actions in Stage 2 are required plus the following new Response Actions:

- Outdoor irrigation of ornamental landscapes and turf with potable water shall be limited to 3 days a week. Customers whose street addresses end with an odd number may water on Wednesday, Friday, and Sunday. Customers whose street addresses end with an even number may water on Tuesday, Thursday, and Saturday.
- The application of potable water to outdoor landscapes during or within 48 hours after rainfall of 0.20 inches or more is prohibited.
- Flushing of water mains, sewers, or fire hydrants is prohibited except for emergencies and essential operations.
- Water overuse penalties may be implemented; or modified, if already implemented a previous stage.
- Motor vehicles and equipment shall be washed only with buckets or with hoses equipped with automatic shutoff nozzles.

The following Response Actions replace previous less stringent actions:

- Leaking customer pipes or faulty sprinklers shall be repaired within two (2) working days or less if warranted due to the severity of the problem.  
Reduce water use by the following specified percentages: Residential and Rural by 20-30%, Multi-family and Public/Institutional customers by 20-30%, commercial customers by 20%, and Landscape Irrigation by 25-35%.
- Customers with “smart” irrigation timers or controllers are asked to set their controllers to achieve 75% of the evapotranspiration (ET) rate. Drip irrigation systems are excluded from this requirement.

### ***Stage 4 Extreme Water Shortage (60% to 70% of Normal Water Production)***

All the Response Actions in Stage 3 are required plus the following new Response Actions:

- Water use for ornamental ponds, fountains, or other ornamental water feature for aesthetic purposes is prohibited except where necessary to support aquatic life.
- The application of potable water to driveways and sidewalks is prohibited.
- The installation of new turf or landscaping is prohibited.
- Irrigation of ornamental turf with potable water on public street medians is prohibited.

- Water use or overuse penalties may be implemented; or modified, if already implemented a previous stage.
- New connections to the District's water distribution system will be allowed but their water use shall be restricted to the minimum requirements for personal health and safety. The following Response Actions replace previous less stringent actions:
- Leaking customer pipes or faulty sprinklers shall be repaired within 24 hours or less if warranted due to the severity of the problem.
- Reduce water use by the following specified percentages: Residential and Rural by 30-40%, Multi-family and Public/Institutional customers by 30-40%, commercial customers by 30%, and Landscape Irrigation by 35-50%.

***Stage 5A Critical I Water Shortage Short-Term (50% to 60% of Normal Water Production)***

All the Response Actions in Stage 4 are required plus the following new Response Actions:

- Water use for ornamental ponds and fountains is prohibited.
- Water for flow testing from water agency fire hydrants and blow-offs is prohibited.

The following Response Actions replace previous less stringent actions:

- Leaking customer pipes or faulty sprinklers shall be repaired within 24 hours. Water service will be suspended until repairs are made.
- Water overuse penalties will be implemented.

***Stage 5B Critical I Water Shortage Long-Term (50%-60% of Normal Water Production)***

A long-term declaration is for water shortage conditions expected for a duration of 45 days or more. All the Response Actions in Stage 5A are required plus the following that replace previous less stringent actions:

- Motor vehicles and equipment shall be washed only at commercial establishments that use recycled or reclaimed water.

Penalties: Water use exceeding the customer's water shortage allocation will be charged at the applicable overuse penalty rate. Any customer in violation of Stage 5 requirements (other than exceeding their water allocation) shall be first notified of the regulations and warned of the penalty associated with continued violation. If the violation is not corrected in a timely manner, any continued violation of mandatory Stage 5 requirements after notice and warning is provided shall be punishable by an administrative fine per day or per occurrence as set in Appendix A of the District's Policy Manual.

**III. OVERUSE PENALTY**

Effective with all water use beginning March 1, 2022, and with all billings on May 1, 2022 and thereafter for the duration of the enforcement of this Resolution, every customer shall, in addition to the existing water rates, be subject to an overuse penalty rates for the use of water in excess of allotments allowed in Section II. The penalty amount as determined by the recorded meter reading, shall be as listed below:

Residential, Rural, Commercial, Public Institutional Customers that exceed their allotment described in Section II, will be subject to an Exceedance Penalty rate of **\$2.00** per HCF in addition to the current water usage rate.

Agricultural Customers that exceed their allotment described in Section II, will be subject to an Exceedance Penalty rate of **\$2.00 per HCF (\$871.20 per AF)** in addition to the current water usage rate.

#### IV. EXCEPTIONS AND/OR VARIANCES

The General Manager may, in writing, grant temporary variances for prospective uses of water otherwise prohibited after determining that due to unusual circumstances to fail to grant such variance would cause an emergency condition affecting health, sanitation, or fire protection of the applicant or the public. The Board of Directors shall ratify or revoke any such variance or adjustment at its next scheduled meeting. Any such variance or adjustment so ratified may be revoked by later action of the Board of Directors. No such variance shall be retroactive or otherwise justify any violation of this Resolution occurring prior to issuance of said temporary variance.

It must be recognized that due to the water shortage emergency the District has very limited ability to grant exceptions and/or variances to the Water Shortage Management Plan.

#### V. PUBLIC NOTICE

a. The Secretary of the Board is directed to publish this Resolution in accordance with Government Code Section 6061 and Water Code Section 375.

b. The Secretary of the Board is directed to publish a summary of this Resolution on the District's internet web site ([www.bvwd.org](http://www.bvwd.org)) and include it in a newsletter sent to each customer in the District.

#### VI. DURATION

These restrictions shall remain in full force and effect until the rescission of this Resolution, or modification of a part thereof, by the Board of Directors.

\* \* \* \* \*

Passed and adopted this 28<sup>th</sup> day of February, 2022, by the following vote:

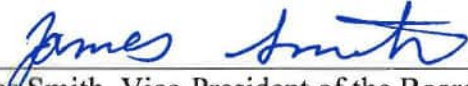
Ayes: Nash, Schabarum, Smith, and Walters

Noes: 0

Absent: Bambino

Abstain: 0

BELLA VISTA WATER DISTRICT

  
James Smith, Vice-President of the Board of  
Directors of Bella Vista Water District

ATTEST:

  
David J. Coxey, Secretary of the Board of  
Directors of Bella Vista Water District





STATE WATER RESOURCES CONTROL BOARD  
REGIONAL WATER QUALITY CONTROL BOARDS

“Conservation as a Way of Life” Compliance Summary:  
Bella Vista Water District (ORG ID 167)

Report prepared by State Water Resources Control Board staff on March 9, 2026

## Report Sections

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<b>3</b>	<b>Report Submittal Date</b>	<b>3</b>
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<b>6</b>	<b>Summary of Data Quality Flags for Variance Calculations</b>	<b>4</b>
<b>7</b>	<b>CII Performance Measures</b>	<b>4</b>
<b>8</b>	<b>Objectives Calculated with Future Standards</b>	<b>5</b>
<b>A</b>	<b>Steps to Calculate Objective</b>	<b>7</b>

# 1 Executive Summary

The “Making Conservation a California Way of Life” regulation establishes unique efficiency goals for each urban retail water supplier in California and provides those suppliers flexibility to implement locally appropriate solutions. The regulation seeks to cultivate long-term practices that help communities adapt to California’s ongoing water challenges.

The regulation requires suppliers to:

- Annually calculate urban water use objectives for a subset of urban water uses: residential indoor water use, residential outdoor water use, real water loss, and commercial, industrial, and institutional (CII) landscapes with dedicated irrigation meters (DIMs)
- Carry out performance measures for CII water use
- Annually report to the State Water Board

This report summarizes the supplier’s compliance with annual reporting requirements under the “Making Conservation a California Way of Life” regulation for the state fiscal year 2024-2025. This report was due on January 1, 2026.

## 1.1 Key Highlights from the Report

The following points are a summary of Sections 3 through 7.

- The report was submitted **late**, on March 6, 2026.
- The supplier has **met** its calculated objective for fiscal year 2024-2025.<sup>1</sup>
- The supplier was approved for the following variance(s) for fiscal year 2024-2025: Residential Agriculture Variance
- The report contains 1 data quality flag.

## 1.2 Objectives Calculated with Future Standards

The water use objectives will become progressively smaller as standards change through 2040. The following table compares the current water use objective and reported water use (shown in million gallons) to future efficiency requirements; the full summary can be found in Section 8. While this table does not capture how future water use objectives will be influenced by changes in local climatology, service area population, square footage of irrigated landscapes, and other data that will factor into future water use efficiency objectives, it is provided as a tool for local planning purposes.

Year	FY 24-25 Use (MG)	Calculated/Projected Objective (MG)	Current use lower than objective?
Current	2,100.7	2,639.7	Yes
FY25-26	2,100.7	2,612.3	Yes
FY30-31	2,100.7	2,578.4	Yes
FY35-36	2,100.7	2,278.6	Yes
FY40-41	2,100.7	2,136.3	Yes

Table 1: Simplified version of Table 6. Objectives calculated using the values and standards specified in Table 5 (with the exception of CII DIMs due to lack of data). See Section 8 for more information on the calculations and assumptions made.

<sup>1</sup>The State Water Board will begin formally assessing compliance with the objective for the report due on January 1, 2027.

## 2 Introduction

The “Making Conservation a California Way of Life” regulation went into effect on January 1, 2025. Pursuant to the regulation, urban retail water suppliers are annually required to submit a reporting form to the State Water Resources Control Board (State Water Board) by January 1 of each year. This document is intended to provide the supplier with a high-level summary of its compliance with reporting requirements for the state fiscal year 2024-2025, as well as some supplemental information that may help to inform future decision-making. Sections 3 through 7 summarize the information that the supplier provided on the required reporting form, as well as data quality issues identified by State Water Board staff. Section 8 calculates what the objective for fiscal year 2024-2025 would look like if future water use efficiency standards were applied.

Note: This is the second year that water use and water use objectives were required to be reported and calculated pursuant to the State Water Board’s regulation, and State Water Board staff are identifying errors in the submitted data and reporting form as review is ongoing; these errors may impact the values shown throughout this report. Staff are taking steps to identify the more common errors so that they are corrected by suppliers and are resolved by the time water use objective compliance is assessed (i.e., for reports submitted January 1, 2027).

This report was generated by the State Water Board on March 9, 2026.

## 3 Report Submittal Date

The fiscal year 2024-2025 report was due on January 1, 2026. The version first reviewed by the State Water Board was submitted on March 6, 2026. The version reviewed for this version of the report was resubmitted on March 6, 2026.

## 4 Comparing the Objective to Reported Water Use

The supplier has **met** its calculated objective for fiscal year 2024-2025.

The final urban water use objective and corresponding reported water use, as calculated in the reporting workbook, is summarized in Table 2 in both million gallons (MG) and acre-feet (AF). Please note that compliance with the objective will first be formally assessed for the fiscal year 2025-2026, based on the report due January 1, 2027.

Quantity	Value (MG)	Value (AF)
Objective	2,639.7	8,101.0
Actual Water Use	2,100.7	6,446.8

Table 2: Objective and reported water use for fiscal year 2024-2025

As of the report due January 1, 2026, the SBx7-7 backstop volumes for process and recycled water are no longer equivalent to the values reported in the 2020 Urban Water Management Plan. Instead, they are based on values calculated in the SBx7-7 Backstop section of the reporting form. If the supplier had previously reported process and/or recycled water in the 2020 urban water management plan and did not include it in this year’s report, this may lower the volume of the SBx7-7 backstop relative to that shown in the fiscal year 2023-2024 report, and result in a lower objective volume. Please refer questions about these changes to State Water Board staff at [waterconservation@waterboards.ca.gov](mailto:waterconservation@waterboards.ca.gov).

If you have any questions about how the objective was calculated, please refer to Appendix A.

## 5 Summary of Data Quality Flags for Objective Calculations

Table 3 summarizes objective data-related issues as identified by State Water Board staff.

Section	Data Checked	Reporting Issues Flagged
Objective	Calculated Final Volume	None
Objective	Intermediate Calculations	None
Residential Indoor	Calculated Volume	None
Residential Indoor	Required Cells Left Blank	None
Residential Outdoor	Calculated Volume	None
Residential Outdoor	LAM Data	None
Residential Outdoor	Required Cells Left Blank	None
Bonus Incentive	Calculated Volume	None
Water Loss Budget	Calculated Volume	None
Water Loss Budget	Service Connections/ Length of Mains	None
Actual Water Use	Calculated Volume	None
Actual Water Use	Missing/ Zero Potable Deliveries	None
Actual Water Use	Required Cells Left Blank	None
Real Water Loss	Reported Volume	None
Real Water Loss	Reporting Method	None
SBx7-7 Backstop	Required Cells Left Blank	None

Table 3: Data quality flags for the objective-related data

## 6 Summary of Data Quality Flags for Variance Calculations

As of the fiscal year 2024-2025 reporting period, variances and temporary provisions are reviewed by State Water Board staff; approved variances and temporary provisions are prefilled into the report. This has removed the need for variance data quality flags.

The supplier was approved for the following variance(s) for fiscal year 2024-2025:

- Residential Agriculture Variance

## 7 CII Performance Measures

Table 4 summarizes Commercial, Institutional, and Industrial (CII) Performance Measures data-related issues as identified by State Water Board staff. The table summarizes flags for the CII Classification, Dedicated Irrigation Meters (DIMs) and In-Lieu Technologies, and Best Management Practices (BMPs) sections in the reporting form.

Section	Data Checked	Reporting Issues Flagged
CII Classification (972)	Required Cells Left Blank	None
CII Classification (972)	Number of Service Connections	None
DIMs and In-Lieu Tech (973)	Large Landscapes Identification Method	None
DIMs and In-Lieu Tech (973)	Required Cells Left Blank	None
BMPs (974)	CII BMP Identification Method	None
974(c)(1)	Required Cells Left Blank	None
974(c)(1)	Other BMP	Did not explain "Other" BMP

Table 4: Data quality flags for the CII BMP sections

## 8 Objectives Calculated with Future Standards

The current and future standards for the urban water use objective calculations are summarized in Table 5.

Year	Residential Indoor	Residential Outdoor	CII DIMs	Water Loss Budget
FY23-24	55 GPCD	0.8 LEF	Volume as Reported	Reported or Budget
FY25-26	47 GPCD	0.8 LEF	Volume as Reported	Reported or Budget
FY30-31	42 GPCD	0.8 LEF	0.8 LEF (starts July 1, 2028)	Budget (starts July 1, 2027)
FY35-36	42 GPCD	0.63 LEF	0.63 LEF	Budget
FY40-41	42 GPCD	0.55 LEF	0.45 LEF	Budget

Table 5: Summary of the standards that inform objective calculations

Using the standards in Table 5 and the calculation steps explained in Appendix A, as well as the data provided in the fiscal year 2024-2025 report, State Water Board staff generated objective volume estimates as shown in Table 6.

Please note that these values do **not** represent the final calculated budgets for the corresponding years; they are intended to show what an objective for the fiscal year 2024-2025 would look like if future standards, rather than the standards in effect at the time, were applied to the reported data. Compliance with the regulation is a long-term process, but programs or actions implemented to reduce service area demand may also take time to implement and produce intended outcomes. State Water Board staff have provided these numbers as a starting point for considerations of which actions, if any, may need to be taken.

The budget associated with irrigable-not-irrigated landscapes (INI) is conditionally included or not included in the budget as noted in the “INI Included?” column of the table (see item 6 in the list of assumptions below for details). Future water use objectives will be influenced by changes in local climatology, service area population, and square footage of irrigated landscapes, as well as other data points that are not yet available, such as the square footage of CII landscapes with DIMs.

Please note that issues with missing or incorrect data from the fiscal year 2024-2025 report may also affect these values.

Year	INI Included?	Capped?	Objective (MG)	Objective (AF)	FY 24-25 use lower than objective?
Current	No	No	2,639.7	8,101.0	Yes
FY25-26	No	No	2,612.3	8,017.0	Yes
FY30-31	No	No	2,578.4	7,912.7	Yes
FY35-36	No	No	2,278.6	6,992.7	Yes
FY40-41	No	No	2,136.3	6,556.2	Yes

Table 6: Objectives calculated using the values and standards specified in Table 5 (with the exception of CII DIMs due to lack of data; see point 3 below)

These values were generated using the following assumptions:

1. For all years, reported quantities such as population, irrigated residential landscapes, and excluded demands remained constant.
2. For all years, the volume of requested variances (with the exception of the seasonal population variance, if applicable) remained the same as the volumes requested in this year's submitted report.
3. For all years, the CII with DIMs budget was assumed to be equivalent to the reported actual water use for CII with DIMs, since the landscape area data is not yet available. Variances for CII with DIMs are therefore assumed to be 0.
4. The water loss budget prior to FY2030-2031 was equivalent to the value selected by the reporter in this year's submitted report. The water loss budget for FY2030-2031 onwards was set as either (A) the water loss budget calculated using the standards; or (B) the reported water loss, if one or more necessary components for the water loss budget calculation were missing.
5. The volume of the bonus incentive, if applicable, was capped according to the reported method and calculated objective for the corresponding year.
6. The 20% INI was included if actual water use exceeded the pre-"capped" objective for the corresponding year.
7. Before 2040, if the "no backsliding" provision was applicable and the supplier was part of a regional alliance that met its regional target, the pre-"capped" objective was used in place of the "capped" objective.

## A Steps to Calculate Objective

Table 7 summarizes the initial budget components as determined within the submitted workbook, in both million gallons (MG) and acre-feet (AF).

Budget Component	Equation Symbol	Budget Value (MG)	Budget Value (AF)
Residential Indoor	$RI_B$	346.7	1,063.9
Residential Indoor Variances and Provisions	$RI_V$	0.0	0.0
Residential Outdoor	$RO_B$	1,431.5	4,393.0
Residential Outdoor Variances and Provisions	$RO_V$	529.8	1,625.9
CII with DIMs	$DIM_B$	270.8	831.2
Real Water Loss	$RWL_B$	60.9	187.0
Bonus Incentive	$BI$	0.0	0.0
Sum (before INI)	$OBJ$	2,639.7	8,101.0

Table 7: Individual budgets within the objective for fiscal year 2024-2025

The following section describes the step-by-step calculations that produced the final objective for fiscal year 2024-2025. All calculations are shown in million gallons.

1. The initial water use objective (not including INI, the bonus incentive, or the “no backsliding” provision) was calculated as follows:

$$Obj_{init} = RI_B + RI_V + RO_B + RO_v + DIM_B + RWL_B$$

$$OBJ_{init} = 346.7 + 0.0 + 1,431.5 + 529.8 + 270.8 + 60.9$$

$$OBJ_{init} = 2,639.7 \text{ Million Gallons}$$

2. The bonus incentive was reported as 0 or not calculated. Therefore,

$$OBJ = OBJ_{init}$$

$$OBJ = 2,639.7 \text{ Million Gallons}$$

If you think the bonus incentive should be greater than 0, please review the values that were entered in the “Bonus Incentive” tab of the reporting form.

3. The calculated objective was greater than actual water use for FY 2024-2025, so the 20% INI buffer was not added to the objective.

Volume	Equation Symbol	Value (MG)	Value (AF)
Objective without INI	$OBJ$	2,639.7	8,101.0
Actual Water Use	$AWU$	2,100.7	6,446.8
20 pct INI Volume (if applicable)	$RO_{INI}$	482.3	1,480.3
Excluded Demands	$EXCL$	239.3	734.3

Table 8: Summary of volumes used in steps 3 and 4 to compare to the SBx7-7 target volume

$$OBJ_{ADJ} = OBJ$$

$$OBJ_{ADJ} = 2,639.7 \text{ Million Gallons}$$

4. The “no backsliding” provision was assessed.

SBx7-7 Component	Equation Symbol	Value (MG)	Value (AF)
SBx7-7 Target Volume	$SBX_V$	5,149.4	15,802.9
Process Water	$PW$	0.0	0.0
Indirect Recycled	$IR$	0.0	0.0
Total No Backsliding Volume	$SBX_{TOT}$	5,149.4	15,802.9

Table 9: Summary of supplier’s individual SBX7-7 target volume, plus any additional demands excluded from the original target

The sum of the objective plus excluded demands ( $OE$ ) is as follows:

$$OE = OBJ_{ADJ} + EXCL$$

$$OE = 2,639.7 + 239.3$$

$$OE = 2,879.0 \text{ Million Gallons}$$

$OE$  was less than the no backsliding volume,  $SBX_{TOT}$ . Therefore, the final objective remains as calculated in the prior step.

$$OBJ_{FINAL} = OBJ_{ADJ}$$

$$OBJ_{FINAL} = 2,639.7 \text{ Million Gallons}$$

DRAFT

DRAFT

**Appendix K District Water Rates**

# BELLA VISTA WATER DISTRICT

11368 E. STILLWATER WAY  
REDDING, CA 96003  
(530) 241-1085 ♦ (530) 241-8354  
[www.bvwd.org](http://www.bvwd.org)

## SCHEDULE OF BIMONTHLY WATER RATES

### RESIDENTIAL, RURAL, COMMERCIAL, PUBLIC INSTITUTIONAL AND LANDSCAPE IRRIGATION

<u>Meter Class</u>	<u>Base Rates</u>
20	\$49.48
30	\$52.93
50	\$58.38
100	\$68.41
160	\$77.47
200	\$82.59
300	\$93.48
450	\$106.80
900	\$136.88
1200	\$152.77
1500	\$166.77
2000	\$187.28
2500	\$205.36
3300	\$230.84
4500	\$263.84
6000	\$299.36

The commodity rate is \$0.81 per HCF (One hundred cubic feet).

### Water Treatment Plant Improvement Loan Repayment

\$14.00 bimonthly charge for all customers.

### Fire Service Rates

<u>Line Size</u>	<u>Base Rate</u>
2	\$29.10
3	\$41.15
4	\$61.74
6	\$87.30
8	\$112.70
10	\$145.50

## WATER EQUIVALENTS TABLE

1 Cubic Foot = 7.48 gallons = 62.4 pounds of water  
1 Acre Foot = 43,560 cubic feet = 325,900 gallons

An acre foot covers (1) acre of land (1) foot deep

1 cubic foot per second (cfs) = 450 gallons per minute or 646,320 gallons per day

For 24 hours = 1.983 acre feet

For 30 days = 59.5 acre feet

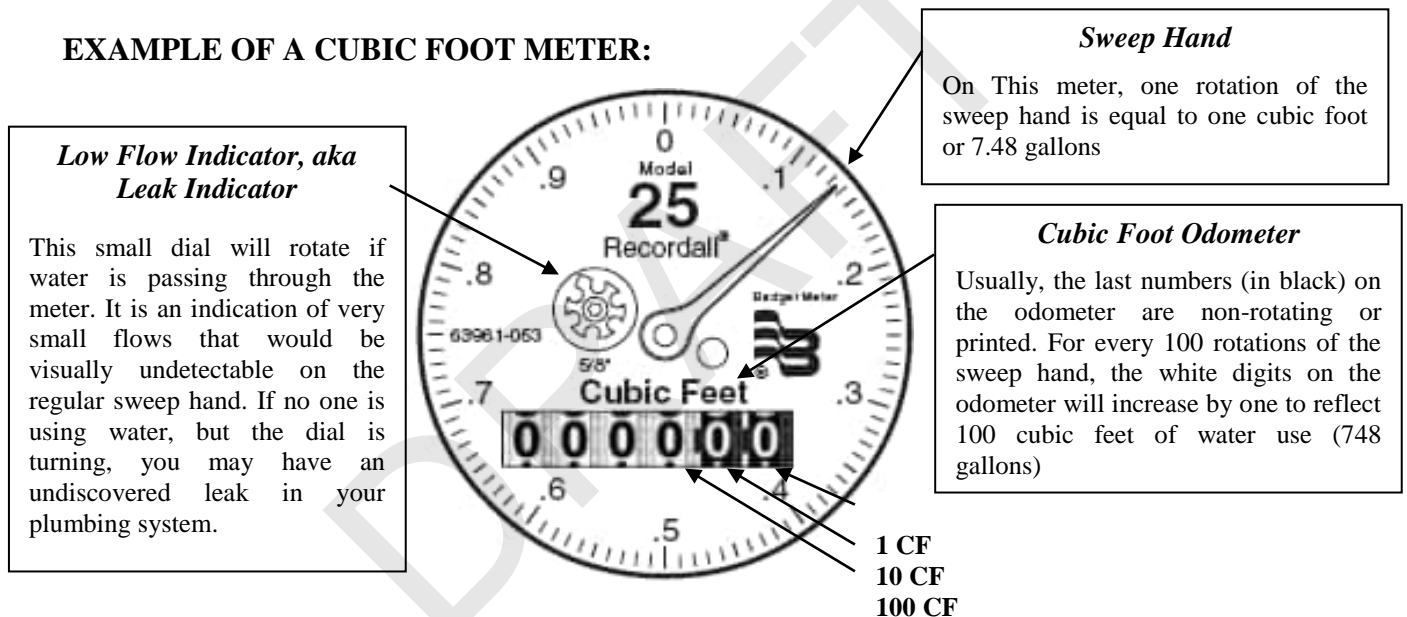
For one year = 724 acre feet

## PROCEDURE FOR METER READING

If register lens is dirty, a light wipe with a damp cloth will clear lens for an accurate reading. Always remember to close the register cover after reading meter to avoid exposure to cracking or scratching of lens.

One of the most important factors in a correct reading is to note the proper number of digits. Read the meter register from left to right.

### **EXAMPLE OF A CUBIC FOOT METER:**



**BILLING:** You will be billed for water service bimonthly; thus, the water meter will be read as nearly as possible on the same day every two (2) months. The bills are due and payable on the date of receipt and become delinquent twenty-two (22) days thereafter. Payments can be made to the District office by mail, in person, or online at: [www.invoicecloud.com/bvwd](http://www.invoicecloud.com/bvwd). The District is currently using Invoice Cloud which allows for automatic payment deductions and only charges a small service fee of \$0.95 if utilizing (e-checks) your checking account or \$2.95 if you would like to continue to utilize your credit or debit cards. All fees are charged by Invoice Cloud and you will no longer see an adjustment on your Bella Vista Utility Billing for any charges.

**OFFICE HOURS:** The district office is open from 8:00 a.m. to 5:00 p.m., Monday through Thursday, and 8:00 a.m. to 4:00 p.m. on Fridays, except holidays. For after-hour emergencies, there is an answering service.

# BELLA VISTA WATER DISTRICT

11368 E. STILLWATER WAY  
REDDING, CA 96003  
(530) 241-1085 ♦ (530) 241-8354  
[www.bvwd.org](http://www.bvwd.org)

## SCHEDULE OF BIMONTHLY WATER RATES

### AGRICULTURAL

<u>Meter Class</u>	<u>Base Rates</u>
50	\$82.31
100	\$93.33
160	\$103.30
200	\$108.92
300	\$120.88
450	\$135.52
900	\$168.59
1200	\$186.06
1500	\$201.44
2000	\$223.98
2500	\$243.85
3300	\$271.87
4500	\$308.14
6000	\$347.18

The commodity rate is \$115.67 per acre-foot (\$0.2655 per HCF)

### Water Treatment Plant Improvement Loan Repayment

\$14.00 bimonthly charge for all customers.

### NDU Credit

Agricultural accounts that have no domestic use will receive a \$19.66 bimonthly base charge reduction referred to as a NDU credit.

## WATER EQUIVALENTS TABLE

1 Cubic Foot = 7.48 gallons = 62.4 pounds of water  
1 Acre Foot = 43,560 cubic feet = 325,900 gallons

An acre foot covers (1) acre of land (1) foot deep

1 cubic foot per second (cfs) = 450 gallons per minute or 646,320 gallons per day

For 24 hours = 1.983 acre feet

For 30 days = 59.5 acre feet

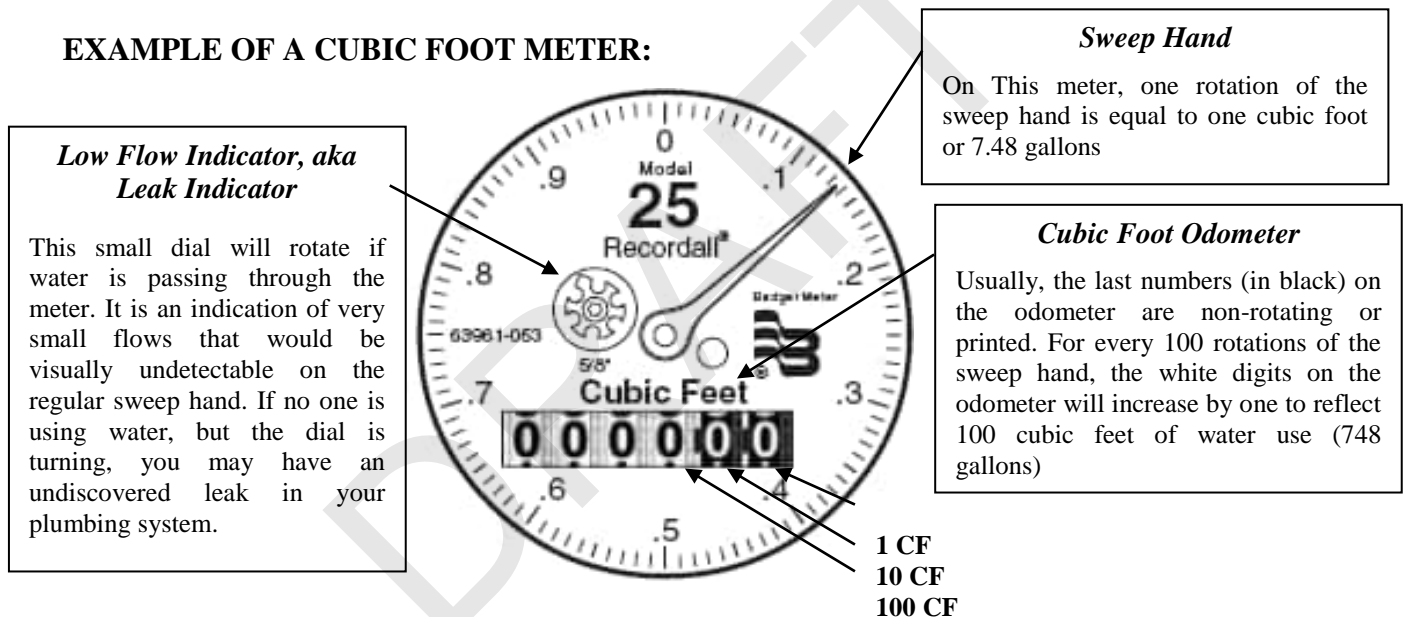
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DRAFT

**Appendix L Shasta County and City of Anderson Multi-Jurisdictional Hazard Mitigation Plan**



*Photo Source: iStock by Getty Images*

### 4.2(E) – Earthquake

#### 4.2.1 – Hazard Description

An earthquake is the vibration of the earth's surface following a release of energy in the earth's crust. This energy can be generated by a sudden dislocation of the crust or by a volcanic eruption. An earthquake's point of initial rupture is called its focus or hypocenter; and the point of ground directly above the hypocenter is called the epicenter.

Earthquakes tend to reoccur along faults, which are zones of weakness in the crust. Faults are more likely to have earthquakes on them if they have more rapid rates of movement, have had recent earthquakes along them, experience greater total displacements, and are aligned so that movement can relieve accumulating tectonic stresses.

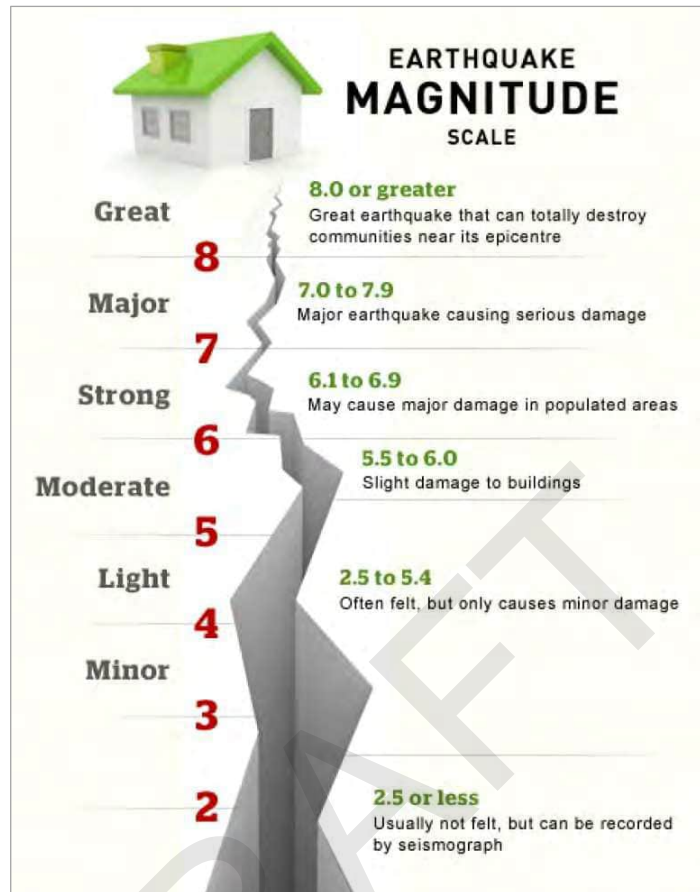
There are numerous characteristics measured when observing earthquake activity; however, four of them—force, depth, peak ground acceleration and the distance to the epicenter—are most influential in determining damage. Two scales are used when referring to earthquake activity: the Richter Scale, which estimates the total force of the earthquake; and the Modified Mercalli Intensity Scale, which categorizes the observed damage from the earthquake.

The Richter Scale is a scientific measurement based on the magnitude of the earthquake. It provides seismic experts greater accuracy in comparing the strength of earthquakes across time and at different locations in all areas of the world. The measurements of the Richter Scale are further explained in the following illustration.



## SECTION 4: HAZARD RISK ASSESSMENT

Illustration 2: Earthquake Magnitude Scale (Richter)



Data Source: UPSeis / Michigan Tech

The Modified Mercalli Intensity value assigned to a specific site after an earthquake has a more meaningful measure of severity to the nonscientist than the magnitude because intensity refers to the effects experienced at that place. The lower numbers of the intensity scale generally deal with the way the earthquake is felt by people. The higher numbers of the scale are based on observed structural damage. Structural engineers usually contribute information for assigning intensity values of VIII or above. The table below is an abbreviated description of the levels of Modified Mercalli intensity.



## SECTION 4: HAZARD RISK ASSESSMENT

Table 13: Modified Mercalli Intensity Scale

Modified Mercalli Intensity Scale		
Intensity	Shaking	Description / Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations like the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum in clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plates. Damage slight.
VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built, ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designated structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage greater in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundation. Rails bent.

Data Source: *The Severity of an Earthquake (abridged)*, USGS General Interest Publication 1989-288-913

According to the U.S. Geological Survey (USGS), it is estimated that there are 500,000 detectable earthquakes in the world each year; 100,000 of those can be felt, and 100 of them cause damage. Earthquakes are much less common in the eastern United States than in California, with most events imperceptible by the public. This leads to a dangerous complacency that may be unwarranted.

### 4.2.2 – Location & Extent

Earthquakes represent the most destructive source of hazard, risk, and, and vulnerability, both in terms of recent California history and the probability of future destruction of greater magnitudes than previously



## SECTION 4: HAZARD RISK ASSESSMENT

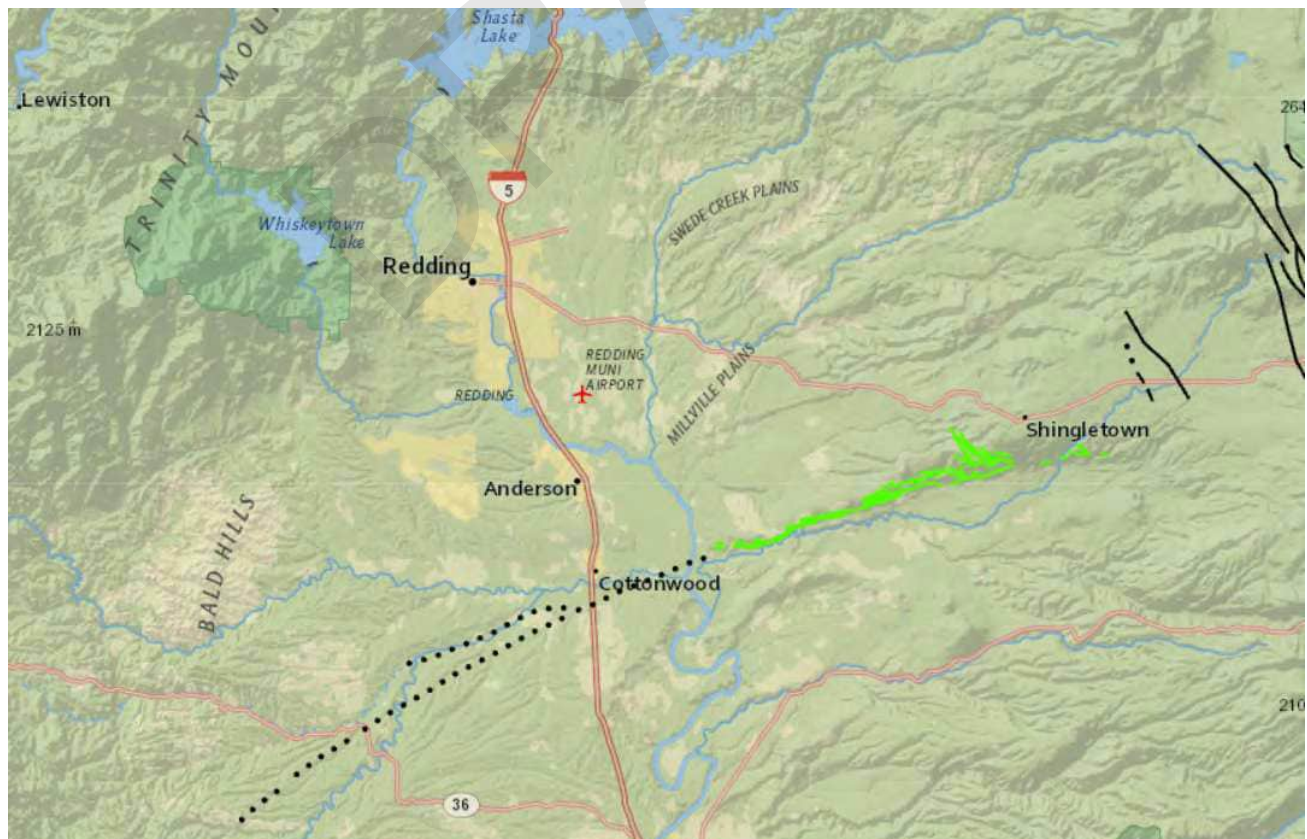
recorded. The state has thousands of recognized faults but only some are known to be active and pose significant risk.

The motion between the Pacific and North American plates occurs primarily on the faults of the San Andreas system and the eastern California shear zone. Faults are more likely to have future earthquakes on them if they have more rapid rates of movement, have had recent earthquakes along them, experience greater total displacements, and are aligned so that movement can relieve the accumulating tectonic stresses.

Geologists classify faults by their relative hazards. Active faults represent the highest hazards which have ruptured to the ground surface during the Holocene period (about the last 11,000 years). Potentially active faults are those that displaced layers of rock from the Quaternary period (the last 1,800,000 years). Nearly all movement between the two plates is on active faults.

There are fault lines located in southern and eastern Shasta County that could produce low to moderate ground shaking. Ground shaking is the principal cause of damage in a seismic event and could catalyze dam failures, landslides, and fires. According to the U.S. Geological Survey (USGS), factors that affect the potential damage of structures and systems because of severe ground shaking include epicenter location and depth, the proximity to a fault, the direction of the rupture, the magnitude, the existing soil and geologic conditions, and the structure-type. Newer structures are more resistant to ground shaking than older structures because of improved building codes. Manufactured housing is very susceptible to damage because the foundation systems are rarely braced for seismic activity. Lifeline systems such as highways, bridges, water and gas pipelines, railroads, and utility services, can experience substantial damage from ground shaking. Structure damage is considered likely when ground motion average peak acceleration reaches 10% and 15% of gravity.

*Shasta County Fault Lines Illustration 3*





## SECTION 4: HAZARD RISK ASSESSMENT

Green fault lines are late quaternary fault displacement lines.

Black fault lines are pre-quaternary fault displacement lines.

According to the California Geological Survey's (CGS) Probabilistic Seismic Hazards Assessment (PSHA), the area is subject to low and moderate ground shaking and lies within the 10% to 30% gravity zone (CGS 2003). The region within the boundaries of Shasta County has not sustained damages attributed to earthquakes, dam failures, or landslides as far as records have been maintained and Shasta County has not proclaimed a state of emergency due to earthquakes events.

### 4.2.3 – Previous Occurrences

Shasta County has a low level of historic seismic activity. In the past 120 years, there has been no significant property damage or loss of life due to earthquakes occurring within or near the planning area. Maximum recorded intensities have reached Modified Mercalli (MM) VII, with possibly one instance of MM VIII. Most of the stronger intensity seismic activity in Shasta County has occurred in the eastern half near Lassen Peak. The City of Redding is located in the less seismically active western half of Shasta County, referred to as an area of moderate seismicity. Earthquake activity has not been a serious hazard in the City of Redding's history, nor is it probable that it will become a serious hazard in the future. Research of historical earthquakes indicates that Redding has experienced several moderate-sized earthquakes, magnitude 4.0 to 4.5 (estimated) in 1904, 1915, 1919, 1920 and 1930.

On November 26 (Thanksgiving Day), 1998, the City of Redding experienced a local magnitude 5.2 earthquake that was centered three miles north-northwest of Redding near Keswick Dam. This was the largest recorded earthquake since USGS began monitoring Shasta County in 1981 and believed to be the largest earthquake in the Redding area since 1878. No structural damage was reported in the City of Redding. Nonstructural damage that was reported consisted of broken merchandise, loss of power due to a damaged electrical panel, fire sprinkler breaks in a mechanical room and two operating rooms at Mercy Medical Center, and non-structural cracks at expansion joints in a highway overpass. Outside the city limits, four-million-gallon water tank in Bella Vista lifted about an inch off its foundation, resulting in bent anchor bolt washers; and a Pacific Gas & Electric (PG & E) transformer caught fire resulting in temporary power outage for 7500 customers. The only reported earthquake injury occurred in the City of Shasta Lake when a woman slipped and fell.

#### 4.2.3A – Probability of Future Occurrences, Earthquake

There can be advanced warning or no warning at all in the event of an earthquake. Earthquakes have occurred in Shasta County before, and they will again. Notable faults in the planning area are the Cleveland Hills and Sierra Nevada fault lines. According to the California Earthquake Authority, there is a 76% chance of an earthquake with a magnitude greater than 7.0 striking northern California over the next 30 years.

Given this estimate and the history of previous occurrences, the likelihood of an earthquake within the planning area is considered **'not likely'**.

### 4.2.4 – Vulnerability & Impact

The planning area, i.e., Shasta County, the City of Anderson, and the Igo Ono Community Services District, has recorded one (1) moderate earthquake since 1990. Information specific to that occurrence is provided in the table below:



Table 14: Historical Impacts, Earthquake

Historical Impacts, Earthquake	
<b>Summary Statistics</b>	
Count of Events	0
Average Magnitude	-
Average Range	-
Average Cost	\$0
Magnitude of Cost	\$0
Total Recorded Cost	\$0
Average Fatalities	0
Total Fatalities	0
Average Injuries	0
Total Injuries	0

Data Source: NOAA/NCEI

**Vulnerability of Facilities**

Structural vulnerability to earthquakes is the same throughout the planning area. Shaking accumulation can cause roofing to collapse on old or poorly constructed facilities. Liquefaction can destroy structures and ensuing landslides destroy everything in their path. Cascading disasters from ruptured gas lines can start fires increasing damage.

The City of Redding recently ran an earthquake scenario based on an expected peak ground acceleration (PGA) of 18% over Shasta County. Building Damage Ratios, or BDRs, were estimated at 6% for older structures located in the immediate downtown area of the city, and 3% for all other areas within the city. The BDR represents an estimate of the ratio, as a percentage, of the repair cost divided by the replacement cost. The higher damage ratio in the downtown area was chosen since these structures are typically older and less likely to have been constructed with any seismic code design provisions (i.e., pre-seismic code buildings). The total damage is estimated at \$198 million for the city as a whole, which is less than 1% of the damage estimates from the 1994 Northridge earthquake.

**Vulnerability of Population**

The entire population of Shasta County is equally vulnerable to the effects of an earthquake. These may include power failures, which can leave citizens, particularly the young and old, at risk from extreme temperatures, or restricted travel. Debris blocking roadways can leave people stranded on roadways and at the mercy of their vehicle’s fuel supply, increasing their vulnerability to the hazard.

**Vulnerability of Systems**

Shasta County and the participating jurisdictions’ assets and systems vulnerability to earthquakes is the same throughout the planning area. Critical systems can be damaged and rendered inoperable reducing available resources. Neighboring counties might face severe damage reducing available mutual aid.

*4.2.4A – Critical Facilities & Infrastructure*

All critical facilities and infrastructure are equally at risk since earthquakes can indiscriminately affect the entire planning area. A complete list of critical facilities and infrastructure can be found in Appendix D.



## SECTION 4: HAZARD RISK ASSESSMENT

### 4.2.4B – Land Use & Development Trends

Shasta County and its participating jurisdictions' predominant growth area is residential housing, as detailed in Section 3.2 – Land Use & Development Trends.

Increased residential growth will not increase Shasta County or its participating jurisdictions' vulnerability and risk to earthquakes as long as the residential structures continue to be built under currently adopted international and state building codes, and an appropriately accommodating power grid. Thus, all buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure constructed within the planning area.

It is important to note, however, that an earthquake's effect(s) can be compounded by the soil type underlying a community's buildings and infrastructure. If the soil is not composed of bedrock and consists of clays, silts, and other types of sand, the pressure generated by an earthquake can force brittle soil and water up toward the surface. These upward forced materials will then destabilize buildings and infrastructure, causing damage that can range from minor cracks to complete destruction. Smaller upward forced materials can destabilize slopes and building foundation further compounding the potential damage to a community.

The National Earthquake Hazards Reduction Program (NEHRP) rates soils from hard to soft and give the soils ratings from Type A through Type E, with the hardest soils being Type A, and the softest soils rated at Type E. Liquefaction risk is considered high if there are soft soils (Types D or E) present within an active fault zone. Most of the soils in Shasta County are Types A-C, with some areas having Type D. No Type E soils were identified, nor was consistent mapping of soil types. For these reasons, combined with a lack of liquefaction history, liquefaction was not addressed in a manner separate from earthquake. It should be considered in subsequent updates to the Shasta County HMP as better data becomes available.

### 4.2.4C – Unique or Varied Risk

To predict any unique or varied risk for the planning area, one would need a comprehensive earthquake study with accurate modeling. Such a study is beyond the resources of most communities, including Shasta County. Based on historical data, evacuation routes are put a risk from earthquakes along with the threat of cascading disasters. Fires are common after earthquakes and multiple hazards can overwhelm disaster response operations.

### 4.2.4D – Repetitive Loss Properties

Not applicable to the hazard.

### 4.2.5 – HAZUS Models

Not applicable to the hazard.