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
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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 1st 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[1]. 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.

[1] 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 is 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 liquification 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** of the 2020 Urban Water Management Plan.

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.

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 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 resrictions 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.

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), 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), 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.

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.

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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.