

APPENDIX J
Urban Water Shortage Contingency Plan

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APPENDIX J: WATER SHORTAGE CONTINGENCY PLANNING

SECTION 1: INTRODUCTION

The City of Santa Rosa Urban Water Shortage Contingency Plan (Shortage Plan) was first adopted on February 11, 1992 and is updated periodically, at a minimum every five years as part of the City's Urban Water Management Plan, which is required by State law to be updated every five years. The Shortage Plan was first adopted in response to emergency legislation, California Assembly Bill 11X. Legislation has changed the requirements of water shortage contingency planning several times since the initial bill was passed. Current requirements are in Section 10632 of the California Water Code, the Urban Water Management Planning Act, which is provided as Attachment 3 to this document.

The City's 1992 Shortage Plan was first revised in 1996 with updated demand and financial data. In 2002, a more comprehensive revision was completed, which included updated demand projections, financial analysis, and rate structure design for each rationing stage; a change in the per capita allocations in Stages 2 through 4; and a change in the methodology for determining landscape allocations in Stages 2 through 4. In 2005, the revision updated the demand and financial data. In 2006, the revision added two sections to the document addressing minimum water supply and drought/emergency planning actions. In 2010, the revision updated the demand projections, financial analysis, per capita allocations, and added a new rationing stage. This 2015 revision updates the demand projections and financial analysis, adds two new rationing stages and changes the per capita allocations in the stages.

The City's Shortage Plan provides guidance on demand reduction strategies for the Santa Rosa system. Trigger points on the Russian River system, which in turn trigger the City's program, are determined by the Sonoma County Water Agency (Agency) and water shortage provisions for the Agency system are governed by the Restructured Agreement for Water Supply dated June 2006 (Restructured Agreement).

1.1 CITY OF SANTA ROSA WATER SUPPLY

The City currently has three sources of existing water supply: 29,100 acre-feet per year (AFY) entitlement from the Agency; 2,300 AFY of groundwater from the City's wells; and approximately 140 AFY of recycled water from the City's Subregional System. In addition, the City has an aggressive water conservation program which reduces current demands and assures that future demands are efficient.

The City currently receives the majority of its potable water supply from the Agency under the provisions of the Restructured Agreement. Approximately 95% of water delivered by the Agency is from surface water sources, with the remainder from groundwater. Santa Rosa

holds an entitlement to 56.6 million gallons per day, peak month average with an annual volume limit of 29,100 AFY.

In addition to Agency supply, in July 2005, the City received permission from the California Department of Public Health (now the Division of Drinking Water) to use two of its groundwater wells, formerly permitted as standby emergency wells, for supply; this supply source is now permitted for regular production and can provide up to 2,300 AFY to the City under normal conditions and approximately 1,550 AFY during dry year conditions.

1.2 PREVIOUS WATER SHORTAGE CONDITIONS

The contractual provisions of the Restructured Agreement dictate how water supply reductions will be administered by the Agency in the event of a water shortage. For the City and the other parties to the Restructured Agreement, the shortage provisions are defined in Section 3.5 of that agreement, and further defined in the Water Shortage Allocation Methodology (Shortage Methodology), which was adopted by the Agency Board in April 2006¹. The Restructured Agreement Section 3.5 provisions, and the Shortage Methodology, are designed to take the demand hardening associated with water conservation into account. The City continues to implement aggressive water conservation programs and has one of the lowest per capita water uses among all the Agency water contractors.

Recent drought conditions in 2014 and 2015 and mandatory State emergency conservation regulations have required the City to implement conservation reductions. On January 17, 2014, the Governor of the State of California declared a state-wide drought emergency and asked Californians to voluntarily reduce water use by 20%. In February 2014, the City adopted Stage 1-voluntary requesting a 20% community-wide reduction in water use. On April 25, 2014, the Governor issued an Executive Order directing local water suppliers to redouble efforts to implement water conservation activities. In August 2014, the City adopted Stage 1-mandatory requiring a 20% community-wide reduction in water use to comply with State Emergency Conservation Regulations. On April 1, 2015, the Governor issued an Executive Order directing the State Water Board to impose restrictions to achieve an aggregate statewide 25% reduction in urban water use. On May 5, 2015, the State Water Board adopted an emergency conservation regulation in accordance with the Governor's April 1, 2015 Executive Order. To reach the statewide 25% reduction, the emergency conservation regulation assigned each urban water supplier a conservation standard that ranges between 4% and 36%. Due to our community's water conservation efforts, the City was assigned a conservation standard of 16%. In February 2016, the State extended the emergency conservation regulations through October 2016. As of March 2016, the City has reduced water use in the months of June 2015 – March 2016 by 24%, compared to the same months in 2013.

¹ This updated Shortage Methodology will be in effect until June 2016. The Agency and this 2015 UWMP assumes the original Shortage Methodology will be re instituted July 1, 2016 unless further action is taken by the WAC.

1.3 PAST, CURRENT AND PROJECTED DEMAND

Santa Rosa is a community of over 173,000 people. Of the approximate 53,000 water connections, 91% service residential demand while the remaining 9% service commercial and irrigation demand. Utility customers are segregated into the following large customer classes: single-family residential, multi-family residential, commercial and irrigation. The multi-family residential class can be further divided by the number of living units. In the commercial customer class, all utility customers have been classified according to the Standard Industrial Classification (SIC) system, which allows the commercial category to be sorted into sub-categories including: industrial, governmental institution, health care facility and public safety.

Analysis of historic dry year conditions in the Sonoma County Water Agency 2015 Urban Water Management Plan indicates a reduction of up to 19% of Agency supply in a single dry year in 2040 and no supply curtailment in a multiple dry year. Due to the City's extensive water conservation implementation which is recognized by the Shortage Methodology, it is not likely that single-dry year conditions would reduce the volume of surface water available to the City to less than the average for all Water Contractors. In addition, due to the short duration of a single-dry year and the artesian conditions of the City's Farmers Lane wells, it is not anticipated that groundwater supply would be impacted during a single-dry year. If a supply shortfall occurs during a single-dry year, the City would enact the appropriate stage of the City's Water Shortage Plan, as described in Chapter 8, to reduce customer demands to match available supplies. This approach was used in 2015, resulting in the City's 2015 water use being 24 percent less than in 2013. Because the City's groundwater and recycled water supplies are not impacted by single-dry year hydrologic conditions, even if Agency water supplies are decreased by 19 percent during a single-dry year under 2040 demand conditions, a City demand reduction of only about 14 percent would be required.

Table 1 presents actual water deliveries for the City in 2015 by customer class; however it should be cautioned that the 2015 water use is not representative of normal water use characteristics for the City. From 2007 to 2015, the City's water use was significantly affected by a number of factors described below:

- Drought conditions – In 2007 and 2008, dry year conditions caused the Agency to request voluntary 15% reductions in water use from all of the Agency's water contractors. The Agency implemented significant public education and outreach campaigns asking all customers to reduce their water use. In response, the City requested customers to voluntarily reduce their water use, implemented additional public outreach, implemented a water watch patrol, provided new "water on request" cards to restaurants and "towel and linen" cards to hotels and motels, and developed a water wise kit which was provided to all single-family residential and dedicated irrigation customers. Water use was reduced by approximately 15%.

- **Drought Conditions** – In early 2014, Governor Brown proclaimed a State of Emergency to exist throughout the State due to severe drought conditions. The City responded by implementing Stage 1-Voluntary of its Shortage Plan requesting a 20% community-wide reduction in water use by prohibiting washing hard surfaces, requiring hose-end shut off nozzles on all garden hoses, and requiring restaurants to only serve water on request. Later in 2015, the State Water Board adopted emergency conservation regulations requiring a statewide 25% in potable urban water use through February 2016. The City again responded by implementing Stage 1-Mandatory of its Shortage Plan requiring 20% community-wide reduction in water use. The City implemented a significant public outreach and education program, organized the Water Smart Expo, participated in staffing the Sonoma Marin Saving Water Partnership booth at the Sonoma County fair, increased the water watch patrol, and sent numerous customized letters to every customer informing them of the Stage 1 water requirements and providing information on ways to reduce their water use. Water use was reduced by approximately 17% in 2014, and 24% in 2015 (both years relative to the baseline year 2013).
- **Economic Conditions** – From 2007 to 2011, economic recession and high amounts of vacancy in existing residential and commercial customer accounts had a significant effect on water usage.

Drought and implementation of Stage 1-Mandatory of the City’s Shortage Plan significantly affected the City’s 2015 water use and therefore, the City’s 2015 water use is not representative of normal water use characteristics for the City.

Table 1: 2015 Water Use by Customer Class		
Customer Class	Water Demand (Acre-feet) ²	Number of Connections
Single-family	8,186	44,268
Multi-family	2,910	3,122
Commercial¹	2,985	2,897
Irrigation	1,729	1,608
Total	15,810	51,895
¹ Includes Commercial, Industrial, Institutional, Health Care and Public Safety		
² Demand totals do not include unaccounted for water loss, which is approximately 8%.		

Because 2015 is not representative of normal water use characteristics, average historical water use based on an approximate 10-year average was used to determine the normal water use characteristics for purposes of the Shortage Plan analysis. The average water demand is representative of normal water use and is used throughout the Shortage Plan for determining demand reduction goals, consumption limits by customer class, as well as for conducting the revenue and expenditure impacts analysis. Table 2 summarizes the 10-year (not including 2009) average historical water demand by customer class.

Table 2: 2015 Water Use by Customer Class 2004-2013 (not including 2009)

Customer Class	Average Water Demand (Acre-feet)	Average Number of Connections
Single-family	11,607	43,003
Multi-family	3,329	3,107
Commercial¹	3,226	2,818
Irrigation	2,283	1,710
Total	20,445	50,639

¹ Includes Commercial, Industrial, Institutional, Health Care and Public Safety

SECTION 2: STAGES OF ACTION

Demand reduction strategies will be employed at all stages of a water shortage emergency. This Section includes details of *Rationing Stages*, *Demand Reduction Goals*, *Consumption Limits*, *Prohibitions on Water Use*, and *Water Shortage Rate Structure*. The entire strategy for demand reduction is summarized in Attachment 1, the City’s Water Shortage Action Plan.

The City has determined the rationing stages for response to reduced supply in a water shortage emergency. Table 3 details these rationing stages.

Table 3: Stages of Water Shortage Contingency Plan (DWR Table 8-1)

Stage No.	Percent Demand Reduction Goal	Water Supply Condition
Stage 1	Up to 10%	Up to 10% Reduction in Agency Water Supply
Stage 2	11-15%	11 – 15% Reduction in Agency Water Supply
Stage 3	16-20%	16 – 20% Reduction in Agency Water Supply
Stage 4	21-25%	21 – 25% Reduction in Agency Water Supply
Stage 5	26-30%	26 – 30% Reduction in Agency Water Supply
Stage 6	31-40%	31 – 40% Reduction in Agency Water Supply
Stage 7	41-50%+	41 – 50%+ Reduction in Agency Water Supply

NOTE: Stage 1 and Stage 2 are voluntary stages.

SECTION 3: PROHIBITIONS ON END USES

Santa Rosa adopted a Water Waste Ordinance in 1999 which prohibits the following:

- Irrigation in such a manner that it runs off or over-sprays the irrigated area
- Leaks that are detected yet un-repaired

The Water Waste Ordinance states that water service will be discontinued for continued violation once notification has been made.

In addition to the prohibitions outlined in the Water Waste Ordinance, the following program of prohibited use is established for the Water Shortage Emergency condition:

Stage 1

- Hose-end shut-off nozzles are required on all garden and utility hoses
- Washing sidewalks, patios, and other hard surfaces is prohibited unless required for public health and safety needs

Stage 2 – All prohibitions established in previous stage plus:

- Using potable water for street washing is prohibited
- Water served in restaurants on request only

Stage 3 – All prohibitions established in previous stage plus:

- Irrigation limited to the hours of 8:00 pm to 6:00 am
- Power washing (unless a variance is obtained)

Stage 4 – All prohibitions established in previous stage plus:

- Operating ornamental fountains and water features is prohibited

Stage 5 – All prohibitions established in previous stage plus:

- New construction must offset new demand by conserving the equivalent of the new demand within the community
- Filling new swimming pools is prohibited
- Recycled water must be used for construction dust control if recycled water is available and project is within a 1 mile radius of recycled water filling station

Stage 6 – All prohibitions established in previous stage plus:

- New construction must offset new demand by conserving two times the new demand within the community
- No water using landscape installation in new construction
- Filling or topping-off of existing swimming pools is prohibited

Stage 7 – All prohibitions established in previous stage plus:

- New construction must offset new demand by conserving three times the new demand within the community
- No water using landscape installation

A summary of the mandatory prohibitions is included in Table 4.

Table 4: Restrictions and Prohibitions on End Uses (DWR Table 8-2)

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other - Prohibit use of potable water for washing hard surfaces	Hard surfaces includes sidewalks, patios and other unless required for health and safety needs	Yes
1	Other - Require automatic shut of hoses		Yes
2	Other - Prohibit use of potable water for washing hard surfaces	Hard surfaces includes streets	Yes
2	CII - Restaurants may only serve water upon request		Yes
3	Landscape - Limit landscape irrigation to specific times	Irrigation limited to 8:00 pm to 6:00 am	Yes
3	Other	Power washing prohibited unless variance obtained	Yes
4	Water Features - Restrict water use for decorative water features, such as fountains		Yes
5	Other	New construction must offset new demand 1:1	Yes
5	Other water feature or swimming pool restriction	Filling new swimming pools is prohibited	Yes
5	Other - Prohibit use of potable water for construction and dust control	Applies when recycled water is available and project is within 1 mile radius of recycled water filling station	Yes
6	Other	New construction must offset new demand 2:1	Yes
6	Landscape - Other landscape restriction or prohibition	No water using landscape installation in new construction	Yes
6	Other water feature or swimming pool restriction	Filling or topping-off existing swimming pools is prohibited	Yes
7	Other	New construction must offset new demand 3:1	Yes
7	Landscape - Other landscape restriction or prohibition	No water using landscape installation	Yes

NOTES: Water Waste Ordinance Prohibition Regulations are in effect during all water conditions. Each stage of the Shortage Plan also includes prohibitions identified in previous stages.

SECTION 4: PENALTIES, CHARGES, OTHER ENFORCEMENT OF PROHIBITIONS

The City employs multiple methodologies in order to enforce the prohibitions listed in Table 4. Primarily, the City relies on robust information sharing and the generation of awareness related to water shortage conditions and the attendant prohibitions that exist for the relevant stage. In addition, the City also utilizes water waste notifications in all stages, and has the ability to require a water audit at customer sites, install a flow reducing device at the meter, and disconnect water service for those customers that repeatedly violation prohibitions or customers that routinely exceed allotments. In addition, all customers will be subject to a Water Shortage Charge in Stages 3 – 7 to help cover water system costs and encourage water conservation by all customers, and in Stages 5-7, the City has the ability to implement Excess Use Penalties for customers that exceed their allotments.

4.1 WATER WASTE AND RATE CHANGE NOTIFICATIONS

When City conservation staff receives a report of water waste from one of our residents or from City employees, conservation staff will generate and mail a Report of Water Waste letter to the customer so identified. The letter is intended to serve as an educational resource to inform the customer about the City's Water Waste Ordinance and any prohibitions that may be in effect at that time. The letter also informs the customer they have 30 days to resolve the issue. A subsequent formal notice of violation may be issued if the situation is not corrected. And finally, an official 15-Day Notice sent by the Director of Water informs the customer that they have 15 days to correct the violation or the water service will be disconnected.

Changes to the rate structure are incorporated during specific stages of a water shortage. Beginning with Stage 3 (20% reduction), water shortage charges may be implemented and increase with subsequent stages. In addition, excess use penalties are incorporated at Stage 5 (30% reduction) and continue into Stage 7 (50+% reduction). The shortage rate structure and the resulting impacts are further detailed in Section 8.6.

4.2 VIOLATIONS OF WATER USE RESTRICTIONS AND REPEATED EXCESS USE

Any customer who exceeds the established allotment for three consecutive months, or exceeds the established allotment for six months within a twelve month period, or violates one or more prohibited uses, may, at the discretion of the Director of Water, be subject to any of the following actions:

- At the customer's expense, undergo a complete site water audit and install certain water efficient fixtures
- Installation of a flow reducing device at the water meter
- Disconnection of water service and payment of a designated fee for reconnection of the water service

4.3 VARIANCE PROCEDURES

This Shortage Plan is designed to place the responsibility for managing our water resource during a water shortage emergency on the entire community. Care has been taken in the design of the Shortage Plan not to penalize any customer who has undertaken conservation measures in the past for having saved water on an ongoing basis. Furthermore, any customer meeting water use reduction goals by limiting water use to defined allocations will be able to avoid paying Excess Use Penalties.

Any customer who feels their established allotment is unfair may apply to the City for a reassessment. Variances will be granted, on a case-by-case basis, at the discretion of the Director of Water. The following conditions are among those that may be given consideration in the variance process:

- Water uses that support public health and safety
- Non-residential water customers (whose allotment is based on previous consumption) who can demonstrate that water efficient hardware and conservation practices were in place prior to the water shortage emergency
- Water used for mature trees for which an inadequate allocation has been made

SECTION 5: CONSUMPTION REDUCTION METHODS

To achieve the overall reduction goals, a community-wide goal is assigned in Stages 1 through 4, and allocations are determined for each customer within a customer class for Stages 5 through 7. Details of reduction strategies for each customer class at each reduction stage are as follows:

Stage 1 is a voluntary program with 10% overall reduction:

- Community-wide reduction is the goal; elimination of all waste; minimization of non-essential use; hose-end shut-off nozzles required on all garden and utility hoses; washing sidewalks, patios etc. unless for public health/safety.

Stage 2 is a voluntary program with 15% overall reduction:

- Community-wide reduction is the goal; all Stage 1 requirements as well as "water-on-request" restaurant program as well as eliminating potable water for street washing.

Stage 3 is a mandatory program with 20% overall reduction:

- Community-wide reduction is the goal; all Stage 1 and 2 voluntary requirements as well as a limitation on hours of irrigation for all customers and elimination of power washing (unless a variance is obtained).

Stage 4 is a mandatory program with 25% overall reduction:

- Community-wide reduction is the goal; all Stage 1-3 requirements as well as a prohibition on operating ornamental fountains and water features.

Stage 5 is a mandatory program with 30% overall reduction. Allocations are developed for each water service as follows:

- Single-family customers receive 51 gallons per capita day (gpcd) plus a moderate landscape allotment of 2,400 gallons per month from May through October.
- Multi-family customers receive 51 gpcd plus a moderate landscape allotment if irrigation usage is not on a separate dedicated service.
- Commercial/Industrial/Governmental receives 85% of previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.
- Irrigation receives a water budget based on 42% of historical net evapotranspiration-based demand for the square footage of the irrigated area.
- Health care and public safety receives 95% of previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.

Stage 6 is a mandatory program with 40% overall reduction. Allocations are developed for each water service:

- Single-family customers receive 48 gpcd plus a minimal landscape allotment of 1,300 gallons per month from May through October.
- Multi-family customers receive 48 gpcd plus a minimal landscape allotment if irrigation usage is not on a separate dedicated service.
- Commercial/Industrial/Governmental receives 80% of previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.
- Irrigation receives a water budget based on 23% of historical net evapotranspiration-based demand for the square footage of the irrigated area.
- Health care and public safety receives 90% of previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.

Stage 7 is a mandatory program with 50% overall reduction. Allocations are developed for each water service:

- Single and multi-family customers receive 41 gpcd with no landscape allotment.
- Commercial/Industrial/Governmental receives 70% of previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.
- Irrigation receives allotment only for mature trees and shrubs.
- Health care and public safety receives 85% of previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.

A summary of the consumption reduction methods are included in Table 5. Each stage incorporates the consumption reduction methods of the previous stage. The City will initiate its public information campaign in Stage 1 and progressively build the campaign through successive stages.

Table 5: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods (DWR Table 8-3)		
Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference (optional)
1	Other	Community wide reduction target established, minimization of non-essential uses, public information campaign
2	Other	Community wide reduction target established, minimization of non-essential uses
3	Other	Community wide reduction target established, minimization of non-essential uses
3	Increase Water Waste Patrols	
3	Implement or Modify Drought Rate Structure or Surcharge	Begin implementing Water Shortage Charges
4	Other	Community wide reduction target established, minimization of non-essential uses
5	Moratorium or Net Zero Demand Increase on New Connections	New construction offsets new demand 1:1
5	Increase Frequency of Meter Reading	The Sonoma County Water Agency will provide weekly metering data
5	Other	Begin implementing water usage allocations
6	Moratorium or Net Zero Demand Increase on New Connections	New construction offsets new demand 2:1
6	Implement or Modify Drought Rate Structure or Surcharge	Implement Excess Use Penalties
7	Moratorium or Net Zero Demand Increase on New Connections	New construction offsets new demand 3:1
NOTES: Water use surveys, and rebates for plumbing fixtures/devices, landscape irrigation efficiency, turf replacement and sustained reduction are available under all water conditions.		

In addition to the methods discussed previously in this section, the City may elect to implement other water reducing measures including implementing limitations on water main flushing as well as restricting potable water use for fire department drills. The City is also a member of the Sonoma Marin Saving Water Partnership, an eleven-member partnership who have joined together to provide a regional approach in addressing water efficiency. The Partnership identifies and recommends implementation of joint water use efficiency projects, expands public information campaigns and maximizes the cost-effectiveness of water use efficiency programs in the region.

SECTION 6: DETERMINING WATER SHORTAGE REDUCTIONS

All of the City water accounts are metered. Meters are read monthly and billing invoices are distributed monthly. In addition, water provided to the City by the Sonoma County Water Agency is also metered/billed on a monthly basis.

Stages 1 through 4 – Monthly delivery records from the Agency meters and from local groundwater sources, if in use, will be reported to the Director of Water or the Director’s designee. If overall reduction goals are not met, the Director may notify the Board of Public Utilities and City Council and more aggressive measures can be implemented.

Stages 5 through 7 - Weekly delivery figures from the Agency meters and local groundwater sources, if in use, and monthly consumption data from the City’s Utility Billing Division will be reported to the Director of Water or the Director’s designee. If reduction goals are not met, the Director will notify the Board of Public Utilities and City Council and more aggressive action will be taken.

The City is currently in the final planning stages of implementing an Advanced Metering Infrastructure (AMI) project which will replace/retrofit existing water meters with new technology that will optimize meter reading, customer service and water-use efficiency. Meter replacement will begin in 2017 and is anticipated to be completed by 2022. As infrastructure is installed, advanced metering data will become available to more accurately gauge up to date water savings associated with various shortage stages.

SECTION 7: REVENUE AND EXPENDITURE IMPACTS

The City’s water rate structure consists of a two-tier water rate structure for Single-Family Residential customers, a uniform water usage rate structure for Multi-Family Residential and Commercial, Industrial and Institutional (CII) customers, and a water-budget based two-tier water rate structure for Dedicated Irrigation customers. As of January 5, 2016 the normal water usage rates per 1,000 gallons are listed in Table 6. The water rate structure also includes fixed monthly service charges, which vary with the size of the water meter.

Table 6: Water Usage Rates Effective January 5, 2016	
	Water Usage Rates(per 1,000 gallons)
Single Family Residential Tiered Rate	
Tier 1 (up to sewer cap)	\$5.25
Tier 2 (above sewer cap)	\$6.14
Multi-family Residential	\$5.59
Commercial, Industrial, & Institutional (CII)	\$5.59
Dedicated Irrigation Water-Budget Based Tiered Rate	
Tier 1 (up to 125% of water budget)	\$5.29
Tier 2 (above 125% of water budget)	\$6.70

Water usage rates during a shortage condition, as defined in the following sections, will be based on modifications to the water rate structure in place at the time of the declared emergency.

The City’s water rate structure is designed to encourage efficient water use, even during normal water supply conditions. This is achieved through a low fixed service charge and a relatively high usage charge applicable to each unit of water use. This conservation-oriented rate structure introduces some financial risk in that a significant portion of fixed costs is recovered through the usage charge, based on water usage. A reduction in water usage can result in revenues not covering all fixed costs.

7.1 DROUGHT RATE STRUCTURES AND SURCHARGES

Changes to the water rate structure during each stage of rationing are designed to encourage customers to reduce water use commensurate with water allocations and use reduction goals. In addition, the water rate structure changes are also necessary to help cover water system costs and protect the financial stability of the water system as water demands are reduced.

Under normal conditions, and in both Stages 1 and 2 (with voluntary use restrictions), there are no changes to the water rate structure. To compensate for loss of revenue from reduced water sales and increased staffing for the water shortage response effort, the Catastrophic Reserve may be employed in Stages 1 and 2. In the event of a water shortage, adoption of the Water Shortage Resolution (See Section 8) by the Santa Rosa City Council will allow the appropriation of funds from the Catastrophic Reserve.

In Stages 3 and 4, reduction in net revenue brought on by reduced water sales and increased costs for the water shortage response effort will be mitigated by both the Catastrophic Reserve and the introduction of a Water Shortage Charge (WSC) on each unit of water sold. A 5% WSC will be added to the then-current water usage rates on every unit of water sold for all customer accounts beginning in Stage 3. The WSC will increase to 10% in Stage 4, 15% in Stage 5, 20% in Stage 6, and 30% in Stage 7. Table 7 illustrates incremental changes in water rates as a function of the shortage stage.

Table 7: Water Shortage Charge (WSC) for All Water Sold – Stages 3 through 7		
WATER SHORTAGE CHARGE - STAGE 3		
Account Type	Water Shortage Charge Stage 3 (\$ Per 1,000 Gallons)	Example with Jan.2016 Water Usage Rates (\$ Per 1,000 Gallons)
Single Family and Duplex Accounts	Tier 1 Rate Plus 5% Tier 2 Rate Plus 5%	Tier 1 \$5.51 Tier 2 \$6.45
Dedicated Irrigation Accounts	Tier 1 Rate Plus 5% Tier 2 Rate Plus 5%	Tier 1 \$5.55 Tier 2 \$7.04
Multi-Family Residential Accounts(3 units or more)	Uniform Rate Plus 5%	\$5.87
Commercial, Industrial, Institutional, Health Care, Safety	Uniform Rate Plus 5%	\$5.87
WATER SHORTAGE CHARGE - STAGE 4		
Account Type	Water Shortage Charge Stage 4 (\$ Per 1,000 Gallons)	Example with Jan.2016 Water Usage Rates (\$ Per 1,000 Gallons)
Single Family and Duplex Accounts	Tier 1 Rate Plus 10% Tier 2 Rate Plus 10%	Tier 1 \$5.78 Tier 2 \$6.75
Dedicated Irrigation Accounts	Tier 1 Rate Plus 10% Tier 2 Rate Plus 10%	Tier 1 \$5.82 Tier 2 \$7.37
Multi-Family Residential Accounts(3 units or more)	Uniform Rate Plus 10%	\$6.15
Commercial, Industrial, Institutional, Health Care, Safety	Uniform Rate Plus 10%	\$6.15
WATER SHORTAGE CHARGE - STAGE 5		
Account Type	Water Shortage Charge Stage 5 (\$ Per 1,000 Gallons)	Example with Jan. 2016 Water Usage Rates (\$ Per 1,000 Gallons)
Single Family and Duplex Accounts	Uniform Rate Plus 15%	\$6.43
Dedicated Irrigation Accounts	Uniform Rate Plus 15%	\$6.43
Multi-Family Residential Accounts(3 units or more)	Uniform Rate Plus 15%	\$6.43
Commercial, Industrial, Institutional, Health Care, Safety	Uniform Rate Plus 15%	\$6.43
WATER SHORTAGE CHARGE - STAGE 6		
Account Type	Water Shortage Charge Stage 6 (\$ Per 1,000 Gallons)	Example with Jan. 2016 Water Usage Rates (\$ Per 1,000 Gallons)
Single Family and Duplex Accounts	Uniform Rate Plus 20%	\$6.71
Dedicated Irrigation Accounts	Uniform Rate Plus 20%	\$6.71
Multi-Family Residential Accounts(3 units or more)	Uniform Rate Plus 20%	\$6.71
Commercial, Industrial, Institutional, Health Care, Safety	Uniform Rate Plus 20%	\$6.71
WATER SHORTAGE CHARGE - STAGE 7		
Account Type	Water Shortage Charge Stage 7 (\$ Per 1,000 Gallons)	Example with Jan. 2016 Water Usage Rates (\$ Per 1,000 Gallons)
Single Family and Duplex Accounts	Uniform Rate Plus 30%	\$7.27
Dedicated Irrigation Accounts	Uniform Rate Plus 30%	\$7.27
Multi-Family Residential Accounts(3 units or more)	Uniform Rate Plus 30%	\$7.27
Commercial, Industrial, Institutional, Health Care, Safety	Uniform Rate Plus 30%	\$7.27

Beginning in Stage 5 and continuing through Stage 7, the tiered water usage rates for Single-Family Residential and Dedicated Irrigation accounts are eliminated and the uniform water usage rate applicable to Multi-Family Residential and CII accounts is imposed on all customer accounts. In addition, Excess Use Penalties will be imposed on water usage in excess with water allocations established for each customer.

The WSC is designed to recover a portion of the cost of the revenue from the shortfall from the entire community, and is designed such that a typical customer’s bill will not change significantly even though the water usage rates are increased (this assumes the typical customer will reduce water usage consistent with use reduction goals).

In addition to the WSC, an inclining rate designed to reward customers for staying within their allotment and to assess Excess Use Penalties (EUP) for water use over the allotment will be adopted at Stages 5, 6, and 7. In Stage 5, the EUP consists of a 10% penalty for use from 100% up to 150% of the water allotment and a 20% penalty for use over 150% of the water allotment for all customer accounts. In Stage 6, the EUP consists of a 25% penalty for use from 100% up to 150% above the water allotment and a 50% penalty for use over 150% of the water allotment for all customer accounts. In Stage 7, the EUP consists of a 50% penalty for use from 100% up to 150% above the water allotment and a 100% penalty for use over 150% of the water allotment for all customer accounts. The structure of the EUP is summarized in Table 8.

Table 8: Excess Use Penalty (EUP) for Water Used in Excess of Allotment Stages 5, 6, and 7	
WATER USE COMPARED TO ALLOTMENT	EXCESS USE PENALTY (EUP)
Water use up to 100% of allotment	Water usage rate with WSC per Table 7
Water use from 100% up to 150% of allotment	Stage 5 – Water usage rate with WSC plus 10% EUP Stage 6 – Water usage rate with WSC plus 25% EUP Stage 7 – Water usage rate with WSC plus 50% EUP
Water use over 150% of allotment	Stage 5 – Water usage rate with WSC plus 20% EUP Stage 6 – Water usage rate with WSC plus 50% EUP Stage 7 – Water usage rate with WSC plus 100% EUP

No EUP revenues are planned for or relied upon, as the EUP is entirely avoidable to all customers. EUP revenues are not intended to be used as general operating revenues during the emergency, but may be used to: (1) offset the extraordinary costs of the water shortage emergency such as additional conservation support; (2) rebuild the Catastrophic Reserve; and/or (3) establish a rate stabilization fund for the post-emergency recovery.

Table 9 summarizes the water shortage rate structure for each stage of rationing based on the current (effective January 5, 2016) water rates.

Table 9: Water Shortage Rate Structure (Jan. 2016)						
	NORMAL SUPPLY AND STAGES 1 & 2	STAGE 3: (16% TO 20% SHORTAGE)	STAGE 4: (21% TO 25% SHORTAGE)	STAGE 5: (26% TO 30% SHORTAGE)	STAGE 6: (31% TO 40% SHORTAGE)	STAGE 7: (41% TO 50% SHORTAGE)
MONTHLY SERVICE CHARGE (\$/MONTH) ¹						
5/8" meter	\$ 10.78	\$ 10.78	\$ 10.78	\$ 10.78	\$ 10.78	\$ 10.78
1" meter	\$ 24.18	\$ 24.18	\$ 24.18	\$ 24.18	\$ 24.18	\$ 24.18
1 1/2" meter	\$ 46.51	\$ 46.51	\$ 46.51	\$ 46.51	\$ 46.51	\$ 46.51
2" meter	\$ 73.31	\$ 73.31	\$ 73.31	\$ 73.31	\$ 73.31	\$ 73.31
3" meter	\$ 135.83	\$ 135.83	\$ 135.83	\$ 135.83	\$ 135.83	\$ 135.83
4" meter	\$ 225.16	\$ 225.16	\$ 225.16	\$ 225.16	\$ 225.16	\$ 225.16
6" meter	\$ 448.46	\$ 448.46	\$ 448.46	\$ 448.46	\$ 448.46	\$ 448.46
WATER USAGE RATES (\$/1,000 GAL.) ²						
Single Family & Duplexes	Tier 1	\$ 5.25	\$ 5.51	\$ 5.78		
	Tier 2	\$ 6.14	\$ 6.45	\$ 6.75		
Dedicated Irrigation	Tier 1	\$ 5.29	\$ 5.55	\$ 5.82		
	Tier 2	\$ 6.70	\$ 7.04	\$ 7.37		
Multi-Family Residential		\$ 5.59	\$ 5.87	\$ 6.15		
Non-Residential		\$ 5.59	\$ 5.87	\$ 6.15		
All Water Customers³	Tier 1 - Up to 100% of water allotment			\$ 6.43	\$ 6.71	\$ 7.27
	Tier 2 - Over 100% up to 150% of water allotment			\$ 7.07	\$ 8.39	\$ 10.91
	Tier 3 - Over 150% of water allotment			\$ 7.72	\$ 10.07	\$ 14.54
WATER SHORTAGE RATE SURCHARGES ³						
Water Shortage Charge		5%	10%	15%	20%	30%
Tier 2 Excess Use Penalty				10%	25%	50%
Tier 3 Excess Use Penalty				20%	50%	100%
¹ Monthly water service charges are unaffected by water shortage rate changes.						
² No changes to water usage rates occur during Stage 1 or Stage 2 conditions. Beginning in Stage the water usage rates are increased by the amount of the water shortage charge. The basic water usage structure for each customer class is unchanged through Stage 4.						
³ During Stages 5 through 7 the water usage rate structure changes to an allotment for each customer (as described). Water shortage charges apply in these stages, and excess use penalties apply to water usage above the allotment, as specified						

Table 10 details the City’s projected annual revenue and expenditure status (based on a normalized budget and water supply/demand condition for FY 15-16) in non-shortage conditions and at each stage in the water shortage program.

Customers who reduce their water use consistent with declared water use reduction goals should expect to see a decrease in the water portion of their monthly utility bill. Table 11 summarizes a sample water bill (not including wastewater fees) for an average Single Family Residential account that uses water consistent with the use reduction goal compared to a sample bill for an average Single Family Residential account that does not reduce water use during declared shortages

Table 10
Impact of Water Shortage on Revenues and Expenditures With Proposed Water Shortage Strategy (FY 15-16) (1)

	Water Use Reduction Ranges							
	Normal Supply (1)	Stage 1 Voluntary 6% to 10%	Stage 2 Voluntary 11% to 15%	Stage 3 Mandatory 16% to 20%	Stage 4 Mandatory 21% to 25%	Stage 5 Mandatory 26% to 30%	Stage 6 Mandatory 31% to 40%	Stage 7 Mandatory 41% to 50%
Water Sales (AF) -->	20,445	16,401	17,378	16,356	15,334	14,312	12,267	10,223
Sources of Funds								
Service Charge Revenue	\$ 9,480,000	\$ 9,480,000	\$ 9,480,000	\$ 9,480,000	\$ 9,480,000	\$ 9,480,000	\$ 9,480,000	\$ 9,480,000
Usage Charge Revenue (2)	\$ 36,200,000	\$ 32,580,000	\$ 30,770,000	\$ 28,960,000	\$ 27,150,000	\$ 25,340,000	\$ 21,720,000	\$ 18,100,000
Water Shortage Charge Rev. (3)	\$ 3,320,000	\$ 3,320,000	\$ 3,320,000	\$ 3,320,000	\$ 3,320,000	\$ 3,320,000	\$ 3,320,000	\$ 3,320,000
Other Operating Revenue	\$ 49,000,000	\$ 45,380,000	\$ 43,570,000	\$ 43,208,000	\$ 42,665,000	\$ 41,941,000	\$ 38,864,000	\$ 36,330,000
Total Sources of Funds (% of normal)		93%	89%	88%	87%	86%	79%	74%
Uses of Funds								
Salaries & Benefits	\$ 5,460,000	\$ 5,460,000	\$ 5,460,000	\$ 5,460,000	\$ 5,460,000	\$ 5,460,000	\$ 5,460,000	\$ 5,460,000
Services and Supplies	\$ 3,310,000	\$ 3,310,000	\$ 3,310,000	\$ 3,310,000	\$ 3,310,000	\$ 3,310,000	\$ 3,310,000	\$ 3,310,000
Utility Billing Services	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000
SCWA Water Purchases (4)	\$ 16,220,000	\$ 14,598,000	\$ 13,787,000	\$ 12,976,000	\$ 12,165,000	\$ 11,354,000	\$ 9,732,000	\$ 8,110,000
Recycled Water Purchases	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000
Electricity (4)	\$ 660,000	\$ 594,000	\$ 561,000	\$ 528,000	\$ 495,000	\$ 462,000	\$ 396,000	\$ 330,000
Groundwater Production (4)	\$ 100,000	\$ 90,000	\$ 85,000	\$ 80,000	\$ 75,000	\$ 70,000	\$ 60,000	\$ 50,000
Indirect Costs	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000
Water Conserv./Dmd Mgmt. (5)	\$ 930,000	\$ 1,033,000	\$ 1,094,000	\$ 1,163,000	\$ 1,240,000	\$ 1,329,000	\$ 1,550,000	\$ 1,860,000
Capital Outlay	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
O&M Projects	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000
Transfers To								
Utility Undrgrnd. Impact Fund	\$ 1,080,000	\$ 1,080,000	\$ 1,080,000	\$ 1,080,000	\$ 1,080,000	\$ 1,080,000	\$ 1,080,000	\$ 1,080,000
Debt Service Funds	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Capital Projects (Approp.) (6)	\$ 13,000,000	\$ 13,000,000	\$ 13,000,000	\$ 12,000,000	\$ 12,000,000	\$ 12,000,000	\$ 11,500,000	\$ 10,500,000
Other Funds/Reserves	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000
Total Uses of Funds (% of normal)	\$ 49,000,000	\$ 47,405,000 97%	\$ 46,617,000 95%	\$ 44,837,000 92%	\$ 44,065,000 90%	\$ 43,305,000 88%	\$ 41,328,000 84%	\$ 38,940,000 79%
Surplus/(Deficit) in Operations	\$ -	\$ (2,025,000)	\$ (3,047,000)	\$ (1,629,000)	\$ (1,400,000)	\$ (1,364,000)	\$ (2,464,000)	\$ (2,610,000)
Catastrophic Reserve								
Available Balance (7)	\$ 5,750,000	\$ 5,750,000	\$ 5,750,000	\$ 5,750,000	\$ 5,750,000	\$ 5,750,000	\$ 5,750,000	\$ 5,750,000
Excess Use Penalty Revenue (8)	\$ -	\$ (2,025,000)	\$ (3,047,000)	\$ (1,629,000)	\$ (1,400,000)	\$ (1,364,000)	\$ (2,464,000)	\$ (2,610,000)
Used to Cover Oper. Deficit (9)	\$ 5,750,000	\$ 3,725,000	\$ 2,703,000	\$ 4,121,000	\$ 4,350,000	\$ 4,386,000	\$ 3,286,000	\$ 3,140,000
Ending Balance (after 1 year)								
Water Shortage Charge				5%	10%	15%	20%	30%

Notes:

- (1) Reflects estimated FY 15-16 revenues and expenses under "normalized" budgetary, water supply, water demand, and economic conditions, as a basis for financial analysis. Normal water demand has been defined as the average water demand from 2004 through 2013, excluding 2009, and was determined to be 20,445 AF.
- (2) Water usage charge revenue is estimated to decline in proportion with reduced water sales.
- (3) Water shortage charges would be imposed when the use reduction goal exceeds 15 percent and escalate through higher stages to limit the operating deficit.
- (4) Water purchase costs, energy costs, and groundwater production costs would all decline in proportion to reduced water usage.
- (5) Water conservation and demand management costs would increase in inverse proportion to reduced water sales.
- (6) Funding for the capital program would be restricted when the use reduction goal exceeds 15 percent and escalate through higher stages to preserve cash.
- (7) Assumes Catastrophic Reserve is fully funded and available at the outset of a water shortage. Other surplus reserves may also be available during a water shortage.
- (8) Excess use penalties would be imposed in Stages 5, 6, and 7, but are not expected to generate any revenue, as the penalties can be avoided. Any penalty revenue received would be used to replenish the Catastrophic Reserve and/or fund conservation activities.
- (9) The Catastrophic Reserve and/or any available surplus reserves would be used to offset any operational deficit.

Table 11: Sample Single Family Residential Charges																			
Shortage Stage	Single Family Reduction Goal	Monthly Water Use (1,000 Gal.)	Monthly Service Charge	Water Usage Charge	Water Shortage Charge	Excess Use Penalty	Total Water Bill												
AVERAGE SINGLE FAMILY CUSTOMER MEETING REDUCTION GOALS¹																			
Normal	0%	10	\$10.78	\$56.95	n/a	n/a	\$67.73												
Stage 1	10%	9	\$10.78	\$50.81	n/a	n/a	\$61.59												
Stage 2	15%	8.5	\$10.78	\$47.74	n/a	n/a	\$58.52												
Stage 3	20%	8	\$10.78	\$44.67	\$2.23	n/a	\$57.68												
Stage 4	25%	7.5	\$10.78	\$41.60	\$4.16	n/a	\$56.54												
Stage 5	(2)	7	\$10.78	\$38.53	\$5.78	\$0	\$55.09												
Stage 6	(2)	5.6	\$10.78	\$29.93	\$5.99	\$0	\$46.70												
Stage 7	(2)	3.7	\$10.78	\$19.43	\$5.83	\$0	\$36.03												
AVERAGE SINGLE FAMILY CUSTOMER WITH NO WATER USE REDUCTION¹																			
Normal	0%	10	\$10.78	\$56.95	n/a	n/a	\$67.73												
Stage 1	10%	10	\$10.78	\$56.95	n/a	n/a	\$67.73												
Stage 2	15%	10	\$10.78	\$56.95	n/a	n/a	\$67.73												
Stage 3	20%	10	\$10.78	\$56.95	\$2.85	n/a	\$70.58												
Stage 4	25%	10	\$10.78	\$56.95	\$5.70	n/a	\$73.43												
Stage 5	(2)	10	\$10.78	\$56.95	\$8.54	\$2.81	\$79.08												
Stage 6	(2)	10	\$10.78	\$56.95	\$11.39	\$18.31	\$97.43												
Stage 7	(2)	10	\$10.78	\$56.95	\$17.09	\$107.55	\$192.37												
¹ Assumes single family customer with 5/8" meter, a 3-person household, summertime irrigation, and a sewer cap of 5,000 gallons. ² Stages 5, 6, and 7 include the following water use limitations: <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Per Capita (gpcd)</th> <th style="text-align: center;">Irrigation (gal./mo.)</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">Stage 5</td> <td style="text-align: center;">51</td> <td style="text-align: center;">2,400</td> </tr> <tr> <td style="text-align: right;">Stage 6</td> <td style="text-align: center;">48</td> <td style="text-align: center;">1,300</td> </tr> <tr> <td style="text-align: right;">Stage 7</td> <td style="text-align: center;">41</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>									Per Capita (gpcd)	Irrigation (gal./mo.)	Stage 5	51	2,400	Stage 6	48	1,300	Stage 7	41	0
	Per Capita (gpcd)	Irrigation (gal./mo.)																	
Stage 5	51	2,400																	
Stage 6	48	1,300																	
Stage 7	41	0																	

7.2 USE OF FINANCIAL RESERVES

Three lines of defense are incorporated into the City’s water shortage financial strategy and rate structure:

- The catastrophic reserve will be drawn down to absorb part of the financial deficit caused by a reduction in water rate revenues (due to lower water sales) that exceeds the reduction in operating costs.
- All customers will be subject to an increased water usage charge (Water Shortage Charge) to help cover water system costs, encourage water conservation by all customers, and help protect the financial condition of the water utility. The Water Shortage Charge (described below) is designed such that customers meeting use reduction goals will have lower water bills than they do with normal usage.
- Water service customers that exceed water allocations and do not meet reduction goals may be subject to additional Excess Use Penalties during Stage 5 through Stage 7 periods. Revenues from Excess Use Penalties will be used only for specified purposes

Table 12 summarizes the Stages in which the Water Shortage Charges and Excess Use Penalties first are applied.

Penalties or Charges	Stage When Penalty Takes Effect
Water Shortage Charge – Increased usage charge to encourage water conservation and help cover costs	3
Excess Use Charge – Penalty for excess use above allocation	5

7.3 OTHER MEASURES

As progressive stages of the Shortage Plan are enacted, an additional measure is taken to stabilize the financial picture for the utility. Along with the WSC, reductions in Capital Improvement Program expenditures are implemented in Stage 3, and increase further in Stages 6 and 7. Reduced capital spending will help to offset reduced revenue resulting from decreased water sales.

SECTION 8: RESOLUTION OR ORDINANCE

At the time of a water shortage emergency, the Santa Rosa City Council will adopt a Water Shortage Resolution. A draft Water Shortage Emergency Resolution is found in Attachment 2. With Stages 5 through 7, a Water Shortage Emergency Ordinance will also be adopted.

In the event that a Water Shortage Emergency occurs and the City Council cannot assemble to adopt a Water Shortage Emergency Resolution or Ordinance, the Director

of Water is authorized to implement the appropriate stage, based on the reduction in water supply, of the Shortage Plan. The Director of Water's determination to implement the Shortage Plan shall remain effective until the City Council meeting immediately following such determination, at which time the Santa Rosa City Council will adopt the Water Shortage Resolution or Ordinance.

SECTION 9: CATASTROPHIC SUPPLY INTERRUPTION

In addition to responding to drought conditions, the City's Shortage Plan can be used to respond to emergency conditions that interrupt water supplies to the City. Water supplies may be interrupted in the future due to water supply contamination, major transmission pipeline break, regional power outage, or a natural disaster such as an earthquake. In the event of an emergency, the Water Department would respond as outlined in the City's current City of Santa Rosa Utilities Department Water System Emergency Response Plan. Actions that the City would take if these emergencies occurred today are outlined below.

9.1 NO WATER AVAILABLE FROM THE AGENCY

In the event that the Agency's Russian River supply becomes contaminated (i.e. due to a chemical spill or other environmental incident), it may be possible that no water would be available from the Agency for a period of time. In such a case, the City would need to rely on water from Agency/City distribution system storage facilities, Farmers Lane wells, and/or emergency wells.

If such an event were to occur, the City would need to implement one or more stages of the Shortage Plan to notify customers of the need to reduce water use until the Agency water supply could be restored.

9.2 AREA-WIDE ELECTRICAL POWER FAILURE

If an area-wide electrical power failure were to occur within the City's water service area, many of the City's pumping facilities could potentially be impacted. The City has stationary standby generators at 18 of its 20 booster pump stations. The other two booster pump stations either have receptacles for use with a portable generator or have outlets for bypass pumping with portable water pumpers. In addition, the City has numerous pumper connectors and pressure regulating valves throughout the water system to move water from different pressure zones during an emergency.

The Agency's facilities may also be vulnerable to power outages; however, most of the Agency facilities which serve the City have backup power provisions.

9.3 EARTHQUAKE

Water system infrastructure, including pump stations, storage tanks, and pipelines, can be damaged during a strong earthquake. The City’s facilities have been constructed in accordance with the applicable building codes to minimize potential damage during an earthquake. However, it is expected that some facilities may be damaged as the result of a strong earthquake. The City has planned for this potential outage scenario by constructing system redundancy into its water system. The City has multiple storage facilities, looped distribution pipelines, and a hose reel trailer with over 2,500 lineal feet of potable hose in various sizes with fittings to allow potentially damaged portions of the City’s system to be quickly isolated and repaired as well as being able to construct manifolds for temporary emergency water stations.

SECTION 10: MINIMUM SUPPLY NEXT THREE YEARS

The estimated minimum water supply for the next three years assumes a multiple dry year condition based on the driest four-year historic sequence (1988 to 1991). As indicated in the Agency’s 2015 Urban Water Management Plan, no supply curtailment would result to the City from the Agency if the hydrologic conditions of the driest four-year historic sequence occurred today. Table 13 presents the estimated minimum water supply for the next three years, as well as the projected demands under normal conditions for the next three years. As shown, the estimated minimum water supply is sufficient to meet the projected water demands under normal conditions and no supply shortfall is projected.

The methodology used for the demand projections for the next three years is based on normal water use characteristics and does not incorporate the effects of the conditions described in Section 4 above. Because of this methodology, the projections for the next three years included in Table 13 may be slightly higher than what may likely occur and represents the maximum demand the City anticipates will occur based on a gradual shift in hydrologic conditions back to normal non-drought conditions.

Table 13: Minimum Supply Next Three Years (DWR Table 8-4)			
	2016	2017	2018
Available Water Supply	31,540	31,540	31,540

ATTACHMENTS

ATTACHMENT 1: CITY OF SANTA ROSA - WATER SHORTAGE ACTION PLAN 2015

Stage	Water Department Actions	Customer Actions	Comments
<p>Stage 1 - 10 percent overall reduction</p>	<p>1. Adopt resolution:</p> <ul style="list-style-type: none"> • Requesting voluntary water conservation with non-allocation based cut-back goals for all user classes. • Prohibiting water waste and reducing all non-essential uses. <p>2. Initiate public information campaign:</p> <ul style="list-style-type: none"> • Prepare and disseminate educational brochures, bill inserts, etc. • Disseminate technical information to specific customer types. • Set up public information booths urging water conservation and showing ways the public can save water. • Coordinate media outreach program; issue news releases to the media. • Explain other stages and forecast future actions. <p>3. Increase City support:</p> <ul style="list-style-type: none"> • Add temporary position to staff phone lines. <p>4. Prepare for future stages:</p> <ul style="list-style-type: none"> • Prepare for initiation of rationing stages. 	<p>1. Implement voluntary water use reductions.</p> <p>2. Adhere to water shortage resolution.</p> <p>3. Become aware of possible further restriction.</p>	<p>Voluntary program with community-wide reduction goals.</p> <p>Strong public information campaign.</p> <p>Emphasis on elimination of waste and increased awareness.</p> <p>Hose-end shut-off nozzles required on all garden and utility hoses.</p> <p>Hosing off hard surfaces prohibited unless required for public health and safety.</p>

Stage	Water Department Actions	Customer Actions	Comments
	<ul style="list-style-type: none"> Update people per household information for residential sector for per capita allotments. 		

Stage	Water Department Actions	Customer Actions	Comments
<p>Stage 2 – 15 percent overall reduction</p>	<p>1. Adopt resolution:</p> <ul style="list-style-type: none"> • Requesting voluntary water conservation with non-allotment based cut-back goals for all user classes. • Prohibiting water waste and reducing all non-essential uses. <p>2. Initiate public information campaign:</p> <ul style="list-style-type: none"> • Prepare and disseminate educational brochures, bill inserts, etc. • Send out information on irrigation hour limitation. • Disseminate technical information to specific customer types. • Set up public information booths urging water conservation and showing ways the public can save water. • Coordinate media outreach program; issue news releases to the media. • Explain other stages and forecast future actions. <p>3. Increase City support:</p> <ul style="list-style-type: none"> • Add temporary position to staff phone lines. <p>4. Prepare for future stages:</p> <ul style="list-style-type: none"> • Prepare for initiation of rationing stages. • Update people per household 	<p>1. Implement voluntary water use reductions.</p> <p>2. Adhere to water shortage resolution.</p> <p>3. Become aware of possible further restriction.</p>	<p>Voluntary program, community-wide reduction goals.</p> <p>Strong public information campaign.</p> <p>Emphasis on elimination of waste and increased awareness.</p> <p>Hose-end shut-off nozzles required on all garden and utility hoses.</p> <p>Hosing off hard surfaces prohibited unless required for public health and safety.</p> <p>Using potable water for street washing prohibited.</p> <p>“Water-on-request” restaurant program.</p>

Stage	Water Department Actions	Customer Actions	Comments
	<p>information for residential sector for per capita allotments.</p>		

Stage	Water Department Actions	Customer Actions	Comments
<p>Stage 3 - 20 percent overall reduction</p>	<p>1. Adopt resolution:</p> <ul style="list-style-type: none"> • Requesting mandatory water conservation with non-allotment based cut-back goals for all user classes. • Limiting hours of irrigation for all customers and reducing all non-essential uses. • Implementing 5% Water Shortage Charge (WSC). <p>2. Initiate public information campaign:</p> <ul style="list-style-type: none"> • Prepare and disseminate educational brochures, bill inserts, etc. • Send out information on irrigation hour limitation. • Disseminate technical information to specific customer types. • Set up public information booths urging water conservation and showing ways the public can save water. • Coordinate media outreach program; issue news releases to the media. • Explain other stages and forecast future actions. <p>3. Increase City support:</p> <ul style="list-style-type: none"> • Add temporary position to staff phone lines. • Initiate patrol for water waste violations. 	<p>1. Implement Mandatory water use reductions.</p> <p>2. Adhere to water shortage resolution.</p> <p>3. Become aware of possible further restriction.</p>	<p>Mandatory program, community-wide reduction goals.</p> <p>Strong public information campaign.</p> <p>Emphasis on elimination of waste and increased awareness.</p> <p>Irrigation limited to hours of 8 PM to 6 AM.</p> <p>Power washing prohibited (unless variance obtained)</p> <p>Hose-end shut-off nozzles required on all garden and utility hoses.</p> <p>Hosing off hard surfaces prohibited unless required for public health and safety.</p>

Stage	Water Department Actions	Customer Actions	Comments
	<p>4.</p> <ul style="list-style-type: none"> • Prepare for initiation of rationing stages. • Update people per household information for residential sector for per capita allotments. 		<p>Using potable water for street washing prohibited.</p> <p>“Water-on-request” restaurant program.</p>

Stage	Water Department Actions	Customer Actions	Comments
<p>Stage 4 - 25 percent overall reduction</p>	<ol style="list-style-type: none"> 1. Adopt resolution: <ul style="list-style-type: none"> • Requesting mandatory water conservation with non-allotment based cut-back goals for all user classes. • Limiting hours of irrigation for all customers and reducing all non-essential uses. • Implementing 10% WSC. 2. Initiate public information campaign: <ul style="list-style-type: none"> • Prepare and disseminate educational brochures, bill inserts, etc. • Send out information on irrigation hour limitation. • Disseminate technical information to specific customer types. • Set up public information booths urging water conservation and showing ways the public can save water. • Coordinate media outreach program; issue news releases to the media. • Explain other stages and forecast future actions. 3. Increase City support: <ul style="list-style-type: none"> • Add temporary position to staff phone lines. • Initiate patrol for water waste violations. 4. Prepare for future stages: 	<ol style="list-style-type: none"> 1. Implement mandatory water use reductions. 2. Adhere to water shortage resolution. 3. Become aware of possible further restriction. 	<p>Mandatory program, community-wide reduction goals.</p> <p>Strong public information campaign.</p> <p>Emphasis on elimination of waste and increased awareness.</p> <p>Operating ornamental fountains and water features is prohibited.</p> <p>Irrigation limited to hours of 8 PM to 6 AM.</p> <p>Power washing prohibited (unless variance obtained)</p> <p>Hose-end shut-off nozzles required on all garden and utility hoses.</p> <p>Hosing off hard surfaces prohibited</p>

Stage	Water Department Actions	Customer Actions	Comments
	<ul style="list-style-type: none"> • Prepare for initiation of rationing stages. • Update people per household information for residential sector for per capita allotments. 		<p>unless required for public health and safety.</p> <p>Using potable water for street washing prohibited.</p> <p>“Water-on-request” restaurant program.</p>

Stage	Water Department Actions	Customer Actions	Comments
<p>Stage 5 - 30 percent overall reduction</p>	<p>In addition to Stage 1 through Stage 4:</p> <p>1. Adopt rationing ordinance:</p> <ul style="list-style-type: none"> Assigning allotment to each water service: residential based on per capita allotment plus landscape; irrigation only based on ETo water budget; non-residential based on reduction from previous consumption. Implementing 15% WSC and Excess Use Penalty (EUP). Expanding prohibited uses and developing penalty structure for waste violations. Defining criteria and administrative procedures for variances. <p>2. Intensify public info campaign:</p> <ul style="list-style-type: none"> Notify each service of allotment goals. Make site surveys available to all customers. <p>3. Increase City support:</p> <ul style="list-style-type: none"> Establish Shortage Response Center. Appoint variance officer and administer variance program for all user classes. Increase water waste patrol and audit support. 	<p>In addition to Stage 5:</p> <p>1. Adhere to allotment for 30 percent overall reduction:</p> <ul style="list-style-type: none"> Single Family - 51 gpcd, plus landscape allotment of 2,400 gallons per month May-Oct. Multiple Family - 51 gpcd, plus moderate landscape allotment. Commercial/Industrial/ Governmental - 85 % of previous 12 months' usage (15% reduction). Irrigation - 42% of ET based water budget. Health Care Facilities/ Public Safety - 95% of previous 12 months' usage (5% reduction). <p>2. Request variance where required.</p>	<p>Mandatory program with allotments for each service.</p> <p>Close tracking and feedback to community.</p> <p>Prohibit uses from Stage 4 plus:</p> <ul style="list-style-type: none"> filling new swimming pools prohibited. <p>New development must offset water demand.</p> <p>Recycled water must be used for construction dust control if available and project is within a 1-mile radius of a recycled water filling station.</p>

Stage	Water Department Actions	Customer Actions	Comments
		3. Eliminate all prohibited uses.	

Stage	Water Department Actions	Customer Actions	Comments
<p>Stage 6 - 40 percent overall reduction</p>	<p>In addition to Stage 5:</p> <ol style="list-style-type: none"> Intensify ordinance requirements: <ul style="list-style-type: none"> Prohibit installation of landscapes in new construction. Require new construction to offset two times the new demand through upgrades to existing homes and businesses (toilet replacements, etc.). Implementing 20% WSC and EUP. Intensify public information campaign: <ul style="list-style-type: none"> Promote participation in new construction offset program. Staffing: <ul style="list-style-type: none"> Expand Shortage Response Center, water waste patrol and audit effort. 	<ol style="list-style-type: none"> Adhere to allotment for 40 percent overall reduction: <ul style="list-style-type: none"> Single Family - 48 gpcd, plus landscape allotment of 1,300 gallons per month May-Oct. Multiple Family – 48 gpcd, plus minimal landscape allotment. Commercial/Industrial/ Governmental - 80% of previous 12 months' usage (20% reduction). Irrigation - 23% of ET based budget. Health Care Facilities/ Public Safety - 90% of previous 12 months' usage (10% reduction). Request variance when required. Eliminate all prohibited uses. 	<p>Mandatory program with minimal landscape allotments.</p> <p>Penalties for excess usage.</p> <p>Prohibit uses from Stage 5 plus:</p> <ul style="list-style-type: none"> New construction program - offset twice the new demand. No water using landscape installation in new construction. Filling or topping off of existing swimming pool is prohibited.

Stage	Water Department Actions	Customer Actions	Comments
<p align="center">Stage 7 - 50 percent overall reduction</p>	<p>In addition to Stage 6:</p> <ol style="list-style-type: none"> Intensify ordinance requirements: <ul style="list-style-type: none"> Prohibit installation or replanting of any landscaping. Requiring new construction to offset three times the new demand through upgrades to existing homes and businesses; toilet replacement, etc. Implementing 30% WSC and EUP. Intensify public information campaign. Expand Drought Response Center, water waste patrol and audit effort. 	<ol style="list-style-type: none"> Adhere to allotment for 50 percent overall reduction: <ul style="list-style-type: none"> Single Family - 41 gpcd, no landscape allotment. Multiple Family - 41 gpcd, no landscape allotment. Commercial/Industrial/Governmental - 70% of previous 12 months' usage (30% reduction). Irrigation - minimal allotment – for mature trees and shrubs only. Health Care Facilities/ Public Safety - 85% of previous 12 months' usage (15% reduction). Request variance where required. Eliminate all prohibited uses. 	<p>Mandatory program with no landscape allotments.</p> <p>Severe penalties for excess usage.</p> <p>Prohibited uses from Stage 6 plus:</p> <ul style="list-style-type: none"> New construction program – offset three times new demand. No water using landscape installation in new construction.

ATTACHMENT 2:

DRAFT WATER SHORTAGE EMERGENCY RESOLUTION

RESOLUTION OF THE COUNCIL OF THE CITY OF SANTA ROSA DECLARING A WATER SHORTAGE EMERGENCY, IMPLEMENTING STAGE ___ OF THE CITY'S URBAN WATER SHORTAGE CONTINGENCY PLAN REQUESTING CUSTOMERS TO _____ REDUCE WATER USE BY ___%, AND AUTHORIZING UTILIZATION OF THE UTILITY'S CATASTROPHIC RESERVE.

WHEREAS, the City of Santa Rosa is a City empowered to provide water service within certain boundaries; and

WHEREAS the Sonoma County Water Agency (Agency) is the wholesaler of water to the City of Santa Rosa; and

WHEREAS, due to (current condition – drought, contamination, etc.), water supply conditions indicate that a ___% reduction in demand is required to ensure adequate supply in 20__; and

WHEREAS, the Sonoma County Water Agency has reduced delivery to the City and all prime contractors by ___%; and

WHEREAS, the City of Santa Rosa has the authority and responsibility to adopt water demand reduction measures within its area of service; and

WHEREAS, the City of Santa Rosa has the authority to employ the Catastrophic Reserve during a Water Shortage Emergency; and

WHEREAS, the Utilities Department staff is recommending implementation of Stage __ of the City's Urban Water Shortage Contingency Plan; and

WHEREAS, on _____ the Board of Public Utilities recommended that the Council of the City of Santa Rosa adopt a resolution declaring a water shortage emergency, directing staff to implement a program of demand management as defined by Stage ___ of the City's Urban Water Shortage Contingency Plan to realize community-wide water reduction of ___% and directing staff to utilize the Catastrophic Reserve to compensate for loss of revenue due to reduced water sales.

NOW, THEREFORE, BE IT RESOLVED that the Council of the City of Santa Rosa declares a water shortage emergency and directs staff to implement a program of demand management as defined by Stage ___ of the City's Urban Water Shortage Contingency Plan to realize community-wide water reduction of ___%.

BE IT FURTHER RESOLVED, that the City Council directs staff to utilize the Catastrophic Reserve to compensate for loss of revenue due to reduced water sales.

IN COUNCIL DULY PASSED this _____ day of _____, 20____

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST: _____

APPROVED: _____

City Clerk
Mayor

APPROVED AS TO FORM:

City Attorney

ATTACHMENT 3:

**California Water Code Section 10632
Urban Water Management Planning**

Water Shortage Contingency Analysis

10632.

(a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:

(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage.

(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(6) Penalties or charges for excessive use, where applicable.

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(8) A draft water shortage contingency resolution or ordinance.

(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

(b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined

in subdivision (a) of Section 115921 of the Health and Safety Code.