



Water Shortage Contingency Plan 2023 Update

City of Brisbane, Guadalupe Valley Municipal Improvement District

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ABBREVIATIONS

BAWSCA	Bay Area Water Supply and Conservation Agency
CA	California
CII	Commercial, Industrial, and Institutional
CWC	California Water Code
DRT	Drought Response Tool
EOP	Emergency Operations Plan
ERP	Emergency Response Plan
FY	fiscal year
GPCD	gallons per capita per day
GVMID	Guadalupe Valley Municipal Improvement District
MG	million gallons
MGD	million gallons per day
MGY	million gallons per year
MOU	Memorandum of Understanding
R-GPCD	residential gallons per capita per day
RWS	Regional Water System
SFPUC	San Francisco Public Utilities Commission
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
WSA	Water Supply Agreements
WSAP	Water Shortage Allocation Plan
WSCP	Water Shortage Contingency Plan



1. DECLARATION OF POLICY, PURPOSE, AND INTENT

CWC § 10609.60

(a) No later than July 1, 2023, and updated every five years thereafter, a small water supplier serving 1,000 to 2,999 service connections, inclusive, and a nontransient noncommunity water system that is a school shall each develop and maintain, onsite, an abridged Water Shortage Contingency Plan (WSCP) that includes, at a minimum, all of the following drought-planning elements:

(1) Drought-planning contacts, including all of the following:

(A) At least one contact at the water system for water shortage planning and response and the development of the plan.

(B) Contacts for local public safety partners and potential vendors that can provide repairs or alternative water sources, including, but not limited to, local community-based organizations that work with the population in and around areas served by the water system, contractors for drilling wells, vended water suppliers, and emergency shower vendors.

(C) State and local agency contacts who should be informed when a drought or water shortage emergency is emerging or has occurred.

(D) Regional water planning groups or mutual aid networks, to the extent they exist.

(2) Triggering mechanisms and levels for action, including both of the following:

(A) Standard water shortage levels corresponding to progressive ranges based on the water supply conditions. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, a fire, and other potential emergency events.

(B) Water shortage mitigation, response, customer communications, enforcement, and relief actions that align with the water shortage levels required by subparagraph (A).

The City of Brisbane / Guadalupe Valley Municipal Improvement District (City/GVMID, also referred to herein as “the City”) has developed a Water Shortage Contingency Plan (WSCP) to provide a flexible framework of planned response measures to mitigate future water supply shortages. This WSCP builds upon and supersedes the WSCP that was adopted in 2014 to meet the requirements of California Water Code (CWC) §10609.60. Updates to the current WSCP reflect key lessons learned during the recent drought to improve the City’s ability to respond effectively and efficiently in the event of a future water shortage.

The City developed this WSCP based on the following guiding principle:

Eliminate water waste and prioritize reducing non-essential water uses, concentrating on the reduction of non-essential water uses such as landscape irrigation and other discretionary outdoor water use and giving the highest priority to preserving water uses that are essential to the health, safety, welfare, and economic vitality of the City’s customers.

Practically, this principle guides the City to ask for a need-based, shared contribution from all its customers towards meeting water use reduction goals during periods of water shortage. It further directs the City to focus its water conservation efforts on reducing discretionary water uses such as outdoor irrigation, while



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attempting to preserve uses that are essential to health and safety such as drinking, cooking, and sanitary activities and minimizing economic and other impacts to its residential and commercial customers.

The City has developed this WSCP to address water shortage conditions resulting from any cause (e.g., droughts, impacted distribution system infrastructure, regulatory-imposed shortage restrictions, etc.). The WSCP identifies a variety of actions that the City will implement to reduce demands and further ensure supply reliability at various levels of water shortage.



2. WATER USE AND SUPPLIES

The City/GVMID collectively serve approximately 2,000 accounts and deliver 0.61 million gallons per day (MGD) of water¹. The City relies on the San Francisco Public Utilities Commission (SFPUC) Regional Water System (RWS) for all of its water supply. SFPUC RWS water is delivered to the City/GVMID through five turnouts off the Crystal Springs #1 and #2 Pipelines. The City/GVMID are operated as a combined distribution system comprised of ten pressure zones. In accordance with the SFPUC's perpetual obligation to the City and GVMID's Supply Assurance, the City and GVMID have a combined contractual allocation, or Supply Assurance, of 0.98 MGD (358 million gallons per year [MGY]), as documented in the 2009 Water Supply Agreement (WSA) with the City and County of San Francisco. The water system profile and water use characteristics are provided in **Appendix A**.

2.1 Current Water Use Characteristics

The City has among the lowest residential per capita water use of the Bay Area Water Supply and Conservation Agency (BAWSCA) member agencies and the State of California (State), and water use in the City has decreased over the last five years, primarily because of conservation during recent droughts (further described in **Appendix B**). The City's low water use makes additional dry year cutbacks difficult to achieve without incurring significant impact at most cutback levels. The City's pre-drought (FY 2019-20) baseline residential per capita water use is 44 gallons per capita per day (GPCD). By comparison, the average residential per capita water use for the BAWSCA region is 63.4 GPCD (BAWSCA, 2021). However, customer water use in the City does demonstrate seasonal variation, and approximately 45%² of the City's overall water use is for outdoor use, primarily attributable to irrigation. Thus, it would appear that significant savings can be achieved by limiting outdoor irrigation, without significant impacts to the City's already efficient residential and commercial indoor water use.

2.2 Water Supply Reliability

The City/GVMID's supply reliability relies largely on the reliability of the SFPUC RWS. The SFPUC has committed to, among other things, meeting the retail and Wholesale Customers' average annual water demand during non-drought years and meeting dry-year delivery needs while limiting rationing to a maximum 20% system-wide reduction in water service during extended droughts. However, several potential constraints have been identified on the future supply availability of the SFPUC RWS. One of the key constraints is the adoption of the 2018 Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment). If the Bay-Delta Plan Amendment is implemented, the SFPUC is anticipated to have sufficient supplies to meet the projected water demands in normal years but would experience significant supply shortages in single dry years or multiple dry years.

¹ Based on fiscal year (FY) 2020-21 deliveries (BAWSCA, 2023).

² The outdoor water use proportion was estimated by the Drought Response Tool, and additional details are included in **Appendix C**. The 45% estimate was established by assuming that the lowest water use month in each sector represents indoor water use only, and that the indoor water use remains consistent throughout the year. The remaining water use is allocated to outdoor water use.

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Based on the current allocation methodology³, the City's current demand projections⁴, and SFPUC's projected dry year cutbacks, the City is anticipated to experience up to a 145 million gallon (MG) (46%) supply shortfall in single dry years by 2045 and up to 171 MG (54%) supply shortfall in multiple dry years by 2045 if the Bay-Delta Plan Amendment is implemented.

However, numerous uncertainties remain in the implementation of the Bay-Delta Plan Amendment and the allocation of the available supply between the Wholesale Customers of the SFPUC's RWS. Among these uncertainties are the ongoing Voluntary Agreement negotiations between SFPUC, the California State Water Resources Control Board (SWRCB), and other stakeholders and a Memorandum of Understanding (MOU) between SFPUC, Governor Newsom's senior water policy officials, and the Modesto and Turlock Irrigation Districts, signed in November 2022. This MOU includes, among other things, protection of water supplies for RWS customers and a commitment by the parties for new flows in the Tuolumne River. Regardless of the recent progress made through the November 2022 MOU, a Voluntary Agreement has yet to be approved by the SWRCB as an alternative to the Bay-Delta Plan Amendment, and shortages and supply cutback values associated with this alternative are unknown. The resultant supply reliability and the frequency of supply shortfalls for the City cannot be known currently.

Considering the uncertainties on RWS reliability, the City has placed high priority on working with SFPUC and BAWSCA to better refine the estimates of RWS supply reliability. The SFPUC and BAWSCA have also been taking various actions to improve the reliability of the RWS supply, including implementing a number of dry year water supply projects, exploring alternative water supplies, and implementing Long-Term Reliable Water Supply Strategy recommendations.

³ The SFPUC and the Wholesale Customers have negotiated and adopted a plan to allocate the RWS supply during system-wide shortages of 20% or less. To address the instances where the supply shortfalls are projected to be greater than 20%, BAWSCA has developed a revised methodology to allocate the RWS supply. This allocation method is intended to serve as the preliminary basis for the 2020 Urban Water Management Plan (UWMP) supply reliability analysis and does not in any way imply an agreement by BAWSCA member agencies as to the exact allocation methodology.

⁴ Projected demands for the City are per City of Brisbane, 2022, DSS Model for the City of Brisbane, prepared by Maddaus Water Management, updated by the City of Brisbane August 2022. The DSS Model was updated to use 2017 as starting year for projections because 2017 is more representative of the City's current water use trends. Per the DSS Model, projected demands for the City are 290 MGy in 2045.



3. AUTHORIZATION

The City / GVMID WSCP is adopted by City Resolution No. 2023- [redacted], and GVMID Resolution No. 2023- [redacted], resolutions of the City Council and GVMID Board adopting a Water Shortage Contingency Plan.

The City’s Public Works Director/City Engineer or his designee (referred to herein as “the Director”) is authorized to implement the applicable provisions of the WSCP upon determination that such implementation is necessary to protect public health, safety, and welfare. The Director has the authority to initiate or terminate drought or other water supply emergency response measures as described in the WSCP.

The Shortage Level will become effective after the Director declares a particular Shortage Level and has published notice of this determination. Once effective, the provisions of a water Shortage Level will stay in effect until (1) a different Shortage Level is declared; or (2) the Public Works Director/City Engineer determines that the water shortage condition no longer exists and the City has published notice of this determination.

The contact information for the Director is provided below:

City of Brisbane
Public Works Director/City Engineer
50 Park Place
Brisbane, CA 94005
(415) 508-2130
cityengineer@brisbaneca.org



4. APPLICATION

The provisions of the WSCP shall apply to all persons, customers, and property utilizing water provided by the City. The terms “person” and “customer” as used in the WSCP may include individuals, corporations, partnerships, associations, and all other legal entities.



5. SHORTAGE LEVELS AND RESPONSE ACTIONS

CWC § 10609.60 (a) (2)

Triggering mechanisms and levels for action, including both of the following:

(A) Standard water shortage levels corresponding to progressive ranges based on the water supply conditions. Water shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, a fire, and other potential emergency events.

(B) Water shortage mitigation, response, customer communications, enforcement, and relief actions that align with the water shortage levels required by subparagraph (A).

Consistent with the requirements of CWC §10609(a)(2), this WSCP is based on the six Shortage Levels shown in Table 5-1. These Shortage Levels are intended to address shortages caused by any condition, including the catastrophic interruption of water supplies. Table 5-1 summarizes the water supply reductions and supply conditions associated with each Shortage Level.

5.1 Shortage Levels

Table 5-3 describes the customer restrictions and prohibitions and consumption reduction methods (i.e., the actions to be taken by City staff) associated with each Shortage Level. Specific prohibitions and consumption reduction methods are discussed in more detail below. The monthly and cumulative annual water savings impacts associated with each restriction, prohibition, and consumption reduction method were quantitatively estimated using the Drought Response Tool (DRT) for each Shortage Level (see **Appendix C**).



Table 5-1 Water Shortage Contingency Plan Levels

Shortage Level	Estimated Water Shortage Range (a)	Trigger	Response Action
No Drought	N/A	N/A	Includes water waste prohibitions effective at all times as specified in Chapter 8.40 of the Brisbane Municipal Code.
1	Up to 10%	Declaration by the Public Works Director/City Engineer upon the determination that (1) the SFPUC or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use of up to 10% due to water supply shortages or an emergency or (2) local conditions impacting the quantity or quality of City's water supply warrant the need for a reduction in water use of up to 10%.	Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 5-3).
2	Up to 20%	Declaration by the Public Works Director/City Engineer upon the determination that (1) the SFPUC or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use of up to 20% due to water supply shortages or an emergency or (2) local conditions impacting the quantity or quality of City's water supply warrant the need for a reduction in water use of up to 20%.	Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 5-3).



Shortage Level	Estimated Water Shortage Range (a)	Trigger	Response Action
3	Up to 30%	Declaration by the Public Works Director/City Engineer upon the determination that (1) the SFPUC or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use of up to 30% due to water supply shortages or an emergency or (2) local conditions impacting the quantity or quality of City's water supply warrant the need for a reduction in water use of up to 30%.	Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 5-3).
4	Up to 40%	Declaration by the Public Works Director/City Engineer upon the determination that (1) the SFPUC or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use of up to 40% due to water supply shortages or an emergency or (2) local conditions impacting the quantity or quality of City's water supply warrant the need for a reduction in water use of up to 40%.	Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 5-3).



Shortage Level	Estimated Water Shortage Range (a)	Trigger	Response Action
5	Up to 50%	Declaration by the Public Works Director/City Engineer upon the determination that (1) the SFPUC or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use of up to 50% due to water supply shortages or an emergency or (2) local conditions impacting the quantity or quality of City's water supply warrant the need for a reduction in water use of up to 50%.	Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 5-3).
6	>50%	Declaration by the Public Works Director/City Engineer upon the determination that (1) the SFPUC or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use of greater than 50% due to water supply shortages or an emergency or (2) local conditions impacting the quantity or quality of City's water supply warrant the need for a reduction in water use of greater than 50%.	Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 5-3).



5.2 Shortage Response Actions

This section describes the response actions the City will take to deal with the shortages associated with each of the six Shortage Levels. Shortage response actions for each Shortage Level are enumerated in Table 5-3.

5.2.1 Supply Augmentation

The City relies on the SFPUC RWS for its potable supplies. There are currently no supply augmentation actions planned in the City's shortage response actions. However, potential transfer and exchange opportunities exist within and outside of the SFPUC RWS.

The Water Shortage Allocation Plan (WSAP) adopted by all BAWSCA agencies and the SFPUC provides the basis for voluntary transfers of water among BAWSCA agencies during periods when mandatory rationing is in effect on the SFPUC RWS. Some BAWSCA agencies have the capacity to rely on groundwater or other sources during dry years and thus may be willing to transfer a portion of their wholesale water entitlement to other BAWSCA agencies in need of supply above their allocations. Securing water from willing sellers outside the SFPUC RWS is a more complex process than transfers within the RWS, which requires both a contract with the seller agency and approval by the SFPUC. BAWSCA has the authority to plan for and acquire supplemental water supplies and continues to evaluate the feasibility of water transfers as part of its implementation of its Long-Term Reliable Water Supply Strategy.

5.2.2 Demand Reduction Methods

As discussed above, Table 5-3 lists the demand reduction methods that the City will implement during each Shortage Level to reduce the City's own water consumption and encourage reduction in water use by its customers. The monthly and cumulative annual water saving impacts associated with each restriction, prohibition, and consumption reduction method were quantitatively estimated using the DRT for each Shortage Level (see **Appendix C**).

A focus of the City's planned consumption reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. The public outreach efforts that the City will implement to respond to a water shortage are described in Section 8.

5.2.3 Operational Changes

Table 5-3 lists the operational changes that the City will implement during each Shortage Level including measures to: (1) reduce system losses through a reduction in flushing of water distribution mains, (2) increase enforcement and customer service, and (3) implement the demand reduction methods.

5.2.4 Prohibitions on End Uses

Chapter 8.40 of the City's Municipal Code describes the following prohibited uses of water under all hydrologic conditions:



- Excessive irrigation of landscaping, defined as the irrigation of landscaping that allows water to accumulate on the surface and overflow into adjacent gutters, storm drains, driveways, sidewalks, streets, or other non-landscaped areas for a period of four or more consecutive hours.
- Excessive watering of impervious surfaces, defined as watering so that water falls directly onto impervious surfaces to the extent that running water leaves the property and flows into adjacent gutters, storm drains, driveways, sidewalks, streets, or other conveyance for a period of four or more consecutive hours.
- Failure to repair a water leak, defined as the leakage of water from any broken or defective plumbing, sprinklers, watering, or irrigation system for a period of forty-eight (48) hours, during which the leak should reasonably have been discovered and corrected.

On 24 May 2022, the SWRCB adopted an emergency water conservation regulation prohibiting the irrigation of “non-functional turf” in the commercial, industrial, and institutional (CII) sectors, which includes all ornamental turf except turf regularly used for human recreational purposes or civic/community events. This regulation took effect on 10 June 2022 and its expiration date was extended to June 4, 2024 by order of the Office of Administrative Law on 6/5/23 (refer to OAL Matter Number 2023-0526-01).

Restrictions and prohibitions associated with each Shortage Level are presented in Table 5-3. Consistent with the guiding principle for the WSCP, these responses focus on the reduction of non-essential water uses such as ornamental landscape irrigation, and preserve water uses that are vital to the health, safety, welfare, and economic vitality of the City’s customers. Lower Shortage Levels of the WSCP focus on guiding customer actions through prohibitions on end uses, while subsequent Shortage Levels of the WSCP include increasingly restrictive prohibitions and conformance with water allocations that will be assigned to each customer account.

The City anticipates assigning water allocations to each customer account during higher WSCP Shortage Levels (i.e., Shortage Levels 5 through 6). Table 5-2 further describes how the cutbacks will be distributed between water use sectors and end uses to collectively achieve the targeted water savings associated with each Shortage Level. The measures and prohibitions described for each Shortage Level in Table 5-3 are designed to assist customers in meeting their target reductions and water budgets.

As discussed in Section 2.1 above, the City serves water to residential, commercial, and dedicated irrigation customers. The City has among the lowest residential per capita water use in the State. Therefore, achieving the targeted demand reductions in Shortage Levels 5 and 6 would significantly impact the essential water use of the City’s residential and CII customers. The levels of rationing suggested in Table 5-3 for Shortage Levels 5 and 6 are intended to be implemented only during a short-term emergency such as a critical interruption lasting less than a week. The City will prioritize furnishing water transfers or alternative supplies in the event of a prolonged shortage condition and consult with its customers to identify alternative water saving actions.



Table 5-2 Potential Water Allocations by Customer Sector

Customer Category	Potential Water Allocations					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Residential Allocation	--	--	-	-	25 GPCD	25 GPCD
Commercial Customer	--	--	-	-	55%	55%
Irrigation Customer	--	--	-	-	25%	0%
Notes: (a) Water allocations for commercial and irrigation customers are presented as the percentage of water use allocated to each customer compared to the customer's water use during the most recent non-drought year.						



Table 5-3 Shortage Actions

Shortage Level	Agency Actions	Shortage Response Actions	Saving Estimate
1	<ul style="list-style-type: none"> • City may implement social media campaigns, newspaper articles, and the City website to promote drought conservation. • City may host water efficiency workshops or other public events. • Enforce the water waste ordinance to the maximum extent. (a) • Coordinate with BAWSCA and the SFPUC. (a) • Convert to more frequent meter reading for high water users. (a) 	<ol style="list-style-type: none"> 1. Stop washing down paved surfaces, including but not limited to, sidewalks, driveways, parking lots, tennis courts or patios, except when necessary to address an immediate health, safety, or sanitation need. 2. Stop the application of potable water to outdoor landscapes in a manner that causes excessive runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or other hardscapes and structures. 3. Do not irrigate residential and commercial landscapes between the hours of 9:00 a.m. and 6:00 p.m. or during rain events. 4. Use a hand-held hose equipped with an automatic shut-off nozzle or bucket to water landscaped areas that are not irrigated by a landscape irrigation system. (a) 5. Irrigate nursery and commercial growers' products before 10:00 a.m. and after 6:00 p.m. Watering is permitted at any time with a hand-held hose equipped with an automatic shut-off nozzle, a bucket, or a drip/micro-irrigation system. Irrigation of nursery propagation beds is permitted at any time. Watering of livestock is permitted at any time. (a) 6. Use only re-circulated or recycled water to operate ornamental fountains. 7. Wash vehicles using a bucket, a hand-held hose with an automatic shut-off nozzle, a mobile high pressure/low volume wash system, or at a commercial site that re-circulates (i.e., reclaims) water on-site. 8. Serve and refill water in restaurants and other food service establishments only upon request. 9. Offer guests in hotels, motels, and other commercial lodging establishments the option of not laundering towels and linens daily. 10. Potable water shall not be used for street washing. 11. Potable water shall not be used to irrigate ornamental turf on public street medians. 12. Require repair of leaks, breaks, or malfunctions in lines, fixtures, or facilities within 1 day. 13. Use recycled water for construction purposes, if available. (a) 14. No new, non-residential water meters may be issued unless the Director determines that such issuance will not impede the City's compliance with the required water use reductions. (a) 	6%



Shortage Level	Agency Actions	Shortage Response Actions	Saving Estimate
2	<ul style="list-style-type: none"> • Continue with actions and measures from Shortage Level 1 except where superseded by more stringent requirements. • Conduct inspection of the system and accelerate repairs to reduce water loss. • Decrease frequency and length of line flushing. • Conduct in-house training so City staff are prepared to respond to customer calls, reports and complaints, and to support enforcement actions. (a) • Inform local fire department of water supply status and request cooperation in reducing fire training exercises that use water. (a) 	<ol style="list-style-type: none"> 1. Continue with Shortage Level 1 restrictions and prohibitions except where superseded by more stringent requirements. 2. Limit irrigation to no more than three (3) days per week. Does not apply to commercial growers or nurseries. 3. Prohibit filling or re-filling ornamental of lakes or ponds except (1) as needed to sustain aquatic life (2) with or using recycled water, if available. 4. Prohibit use of potable water for construction and dust control. 5. Require pre-rinse spray valves for commercial kitchens. 6. Prohibit single-pass cooling systems. 7. Prohibit vehicle washing except at facilities using recycled or recirculating water. 	16%



Shortage Level	Agency Actions	Shortage Response Actions	Saving Estimate
3	<ul style="list-style-type: none"> • Continue with actions and measures from Shortage Level 2 except where superseded by more stringent requirements. • Continue with media campaigns and other outreach events to enforce water conservation. • Inform local fire department of water supply status and request elimination of fire training exercises that use water. (a) • Suspend issuance of new potable water service, new temporary meters or permanent meters, and statements of immediate ability to serve except under the following circumstances: (a) <ul style="list-style-type: none"> ○ A valid, unexpired building permit has been issued; ○ The project to protect the public health and safety; ○ Enforceable commitment of water demand offset; or ○ Continuation or restore service interrupted < 1 year. 	<ol style="list-style-type: none"> 1. Continue with Shortage Level 2 restrictions and prohibitions except where superseded by more stringent requirements. 2. Prohibit outdoor watering with potable water more than 10 minutes per day and 1 day per week. Does not apply to commercial growers or nurseries. 	28%



Shortage Level	Agency Actions	Shortage Response Actions	Saving Estimate
4	<ul style="list-style-type: none"> • Continue with actions and measures from Shortage Level 3 except where superseded by more stringent requirements. • Implement drought rate structure / water budgets. • Conduct surveys targeting high water users with CII, irrigation, and residential accounts. 	<ol style="list-style-type: none"> 1. Continue with Shortage Level 3 restrictions and prohibitions except where superseded by more stringent requirements. 2. Prohibit landscape irrigation with potable water, except crops and landscape products of commercial growers and nurseries. This restriction shall not apply to the following categories of use unless the Director has determined that recycled water is available and may be lawfully applied to the use. <ul style="list-style-type: none"> ○ Maintenance of trees and shrubs located on residential and commercial properties, no more than one (1) time per week by using a bucket, hand-held hose with an automatic shut-off nozzle, or low-volume non-spray irrigation on a schedule established by the Director and posted on the City's website; ○ Maintenance of existing landscaping necessary for fire protection as specified by the Fire Marshal of the local fire protection agency having jurisdiction over the property to be irrigated; ○ Maintenance of existing landscaping for erosion control; ○ Maintenance of landscaping within active public parks and playing fields, daycare centers, and school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week according to the schedule established by the Director and posted on the City's website; ○ Watering of livestock; and ○ Public works projects and actively irrigated environmental mitigation projects. 	39%
5	<ul style="list-style-type: none"> • Continue with actions and measures from Shortage Level 4 except where superseded by more stringent requirements. • Increase enforcement and water waste patrols. • Reduce distribution system pressures. • Develop allotments for all accounts and notice those accounts appropriately. 	<ol style="list-style-type: none"> 1. Continue with Shortage Level 4 restrictions and prohibitions except where superseded by more stringent requirements. 2. All dedicated irrigation customers shall reach a water reduction of 75% from the water use of the most recent non-drought year. 3. All residential and CII customers shall reach a water reduction of 45% from the water use of the most recent non-drought year. The estimated allotment for residential customers is 25 GPCD. <ul style="list-style-type: none"> ○ New residential customers will receive an allotment based on the residential demand of 25 GPCD and person per household (and number of units for multi-family residence). 	44%



Shortage Level	Agency Actions	Shortage Response Actions	Saving Estimate
6	<ul style="list-style-type: none"> Continue with actions and measures from Shortage Level 5 except where superseded by more stringent requirements. Increase staff enforcement to ensure customers comply with the assigned water budget. Increase public outreach, including establishment of a dedicated customer service hotline. Schedule staff for enforcement and customer service, including on weekends. May include hiring additional, temporary staff. Convert to more frequent meter reading and billing for all customers. 	<ol style="list-style-type: none"> Continue with Shortage Level 5 restrictions and prohibitions except where superseded by more stringent requirements. All dedicated irrigation customers shall reach a water reduction of 100% from the water use of the most recent non-drought year. 	53%

Notes:

(a) Measures were not modeled in the DRT and thus savings could not be quantified.



5.3 Catastrophic Supply Interruption

Catastrophic supply interruptions may be caused by a regional power outage, natural disaster, or national security/terrorism emergencies. Catastrophic interruptions may occur in the SFPUC RWS or in the City water distribution system. In the event of a catastrophic supply interruption, the response procedures that the City would follow are described in:

- SFPUC Emergency Operations Plan (EOP);
- San Mateo County's Operational Area EOP Potable Water Procurement and Distribution Annex (San Mateo County's EOP);
- City of Brisbane Emergency Operations Plan (Basic Plan); and
- City of Brisbane Emergency Response Plan (ERP).

In the event of a catastrophic supply interruption, the response procedures that the City would follow are described in the SFPUC EOP as well as the San Mateo County Operational Area EOP (County of San Mateo, 2004) and the Basic Plan (City of Brisbane, 2018) and those sections related to utility recovery in the Earthquake Annex to the Basic Plan. Actions described in the SFPUC EOP focus on maintaining flow within, and from, the RWS pipelines. SFPUC's emergency preparedness procedures are described in detail in the SFPUC EOP. The San Mateo County's EOP addresses San Mateo County's planned response to extraordinary emergency situations associated with natural disasters, man-made technological incidents, and national security emergencies. This EOP is a preparedness document that is designed to be read, understood, and exercised prior to an emergency. Each agency is responsible for ensuring the preparation and maintenance of appropriate and current Standard Operating Procedures, Emergency Operating Procedures, and alert lists that will support San Mateo County's EOP.

Together, these EOPs/ERP provide the framework for responding to major emergencies or disasters associated with natural disasters, technological incidents, and national security/terrorism emergencies. Sections of these EOPs/ERP outline specific strategies to prepare for, mitigate, respond to, and recover from an emergency or disaster that affects the water utilities that serve the population within San Mateo County.

The City is in the process of updating its ERP to address the City's response to catastrophic supply interruptions as well as other emergencies. The City's ERP will include information on key facilities, emergency response roles, communication methods, public notification information, response actions and procedures, mitigation actions, and detection strategies. The ERP will include incident action checklists for the possible water supply catastrophes including: contamination, cybersecurity, drought, earthquake, flooding, pandemic, power outage, and wildfire.

The City may evaluate and require appropriate WSCP response actions during a catastrophic supply interruption, such as end-use prohibitions and mandatory rationing, as well as implement the operational changes and communication protocols described herein.

When a shortage declaration appears imminent, the Director manages related activities and will serve as the Emergency Response Lead. In the absence of the Director, the Director's assigned proxy or other available supervisory personnel will serve as the Emergency Response Lead. If warranted, the City's EOP will be activated and information will be provided to Brisbane Police, North County Fire Authority, and San Mateo County. The Director will also provide essential information to the public, including coordinating information with other jurisdictions, if necessary, before releasing information to the news media.

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The City has sufficient facilities and infrastructure to reroute around most temporary water supply disruptions. The City also has emergency interties with the Cal Water – South San Francisco District and the City of Daly City. The City typically has three days of average daily water for emergency, fire, and operational needs in the City’s water tanks at all times.

The City may evaluate and require appropriate WSCP response actions during a catastrophic supply interruption, such as end-use prohibitions and mandatory rationing, as well as implement the operational changes and communication protocols described herein.



6. DROUGHT RESPONSE TRIGGERS, NOTIFICATION, AND TERMINATION PROCEDURES

The section describes the triggering mechanisms, customer notification procedures, monitoring, and termination procedures for the WSCP.

6.1 Water Shortage Declaration and Notification Procedures

The provisions of each drought Shortage Level are triggered upon the Director’s determination that a Governing Authority has required the City to achieve a voluntary or mandatory reduction in water use because of water shortage conditions.

For shortages due to drought on the RWS, the SFPUC allocates water under the WSAP, also known as the Tier One Plan, included in the WSA. The Wholesale Customers’ share is then apportioned among the individual Wholesale Customers, including the City/GVMID collectively, based upon a separate methodology adopted by the Wholesale Customers, known as the Tier Two Plan.⁵ Upon declaration by the SFPUC of a water shortage emergency and subsequent confirmation by BAWSCA and SFPUC of the City’s water supply allocation, the Director will compare the City’s allocation to its projected water demands for the following year to determine the required cutback and associated Shortage Level.

The Director will monitor water supply and/or demand conditions on a monthly basis to determine if a water shortage condition exists and the severity of any such water shortage condition. The Director shall implement the following notification procedures accordingly.

The Public Works Director, or designee, will notify the public by means of electronic notification and direct mailings to customers as necessary. Electronic notification includes website alerts, social media, and weekly and monthly electronic newsletters. Prepared materials from the Department of Water Resources’ “Save Our Water Toolkit” may be used as drought communication tools with the City logo added. The link for these materials is provided below:

<https://saveourwater.com/en/Partner-Toolkit>

Additional communications protocols are provided in Section 8.

The provisions for each Shortage Level will become effective five (5) days after the Director determines that a particular Shortage Level should be triggered and has published notice of this determination by mail to the City’s customers.

6.2 Monitoring Procedures

The City monitors water use through analysis of wholesale water purchases and customer meter readings. The City receives monthly water purchase totals directly from each of the turnout meters read by SFPUC to monitor wholesale water purchases. In addition, each customer account is metered. Some large

⁵ The Tier One Plan and Tier Two Plan only apply to RWS system-wide shortages of 20% or less. There is currently no methodology for sharing available water between SFPUC and the Wholesale Customers for system-wide shortages of greater than 20%



landscape sites, including City parks and schools, have dedicated irrigation meters to monitor water use for landscape irrigation separately from indoor uses.

The City reads all customer meters on a bi-monthly basis. During a supply shortage, the City will continue to monitor water use on this schedule to determine the effectiveness of the customer response to the implementation of this WSCP. If necessary, the City may increase the frequency of meter readings and increase proactive leak checks and water audits based on customer consumption.

6.3 Water Shortage Termination Procedures

Once effective, the provisions of a Shortage Level will stay in effect until (1) the effective date of a different Shortage Level is triggered; or (2) the Director determines that the water shortfall condition no longer exists and has published notice of this determination electronically and, if necessary, by mail.

After the termination of the water shortage conditions, the Director will oversee any remaining termination and WSCP review activities. These activities could include:

- Restore water utility operations, organization, and services to pre-event levels.
- Document the event and response and compile applicable records for future reference.
- Collect cost accounting information, assess revenue losses and financial impact, and review deferred projects or programs.
- Debrief staff and partner agencies to review effectiveness of actions to identify lessons learned and to enhance response and recovery efforts in the future.
- Update the WSCP, as needed.

6.4 Refinement Procedures

The WSCP is implemented as an adaptive management plan. The City will evaluate revisions to its WSCP as needed. The evaluation will consider the effectiveness of WSCP actions and any anticipated water supply shortages. If the WSCP is revised, the Council will adopt a new resolution adopting the revised WSCP.



7. REGIONAL DROUGHT PLANNING COORDINATION AND CONTACTS

CWC § 10609.60(a)(1)

Drought-planning contacts, including all of the following:

(A) At least one contact at the water system for water shortage planning and response and the development of the plan.

(B) Contacts for local public safety partners and potential vendors that can provide repairs or alternative water sources, including, but not limited to, local community-based organizations that work with the population in and around areas served by the water system, contractors for drilling wells, vended water suppliers, and emergency shower vendors.

(C) State and local agency contacts who should be informed when a drought or water shortage emergency is emerging or has occurred.

(D) Regional water planning groups or mutual aid networks, to the extent they exist.

This section provides the regional drought planning coordination procedures and key contacts for public safety partners, state and local agency contacts, regional water planning groups, and state and local agencies.

The Public Works Director, or designee, will notify the following individuals and entities of restrictions or water shortages, as defined in the subsections below, as appropriate for each Shortage Level.



Table 7-1 Public Safety Contact

Organization or Department	Name & Position	Telephone	Email
Fire Department North County Fire Authority	Ron Myers, Fire Chief	(650) 991-8138	supportstaff@northcountyfire.org
Partnering Water Systems	-	-	-
San Mateo County Office of Emergency Services	Will Young, Bureau Lieutenant	(650) 363-4911	--
County Environmental Health Specialist	Heather Forshey, Director	(650) 372-6200	envhealth@smcgov.org
State Water Board District Engineer	Van Tsang, District Engineer	(510) 620-3602	DWPDIST17@waterboards.ca.gov
Wholesaler	Steve Ritchie, Assistant General Manager - Water, SFPUC	(415) 701-2311	sritchie@sflower.org
County Public Health	Louise Rogers, Chief	(650) 867-1661	press@smchealth.org
Critical Water Users (schools, hospitals, etc.)	Ronan Collver, Superintendent, Brisbane School District	(415) 467-0550	rcollver@brisbanesd.org
Regional Water Planning Contact	Nicole Sandkulla, Chief Executive Officer and General Manager, BAWSCA	(650) 349-3000	bawasca@bawasca.org
Mutual Aid Contact / CalWarn Contact	Paul Gilbert-Snyder, Steven Hancock, Chairs of CalWarn, Region II – Coastal Region	(510) 287-0432; (707) 292-1195	CWRegII@YourACS.org

Note: This notification section provides potential agencies that should be considered for coordination of water shortages. More specific contacts for each Shortage Level are provided below.



7.1.5 Support Services Contacts

The following is a listing of support services that may be appropriate for a water shortage emergency.

Table 7-2 Support Services Contact

Organization or Department	Name & Position	Telephone	Email
Water Operator	Dustin Cohn - Water Team Leader	415- 298-8644	dcohn@ci.brisbane.ca.us
Back-up Water Operator	Devin Gutierrez - Water Unit Leader	415-205-6957	dgutierrez@ci.brisbane.ca.us
Electric Utility Co.	PG&E Contact Number	800-743-5000	-
Electrician	Dan Charles - Charles Electric	650-766-1000	dancharleselectric@hotmail.com

Note: In the event of an emergency, the City's Logistics Section in its Emergency Operations Center can submit a request to the San Mateo County Operational Area for any supplies not sourceable locally.



8. COMMUNICATION PROTOCOLS

CWC § 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 of the following:

(A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.

(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.

(C) Any other relevant communications.

Even before formal declaration of a water shortage, the City will activate a public information program to provide customers with as much advance notice as possible. Following declaration of a shortage, customers will be provided notice of water shortage rules and regulations via a variety of media and communications methods.

Coordination between City departments and with other public agencies can begin prior to formal declaration of a water shortage and can be accomplished through regular meetings, e-mail group updates, and presentations. In a regional water shortage scenario, the City will use the public outreach resources and materials provided by BAWSCA and/or SFPUC. In addition to these materials, the City may develop its own materials and use the following media and methods to communicate with customers:

- City of Brisbane website alerts.
- Social media (Instagram, Facebook, Nextdoor, Twitter).
- Monthly electronic newsletters.
- Community signboards.
- Direct mailings to customers.
- Utility bill messaging and inserts.
- Brochure racks distributed throughout the City (e.g., the Public Library and City Hall).
- Water Conservation phone hotline.
- Booths at community and corporate events.

The City currently has less than one full-time employee with responsibilities for water conservation. Staff time dedicated to water conservation and enforcement action will increase with the severity of a supply shortage. Additional duties may be assigned to current City employees, or the hiring of temporary staff may be considered to meet staffing needs during extreme water shortages.



9. ENFORCEMENT

Enforcement of the City’s water conservation regulations is focused on soliciting cooperation from water customers who are unaware of the restrictions or have failed to comply with the provisions of the City’s Water Shortage Ordinance and this WSCP. If discussions with the customer are unsuccessful in obtaining compliance, available enforcement mechanisms detailed in the City’s Water Shortage Ordinance include written warnings, fines, penalties, and enforcement provisions as set forth in Chapter 8.40.030 of the City’s Municipal Code. Enforcement actions are further described in Table 9-1.

During prior water shortage periods, the City implemented excess use fees for customers who consumed more water than their allocation. Similar excess water use charges may be implemented again if the City’s WSCP is implemented and if water use allocations are necessary (i.e., in Shortage Levels 5 and 6).

City employees and members of the public may register water waste complaints through a telephone hotline or bring the complaint directly to City staff. Staff will be available to provide information and respond to complaints. Staff may also seek assistance from other City departments in responding to complaints, including those received directly or via the State Water Waste Reporting Portal, and enforcing water use restrictions.

As mentioned in Section 8, staff time dedicated to water conservation and enforcement action will increase with the severity of a supply shortage. Enforcement duties may be assigned to current City employees, or the hiring of temporary staff may be considered to meet staffing needs for compliance during extreme water shortages.

Table 9-1 Enforcement of Water Use Restrictions and Prohibitions

Violation	Enforcement Action or Penalty
1 st	The City will attempt to educate the customers by contacting them and informing the customer about the violation, potential penalties, and compliance requirements.
2 nd	The City will send a written notice to the customer specifying the nature of the violation and the date and time of occurrence and request that the customer cease the violation and take prompt remedial action. The City will provide the customer with a copy of the Water Shortage Ordinance and inform the customer that failure to comply may result in fines or penalties.
3 rd	The City will make reasonable efforts to notify the customer of the violation and post a notice on the front door or other point of entry onto the property requiring the customer to cease the violation and take remedial action within 48 hours of the on-site notification. Any person who receives a notice of correction who fails to eliminate water waste as required by the notice may be subject to penalties, and enforcement provisions set forth in Chapters 1.14, 1.16, 1.18 and 8.40 of the City’s Municipal Code and may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty (30) days and/or by a fine not exceeding one thousand dollars (\$1,000.00) (as provided in Water Code Section 377). .



10. CONSEQUENCES OF WSCP

10.1 Financial Consequences

In the event of a drought, if the City anticipates significant loss in revenue due to decreased water consumption, the City may increase its water rates or modify the drought surcharge so that customers are charged for the actual cost of providing water during a shortage. Current rates and applicable drought surcharges are specified in the City's adopted water rate schedule.

The City understands the projected ranges of water sales by Shortage Level and what the impact of reduced water sales would be on projected revenues.

The administration of the WSCP will also have an impact on the City's general and administrative costs. Costs could include funding additional staff focused on high water consumption monitoring, water waste patrols, additional billing requirements, and customer outreach. Other costs could be related to funding additional rebate programs, print and mail costs for additional outreach, and expenses related to creating and enforcing customer water budgets. These costs will be considered whenever the City's budget is next adopted. Revenue from potential excess use charges as a result of implementation of the water allocation program can also be applied towards the administration of the WSCP to help offset the revenue shortfalls.

10.2 Water Quality Consequences

The City's primary water quality concerns during shortage are impacts to distribution system water quality. Reduced flushing and increased water age in storage tanks may pose water quality challenges with reduction in demands. The City will monitor water quality and may need to occasionally drain storage tanks if nitrification issues arise.

The City's wastewater is treated at the Southeast Treatment Plant, operated by the SFPUC, located in San Francisco, California. In the event of a substantial decrease in water supply to the City and other customers of the treatment plant, SFPUC may encounter various water quality challenges, including elevated levels of concentrated nitrate and total dissolved solids, that could impact the proper functioning of the wastewater treatment plant. To address the potential impacts of drought, water supply shortages, and water quality concerns, the City will work with the SFPUC as needed.



11. VARIANCES

The Director may grant, in writing, a temporary variance for existing water uses otherwise prohibited under this WSCP if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the health, sanitation, or fire protection for the public or the person requesting such variance, and if one or more of the following conditions are met:

- (a) Compliance with this WSCP cannot be technically accomplished during the duration of the water supply shortage or other condition for which the WSCP is in effect.
- (b) Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Water Shortage Ordinance shall file a petition for variance with the water system within 5 days after the WSCP or a particular Shortage Level has been invoked. All petitions for variances shall be reviewed by the Director and shall include the following:

- (a) Name and address of the petitioner(s).
- (b) Purpose of water use.
- (c) Specific provision(s) of the WSCP from which the petitioner is requesting relief.
- (d) Detailed statement as to how the specific provision of the WSCP adversely affects the petitioner or what damage or harm will occur to the petitioner or others if the petitioner complies with this Water Shortage Ordinance.
- (e) Description of the relief requested.
- (f) Period of time for which the variance is sought.
- (g) Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this WSCP and the compliance date.
- (h) Other pertinent information.

A decision on the variance request will be returned to the customer within 10 days.



12. PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

The City informed the public of: (1) its intent to prepare a WSCP, (2) where the WSCP was available for public review, and (3) when the public hearing regarding the WSCP would be held.

Public notice was provided on the City's website beginning on 17 May 2023. Notice was also provided to the City's customers through the City's Blast (weekly digital community updates) on 1 May, 24 May, 31 May, 7 June, and 14 June 2023. Additional notice was published in the Brisbane STAR monthly community newsletter on 1 June 2023.

A copy of the adopted 2023 WSCP will be available for public review in City Hall during normal business hours and on the City's website by 1 July 2023.



REFERENCES

- BAWSCA, 2021. *Bay Area Water Supply and Conservation Agency Annual Survey, FY 2019-2020*, March 2021.
- BAWSCA, 2022. *Bay Area Water Supply and Conservation Agency Annual Survey FY 2020-21*, March 2022.
- BAWSCA, 2023. *Member Agency Profiles: City of Brisbane/Guadalupe Valley Municipal Improvement District*, accessed on 18 May 2023.
- City of Brisbane, 2018. *Emergency Operations Plan – Basic Plan*, November 2018.
- County of San Mateo, 2004. *San Mateo County/ Operational Area Emergency Operations Plan, Potable Water Procurement and Distribution Annex*, 3rd Edition, July 2004.
- County of San Mateo, 2016. *San Mateo County Hazard Mitigation Plan*, prepared by Tetra Tech, dated July 2016.



Appendix A: Water System Profile and Use Characteristics

The City of Brisbane is located in North San Mateo County, and it operates both the City of Brisbane Water District and the GVMID. The GVMID is an area within the Brisbane city limits composed of an industrial park development and a small residential enclave. The two districts are operated as a combined system with ten pressure zones, and various pressure reducing valve stations that allow for water to be distributed within the system. The only source of potable water for the combined system comes from the Crystal Springs Pipeline #1 and #2. The City of Brisbane Water District has 0.9 MG of local storage and the GVMID has 2.0 MG of local storage. Together the system can hold more than three days' worth of demand (BAWSCA, 2023). Table A-1 summarizes the key components of the combined water system.

The total demand for both districts has been decreasing between 2019 and 2023. This is primarily due to the City's response to the most recent drought (**Appendix B**). Table A-2 shows water demand by sector over the last four years, and in general, residential and commercial/industrial demand are the largest two sectors (BAWSCA, 2023).



Table A-1 System Profile

Area Size	3.4 square miles
Service Population (a)	4,851
Number of Accounts	2,041
Number of SFPUC RWS Connections	5 (3 for the City of Brisbane District, 2 for GVMID)
Connections To SF RWS Mains	Crystal Springs Pipeline #1 and #2
Avg. Day Demand (MGD)	0.61
Avg. Day Purchases From SF RWS (MGD)	0.61
% Demand Met With SF RWS Supplies	100.0%
Maximum Local Water Production (MGD)	0
Alternative Supply Sources	None
Interties With Other Agencies	California Water Service – South San Francisco, Daly City
Local Storage (MG)	2.9
Days of Storage	3 – Combined storage. All zones can meet the 8 hour criteria either separately or by pumping from zones with excess capacity.
<p>Notes: (a) Service population is based on the 2020 U.S. Census data for the City of Brisbane.</p>	



Table A-2 Average Daily Demand by Sector

Sector	FY 18-19		FY 19-20		FY 20-21		FY 21-22	
	(MGD)	Percent Total Demand	(MGD)	Percent Total Demand	(MGD)	Percent Total Demand	(MGD)	Percent Total Demand
Residential	0.20	30.1%	0.21	33.7%	0.22	35.8%	0.20	32.3%
Commercial/Industrial	0.21	32.0%	0.20	31.7%	0.15	24.4%	0.17	28.3%
Dedicated Irrigation	0.14	20.5%	0.16	25.8%	0.16	26.5%	0.15	23.8%
Non-Revenue Water	0.04	6.7%	0.00	0.6%	0.06	9.2%	0.02	3.4%
Other	0.07	10.8%	0.05	8.3%	0.03	4.1%	0.07	12.2%
Total	0.66	100%	0.64	100%	0.62	100%	0.61	100%



Appendix B: Prior Drought Actions

The City has historically developed different strategies for reducing water demand during water shortages. The City's actions in response to the drought that occurred in California between 2014 and 2017 and the most recent drought are discussed below.

2014 to 2017 Drought

From 2014 through 2017, the State of California experienced a severe drought that impacted availability of RWS water supply to the City. On 17 January 2014, Governor Brown issued a proclamation requesting all Californians to voluntarily reduce water use by 20%. SFPUC subsequently called for a voluntary 10% water use reduction from RWS customers. On 1 April 2015, due to worsening drought conditions, Governor Brown issued Executive Order B-29-15 regarding actions necessary to address California's severe drought conditions. In addition to imposing the first ever mandatory restrictions on urban water suppliers to achieve a statewide 25% reduction in potable urban water usage, the Executive Order also required CII users to implement water efficiency measures, prohibited irrigation with potable water of ornamental turf in public street medians, and prohibited irrigation with potable water outside newly constructed homes and buildings that were not delivered by drip or microspray systems, along with numerous other directives.

In response to the drought, the City developed a Water Shortage Ordinance and WSCP. On September 2, 2014, the City adopted Ordinance No. 589 declaring a water shortage emergency and adopting of the WSCP. In conjunction with the drought response, the City implemented a two day per week outdoor watering schedule. The City conducted customer outreach through a regional media campaign, bill inserts, and social media. The City also increased its water loss prevention program, limited system flushing, and reduced irrigation of City-owned landscape and/or parks. To support enforcement of these measures, the City provided a platform for reporting water waste and implemented an excessive water use warning and penalty system.

In April 2017, Governor Brown ended the drought State of Emergency.

2021 to 2023 Drought

On 8 July 2021, Governor Newsom requested a voluntary water use reduction of 15% in response to severe statewide drought conditions. In response to this request, the City determined on 15 July 2021 that a Shortage Level 1 Drought had been triggered, and imposed measures from its WSCP to achieve the required conservation.

On 10 June 2022, the SWRCB adopted an emergency water conservation regulation that bans CII accounts, including homeowners' associations, from watering certain kinds of ornamental or non-functional grass. The City enforced the state's emergency drought regulation by sending a demand letter to all CII water users, including homeowners' associations, that either have a separate irrigation meter or that irrigate a significant square footage of turf requiring the immediate cessation of irrigation of nonfunctional turf, with fines of up to \$500 for each day and for each violation.

On 24 March 2023, Governor Newsom issued Executive Order N-5-23 easing drought emergency provisions.



Ongoing Water Conservation Actions

Beyond drought response actions, the City has a strong record of encouraging water conservation, both in its own practices as a water user, and in communications with its customers, even in normal years. Specifically, the City has pursued the following actions:

- Offered financial rebates to its customers for replacing high-water use fixtures such as toilets and washing machines with water-efficient versions;
- Offered financial rebates to its customers for replacing irrigated turf with low-water use plantings;
- Designed its water rates to encourage water conservation; and
- Modified the irrigation systems and schedules at all City parks to reduce irrigation demand.

Furthermore, the City has incorporated into its municipal code the following sections that encourage water conservation:

- Chapter 15.72: Indoor Water Use Efficiency Requirements, which establish efficiency standards for all new development and major remodels;
- Chapter 15.70: Outdoor Water Use Efficiency Requirements, which establish landscape efficiency standards for all new development and major landscape renovations; and
- Chapter 8.40: Water Waste Prohibition, which describes certain prohibited uses of water under all hydrologic conditions.



Appendix C: Analysis of Shortage Response Action Effectiveness

To evaluate and ensure that effective actions will be implemented to achieve necessary cutbacks at each Shortage Level, the City employed the DRT, an Excel spreadsheet model developed by EKI Environment and Water, Inc. The DRT model calculates monthly savings anticipated by implementing each Shortage Level as detailed below.

1. Baseline Water Use Profile

Using the DRT, the City developed a baseline water use profile that reflects usage patterns within the City's service area by major water use sectors in FY 2020.⁶ The analysis of the baseline water use profile was used to guide development of the WSCP. Key findings from this analysis are presented below.

Residential Per Capita Demand

The City's baseline residential gallons per capita per day (R-GPCD) demand in 2020 was approximately 44 R-GPCD. As shown in Table C-1 and the associated chart, this R-GPCD is significantly lower than both the statewide average of 89 R-GPCD and the average of all BAWSCA agencies of 63.4 R-GPCD during the same period. The City's residential per capita water use was in the lower range of the BAWSCA agencies and across the State.

Proportion of Outdoor Water Use

As shown in Table C-2 and the associated charts, outdoor water use, which can generally be considered as a "discretionary water use", was estimated to be approximately 45% of the City's total consumption in 2020. The seasonal variation in baseline water use generally reflects increased irrigation demands during the summer and fall months. Therefore, the greatest potential for reductions in non-essential water use is expected during these months.

⁶ The 2020 baseline demand was selected as the most recent non-drought year. The 2020 baseline was adjusted to include the incremental demand from the large developments since 2020.



Table C-1 Baseline Residential Per Capita Water Demand

	Baseline Residential Per Capita Water Demand (R-GPCD)
Brisbane (a)	44
BAWSCA Agencies (b)	63.4
Statewide Average (c)	89

NOTES:
 (a) Brisbane R-GPCD calculated using FY 2020 consumption data.
 (b) Average BAWSCA R-GPCD obtained from master excel file BAWSCA Annual Survey FY 2019-2020 (BAWSCA, 2021).
 (c) State-wide R-GPCD for 2020 obtained from data provided at California State Water Resources Control Board Water Conservation Portal - Conservation Reporting, http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml, accessed May 2022.

Chart C1-A Baseline Residential Per Capita Water Demand

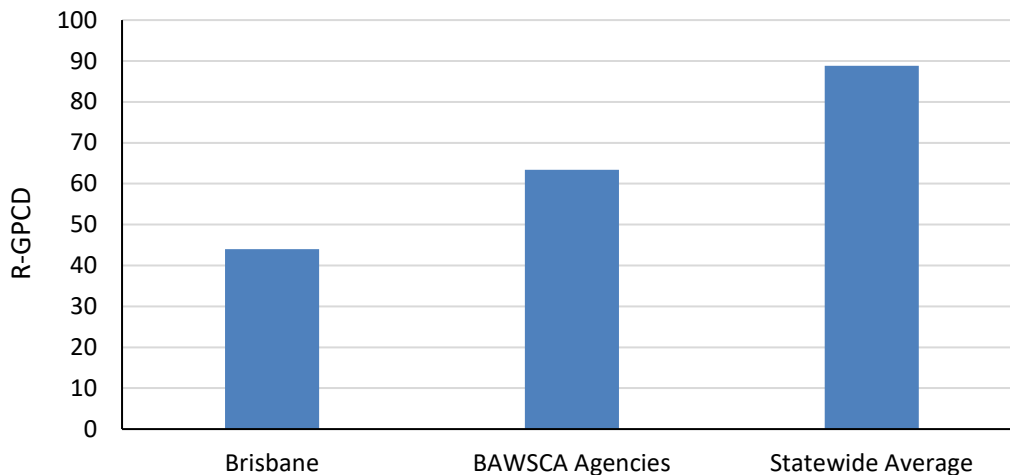




Table C-2 Baseline Water Use Profile

Sector	End-Use	Baseline (2020) Water Use													Annual % of Total by Sector
		July	August	September	October	November	December	January	February	March	April	May	June	Annual	
Residential	Indoor	5.1	5.1	4.9	5.1	4.9	5.1	5.1	4.6	5.1	4.9	5.1	4.9	59.7	77%
	Outdoor	1.4	1.7	1.7	1.6	1.4	0.0	1.1	1.9	0.7	1.3	2.1	3.4	18.2	23%
	<i>Subtotal Residential</i>	6.5	6.8	6.6	6.7	6.3	5.1	6.1	6.4	5.7	6.2	7.1	8.3	77.9	100%
CII	Indoor	4.1	4.1	4.0	4.1	4.0	4.1	4.1	3.7	4.1	4.0	4.1	4.0	48.2	63%
	Outdoor	3.6	3.9	3.9	3.8	3.4	1.9	1.8	2.5	1.1	1.7	0.0	0.8	28.3	37%
	<i>Subtotal CII</i>	7.7	8.0	7.9	7.9	7.4	6.0	5.9	6.2	5.2	5.7	4.1	4.8	76.6	100%
Dedicated Irrigation	Outdoor	8.2	8.6	8.9	9.0	4.6	3.7	0.7	0.8	2.3	2.5	6.3	7.3	62.9	100%
Non-Revenue	Non-Revenue	3.9	4.1	1.0	1.0	0.0	0.0	2.8	2.9	2.5	2.7	1.1	1.3	23.3	100%
Total	Indoor	9.2	9.2	8.9	9.2	8.9	9.2	9.2	8.3	9.2	8.9	9.2	8.9	108	45%
	Outdoor	13.2	14.2	14.4	14.4	9.4	5.6	3.6	5.1	4.1	5.5	8.4	11.6	109	45%
	Non-Revenue	3.9	4.1	1.0	1.0	0.0	0.0	2.8	2.9	2.5	2.7	1.1	1.3	23.3	10%
	Total	26.3	27.5	24.3	24.6	18.3	14.8	15.5	16.3	15.7	17.0	18.7	21.8	241	100%

NOTES:

- (a) Volumes are in units of MG.
- (b) Monthly water use is estimated based on bi-monthly billing and scaled by production amount. The CII and landscape irrigation demands were adjusted to include the new large development (i.e., 4.6 MG for CII and 4 MG for landscape irrigation, respectively).
- (c) Totals may not sum due to rounding.



Chart C2-A Baseline Year (2020) Monthly Total Water Use by Sector

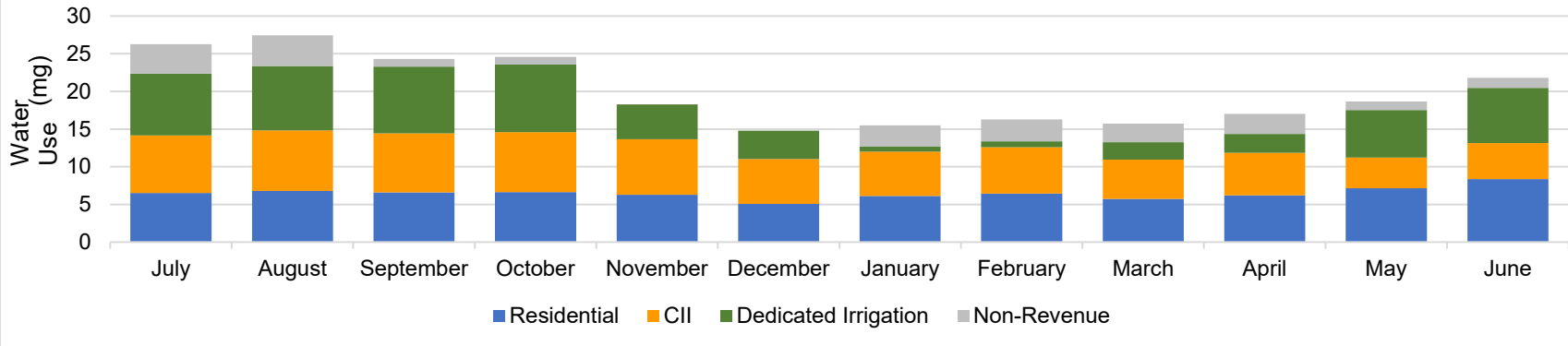
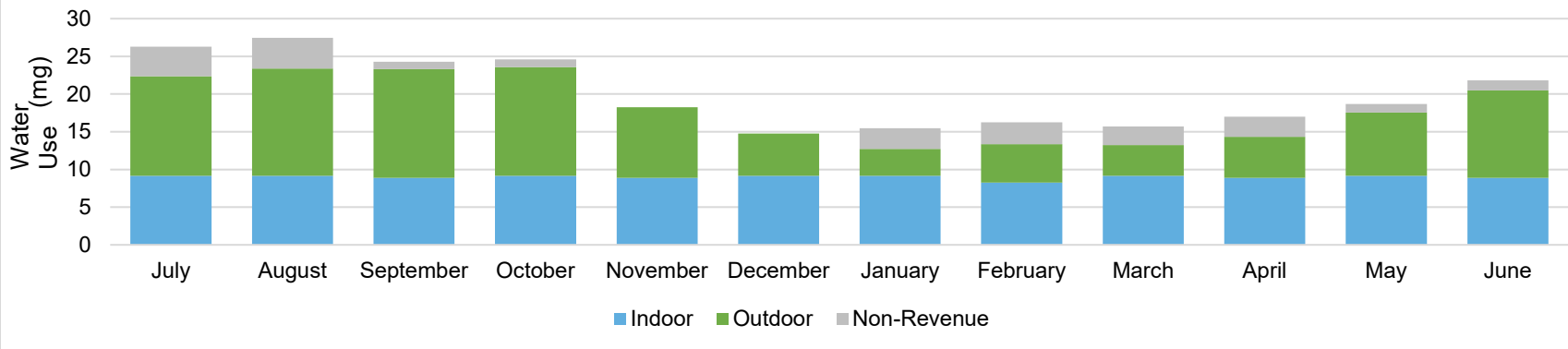


Chart C2-B Baseline Year (2020) Monthly Indoor vs. Outdoor Water Use





2. Shortage Response Action Effectiveness

The DRT provides a quantitative framework that allows the City to systematically estimate the monthly and cumulative annual demand reductions expected to result from particular combinations of drought response actions and associated implementation rates. Data inputs to the DRT include total production, class-specific water use, population, and assumptions regarding the split between indoor and outdoor water use for each customer class.

For each drought response action, the user specifies:

- The customer class(es) and end use(s) that are affected;
- The percent savings for that end use for each account that implements the action (based on evaluations reported in the literature, or where such studies are not available, on best estimates based on the City's experience); and
- The percentage of accounts assumed to implement the action, which is presumed to be the result of the intensity level of the City's program implementation, including but not limited to, marketing and enforcement activities.

An additional critical DRT user input is a set of constraints on demand reductions to ensure that usage levels do not endanger health and safety or result in unacceptable economic impacts. The DRT will not permit estimated usage reductions to violate these constraints, regardless of the demand reduction actions selected. The constraints are:

- A minimum residential indoor per capita daily usage of 25 gallons;
- A maximum residential outdoor usage reduction of 100%;
- A maximum CII indoor usage reduction of 30% except in the most extreme conditions (e.g., Shortage Levels 5 and 6); and
- A maximum CII outdoor usage reduction of 100%.

Based on the foregoing constraints, the DRT model calculates the resulting monthly savings. The City adjusted the combination of actions and implementation levels to achieve the targeted savings levels at each of the six Shortage Levels.

For each of the Shortage Levels, the modeling targeted the mid-range of the required demand reduction range, ergo:

- 5% for Shortage Level 1;
- 15% for Shortage Level 2;
- 25% for Shortage Level 3;
- 35% for Shortage Level 4;
- 45% for Shortage Level 5; and
- 53% for Shortage Level 6.