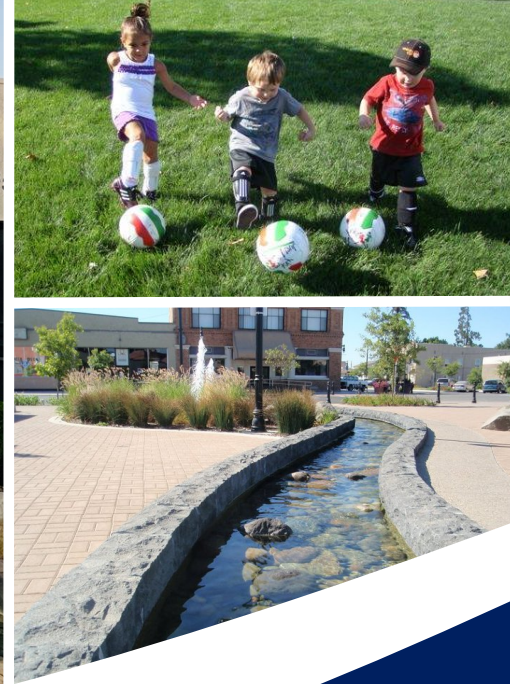




Water Shortage Contingency Plan



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Prepared for:
The City of Riverbank

Prepared by:
Kjeldsen, Sinnock & Neudeck, Inc.



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Water Shortage Contingency Plan

This section describes the City's water shortage contingency planning and structured steps to respond to a water shortage. A water shortage is triggered when the supply of available water is unable to meet the normally expected customer water use at any given point in time.

In accordance with the City of Riverbank's emergency response procedures, the City has developed a comprehensive Water Shortage Contingency Plan (WSCP) as contained in the 2020 Urban Water Management Plan (UWMP). The WSCP is consistent with the provisions of the City's emergency response procedures to implement during an interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster. A sample resolution to declare a water shortage emergency is included in Appendix I of the 2020 UWMP.

The WSCP address the several types of water supply shortages that could potentially impact the City and its customers. The potential impacts experienced may result from:

- Long-term supply shortages due to years of consecutive dry-year conditions, contamination, etc.
- Short-term supply shortages that are the result of natural or man-made disasters, such as earthquakes, flood, fire, or other emergencies, that would place restrictions on production capacities.

The City's WSCP has been updated so that it is consistent with 2018 California State Legislature enacted Senate Bill (SB) 606 (Hertzberg) and Assembly Bill (AB) 1668 (Friedman)). The 2018 water conservation legislation, set new requirements for WSCPs while establishing a new foundation for drought planning due to projected impacts of climate change. The City considers the WSCP as a dynamic tool that is adaptable to ensure that its shortage response actions are effective and will produce the desired results. As such, the WSCP refinement procedures and adoption requirements are provided in this plan to allow the City to modify the WSCP outside of the UWMP process.

1.1 WATER SUPPLY RELIABILITY ANALYSIS

Water supply and its reliability are evaluated in Chapter 6 and Chapter 7, respectively, in the 2020 UWMP. Analysis of the supply sources show that the City will have enough supply to meet increases in retailer water demand in both the short-term and long-term. The Water Supply Reliability Analysis includes both the water service reliability assessment and the DRA. Under a normal year, a single-dry year, and five consecutive dry year period conditions, a supplier must evaluate the long-term (2025-2040) water service reliability assessment. In the short-term (2021-2025), a supplier must evaluate the Drought Risk Assessment (DRA) to evaluate the effects of an impending five consecutive dry-year period.

The water source at Riverbank has been consistent in both source production levels and levels of water use. In the foreseeable future, there are no environmental or legal factors that are

expected to affect water supplies. Therefore, the City expects to meet demands under all water year scenarios while still promoting conservation. In the event of an unforeseen sudden emergency event, the City well production and/or water quality may be affected. Since the City relies exclusively on groundwater, a low probability, high impact issue—like the sudden presence of an unforeseen toxin—may require shuttering the main groundwater pumping system and activating the WSCP.

As stated in Section 7 of the 2020 UWMP, the City's water supply is very reliable through multiple dry years, and there is no expectation of a drop in water supply. Table 1 shows that the City anticipates for the water supply to meet the projected water demands at the very minimum. These demands are calculated as described in Section 4.1.

Table 1
Minimum Supply Next Five Years

	2021	2022	2023	2024	2025
Available Water Supply (AF)	4,469	4,513	4,557	4,601	4,646

1.2 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

Per Water Code Section 10632 (a)(2) and after the adoption of the 2020 UWMP, an Annual Water Supply and Demand Assessment (Annual Assessment) report will be submitted to DWR starting in 2022. It is an evaluation of the short-term outlook supplies and demands to determine whether the potential for a supply shortage exists and whether to trigger a WSCP shortage level.

The WSCP will include the elements required for the Annual Assessment and outlines how the City will conduct its Annual Assessment. Specific procedures will include:

- Decision-Making Process
- Data and Methodologies
 - Evaluation Criteria
 - Watery Supply
 - Current Year Unconstrained Customer Demand
 - Current Year Available Supply
 - Infrastructure Considerations
 - Other Factors

The Annual Assessment will reflect circumstances specific to the City per Water Code Section 10632(a).

1.2.1. DECISION-MAKING PROCESS

The decision-making process below details how the City will determine its water supply reliability in the Annual Assessment with the Public Works Director or their designee being responsible for the preparation of the Annual Assessment and submittal of the prepared report to the Department of Water Resources (DWR) by July 1 of each year. The Annual Assessment report should report the projected shortage level, the triggered shortage response actions,

compliance and enforcement actions and the resulting communication actions that will be implemented to mitigate the anticipated water shortage impacts outlined in the Annual Assessment.

Using methodology described in Section 1.2.3 the City will determine water demands and water supply to evaluate the water supply reliability for the current year and subsequent dry year.

Steps determining the decision-making process are outline in Table 2 below:

Table 2
Decision-Making Process and Activities

Step	Activity	Responsible Party
1	Muster team and develop timeline	Public Works Department
2	Outline the water supply for the current year and a subsequent dry-year. Detail significant changes that may impact supply factors. Describe the City sources of water and quantities available.	Public Works Department
3	Outline the water demands for the current year and subsequent dry-year. Detail significant changes that may impact demand factors. Describe the City type and projected quantity of City specific water end uses.	Public Works Department
4	Use methodology presented in Section 1.2.2 to evaluate the water supply, water demands, and ultimately water supply reliability for the current year and subsequent dry-year.	Public Works Department
5	Determine if water shortage emergency exists and which, if any, protocols to enact. If necessary, present determinations to City Council.	Public Works Department
6	Make determinations and recommendations based on previous analysis presented to declare a water shortage emergency and authorize a response.	City Council
7	Implement WSCP if emergency is declared and evaluate further for advancement to subsequent level or withdrawal to previous level	Public Works Department

1.2.2. KEY DATA INPUTS

Evaluation criteria will require key data inputs that reflect the water supply reliability condition for the current year and one dry-year. The criteria listed below can be used in any combination to make a determination and declare the severity of a supply shortage:

- Groundwater supply projections based on:
 - Monthly precipitation data
 - Monthly static and pumping groundwater elevations to the extent recorded
 - Construction details of operating municipal wells including pump settings, and screened intervals
 - Well specific capacity and well pumping rates
 - Pump curves, if available for operational municipal groundwater well pumps
 - The 2020 Urban Water Management Plan, Water Conservation Effort Reports, Regional Groundwater Sustainability Plans, and other relevant reports.
- Groundwater demand projections:
 - Monthly and annual total groundwater production data
 - Projected future pumping groundwater levels
 - The 2020 Urban Water Management Plan, Water Conservation Effort Reports, Regional Groundwater Sustainability Plans, and other relevant reports.
- Infrastructure capabilities and constraints imposed by a crisis
 - Production data
 - Staff input from the Public Works Division

1.2.3. ASSESSMENT METHODOLOGY

City staff will perform the assessment methodology to complete and submit the Annual Assessment to DWR. Evaluation of the Section 1.2.2 key inputs will be used to determine the agency's water supply reliability for the current year and subsequent single-dry year. Supply and demand assessments will be used to determine the reliability of the City's water supply. If the water supply is deemed insufficient to meet the expected demand supplied by the City in the current year and/or a subsequent dry year, a determination of the water shortage level will be made, and the City will implement a prepared response outlined in this WSCP.

1.3 SIX STANDARD WATER SHORTAGE STAGES

The 2018 Water Conservation Legislation mandates that water suppliers plan for six standard water shortage levels that correspond to six ranges of up to 10%, 20%, 30%, 40%, 50%, and greater than 50% shortages from the normal reliability conditions. However, WCS 10632(a)(3)(B) allows for already existing water shortage levels to be used provided that there is a crosswalk detailing the differences between the two. Table 3 of this WSCP details existing water shortage contingency plan levels with shortage response actions that the City would take when a shortage level is triggered.

Table 3
Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Reduction	Shortage Response Actions	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement?
1	15%	Other - Require automatic shut of hoses		Yes
1		Other - Customers must repair leaks, breaks, and malfunctions in a timely manner		Yes
2	25%	Other - Prohibit use of potable water for washing hard surfaces	Sidewalk/Street Cleaning	Yes
2	25%	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water		Yes
4	50%	Landscape - Other landscape restriction or prohibition		Yes
4	50%	Other - Prohibit use of potable water for washing hard surfaces		Yes
4	50%	Landscape - Limit landscape irrigation to specific times		Yes
4	50%	Landscape - Limit landscape irrigation to specific days		Yes
4	50%	Other	No new service connections	Yes

Table 3 (Continued)
Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Reduction	Shortage Response Actions	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
All Levels		Other	Use prohibitions; additional water conservation enforcement; voluntary rationing, mandatory rationing; reduction of water pressure in water lines where feasible; flow restrictions; installation of water kits, plumbing fixture replacements; restriction on building permits; and installation of pool covers	YES
All Levels		Other	Expansion of leak and repair programs	YES

Figure 1 details the already existing WSCP shortage levels authorized by WCS 10632(a)(3)(B) and presents a crosswalk that translates the City's water shortage levels to those mandated by statute.

2015 UWMP Stage	Supply Condition/Shortage			2020 WSCP Level	Shortage Level
Action Stage	Percent Supply Reduction	Water Supply Condition			
1 - Minimal	15%	- Below average rainfall in the previous 12-24 months 10% or more of City wells out of service due to noncompliance with drinking water standards or drop in static ground water levels - Irrigation allotments by local irrigation districts reduced by 15% - Extended warm weather patterns typical of summer	→	1	Up to 10%
2 - Moderate	25%	- Below average rainfall in the previous 24-36 months - Prolonged periods of low water pressure 10% or more of City wells out of service due to noncompliance with drinking water standards or drop in static ground water levels - Irrigation allotments by local irrigation districts reduced by 25% - Extended warm weather patterns typical of summer	→	2	Up to 20%
3 - Severe	35%	- Below average rainfall in the previous 36-48 months - Prolonged periods of low water pressure 10% or more of City wells out of service due to noncompliance with drinking water standards or drop in static ground water levels - Irrigation allotments by local irrigation districts reduced by 35% - Extended warm weather patterns typical of summer	→	3	Up to 30%
4 - Critical	50%	- Below average rainfall in the previous 48-60 months - Prolonged periods of low water pressure 10% or more of City wells out of service due to noncompliance with drinking water standards or drop in static ground water levels - Irrigation allotments by local irrigation districts reduced by 50% - Extended warm weather patterns typical of summer	↘	4	Up to 40%
			↘	5	Up to 50%
			↘	6	>50%

Figure 1
Water Shortage Contingency Plan Levels Crosswalk

1.4 SHORTAGE RESPONSE ACTIONS

Shortage response actions in accordance with California Water Code 10632(a)(4) and 10632.5(a) are described in this section and may be implemented or considered to the water shortage level. The City's response actions are dependent on the type of event triggering the water shortage level. Other factors considered in response will be the time of year, available water sources, and the condition of the water system infrastructure. A dynamic approach will be taken that considers a combination of supply augmentation, demand reduction, and any relevant operation changes to ensure that actions taken are effective in meeting the water use goals determined by the water shortage emergency.

Both the City's production wells and customer meters are fully metered and can provide daily readings to assess the effectiveness of the City's actions. Shortage action responses are discussed in this section.

1.4.1. DEMAND REDUCTION

Reduction in water use may be necessary during a water shortage. The plans to City will meet some of the emergency water shortage reliability challenges via demand reductions. Table 3 details these demand reductions actions and volume of reduction estimated to occur.

**Table 4 (2020 UWMP DWR Table 8-2)
Demand Reduction Actions**

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
<i>Add additional rows as needed</i>				
1	Improve Customer Billing	5%	AWE (2015)	No
1	Expand Public Information Campaign	2%	AWE (2015)	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	Unknown		No
3	Increase Water Waste Patrols	Unknown		No
3	Landscape - Restrict or prohibit runoff from landscape irrigation	Unknown		Yes
4	Other	1%	Assume no growth in water use	Yes
5	Landscape - Prohibit all landscape irrigation	14%	Landscape types include: - Turf water - Median watering - Further reduction of irrigation to parks AWE (2015)	Yes
6	Other	Unknown	Water use limited to public water use to health and safety purposes	Yes
NOTES: Demand reduction action and water restrictions as seen in § 52.34 of city code. Demand reduction estimations were taken from the compiled best available estimates of water savings in the Alliance for Water Efficiency Outdoor Water Savings Research Initiative (AWE 2015). Estimated reductions were then applied to residential end uses of water within the City of Riverbank. A drought, water shortage, or waste of water may require the city to implement regulations as expeditiously as such findings occur. The City Council by resolution shall establish water conservation regulations to address such findings, which may include but are not limited to water conservation regulations that are mandated by the state or federal government.				

1.4.2. SUPPLY AUGMENTATION

The City's current (2020) and projected water supplies are provided in Chapter 6 of the 2020 UWMP. As mentioned previously, the City relies exclusively on groundwater for their water supply. The City does not anticipate using a wholesale supply source to meet future needs. The projected water supplies are based on the total water use defined in Chapter 4 of the 2020 UWMP.

The City has no future groundwater extraction projects planned at this time but has identified recommended phasing of capital facilities in its water supply master plan. The 2016 Supply Reliability Certification analysis and 2021 Risk Assessment Summary Report suggests that existing water supplies are more than adequate to satisfy existing system demands. Future water supplies will be brought on as necessary to satisfy specific development needs as discussed below. Therefore, Table 5 or DWR Table 8-3 detailing supply augmentation and other actions details low-probability, high-impact events for supply augmentation. A future evaluation and adoption of the WSCP may conclude that expansion of groundwater extractions may be necessary to augment supply.

**Table 5 (2020 UWMP DWR Table 8-3)
Supply Augmentation and Other Actions**

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>
6	Stored Emergency Supply	6	City of Riverbank has two water storage tanks totaling 2 million gallons of system storage
6	Other Actions (describe)	Unknown	Procurement of bottled water
6	Other Actions (describe)	Unknown	Canals containing non-portable water traverse the community. Local trucking firms can transport water along with the City's fire tanker trucks. Residents would need to boil or disinfect non-potable water.
4-6	Other Purchases	Unknown	The City will keep communication open with adjacent communities, Modesto Irrigation District, and Oakdale Irrigation District to deliver additional water, if needed.

In a low-probability, high-impact event, the City of Riverbank has two water storage tanks totaling 2 million gallons of system storage. Each of the storage tanks is equipped with a booster pumping station with backup power. These tanks will supply water for essential needs in the case of short-term emergencies. The City has chlorination pumps at each well site that may be put into operation when needed. Seven of the City's wells have diesel engine electric generators with enough fuel to run 12 to 24 hours without refueling.

The City can contact bottled water companies in cases of emergencies. Canals containing non-portable water traverse the community. Local trucking firms can transport water along with the City's fire tanker trucks. Residents would need to boil or disinfect non-potable water.

To meet future long-term water demand beyond 2020, the City will continue working on the possibility of bringing in surface water to supplement groundwater. Recycled water opportunities will also be studied further. To offset future potential water shortages due to a drought or disaster, the City will keep communication open with adjacent communities, Modesto Irrigation District, and Oakdale Irrigation District to deliver additional water, if needed.

1.4.3. OPERATIONAL CHANGES

The City may modify its operational actions in the short-term or long-term to effectively respond to any water shortage condition. During a water shortage emergency, the city may reduce pressure in the water distribution system to minimize system losses while still maintaining adequate fire flows. In addition, the city may increase its response to the repair of system leaks and losses in the water distribution system.

1.4.4. ADDITIONAL MANDATORY RESTRICTIONS

Water Use Regulations of Chapter 52 of city water code detail elements of water use restrictions. Specifically, §52.33 and §52.34 detail prohibited acts and restricted water use provisions. For example, the washing of commercial and noncommercial privately owned automobiles, trucks, trailers, motor homes, boats, buses, and other types of vehicles is restricted to the use of a hand-held bucket and quick rinses using a hose with a quick-acting positive shut-off nozzle.

1.4.5. EMERGENCY RESPONSE PLAN

Section 1.4.2 details response actions to augment supplies in a low-probability, high impact event. A sample resolution to declare a water shortage emergency is included in Appendix J.

Reporting escalates with advanced stages of water shortages. During water emergency shortages, production figures would be reported to the Domestic Water Supervisor hourly, and to the Development Services Director and City Manager daily. Reports would also be provided to the City Council and the Public Safety Department. If reduction goals are not met, the City Council would be notified so that additional action may be taken (water shortage emergency).

Below is an example of actions the City would undertake if a catastrophe were imminent or declared.

1. Determine extent of water shortage
2. Activate the water shortage response team

3. Monitor existing storage
4. Obtain additional water supplies
5. Develop alternative water supplies
6. Determine where immediate funding will come from
7. Contact and coordinate with other agencies
8. Put employees and contractors on-call
9. Communicate with the public

1.4.6. SEISMIC RISK ASSESSMENT AND MITIGATION PLAN

Disasters can strike any time and cause loss of life; damage buildings and infrastructure; and have devastating consequences for a community's economic, social, and environmental well-being. Per Water Code Section 10632.5, the City has included a seismic risk assessment and mitigation plan Refer to the Stanislaus County Local Hazard Mitigation Plan (Appendix O of 2020 UWMP) Section 5 for the Seismic Risk Assessment and Section 6 for Mitigation Plan procedures.

1.5 COMMUNICATION PROTOCOLS

The City must inform their customers, the general public and interested parties, and local, regional, and state agencies. With any emergency, clear, timely, and effective communication is vital. In accordance with California Water Code 10632(a)(5), this section describes the communication protocols the City will use to inform customers, the public and other regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.

When a water shortage level is enacted or changed the public shall be notified via a notice published in the local newspaper and the City's website. If the water shortage is severe, the City may consider alternative modes of communications like local radio advertisements, door hangers, or mailed notifications among other options.

1.6 COMPLIANCE AND ENFORCEMENT

Any customer violating the regulations and restrictions on water use set forth in the City's no waste ordinance shall receive a warning for the first such violation. Upon a second violation, the customer shall receive a fine of \$35. A third violation triggers the levy of a \$50 fine. A fourth violation triggers a \$100 fine, and fifth and subsequent violations trigger a \$200 fine each.

1.7 LEGAL AUTHORITIES

Per city code §52.34, it is unlawful for any customer or person to fail to comply with any of the provisions set forth or by City Council resolution. The Enforcement Officer or designee may issue an administrative citation for failure to comply. T Enforcement Officer is defined in City code as the City Manager, Department Director, Public Safety Officer, or any designated city

personnel or other designated person that the City Manager or City Council has authorized and charged with the responsibility for the enforcement of any provision of this chapter.

At the discretion of the Enforcement Officer with the approval of the City Manager, an issued administrative citation for noncompliance of this section may be reduced to a formal written warning and the related citation fines waived or the citation may be cancelled after review of the findings. All results of a citation issued shall be entered into the record. Any further violation of the water conservation regulations provided in this section or adopted pursuant to this section shall result in the imposition of an administrative citation and its related penalties as set forth herein.

In accordance with Water Code Chapter 3 (commencing with Section 350) of Division 1 general provision regarding water shortage emergencies, the City shall declare a water shortage emergency when emergency conditions are met and shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558).

1.8 FINANCIAL CONSEQUENCES OF WSCP ACTIVATION

Water rates need to be set up to enable water suppliers to cover the costs in pumping, storing, treating, and delivering water. Revenues need to be collected to build reserves for future water system repairs, maintenance, and replacement. Water shortages increase costs to the water supplier by increasing expenses for public educational campaigns, stricter conservation efforts, and facility development. Likewise, water shortages impact the operations cash flow as water use falls. Other costs for repairs, maintenance, and replacement are fixed. Refer to the City 2015 Water Rate Study for an analysis of rates during a drought scenario. Water shortage pricing is not considered feasible due to Proposition 218 requirements.

1.9 MONITORING AND REPORTING

Monitoring and Reporting escalates with advanced stages of water shortages. During water emergency shortages, production figures would be reported to the Domestic Water Supervisor hourly, and to the Development Services Director and City Manager daily. Reports would also be provided to the City Council and the Public Safety Department. If reduction goals are not met, the City Council would be notified so that additional action may be taken (water shortage emergency).

Monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance is enhanced through the City's advanced metering infrastructure (AMI) of customer connections and metering on production wells. Per City code related to outdoor water use (§ 52.34(C)), a drought, water shortage, or waste of water may require the city to implement regulations as expeditiously as such findings occur. The City Council by resolution shall establish water conservation regulations to address such findings, which may include but are not limited to water conservation regulations that are mandated by the state or federal government.

1.10 WSCP REFINEMENT PROCEDURES

The City's WSCP is an adaptable document and subject to any needed changes to ensure that the City's water shortage response and mitigation plan are effective. A continual adaptation process is necessary to respond to hazards posed by water shortages.

If certain procedural refinements or new actions are identified by City staff, or suggested by customers or other interested parties, the Director of Public works will consider the actions or refinements to evaluate their effectiveness, incorporate them into the WSCP, and implement them quickly at the appropriate water shortage level.

1.11 SPECIAL WATER FEATURE DISTINCTION

A distinguished special water feature would include a decorative fountain or pond, separately from pools or spas. At the time of this plan, City water use regulations make no distinction for the special water features.

1.12 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

The WSCP will be adopted concurrently with the UWMP, by separate resolution. Before the adoption, a notice of preparation was sent to San Joaquin County and Stanislaus County. In addition, a notification of the public was completed and a public hearing took place.

Within 30 days, a copy of both the WSCP and UWMP will be available at the City office and a copy will also be provided to the San Joaquin County and Stanislaus County. An electronic copy of the WSCP will be submitted to DWR within 30 days of the adoption and made available on the City website.