TOWN OF WINDSOR

Windsor Water District

2020 URBAN WATER MANAGEMENT PLAN







FINAL

AUGUST 2021

WOODARD &CURRAN

TABLE OF CONTENTS

SECTION **PAGE NO.**

1. INTRODUCTION AND LAY DESCRIPTION 1-1

1.1 Lay Description 1-1
1.2 Background and Purpose 1-3
1.3 Urban Water Management Planning and the California Water Code 1-3
1.3.1 Changes to the Water Code Pertaining to UWMPs since 2015 1-3
1.4 Urban Water Management Plans in Relation to Other Planning Efforts 1-4
1.5 Plan Organization 1-5

2. PLAN PREPARATION 2-1

2.1 Basis for Preparing a Plan 2-1
2.1.1 Public Water Systems 2-1
2.1.2 Agencies Serving Multiple Service Areas/Public Water Systems 2-1
2.2 Regional Planning 2-1
2.3 Individual or Regional Planning and Compliance 2-2
2.4 Fiscal or Calendar Year and Units of Measure 2-2
2.4.1 Fiscal or Calendar Year 2-2
2.4.2 Reporting Complete 2020 Data 2-3
2.4.3 Units of Measure 2-3
2.5 Coordination and Outreach 2-3
2.5.1 Wholesale and Retail Coordination 2-3
2.5.2 Coordination with Other Agencies and the Community 2-4
2.5.3 Notice to Cities and Counties 2-4

3. SYSTEM DESCRIPTION 3-1

3.1 General Description 3-1
3.2 Service Area and Customer Types 3-1
3.3 Potable System Facilities 3-6
3.3.1 Russian River Well Field 3-6
3.3.2 Sonoma Water's Facilities 3-6
3.3.3 Groundwater Facilities (Off-River Wells) 3-6
3.3.4 Distribution 3-7
3.4 Service Area Climate 3-9
3.4.1 Climate Change 3-10
3.5 Service Area Population and Demographics 3-12
3.5.1 Service Area Population 3-12
3.5.2 Other Social, Economic, and Demographic Factors 3-12
3.6 Land Uses within Service Area 3-15
3.6.1 Existing Land Use 3-15
3.6.2 Future Land Use 3-16
3.6.3 Land Use Coordination 3-19
3.6.4 Land Use-Based Demand Factor 3-20

4. CUSTOMER WATER USE 4-1

4.1 Non-Potable Versus Potable Water Use 4-1

4.2 Past, Current, and Projected Water Use by Sector 4-1
4.2.1 Water Use Sectors Listed in Water Code 4-1
4.2.2 Water Use Sectors in Addition to Those Listed in Water Code 4-2
4.2.3 Past Water Use 4-3
4.2.4 Distribution System Water Losses 4-3
4.2.5 Current Water Use 4-4
4.2.6 Projected Water Use 4-5
4.2.7 Characteristic Five-Year Water Use 4-8
4.3 Water Use for Lower Income Households 4-8
4.4 Climate Change Considerations 4-9

5. SBX7-7 BASELINE, TARGETS, AND 2020 COMPLIANCE 5-1

5.1 Background 5-1
5.2 Baseline and Target Calculations for 2020 UWMPs 5-2
5.3 2020 Compliance Daily Per-Capita Water Use (GPCD) 5-3
5.4 Regional Alliance 5-3

6. SYSTEM SUPPLY 6-1

6.1 Water Supply Sources 6-1
6.1.1 Purchased Water 6-1
6.1.2 Groundwater 6-2
6.1.3 Surface Water 6-7
6.1.4 Stormwater 6-7
6.1.5 Wastewater and Recycled Water 6-7
6.1.6 Desalinated Water 6-16
6.1.7 Water Exchanges and Transfers 6-16
6.1.8 Future Water Projects 6-16
6.1.9 Summary of Existing and Planned Sources of Water 6-18
6.1.10 Special Conditions 6-20
6.2 Energy Intensity 6-21

7. WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT 7-1

7.1 Water Service Reliability Assessment 7-1
7.1.1 Service Reliability – Constraints on Water Sources 7-1
7.1.2 Service Reliability – Year Type Characterization 7-2
7.1.3 Service Reliability – Supply and Demand Comparison 7-3
7.2 Drought Risk Assessment 7-8
7.2.1 DRA Data, Methods, and Basis for Water Shortage Conditions 7-8
7.2.2 DRA Individual Water Source Reliability 7-8
7.2.3 DRA Total Water Supply and Use Comparison 7-9

8. WATER SHORTAGE CONTINGENCY PLAN 8-1

8.1 Overview of the WSCP 8-1
8.2 Summary of Water Shortage Response Strategy and Required DWR Tables 8-2

9. DEMAND MANAGEMENT MEASURES 9-1

9.1 Demand Management Measures for Wholesale Agencies 9-1
9.2 Demand Management Measures for Retail Agencies 9-1
9.2.1 Water Waste Prevention Ordinances 9-1

9.2.2 Metering 9-2
9.2.3 Conservation Pricing 9-3
9.2.4 Public Education and Outreach 9-4
9.2.5 Programs to Assess and Manage Distribution System Real Loss 9-5
9.2.6 Water Conservation Program Coordination and Staffing Support 9-6
9.2.7 Other DMMs 9-6
9.3 Water Use Objectives (Future Requirements) 9-8

10. PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION 10-1

10.1 Inclusion of All 2020 Data 10-1
10.2 Notice of Public Hearing 10-1
10.3 Public Hearing and Adoption 10-1
10.4 Plan Submittal 10-2
10.5 Public Availability 10-2
10.6 Amending an Adopted UWMP 10-2

11. REFERENCES 11-1

TABLES

Table 2-1: Public Water Systems (AFY) (DWR Table 2-1R)
Table 2-2: Plan Identification (DWR Table 2-2)
Table 2-3: Supplier Identification (DWR Table 2-3)
Table 2-4 Water Supplier Information Exchange (DWR Table 2-4R)
Table 3-1 Well Summary
Table 3-2 Storage Reservoirs
Table 3-3 Pump Stations
Table 3-4 Distribution Pipelines
Table 3-5 Monthly Climate Values for Windsor Area
Table 3-6 Climate Change Impacts and Effects in Sonoma County
Table 3-7 Service Area Population – Current and Projected (DWR Table 3-1R)
Table 3-8 Summary of Existing Land Use with the Town
Table 3-9 Future Land Use for Currently Vacant Parcels
Table 3-10 Specific Development Projected Demand Summary
Table 3-11 Projected Number of Accounts
Table 3-12 Land Use-Based Demand Factors
Table 4-1 Past Annual Water Use (AFY) (2016 – 2019)
Table 4-2 Last Five Years of Water Loss Audit Reporting (DWR Table 4-4R)
Table 4-3 Preceding Five Years of Non-Revenue Water
Table 4-4 Demands for Potable and Non-Potable Water – Actual (DWR Table 4-1R)
Table 4-5 Use for Potable and Non-Potable Water – Projected (DWR Table 4-2R)
Table 4-6 Total Gross Water Use (Potable and Non-Potable) (DWR Table 4-3R)
Table 4-7 Five-Year Characteristic Water Use
Table 4-8 Inclusion in Water Use Projections (DWR Table 4-5R)
Table 5-1 Baseline and Targets Summary from SB X7-7 Verification Form (DWR Table 5-1R)
Table 5-2 2020 Compliance (DWR Table 5-2R)
Table 6-1 Groundwater Volume Pumped (DWR Table 6-1R)
Table 6-2 Wastewater Collected Within Service Area in 2020 (DWR Table 6-2R)
Table 6-3 Wastewater Treatment and Discharge within Service Area in 2020 (DWR Table 6-3R)
Table 6-4 Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4R)
Table 6-5 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual (DWR Table 6-5R)
Table 6-6 Methods to Expand Future Recycled Water Use (DWR Table 6-6R)
Table 6-7 Expected Future Water Supply Projects or Programs (DWR Table 6-7R)
Table 6-8 Water Supplies — Actual (DWR Table 6-8R)
Table 6-9 Water Supplies – Projected (DWR Table 6-9R)
Table 6-10 Recommended Energy Reporting – Total Utility Approach (DWR Table O-1B)
Table 6-11 Recommended Energy Reporting – Wastewater & Recycled Water (DWR Table O-2)
Table 7-1 Basis of Water Year Data (Reliability Assessment) (DWR Table 7-1R)
Table 7-2 Normal Year Supply and Demand Comparison (DWR Table 7-2R)
Table 7-3 Detailed Single Dry Year Supply and Demand Comparison
Table 7-4 Single Dry Year Supply and Demand Comparison (DWR Table 7-3)
Table 7-5 Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4)
Table 7-6 Five-year Drought Risk Assessment Tables to address Water Code Section 10635(b) - Potable (Optional DWR Table 7-5)

Table 7-7 Five-year Drought Risk Assessment Tables to address Water Code Section 10635(b) – Non-Potable (Optional DWR Table 7-5)
Table 7-8 Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b) (DWR Table 7-5)
Table 8-1 Water Shortage Contingency Plan Levels (DWR Table 8-1)
Table 8-2 Demand Reduction Actions (DWR Table 8-2)
Table 8-3 Supply Augmentation and Other Actions (DWR Table 8-3)
Table 10-1 Notification to Cities and Counties (DWR Table 10-1R)

FIGURES

Figure 3-1 Town of Windsor Jurisdictional Boundary
Figure 3-2 Town of Windsor Service Area
Figure 3-3 Town of Windsor Potable Water Distribution Network
Figure 3-4 Town of Windsor Recycled Water System
Figure 3-5 Disadvantaged Communities (DACs) in the Town of Windsor Service Area
Figure 3-6 Town of Windsor Existing Land Use
Figure 3-7 Town of Windsor Future Land Use Development
Figure 6-1 Governance Structure of the Santa Rosa Plain Groundwater Sustainability Agency
Figure 6-2 Groundwater Basins
Figure 8-1 Water Shortage Contingency Plan Flow of Information

APPENDICES

Appendix A – Urban Water Management Plan Checklist
Appendix B – Council Meeting Agendas and Public Notice Documentation
Appendix C – 2020 Water Demand Analysis and Water Conservation Measure Update, EKI 2020 Report
Appendix D – American Water Works Association Water Loss Audit Report Form
Appendix E – SB X7-7 Tables
Appendix F – 2006 Restructured Agreement between Sonoma Water and the Town
Appendix G – Locations of Recycled Water Customers
Appendix H – Water Shortage Contingency Plan
Appendix I – Water Waste Ordinance

ABBREVIATIONS & ACRONYMS

Act	Urban Water Management Planning Act
AF	Acre-feet
AFY	acre-feet per year
AMI	Advanced Metering Infrastructure
AWWA	American Water Works Association
DOF	California Department of Finance
CII	commercial, industrial and institutional
CWC	California Water Code
DAC	Disadvantaged Communities
DMM	Demand Management Measures
DRA	Drought Risk Assessment
DU	Dwelling Unit
ETo	Evapotranspiration
°F	Fahrenheit
FTE	fulltime equivalent
GHG	greenhouse gas
gpcd	gallons per capita per day
gpm	gallons per minute
GSA	Groundwater Sustainability Agencies
GSP	Groundwater Sustainability Plan
MHI	median household income
MG	million gallons
NCIRWMP	North Coast Integrated Water Management Plan
NCRP	North Coast Resource Partnership
QWEL	Qualified Water Efficient Landscaper
Plan	Urban Water Management Plan
OSA	Outside Service Area
RCPA	Sonoma County Regional Climate Protection Authority
SB	Senate Bill
SDAC	Severely Disadvantaged Community
SGMA	Sustainable Groundwater Management Act
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
Town	Town of Windsor
UGA	Urban Growth Area
USACE	The U.S. Army Corps of Engineers
UWMP	Urban Water Management Plan
WAC	Water Advisory Committee
Water Code	California Water Code
WET	Water Efficient Technologies
WSCP	Water Shortage Contingency Plan

1. INTRODUCTION AND LAY DESCRIPTION

1.1 Lay Description

The Town of Windsor (Town), located in Sonoma County, is comprised of approximately 28,397 residents. The Windsor Water District operates the Town's water utilities and provides water primarily for residential and commercial use. The Town's total water demand in 2020 was 4,288 acre-feet per year (AFY), including residential, commercial and industrial water demand (2,975 AFY), landscape irrigation (540 AFY), recycled water demand for potable offset (504 AFY), and unaccounted-for water losses (269 AFY). The Town's demand is relatively constant with increased use matching projected population growth. Water demands are projected to increase by about 1.6% per year based primarily on expected population and employment growth. The Town's actual 2020 total gross per capita water use is 119 gallons per capita per day (gpcd), which is less than the regulatory requirement of Senate Bill SB7-7x 2020 target of 130 gpcd. The gpcd is the average residual water consumption per person and is often used to reflect urban water use efficiency It is expected that the Town will continue to meet this goal with continued passive water savings resulting from plumbing code and market changes requirements, including the natural change-out of water using fixtures and devices with higher efficiency ones over time.

The Town has two primary water sources: Russian River well field (85%) and wholesale surface water purchased from Sonoma Water (15%). The Russian River well field pumps water shallow wells, roughly from 50 feet below ground, and adjacent to the Russian River. The water extracted is considered surface water in connection with underflow from the river and is extracted per the Sonoma County Water Agency (Sonoma Water) water right. The wholesale water purchased from Sonoma Water is delivered to the Town's water distribution network via the Santa Rosa Aqueduct. Both water sources are reliant on the Russian River. Other sources of water supply include tertiary-treated recycled water from the local Town wastewater treatment plant and applied to specific landscape and agricultural parcels and groundwater from the Esposti Well that provides raw water to irrigate Esposti Park.

The Town currently depends almost wholly on surface water supplies obtained directly or indirectly from the Russian River. The Russian River is a rain-fed river, depending on the timing and magnitude of precipitation events for its flows (unlike snow-fed rivers that rely on Sierra snow melt for seasonal flows). As such, flows in the Russian River, and subsequently the ability to divert those flows, may be affected in the future by climate change impacts on precipitation which are generally predicted to result in shorter periods of more intense flows in the future. Sonoma Water is a partner in the management of two reservoirs on the Russian River for both flood control and water supply, Lake Mendocino and Lake Sonoma. Sonoma Water determines the amount of water to be released from each reservoir when the lake levels are in the water supply pools. The U.S. Army Corps of Engineers (USACE) determines the amount of water to be released when the lake levels are above the water supply pools and in the flood control pools.

Lake Mendocino relies on year-to-year rainfall as well as water diverted from the Potter Valley Project. Lake Mendocino is a key drinking water source for the cities of Ukiah, Healdsburg, Cloverdale, and Hopland, and also provides water to Sonoma Water's Russian River water supply system. Water releases from Lake Mendocino support flows in the Russian River for the threatened Chinook salmon and steelhead trout during the fall and winter seasons. Lake Sonoma is about four times larger than Lake Mendocino and provides multiple years of water supply. Lake Sonoma relies on rainfall and supports a dynamic and fragile ecosystem in Dry Creek that

includes the endangered Coho salmon and threatened steelhead trout. Lake Sonoma also provides a majority of Sonoma Water's service area, including the Town of Windsor, with its drinking water. The Russian River is a managed river system with reservoir releases controlling river flows, especially throughout most of the summer and fall. When tributary stream flows are low, Sonoma Water releases water stored in the reservoirs to supplement the natural flows in the Russian River to provide adequate flows for water supply, recreation, and aquatic habitat. A release from a reservoir can be categorized as 'pass-through water' or 'stored water'. The term 'project water' is often used instead of stored water and is used to describe water that is present because of the dam and reservoir project. Pass-through water is water flowing into the reservoir that is not stored in but passes through the reservoir. Project water releases to supplement the natural flows in the Russian River and Dry Creek are necessary to meet State Water Resources Control Board mandatory minimum streamflow requirements that exist for both of these watercourses and can be restricted at times in order to protect Coho and steelhead trout nests, resulting in regulatory droughts where water exists in Lake Sonoma but sufficient supplies for water use cannot be released without habitat damage.

To address anticipated climate and regulatory changes impacting its surface water supplies and to ensure a reliable water supply for its residents, the Town is actively participating in or planning several programs, including:

- Participating in the development of a Groundwater Sustainability Plan (GSP) to protect the long-term usability of the underlying Santa Rosa Plain Groundwater Basin
- Planning the construction of two off-river groundwater production wells to supplement water supplies
- Participating in a regional reliability study to identify ways in which the Town can respond to emergencies and participate in regional efforts to ensure supply reliability under a variety of conditions.
- Participating in the Potter Valley Project Federal Energy Regulatory Commission relicensing process and efforts to develop a regional entity that could operate the project in the future
- Generating revised Water Shortage Contingency Plan (WSCP), as an appendix to this Urban Water Management Plan (UWMP)

Water shortage contingency planning is a strategic planning process that the Town engages to prepare for and respond to water shortages. A water shortage, when water supply available is insufficient to meet the normally expected customer water use at a given point in time, may occur due to a number of reasons, such as water supply quality changes, climate change, drought, and catastrophic events (e.g., earthquake). The Town WSCP provides real-time water supply availability assessment and structured steps designed to respond to actual conditions. This level of detailed planning and preparation will help maintain reliable supplies and reduce the impacts of supply interruptions.

The California Water Code (CWC) Section 10632 requires every urban water supplier that serves more than 3,000 acre-feet per year or has more than 3,000 connections to prepare and adopt a standalone Water Shortage Contingency Plan as part of its urban water management plan. The

WSCP is required to allow suppliers to plan for a greater than 50% supply shortage. This WSCP is due to be updated, based on new requirements, every five years and is due to the California Department of Water Resources by July 1, 2021.

1.2 Background and Purpose

This UWMP provides detailed information on water supplies, water demands, and management for the Windsor Water District's water utility, and is intended as a planning tool for long-term supply and resource management. The Town Council sits as the Board of Directors for the Windsor Water District, which owns and operates the water and wastewater utilities (Reed Group, Inc., 2015). The water utility provides water service within the Town and in the Airport and Shiloh/Mayacama service areas, as well as a few other parcels outside the Town Limits. The water reclamation utility provides wastewater collection, treatment, distribution of recycled water and disposal services within the Town. In this UWMP, "Town" refers to the Town of Windsor or the Windsor Water District, as appropriate.

In this UWMP, water supplies and demands are compared in a historical and projected framework; different conditions are used for projections, including normal, single-dry, and multiple-dry years. A thorough description of the current system is provided and discussed in terms of capacity and reliability. Water demand is estimated through historical meter readings, sales, and demographic data. Conservation measures are evaluated in keeping with the requirements of SBx7-7, with analyses conducted for contingency planning relative to drought response and associated consumption reduction.

This 2020 UWMP is an update to the Town's 2015 UWMP.

1.3 Urban Water Management Planning and the California Water Code

The Urban Water Management Planning Act (Act) was first passed in 1983 and can be found in the California Water Code (CWC or Water Code), Sections 10610-10656. The Act requires water agencies to develop UWMPs every five years as a long-term planning and resource management document.

The Water Conservation Act of 2009 (i.e., SB X7-7) amended the CWC and was passed following a two-year drought beginning in 2007. SB X7-7 calls for a state-wide 20% per capita water use reduction in urban water use by 2020, partly by requiring water agencies to per capita set urban water use targets in increments of five years. To be eligible for State water grants and loans, water agencies must comply with the requirements of SB X7-7 beginning in 2016. The Town's compliance with these requirements is detailed in Section 5.

1.3.1 Changes to the Water Code Pertaining to UWMPs since 2015

The Urban Water Management Planning Act has undergone several revisions since the 2015 UWMPs were prepared to address changing conditions and to guide California's water resource management. The major new requirements passed by the California Legislature relevant to the preparation of 2020 UWMPs are briefly descried below, and individual sections of this UWMP provide details addressing these changes.

- **Lay Description** - The Legislature included a new statutory requirement to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks.

- **Five Consecutive Dry-Year Water Reliability Assessment** - The Legislature modified the dry-year water reliability planning from a "multiyear" time period to a "drought lasting five consecutive water years" designation.

- **Drought Risk Assessment** - The Legislature created a new UWMP requirement for drought planning in part because of the significant duration of recent California droughts and the predictions about hydrological variability attributable to climate change. The Drought Risk Assessment (DRA) requires assessing water supply reliability over a five-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years.

- **Seismic Risk** - The Water Code now requires addressing seismic risk to various water system facilities and to have a mitigation plan. An important aspect of this provision is the intersection of water supply infrastructure planning with a county or regional hazard mitigation plan.

- **Water Shortage Contingency Plan** - The Legislature modified relevant Water Code sections in 2018 to require a WSCP with specific elements. The WSCP is a document that provides an action plan for a drought or catastrophic water supply shortage. Although the new requirements are more prescriptive than previous versions, many of these elements have long been included in WSCPs, other sections of UWMPs, or as part of standard procedures and response actions.

- **Groundwater Supplies Coordination** - The Legislature enacted the Sustainable Groundwater Management Act (SGMA) in 2014 to address groundwater conditions throughout California. The Water Code now requires 2020 UWMPs to be consistent with GSPs in areas where those plans have been completed by Groundwater Sustainability Agencies (GSAs).

1.4 Urban Water Management Plans in Relation to Other Planning Efforts

The Town coordinated the development of this UWMP with the Town's general planning efforts and relied on information developed for several planning reports including:

- The Town of Windsor 2040 General Plan (Town of Windsor, 2018)

- The Windsor Water Master Plan (Woodard & Curran, 2019)

- Town of Windsor Recycled Water Storage and Use Study (Woodard & Curran; Brelje & Race, 2020)

- Water Demand Analysis and Water Conservation Measure Update (EKI, 2020)

- Santa Rosa Plain Groundwater Sustainability Plan (under development)

As part of the water demand analysis conducted in 2020, the Town participated in a regionally-coordinated demand management study (as further discussed in the UWMP's demand

management measures in Section 9) and supply assessment led by Sonoma Water (discussed in Section 7). The goal of the regional coordination was to evaluate and estimate projected water demands through 2040 based on a common methodology and identify potential water conservation programs and regional conservation measures considered for implementation in the future (EKI, 2020).

The Town is also participating in the development of a 2022 GSP for the Santa Rosa Plain Groundwater Subbasin. While the GSP is still in development, information from the UWMP will be used to support the GSP, especially information about groundwater supplies and demands.

One of the crucial elements of an UWMP is the population growth projections for the water supply service area. Water demand projections are based in large part upon projected population growth. As presented in detail in Section 3, population projections used for this UWMP capture the estimated numbers of people served by the Town's potable water system. This estimate includes the population within the Town limits, plus the population outside the Town limits which is served by the Town's water system. These outside service areas include the Airport and Shiloh/Mayacama areas. The population projections are consistent with the Town of Windsor 2040 General Plan and are based on data provided by the Town[1] (EKI, 2020). Employment projections are based on Association of Bay Area Governments (ABAG) projections.

1.5 Plan Organization

The structure of this Plan generally follows the suggestions outlined in the Final *Urban Water Management Plan Guidebook 2020*, released by DWR in March 2021 (California Department of Water Resources, 2021). A checklist of all UWMP requirements, the form of which was provided by the DWR, is included in Appendix A. This UWMP is organized into sections as follows:

- **Section 1 "Introduction and Lay Description"** – Includes UWMP introduction, the newly required lay description, and the major changes to the legislative requirements for 2020 UWMPs.
- **Section 2 "Plan Preparation"** – Includes information on the process for development of this UWMP, along with coordination and outreach efforts.
- **Section 3 "System Description"** – Details the service area, climate, history, and other relevant system information.
- **Section 4 "Customer Water Use"** – Evaluates the overall historical, current, and projected water use within the Town's service area.
- **Section 5 "Conservation Target Compliance"** – Describes the Town's 2020 per-capita target value that was adopted in the 2015 UWMP and shows the Town's compliance with the 2020 per-capita target.

[1] Population projections for the Town of Windsor service area include the Town of Windsor, the Shiloh/Mayacama Service Area, and the Airport Specific Plan Area. Growth is assumed to be 1.5% based on the Town's 2040 General Plan.

- **Section 6 "System Supply"** – Describes the sources of water available to the Town, which includes the Russian River (surface water), groundwater, and recycled water.

- **Section 7 "Water Service Reliability"** – Describes the water service reliability out to 2040, including projections for normal, single-dry, and five consecutive dry years and includes the Town's DRA assessing water supply reliability over a five-year period from 2021 to 2025.

- **Section 8 "Water Shortage Contingency Planning"** – Describes the Town's plan for dealing with water shortages, including action levels and implementation actions in the event of a catastrophic supply interruption (the complete WSCP is included as Appendix H of this document).

- **Section 9 "Demand Management Measures"** – Discusses efforts by the Town to reduce demand on water supply through conservation, including efforts to implement demand management measures.

- **Section 10 "Plan Adoption, Submittal, and Implementation"** – Lists the Town's efforts for adoption, submittal, and implementation of its 2020 UWMP.

2. PLAN PREPARATION

2.1 Basis for Preparing a Plan

In accordance with the CWC, urban water suppliers with 3,000 or more service connections or supplying 3,000 or more AFY are required to prepare a UWMP every five years. These UWMPs are to be completed for years ending in 0 or 5. Because the Town has more than 3,000 water service connections, the Town must prepare an UWMP. The number of connections and volume of water supplied in 2020 is presented in Table 2-1 below.

2.1.1 Public Water Systems

As defined by the CWC, a public water system is a system that provides water for human consumption through pipes or other constructed conveyances and has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

Table 2-1: Public Water Systems (AFY) (DWR Table 2-1R)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020 (a)	Volume of Water Supplied 2020 (b)
CA4910017	Windsor Water District	9,830	3,465
	TOTAL	9,830	3,465

NOTES:
(a) Includes connections for all customer types.
(b) Does not include system losses, recycled water, and the 50 acre-feet of raw water supplied, as it is not potable.

2.1.2 Agencies Serving Multiple Service Areas/Public Water Systems

The Town operates only one public water system which serves the Town and outside service areas known as the Airport and Shiloh/Mayacama service areas. The Town also serves several parcels outside of the Water District.

2.2 Regional Planning

The Town actively and regularly coordinates with other agencies for water efficiency and water supply planning. The Town is a member of the Sonoma-Marin Saving Water Partnership. This Partnership gathers resources to implement water efficiency programs. The Town also coordinates regularly with Sonoma Water and Sonoma Water's other municipal contractors under the Water Advisory Committee (WAC), and the Technical Advisory Committee (TAC).

The Town is also a member of the Santa Rosa Plain GSA, which was formed in June 2017 under the SGMA of 2014. The Santa Rosa Plain Groundwater Basin is a medium-priority groundwater

basin under SGMA, and the Santa Rosa Plain GSA must submit a GSP by January 31, 2022. The Town has a seat on the GSA Board of Directors and the WAC.

2.3 Individual or Regional Planning and Compliance

The Town's UWMP is an individual Plan with Town-specific baselines and targets.

Table 2-2: Plan Identification (DWR Table 2-2)

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance *if applicable* *drop down list*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☑	Water Supplier is also a member of a Regional Alliance	North Marin-Sonoma Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES: The Town of Windsor is a member of the Sonoma-Marin Saving Water Partnership, which is listed as the North Marin-Sonoma Alliance in the DWR tables spreadsheet.			

2.4 Fiscal or Calendar Year and Units of Measure

2.4.1 Fiscal or Calendar Year

The Town has provided data on a calendar year basis whenever possible.

Table 2-3: Supplier Identification (DWR Table 2-3)

Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP (select from drop down)	
Unit	AF
NOTES:	

2.4.2 Reporting Complete 2020 Data

This 2020 UWMP includes water billing, consumption, and production data for the entire calendar year of 2020.

2.4.3 Units of Measure

All water measuring units throughout the report are presented as acre-feet (AF).[1]

2.5 Coordination and Outreach

2.5.1 Wholesale and Retail Coordination

Sonoma Water, Sonoma County, and several other Sonoma Water contractors, were notified that the Town had initiated the effort to update the 2015 UWMP.

Table 2-4 Water Supplier Information Exchange (DWR Table 2-4R)

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
Sonoma Water

[1] One acre-foot is equal to 325,850 gallons.

2.5.2 Coordination with Other Agencies and the Community

The Town regularly coordinates with its wholesaler, Sonoma Water, as well as other retail agencies in the Sonoma Water service area.

In May 2017, the Town, along with other agencies in the Santa Rosa Plain, formed a GSA for achieving groundwater sustainability in the Santa Rosa Plain Groundwater Basin. The Santa Rosa Plain GSA includes nine local agencies with water supply, water management or land use responsibilities. Members include the Town of Windsor, the Cities of Cotati, Rohnert Park, and Sebastopol and Santa Rosa, Gold Ridge Resource Conservation District, Sonoma Resource Conservation District, Sonoma Water, and the County of Sonoma. The Town is contributing to the development of a 2022 GSP and will continue coordination with the members for adoption and implementation of the GSP. While the GSP is still in development, information from the UWMP will be used to support the GSP, especially information about future groundwater supplies and demands. More information about the Santa Rosa Plain GSA and GSP development can be found on their website at *https://santarosaplaingroundwater.org/*.

In 2020, the Town coordinated closely with the members of the Sonoma-Marin Saving Water Partnership to conduct a joint update of their water demand projections and water conservation planning efforts, in preparation for their 2020 UWMP updates (EKI, 2020). The participating Sonoma-Marin Saving Water Partnership members include the Cities of Cotati, Petaluma, Rohnert Park, Santa Rosa, and Sonoma, Marin Municipal Water District, North Marin Water District, Town of Windsor, and Valley of the Moon Water District. On February 10, a notification of preparation of the UWMP went to a list of stakeholders potentially affected by the Town's UWMP. The Town Council was notified of the preparation of the 2020 UWMP on March 17, 2021 during the presentation given at a public hearing being held regarding the Sonoma Water Transmission System Budget. As the Town holds a seat on the Santa Rosa Plain GSA Board, there is ongoing coordination between the Town and the GSA Board.

2.5.3 Notice to Cities and Counties

Several agencies and entities were notified of the Town's preparation of its 2020 UWMP and when the UWMP was available for public review. These agencies include:

- City of Cotati
- City of Healdsburg
- City of Petaluma
- City of Rohnert Park
- City of Santa Rosa
- City of Sonoma
- Lytton Rancheria of California
- Sonoma County
- Sonoma Water
- Valley of the Moon Water District

A table listing the agencies and the contacts at those agencies which received notice is presented in Appendix B.

3. SYSTEM DESCRIPTION

3.1 General Description

The Town, incorporated in 1992, is located in central Sonoma County approximately seven miles northwest of the City of Santa Rosa. The Russian River flows two miles to the west in a north-south direction, and State Highway 101 cuts through the center of the town in a northwest-southeast direction. Figure 3-1 presents the Town's jurisdictional boundaries as well as the Urban Growth Area (UGA).

The Windsor Water District serves as the water provider within the municipality's water service area. The Town Council is the governing entity of the Town and also serves as the District Board (as described in Section 1). The Town Council and District Board consists of the same five members that serve four-year terms.

Since 1984, the Town's potable water supply has been provided primarily from water extracted at its Russian River Well Field under a Sonoma Water Russian River water right, and a connection to Sonoma Water's aqueduct from which the Town purchases wholesale water.

3.2 Service Area and Customer Types

The Town's service area consists of the Town of Windsor, plus "outside service areas" that include the Airport and Shiloh/Mayacama service areas as well as a few other parcels. The Airport service area includes the Airport Specific Plan Area which is located around the Sonoma Marin Area Rail Transit station that is served by the Windsor Water District and identified by Sonoma County for redevelopment. These outside areas are serviced through outside service agreements. The Town encompasses approximately 6.7 square miles, while the outside service areas collectively cover approximately 5.8 square miles. Including the outside service areas, the Town served approximately 28,397 people in 2020. The Town's water service area, including service areas inside and outside the Town limits, is shown in Figure 3-2. Figure 3-3 shows the layout of the Town's water distribution system and locations of the storage facilities. The Town's pumped water from the Russian River Well Field is treated on site; thus, there is no raw water distribution system. The service area had 9,830 municipal connections in 2020. The customer types include residential, commercial, industrial, landscape irrigation, consumers of recycled water, and other. The "other" category includes fire meters, hydrant meters, and other incidental uses. In 2020, residential customer accounts comprised over 81% of the total number of customer accounts. However, residential water demand was equivalent to approximately 69% of the total volume of water demand. See Section 4 for details on the Town's water use and classification of customer types according to the Water Code.

The Town provides non-potable water to customers for landscape irrigation and other needs. The recycled water system, which serves primarily golf courses and other landscaping needs, is displayed in Figure 3-4. The recycled water system is discussed in further detail in Section 6. The Town also produces raw water from the Esposti groundwater well which is delivered on site to Esposti Park. Since there is no raw water distribution system and the pumped raw water is only used on site for landscape irrigation, a map for a raw water distribution system is not applicable and was not included.

Figure 3-1 Town of Windsor Jurisdictional Boundary

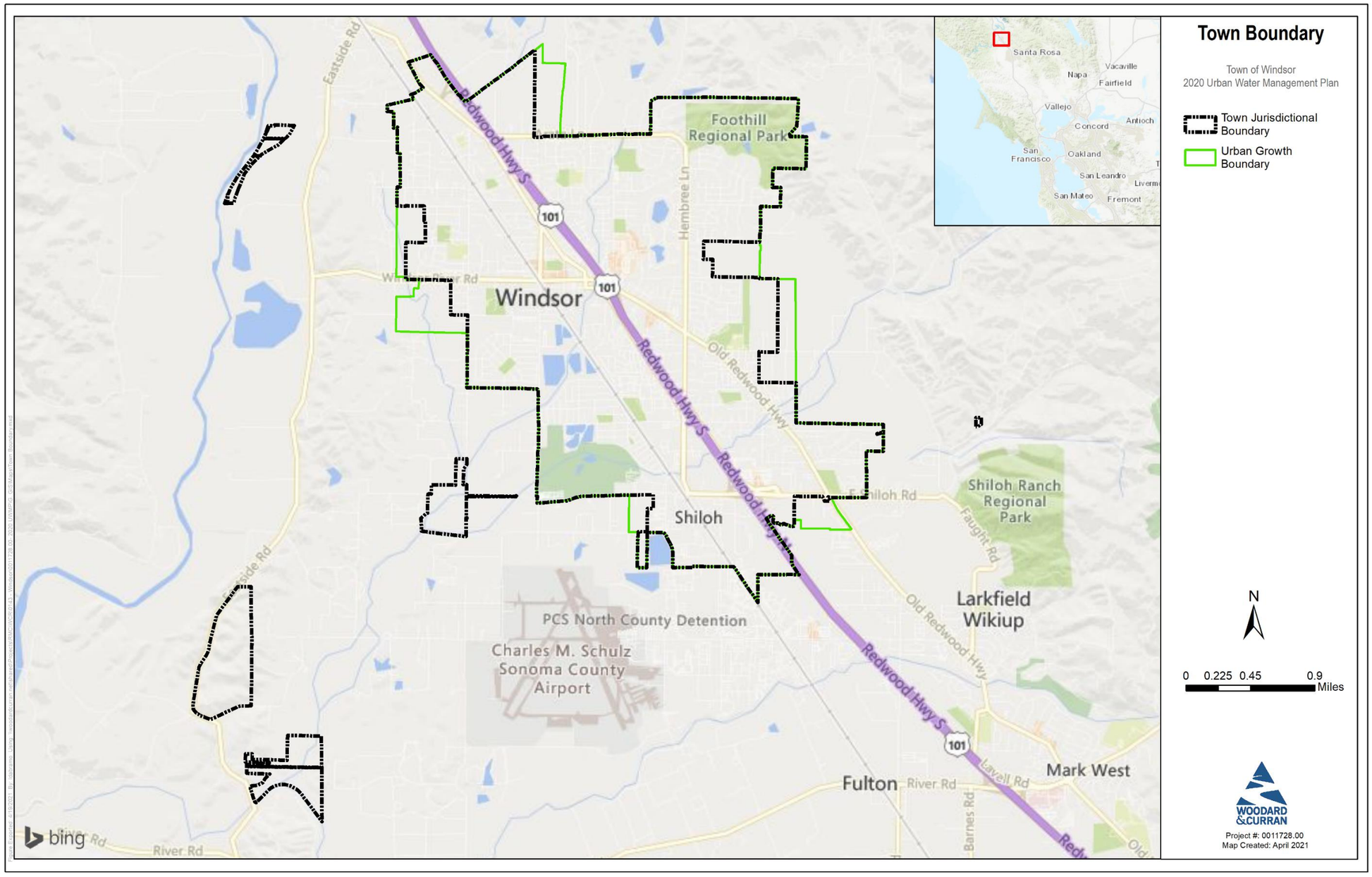


Figure 3-2 Town of Windsor Service Area

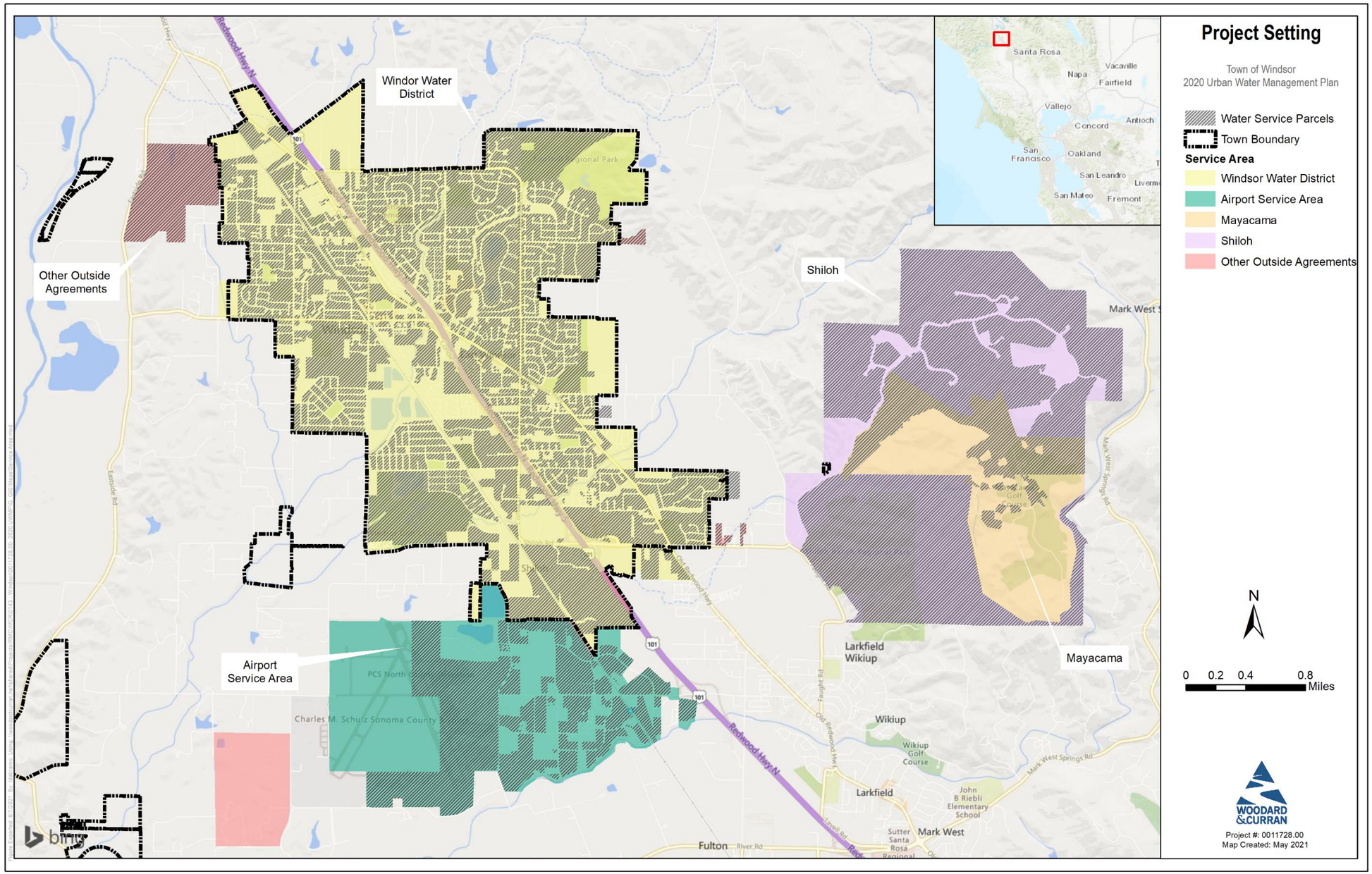


Figure 3-3 Town of Windsor Potable Water Distribution Network

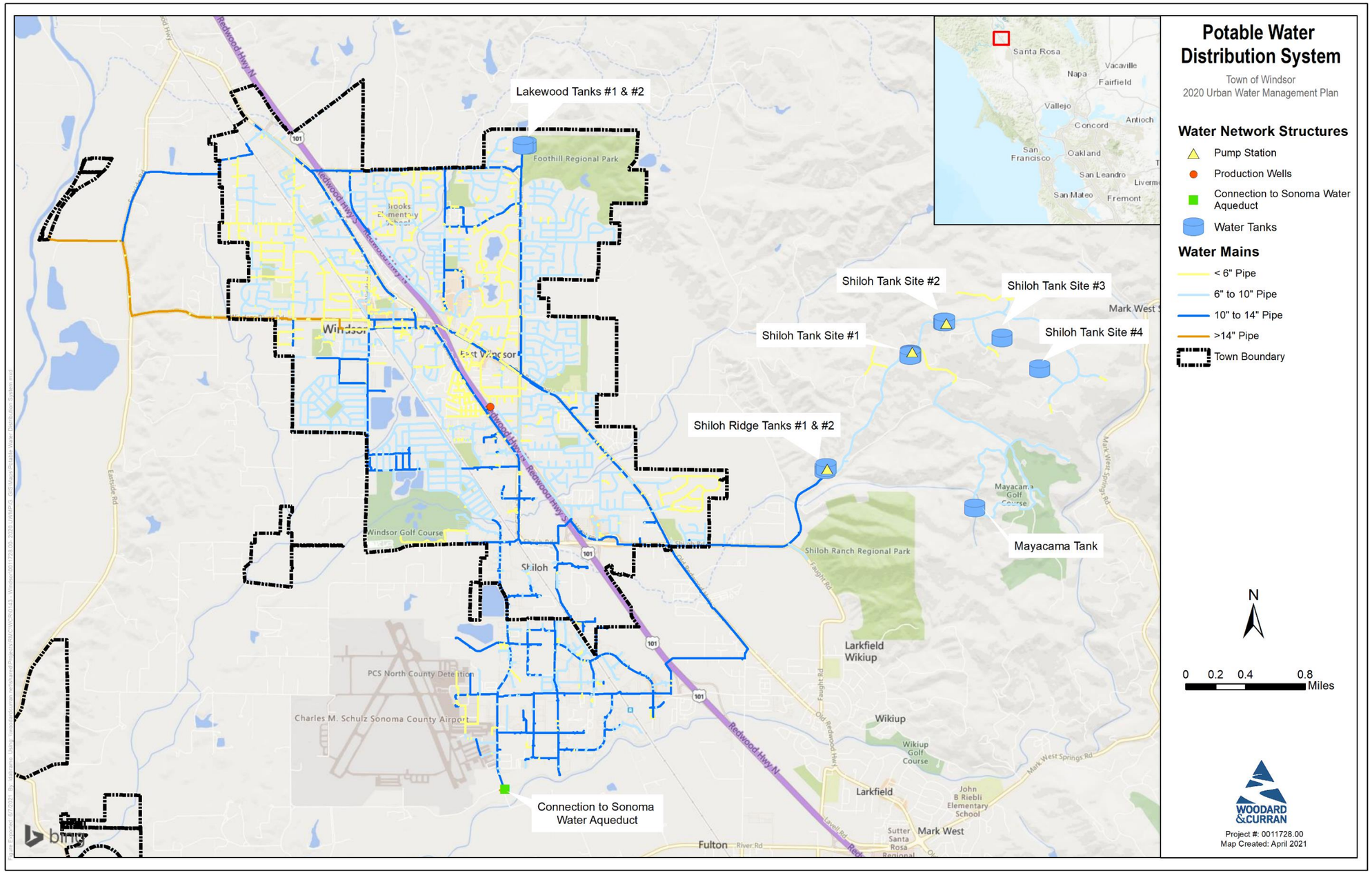
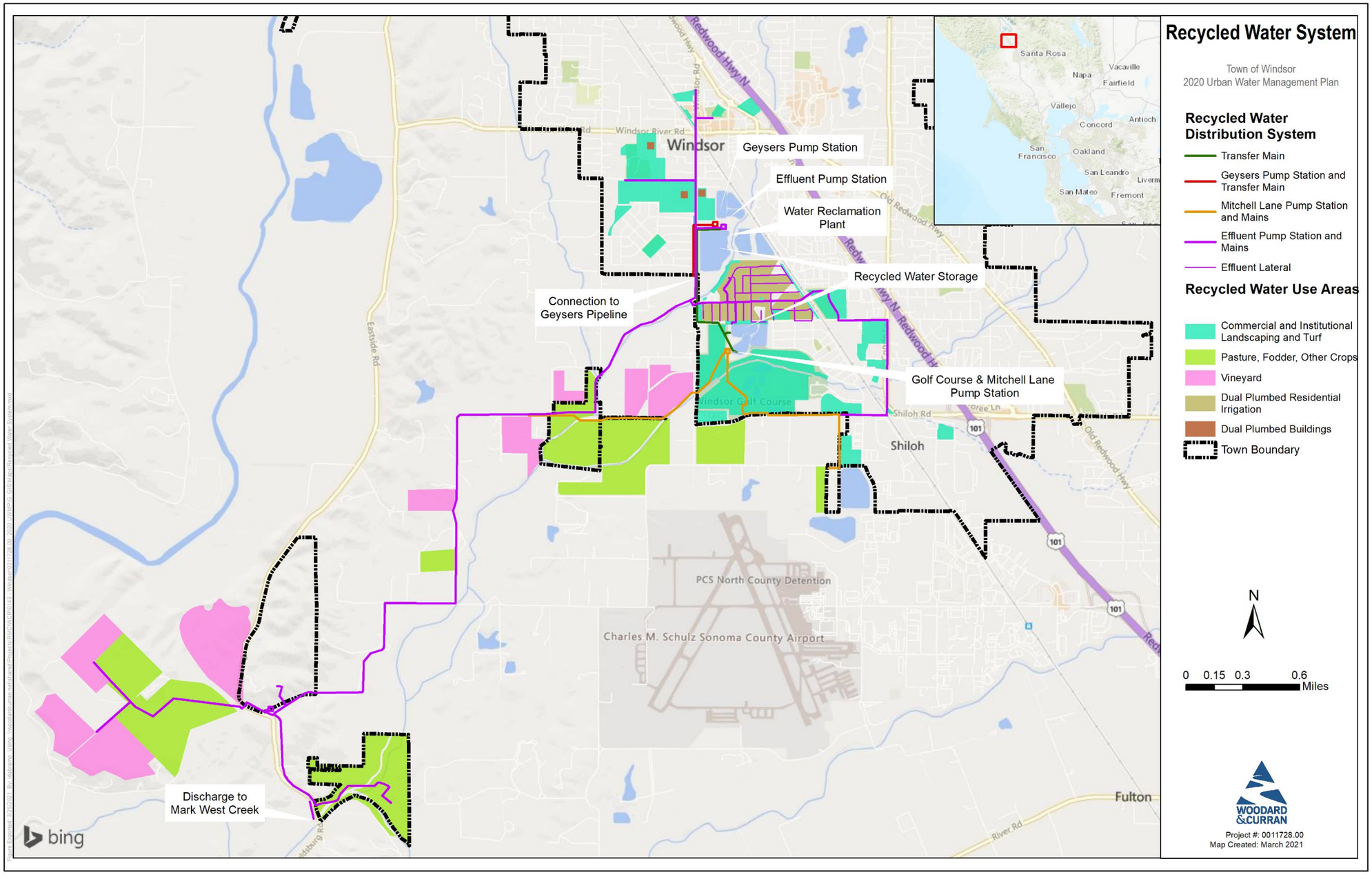


Figure 3-4 Town of Windsor Recycled Water System



3.3 Potable System Facilities

The Town's active potable water supply sources are the Russian River Well Field and Sonoma Water's transmission system (aqueduct). Both provide surface water from the Russian River and are described in detail below.

The Esposti potable well is currently under development as a potable water source. This well has not yet been permitted for municipal use but is currently being reviewed for potential activation with treatment. A detailed discussion of the volume and classification of water supplied by each of the Town's sources is provided in Section 6.

3.3.1 Russian River Well Field

The Russian River Well Field has been in operation since 1984. The well field is located on a 27-acre parcel located near the Russian River. It currently contains five production wells which intercept underflow from the Russian River with individual capacities of approximately 1,300 gallons per minute (gpm). The well field is owned by the Town, and water is extracted under water rights maintained by Sonoma Water. The Town currently has an application pending with the State Water Resources Control Board (SWRCB) Division of Drinking Water (submitted by the Windsor Water District in 1990) to obtain its own water rights for diversion via these wells.

3.3.2 Sonoma Water's Facilities

The Town has purchased surface water from Sonoma Water since 1985 (Town of Windsor, 2015). Purchased water is delivered through Sonoma Water's 36-inch diameter Santa Rosa Aqueduct, and continues through a 12-inch diameter water transmission main at the southern end of the Charles M. Schulz–Sonoma County Airport where it connects to the Town's water system (Figure 3-3). Sonoma Water diverts water into the Santa Rosa Aqueduct via Ranney Collectors under the Russian River and supplements this supply with groundwater wells located in the Santa Rosa Plain Groundwater Basin.

3.3.3 Groundwater Facilities (Off-River Wells)

The Town owns five off-river groundwater wells. These wells include the Esposti Park irrigation well, the Esposti Park potable well, Bluebird Well 1, Bluebird Well 2 and the Keiser Park irrigation well. Only one of the five wells, the Esposti irrigation well, is active; the remaining four off-river groundwater wells are inactive.

The Esposti irrigation well provides raw water for park irrigation and is not used as a potable source. The Town is developing the Esposti potable well as a potable water source, as mentioned above in Section 3.3. As noted above the two Bluebird wells and the Keiser Park well are inactive and not likely to be activated in the foreseeable future.

Table 3-1 summarizes information for all of the Town's wells, including the five production wells at the Russian River Well Field and the five off-river groundwater wells. Table 3-5 is not a DWR-required UWMP table. Section 6 provides further information regarding the wells, in relation to supply.

Table 3-1 Well Summary

Site/Well Number	Capacity (gallons per minute)	Status
Russian River Well Field[1]		
7	1,285	On-line
8	1,285	On-line
9	1,300	On-line
10	1,300	On-line
11	1,300	On-line
Off-River Groundwater Wells[2]		
Bluebird Well #3	0	Inactive/ likely permanently
New Replacement Bluebird Well	0	Water quality issues; not fully permitted; inactive
Esposti Park Irrigation Well	200[3]	Active
New Esposti Potable Well	Unknown	Water quality issues, not fully permitted; inactive
Keiser Park Irrigation Well	0	Inactive/ likely permanently

NOTES:
1. As a water supply the Russian River Well Field is categorized as surface water rather than groundwater.
2. The off-river wells are the Bluebird, Esposti, and Keiser wells. As a supply, they are categorized as groundwater.
3. The capacity for Esposti Well is unknown, as no pumping test has been completed. Therefore, this figure is estimated.

3.3.4 Distribution

Storage

The Town has sixteen storage locations on seven sites that provide a combined 5.4 million gallons (MG) of storage capacity (16.6 AF). The largest portion (5.0 MG or 15.3 AF) serves the main pressure zone and includes the 1 MG and 2 MG Lakewood Hills tanks located in the north-eastern part of the Town and two 1 MG tanks at Shiloh Ridge. Three smaller pressure zones supply the Shiloh/Mayacama area. The Airport service area has no storage tanks.

A summary of the Town's storage system is included in Table 3-2. Table 3-2 is not a DWR-required UWMP table. See Figure 3-3 for the layout of the water distribution system and locations of the storage facilities.

Table 3-2 Storage Reservoirs

Name	Zone Serviced	Number and Capacity of Tanks	Total Tank Capacity of Site (gallons)
Lakewood Hill Tank Site	1 (main pressure zone)	1 x 1 MG tank, 1 x 2 MG tank	3,000,000
Shiloh Ridge	1 (main pressure zone)	2 x 1 MG tanks	2,000,000
Shiloh 1	2 (lower Shiloh OSA)	4 x 10,500-gallon tanks	42,000
Shiloh 2	3 (middle Shiloh OSA)	3 x 10,500-gallon tanks	31,500
Shiloh 3	4 (middle Shiloh OSA)	3 x 10,500-gallon tanks	31,500
Shiloh 4	4 (middle Shiloh OSA)	100,000-gallon tank	100,000
Mayacama Tank	Mayacama pressure zone	220,000-gallon tank	220,000
		Total Tank Capacity	**5,425,000**
NOTES: OSA = Outside Service Area			

Pump Stations

The Town maintains four booster pump stations. Three of these stations are located in and serve the Shiloh/Mayacama area (Figure 3-3). The fourth is located in the northeast portion of the Upper Vinecrest area within the Town's inside service area. The pump station characteristics are shown in Table 3-3. Table 3-3 is not a required DWR UWMP table.

Table 3-3 Pump Stations

Name	Zone Serviced	Number of Pumps[1]	Capacity (GPM)[2]
Shiloh Ridge	2 (lower Shiloh OSA)	2	270
Shiloh 1	3 (middle Shiloh OSA)	2	250
Shiloh 2	4 (middle Shiloh OSA)	2	100
Shiloh 1	2 (lower Shiloh OSA)	4 x 10,500-gallon tanks	42,000
Upper Vinecrest Pump Station	5 (higher Vinecrest Circle)	2	280

NOTES: OSA = Outside Service Area
1. Each pump station has two pumps: one duty pump and one standby pump
2. Source: Town of Windsor 2020 UWMP

Distribution System Pipelines

The Town has nearly 120 miles of distribution piping of various diameters, as shown in Table 3-4. Table 3-4 is not a DWR-required UWMP table. The majority of these pipelines has been installed within the last 25 years and are in good condition.

Table 3-4 Distribution Pipelines

Diameter (inches)	Total Installed Length (feet)	Total Installed Length (miles)
4	1,432	0.27
6	97,850	18.53
8	303,442	57.47
10	5,244	0.99
12	190,206	36.02
14	16,566	3.14
16	3,040	0.58
18	13,348	2.53
	Total	**119.53**
NOTES: Source: Town of Windsor 2010 UWMP		

3.4 Service Area Climate

The Town is located approximately 50 miles north of San Francisco in Sonoma County. It is situated between the Pacific Ocean, 25 miles to the west, and the California Central Valley, 40 miles to the east. The Town rests in the southern foothills of California's Northern Coast Ranges. This region of northern California is marked by a Mediterranean climate with seasonal patterns largely dictated by proximity to both the ocean and mountains nearby. The characteristic rainfall patterns separate the year into wet and dry seasons, with little more than 2% of the annual rainfall arriving between June and September.

The average annual rainfall for the Town is approximately 31.5 inches per year, while the average annual evapotranspiration (ETo) is 45.8 inches per year (December 1990 through March 2021). ETo is defined as the amount of water evaporated to the atmosphere from the soil, plant surface and plant transpiration for a reference crop, and can generally represent how much precipitation is required for the crop to grow in a region. The reference crop is turf. Table 3-5 provides climate statistics for the Town. Table 3-5 is not a DWR-required UWMP table.

Table 3-5 Monthly Climate Values for Windsor Area

Month	Total ET_o (inches)	Average Air Temperature (°F)	Average Total Precipitation (inches)
January	1.0	45.0	5.5
February	1.1	45.6	5.5
March	1.7	48.0	6.2
April	3.2	52.0	4.2
May	4.4	54.7	2.3
June	5.7	59.2	1.1
July	6.6	63.7	0.5
August	6.7	64.2	0.4
September	6.0	63.8	0.5
October	4.6	62.4	0.2
November	3.2	57.9	1.5
December	1.6	50.6	3.6
Total	**45.8**	**55.6**	**31.5**

NOTES:
Represents average monthly values from December 1990 through March 2021 from CIMIS Station 103 (Windsor)

3.4.1 Climate Change

The Town participated in key regional efforts to determine potential vulnerabilities to climate change and set goals and actions that are already underway to prepare for climate change impacts. These regional efforts are briefly discussed here with respect to potential effects of climate change on the region's water supply.

Climate Action 2020 and Beyond was published in July 2016 by the Sonoma County Regional Climate Protection Authority (RCPA), an organization which includes seven other agencies along with the Town and Sonoma County. This report was prepared as a regional collaborative effort to reduce greenhouse gas (GHG) emissions and to respond to the impacts of climate change. Climate Action 2020 and Beyond includes a section identifying the measures to which each entity is committing for addressing climate change. In this section, the Town identified several actions, including actions related to water and wastewater consumption and efficiency, that are already underway to prepare for climate change impacts. Among these actions was the reduction in water consumption in compliance with the SB X7-7 Water Conservation Act, and water conservation requirements for new construction and existing buildings as part of management efforts to increase water supply reliability, resiliency, and efficiency in the face of limited resources, constraints, and climate change. This report also included a vulnerability assessment that evaluates potential impacts from anticipated climate change and details that water supplies in Sonoma County could be affected by climate change in the ways presented in Table 3-6 (RCPA, 2016).

The Town also prepares a biennial GHG and Climate Action report that identifies specific actions in six sections, including water and wastewater. General Plan 2040 identified GHG goals for

reducing Town-generated GHG emission and progress to meeting these goals is tracked in the GHG and Climate Action report. The Town is currently developing a Climate Resiliency Plan to identify risk, inform emergency response, and guide recovery. This effort is in addition to the Town's Local Hazard Mitigation Plan planning efforts that include consideration of hazards, including those that result from or are exacerbated by climate change.

Table 3-6 Climate Change Impacts and Effects in Sonoma County

Impact	Effect
More extremely hot days	• Spikes in energy and water demand; potential stress to supplies
More frequent and intense droughts	• Water shortages from reduced surface and groundwater supplies • Increased water demand and reduced supply • Algae and bacterial growth in water supplies • Increased pumping of groundwater leading to well failure, saltwater intrusion, and degraded water quality • Increased evaporation from reservoirs • Increased need for water on agricultural land and water-dependent ecosystems • Increased urban water use, at possible expense of agriculture water availability • Increased evapotranspiration from open water sources • Decline or death of water-dependent plants and animals
More frequent and intense wildfires	• Risk of lost connections to energy, water, and food supplies, especially for isolated populations • Subsequent landslides that close roads and bury infrastructure, including water supply wells
Greater risk of extreme floods	• Public health risks from damage to sanitation, utility, and irrigation systems • Limitations on access to critical services • Less predictable reservoir operation • Failure of stormwater and wastewater treatment systems • Saltwater intrusion and reduced water quality

Additionally, the North Coast Resource Partnership (NCRP), which encompasses the Town, published the *North Coast Integrated Water Management Plan, Phase III* (NCIRWMP) in April 2014 (NCRP, 2014). Appendix N of the NCIRWMP includes the *Climate Change Vulnerability Assessment* for the region including the Russian River and its tributaries. According to the findings from this assessment, the primary risks associated with climate change on the Town's water supplies are related to increased dependence on groundwater by urban areas and agriculture. The Town is planning on the use of off-river groundwater supplies to meet a portion of future demands, particularly in drought conditions, and this supply will become increasingly important over time.

In addition, the Town and other water agencies in the region are currently preparing a 2022 GSP for the Santa Rosa Plain Groundwater Basin that will also assess climate change impacts on water supplies in the context of SGMA.

The impacts of climate change on supply and supply reliability are further described in Sections 4, 6, and 7.

3.5 Service Area Population and Demographics

3.5.1 Service Area Population

The Town is adopting the population projections as presented in the *2020 Water Demand Analysis and Water Conservation Measure Update* completed in November 2020 (EKI, 2020). The population projections for the Town's service area include the Town of Windsor, the Shiloh/Mayacama Service Area, and the Airport Specific Plan Area. Growth is assumed to be 1.5% annually based on the Town's Growth Control Ordinance (Town of Windsor, 2020), and is therefore consistent with the Town's general planning process. The population projections were derived from California Department of Finance (DOF) 2019 population data (Department of Finance (DOF), 2020) and assumed a constant 1.5% growth through 2040.

The total service area population captures the estimated number of people served by the Town's potable water system within the Town limits and within the outside service areas. The total service area population does not include the number of residents living within the service area using private potable well water.

Table 3-7 lists the resulting service area population current estimate for 2020 and projections for through 2040.

Table 3-7 Service Area Population – Current and Projected (DWR Table 3-1R)

Population Served	2020	2025	2030	2035	2040
	28,397	33,554	36,253	39,040	42,027

NOTES:
(a) Estimate includes Town population as well as outside service area population
(b) 2020 population provided by Town on January 28, 2021
(c) A separate growth rate for the Airport Area Specific Plan was provided by Sonoma County based on the planned phasing of development in the area. Population projections for the area were based on the planned residential unit construction and a person per unit factor of 2.5.

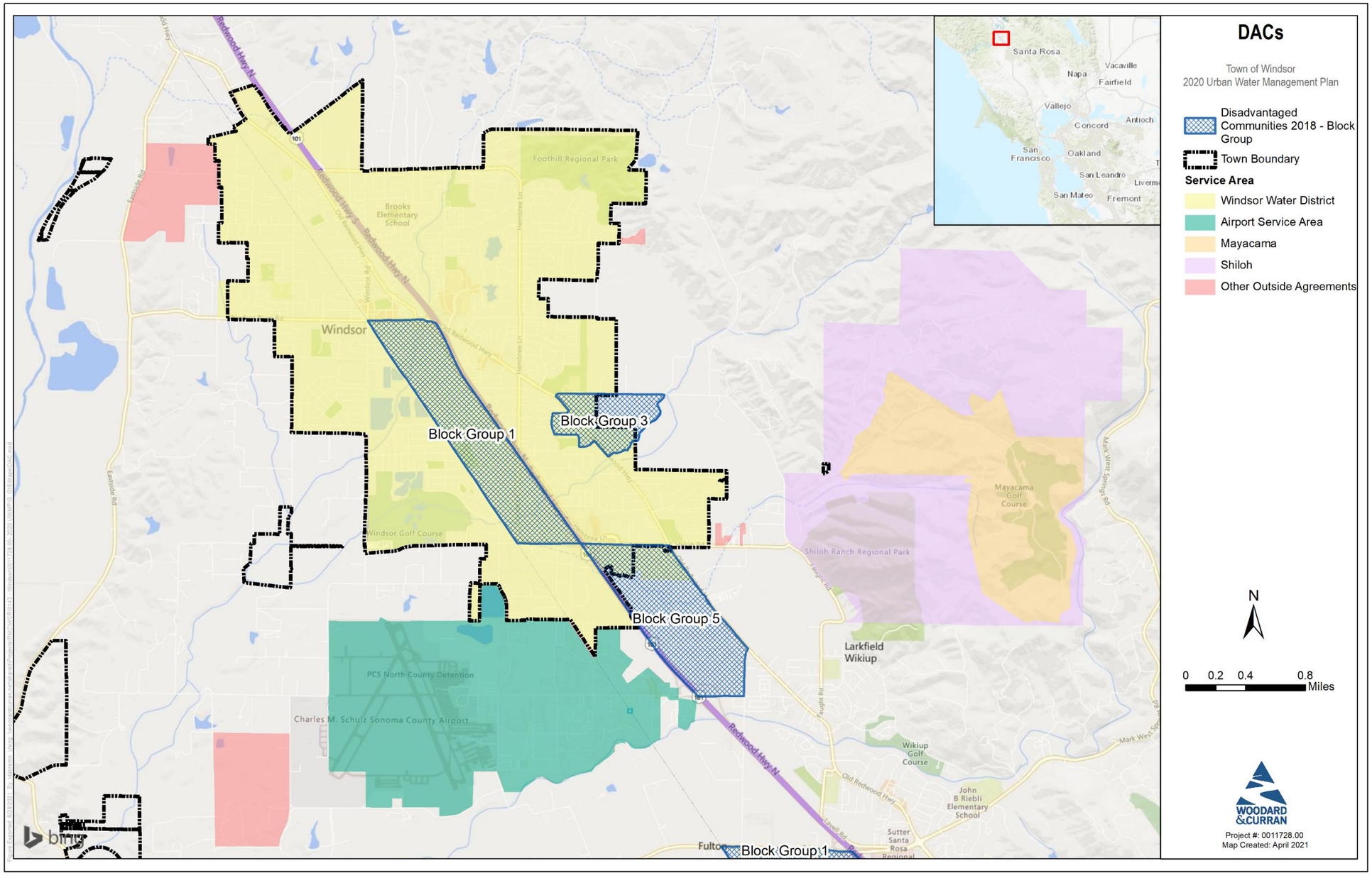
3.5.2 Other Social, Economic, and Demographic Factors

The population of Windsor service area grew from 27,486 in 2015 to 29,397 in 2020 with an average growth rate of 1.5% per year. The Town has a population density of approximately 3,890 people per square mile. The median household income is $106,899 and the poverty rate is approximately 4.0% (United States Census Bureau, 2021). The five largest ethnic groups in Windsor are White (Non-Hispanic) (59.4%), White (Hispanic) (14.5%), Other (Hispanic) (14.2%), Multiracial (Hispanic) (3.65%), and Asian (Non-Hispanic) (3.04%). About 74% of the Windsor population speaks only English, and Spanish is the second most common language spoken

(United States Census Bureau, 2019). The median property value in Windsor (2018) is $563,800, and the homeownership rate is 75.8% (Data USA, 2021). Compared to the state average, the age of housing in Windsor is younger. 21% of homes were built after 2000, 70.9% between 1970 and 1999, and 8.1% before 1970 (United States Census Bureau, 2019).

There are three Disadvantaged Communities (DACs) that fall fully or partially within the Town's service area (Figure 3-5). Block Group 1, in Census Tract 1530.08 DAC lies completely within the Town's service area and stretches along State Highway 101 between Windsor and Shiloh. The Block Group 1 has a population of 1,126 which is comprised of 632 households. The median household income (MHI) is $42,841, which is 60% of the median household income in California (California MHI is $71,228). Block Group 3 in Census Tract 1538.09 is a DAC located partially within the Town's service area, with a MHI of $51,667. Lastly, Block Group 5 in Census Tract 1527.01 is a Severely Disadvantaged Community (SDAC) located partially within the service area and has a MHI of $31,549.

Figure 3-5 Disadvantaged Communities (DACs) in the Town of Windsor Service Area



3.6 Land Uses within Service Area

3.6.1 Existing Land Use

Land use in the Town is comprised of mostly residential uses. The Town's land use consists of:

- Lower density residential – 1,792 acres (53%) and 7,654 dwelling units (83%)
- Higher density residential – includes 152 acres (4%) and 1,199 dwelling units (13%)
- Commercial – 286 acres (8%)
- Industrial – 244 acres (7%)
- Public and open space – 928 acres (27%)

Existing land use data are sourced from the Town of Windsor 2040 General Plan (Town of Windsor, 2018) and the Town's Assessor 2018 data, and land use processing is described in detail in the 2019 Windsor Water Master Plan (Woodard & Curran, 2019). A summary of the existing land use within the Town is provided in Table 3-8 and shown in Figure 3-6.

Table 3-8 Summary of Existing Land Use with the Town

Land Use Category		Dwelling Units (DU)	Area (acres)	Average DU/acre
RR	Rural Res	8	91	0.1
ER	Estate Res	712	359	2.0
VLDR	Very Low-Density Res	5,376	1,046	5.1
LDR	Low Density Res	1,558	296	5.3
MHP	Mobile Home Park	84	69	1.2
MDR	Med Dens Res	646	72	9.0
HDR	High Density Res	469	11	42.6
BMU	Boulevard Mixed Use	13	45	0.3
NC	Neighborhood Center/Mixed	0	4	0.0
TC	Town Center Mixed Use	301	11	2.7
GC	Gateway Commercial	N/A	43	N/A
RC	Retail Commercial	N/A	153	N/A
SC	Service Commercial	N/A	14	N/A
GB	General Business	N/A	16	N/A
LI	Light Industrial	N/A	81	N/A
HI	Heavy Industrial	N/A	163	N/A
PQ	Public/Quasi Public	N/A	176	N/A
PR	Park and Rec	N/A	313	N/A
OS	Open Space	N/A	439	N/A
Total		**8,896**	**3,401**	**N/A**

NOTES:
When the assessor data didn't indicate the number of units on multi-unit property, dwelling units are estimated based on the midpoint of the provided range.

3.6.2 Future Land Use

The Town of Windsor is approximately 94% developed; at present there are 217 acres of undeveloped land within the 3,403 acres comprising the Town Limits. Within the Town, primary future development will build on vacant parcels. As shown in Table 3-9, the Town is anticipating the development of primarily high-density housing. In addition to vacant sites within the Town, there will be planned growth in opportunity sites within the Airport Area Specific Plan, currently under development by Permit Sonoma. Specifically, the Preliminary Airport Area Specific Plan includes 810 acres of planned growth and redevelopment forecasted to add 858 AFY of additional demand by 2040. In total, planned developments within the service area would add over 2,000 additional DUs on vacant lands, which is 20% greater than the number of existing DUs (WMP 2020).

There are also a limited number of parcels outside the Town with annexation plans underway, including the North of Arata Lane Area (a portion of which was recently annexed into the Town), the area east of Jensen Lane, and several parcels south of Shiloh Road. The proposed Lytton Rancheria residential development project, a portion of which falls within the Town's UGA (Figure 3-1), will not be served water by the Town as they will be using their own onsite groundwater well. A summary of the future land use expected for currently vacant parcels is included in Table 3-9.

Table 3-9 Future Land Use for Currently Vacant Parcels

Land Use Category		Dwelling Units (DU)	Area (acres)
RR	Rural Res	0	0
ER	Estate Res	19	7
VLDR	Very Low-Density Res	65	11
LDR	Low Density Res	89	12
MHP	Mobile Home Park	36	2
MDR	Med Dens Res	175	13
HDR	High Density Res	837	44
BMU	Boulevard Mixed Use	300	17
NC	Neighborhood Center/Mixed	86	7
TC	Town Center Mixed Use	396	29
GC	Gateway Commercial	N/A	4
RC	Retail Commercial	N/A	8
SC	Service Commercial	N/A	10
GB	General Business	N/A	0
LI	Light Industrial	N/A	34
HI	Heavy Industrial	N/A	13
PQ	Public/Quasi Public	N/A	0
PR	Park and Rec	N/A	0
OS	Open Space	N/A	7
Total		**2,003**	**217**

Land Use Category	Dwelling Units (DU)	Area (acres)
NOTES: Vacant parcels were assigned their General Plan land use category and associated DU/acre factor (assumed to be 80% of the maximum DU/acre allowable for a given land use category).		

Each of the new developments were reviewed in order to verify that the Town's population growth projections and Association of Bay Area Governments (ABAG) 2018 employment growth assumptions – which are used to estimate projected water demands – appropriately included the new developments. A list of specific developments and potential annexations is listed in Table 3-10 and displayed in Figure 3-7 (Woodard & Curran, 2019). (The development site number in Figure 3-7 refers to the development number in Table 3-10.) The specific developments in Table 3-10 include not just vacant parcels, but land uses that are currently developed that will change zoning and/or require additional water demand. Several developments have been built recently and their water use is included in project demand projections. Several developments with one or two units are also in the pipeline, totaling another 13 units.

Demand projections are estimates of the maximum development that could reasonably occur if all planned, proposed, and reasonably foreseeable development occurred. Growth projections assume full buildout of the 2040 General Plan by 2040 and therefore may overestimate actual future growth. Town-specific and regional water demands are developed to provide conservative estimates for long-range planning purposes and the total projected development and phasing may not be actually constructed as assumed in this UWMP.

Table 3-10 Specific Development Projected Demand Summary

No.[(a)]	Development Name	Residential Land Use	Non-Residential Land Use	Residential Units (DUs)
1	Victoria Oaks	LDR	N/A	87
2	Esposti Park Place (Built)	HDR	N/A	36
3	Holiday Inn (Built)	N/A	BMU	20
4	Grand Cru Winery (Built)	N/A	LI	0
5	Encore Events (Built)	N/A	LI	0
6	Russian River Brewery (Built)	N/A	LI	0
7	Bell Village Commercial (Built)	N/A	RC	0
8	Vintage Oaks on the Town Green	HDR	N/A	387
9	Overlook	VLDR	N/A	12
11	Richardson Street Mixed-Use	HDR	TC	30
12	280 Arata Ln/ Los Amigos	LDR	N/A	7
13	330 Arata Lane	LDR	N/A	6
14	6500 Old Redwood Highway	VLDR	N/A	8
15	The Oaks	LDR	N/A	34
16	Creekwalk	VLDR	N/A	24
17	Draper Estates	ER	N/A	5
18	Duncan Village	LDR	N/A	16

No.[a]	Development Name	Residential Land Use	Non-Residential Land Use	Residential Units (DUs)
19	Mill Creek Apartments	HDR	N/A	360
20	Windsor Veteran's Village	HDR	N/A	60
21	Portello (JKB) at Hembree Lane	MDR	N/A	90
22	Sky Mixed Use Apartments	HDR	N/A	20
23	Heritage Park	HDR	N/A	33
24	Jensen Lane Annexation and Subdivision	LDR	N/A	250
26	Wine Country RV Park	MHP	N/A	36
28	Town Green Hotel	N/A	TC	49
29	North of Arata Annexation	LDR	GC	251
31	Carnation/ATP	N/A	LI	0
32	Lytton	LDR	N/A	300[b]
33	Civic Center Block A	N/A	TC	177
34	Town Hall Expansion	N/A	PQ	0
36	Vicini/ Clearwater	N/A	TC	282
38	Mini-Storage	N/A	LI	0
39	Den Beste Warehouse Built)	N/A	LI	0
41	The Artisan	HDR	N/A	64
42	Shiloh Road Mixed Use	HDR	RC	27
	260 Arata Ln	LDR	N/A	10
	325 Arata Ln	HDR	N/A	240
	8500 ORH (Redwood Glen Senior)	HDR	N/A	50
	Redwood Views Apartments	HDR	N/A	52
	Kashia Apartments	HDR	N/A	60
	19th Hole Drive	MDR	N/A	11
	Shelton Winery Mixed Use	HDR	NC	4
	Windsor Garden Homes	MDR	N/A	12
	Cockrobin Avenue	MDR	N/A	2
	Bo Dean Asphalt Company	N/A	GB	0
	Farrow Warehouse/ Showroom/ Office	N/A	GB	0
	The Artesian Assisted Living	HDR	N/A	64
Total				2,925

NOTES:

(a) "No." column refers to the development number labeled in Figure 3-7. Developments without an assigned number do not have development parcel extent readily available.

(b) The Lytton development will not receive potable water from the Town of Windsor. The Town may treat its wastewater.

The total projected number of accounts, a key component of projected water demands, was developed by incorporating the estimated population growth and ABAG employment projections. Projected water use was based on land use-based demand factors (Section 3.6.4) combined with the account growth (Table 3-11), as described further in Section 4.

Table 3-11 Projected Number of Accounts

Water Use Section	2025	2030	2035	2040[1]
Single Family Residential	9,178	9,916	10,678	11,495
Multi-family Residential	150	214	278	343
Commercial[2]	548	555	570	575
Industrial	48	48	50	50
Irrigation	439	445	457	461
Other	373	378	388	392
Recycled water[3]	589	597	613	619

NOTES: Growth in number of accounts is estimated based on population and employment projections. Residential sectors are estimated relative to population growth, while all others are estimated relative to employment growth. Multi-family residential accounts are adjusted for known planned development beyond that anticipated by projected growth rates.

1. ABAG 2018 includes projections through 2040. For purposes of demand and account projections, it is assumed that the employment growth rate remains constant from 2036 through 2040.
2. Commercial sector includes institutional water use.
3. Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use.

3.6.3 Land Use Coordination

Existing and future land use within the Town's boundaries is directed by the Town itself and did not require extensive coordination with outside agencies such as Sonoma County. The *Town of Windsor 2040 General Plan* and *Water Master Plan 2019 Update*, both of which contain information about land use planning, were developed by the Town of Windsor and information about water demands and supplies are exchanged internally.

The Town also coordinates with agencies about the areas outside of the Town's boundary but within the service area, including the Airport and Shiloh/Mayacama service areas. The Airport service area includes both the Sonoma County Airport and associated development, as well as the developed lands in the Airport Business Park. These combined areas are made up of existing residential, commercial, and industrial development. The County of Sonoma requested a Water Supply Assessment from the Town for the Airport Service Area to ensure that water supply is sufficient for 20-year projections of existing and planned uses in the proposed Specific Plan Area (Sonoma County, 2019). Additionally, water demand estimates for the Airport Service Area were reported by Sonoma County in coordination with the Town (M Group, 2019). After coordination and evaluation of the water supplies and demands, significant possible new development, including residential, commercial, and industrial use, is expected and is reported in the proposed Airport Area Specific Plan and incorporated into water demand projections.

The subdivisions within the Shiloh/Mayacama service area are located in the hills east of the Town. These areas consist of primarily residential land use with 11 commercial accounts. Limited

growth is expected in these areas as the final vacant parcels are developed which will add approximately 20 new accounts. Since there is minimal growth, coordination is limited to new houses in this area receiving a permit from the Town's Building Department. The Town also coordinates with the subdivision for water system improvements or replacements.

3.6.4 Land Use-Based Demand Factor

Land use-based demand factors were developed to estimate water demands for future developments and ensure that current and projected water supply could meet the projected demand. The demand factors, sourced from *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update*, are summarized in Table 3-12. The land use-based demand factors are incorporated into the water projected water demands which are described further in Section 4.

Table 3-12 Land Use-Based Demand Factors

Water Use Section	Water Demand Factor (GPD/account)
Single Family Residential	283
Multi-family Residential	2,152
Commercial	917
Industrial	2,535
Irrigation	1,157
Other	41
Recycled water	1,924
NOTES: GDP = gallons per day	

Figure 3-6 Town of Windsor Existing Land Use

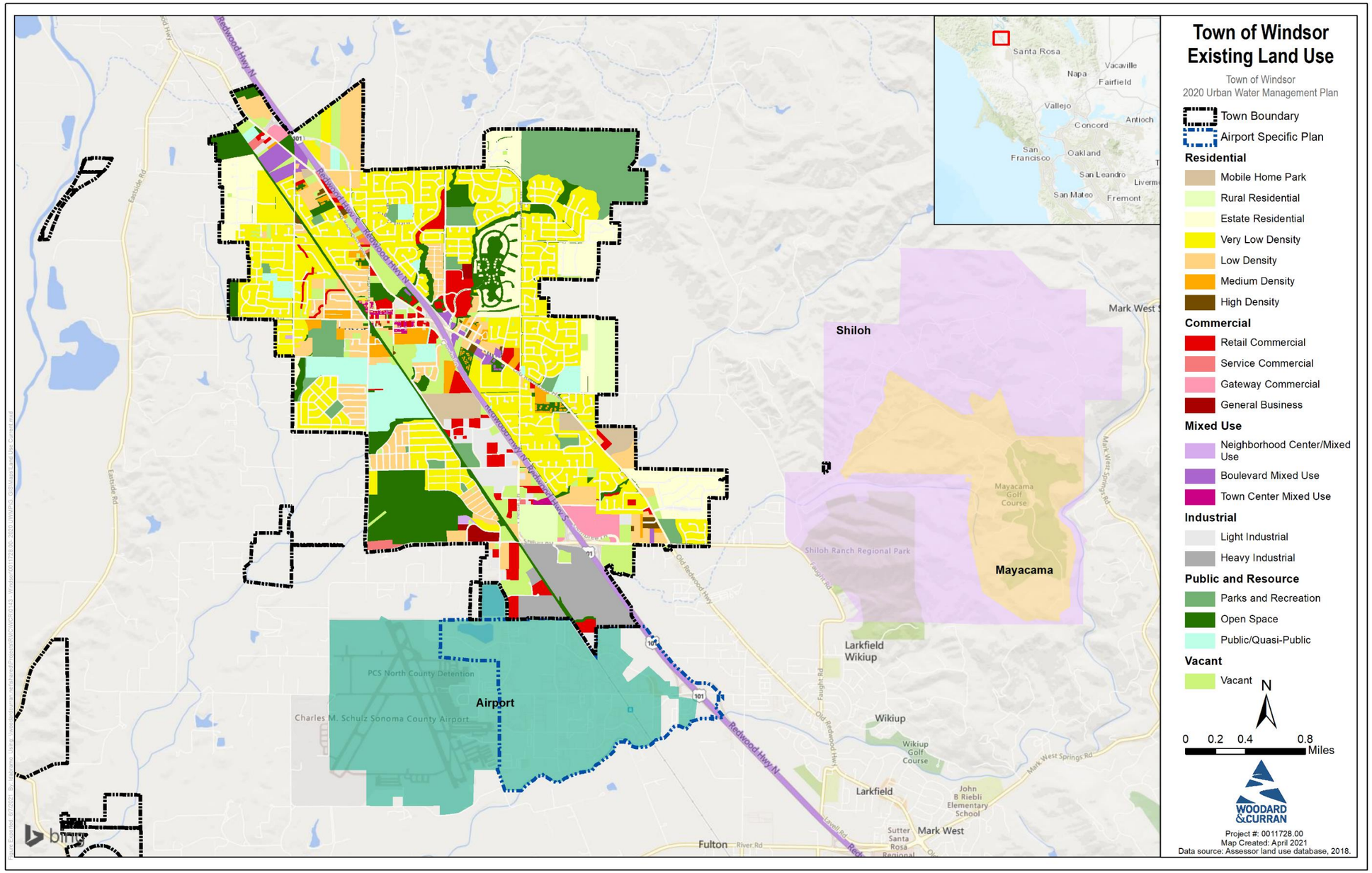
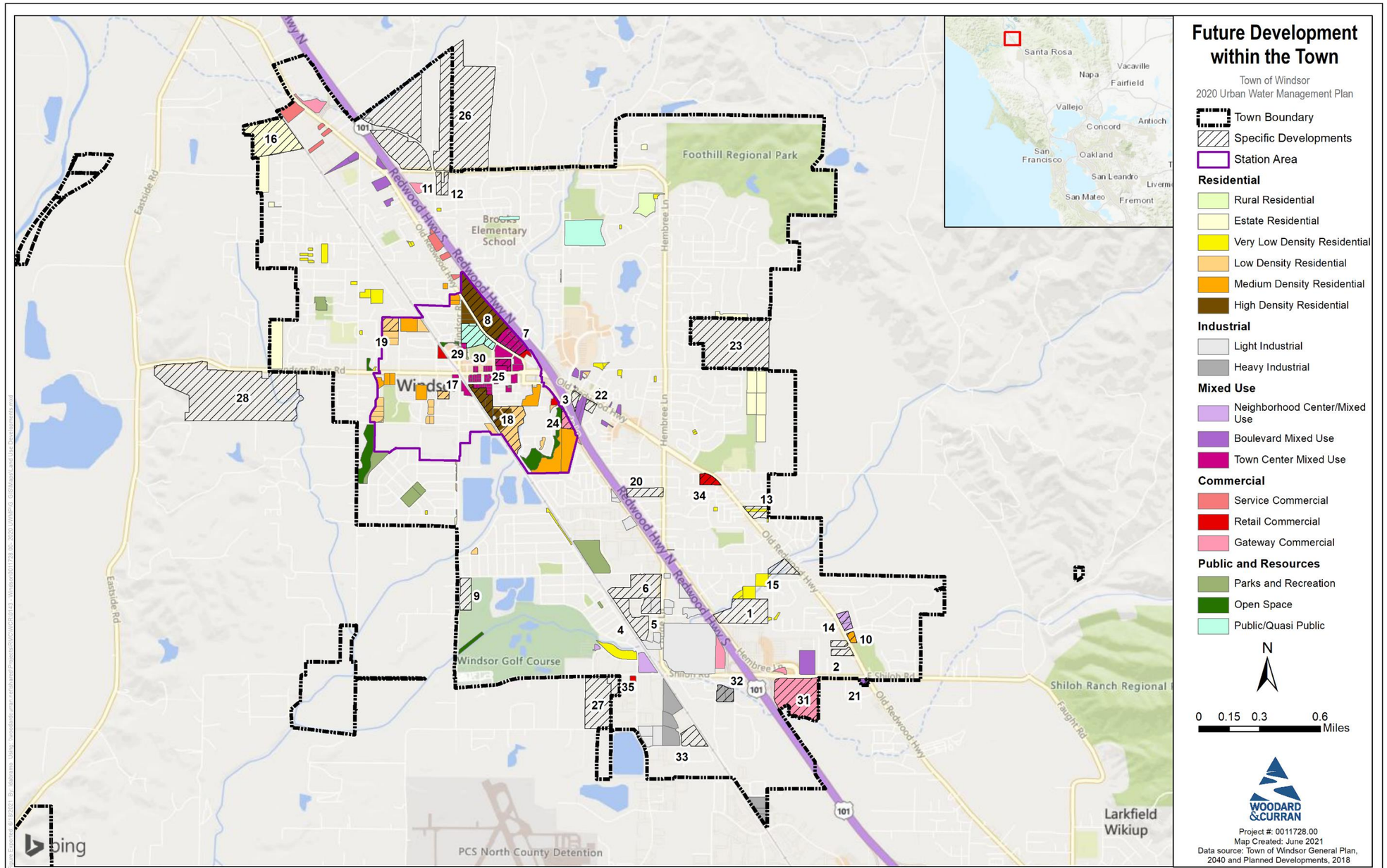


Figure 3-7 Town of Windsor Future Land Use Development



4. CUSTOMER WATER USE

This section presents the Town's water system use and demands and provides the actual 2020 and projected annual water use in five-year increments between 2020 and 2040. Projecting water demand for a 20-year planning horizon is a key requirement of this UWMP. Understanding present and future demands informs the Town's policies on water conservation and management of the Town's water supply portfolio and allows for planning of infrastructure needs to accommodate planned growth.

4.1 Non-Potable Versus Potable Water Use

The demand for drinking (i.e., potable) and recycled water are evaluated separately in this Plan. There are two types of non-potable water produced and used in the Town: recycled water and raw groundwater. Recycled water is produced at the Town of Windsor Wastewater Treatment, Reclamation, and Disposal Facility and is treated to a disinfected tertiary treatment level. The recycled water is used primarily for irrigation (agricultural, landscape, and golf course) and geothermal recharge. Raw groundwater is extracted from the Town's Esposti Irrigation Well to irrigate a local park. The Town's potable and non-potable current and projected water uses are further described below.

4.2 Past, Current, and Projected Water Use by Sector

Demand projections reported in this UWMP rely on collaborative analyses which are reported in the *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update*, completed in November 2020 (EKI, 2020). This document incorporates projected population, employment, and development growth rates to estimate future water use through 2040, factoring in water conservation programs and efforts. This is discussed in more detail in Section 4.2.6, and described comprehensively in Appendix C.

4.2.1 Water Use Sectors Listed in Water Code

The California Water Code requires the reporting of past and projected potable demand by water use sectors to the extent records are available. The sectors in the Water Code are listed below, along with descriptions provided within the DWR 2020 UWMP Guidebook. Some of the sectors are not applicable to the Town as mentioned below. The following sectors were used to categorize all actual and projected potable water demands.

- **Single-family Residential**: A single-family dwelling unit, typically defined as a lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.
- **Multi-family Residential**: Multiple dwelling units contained within one building or several buildings within one complex.
- **Commercial**: A water user that provides or distributes a product or service.
- **Industrial**: A water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

- **Institutional and Governmental**: A water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

- **Landscape**: Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation.

- **Sales to other agencies.** These are water sales made to another agency. This is considered a wholesale demand. This sector is not applicable to the Town.

- **Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.** Saline water intrusion barriers are the injection of water into a freshwater aquifer to prevent the intrusion of saltwater. Groundwater recharge is the managed and intentional replenishment of natural groundwater supplies using man-made conveyances such as infiltration basins or injection wells. Conjunctive use is a management strategy where surface water is managed in conjunction with an underground aquifer. These sectors are not applicable to the Town.

- **Agricultural.** Water used for commercial agricultural irrigation. This sector is not applicable to the Town.

- **Distribution System Water Loss**: This represents the difference between all water produced and entered into the potable distribution system and all water metered at user connections. Losses include both actual water loss and apparent water loss. Actual water loss is due to system leaks. Apparent losses include unmetered authorized uses, such as hydrant flushing, inaccurate water meters, and firefighting.

4.2.2 Water Use Sectors in Addition to Those Listed in Water Code

The water use sectors described below are not specifically listed in, nor required by, the Water Code but are provided for the sake of completeness. These sectors are also not applicable to the Town.

- **Exchanges.** Water exchanges are typically water delivered by one water user to another water user, with the receiving water user returning the water at a specified time, or when the conditions of the parties' agreement are met. Water exchanges can be strictly a return of water on a basis agreed upon by the participants or can include payment and the return of water. The water returned may or may not be an even exchange. Water can be returned on a one-for-one basis or by another arrangement (e.g., for each acre-foot of water received, two are returned).

- **Surface Water Augmentation.** The planned placement of recycled water into a surface water reservoir that is used as a source of domestic drinking water supply.

- **Transfers.** The Water Code defines a water transfer as a temporary or long-term change in the point of diversion, place of use, or purpose of use due to a transfer, sale, lease, or exchange of water or water rights. Transfers can be between neighboring Suppliers or across the state, provided there is a means to convey or store the water. A water transfer

can be a temporary or permanent sale of water or a water right by the water right holder, a lease of the right to use water from the water right holder, or a sale or lease of a contractual right to water supply. Water transfers can also take the form of long-term contracts of the purpose of improving long-term supply reliability.

- **Wetlands or Wildlife Habitat.** Water used for a managed environmental use to improve an environmental condition.

- **Other.** Any water demand that is not adequately described by the water sectors defined above.

4.2.3 Past Water Use

Table 4-1 summarizes the annual past water use for 2016 through 2019 from the *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update* (EKI, 2020). Potable water use was slightly lower in 2016 due to the drought and water savings measures enacted at the time; potable water use gradually increased after the drought to approximately 3,200 AFY in 2017 and 3,300 AFY in 2019. Meanwhile, recycled water use has continued to steadily increase.

Table 4-1 Past Annual Water Use (AFY) (2016 – 2019)

Water Use Type	2016	2017	2018	2019
Potable Water Use	2,944	3,216	3,273	3,300
Recycled Water Use	620	626	747	798
NOTES: EKI 2020, 2020 Water Demand Analysis and Water Conservation Measure Update, Table 3-5				

4.2.4 Distribution System Water Losses

Table 4-2 presents total potable water loss for calendar year 2020. This volume was calculated by subtracting the total potable water measured at service meters from the total potable water produced and purchased. Non-revenue water, which includes both actual and apparent losses for the potable water system for the last five years, is listed in Table 4-3. The 2020 losses are also included in Table 4-4 along with other water use sectors to describe the total demands. In 2020, water loss or non-revenue water represented approximately 5.2% of the total potable water produced. Water loss values of less than 10% are considered acceptable by industry standards, and the Town has met this standard in 2020 and for the preceding five years. An American Water Works Association water loss audit report form is included in this UWMP as Appendix D.

Table 4-2 Last Five Years of Water Loss Audit Reporting (DWR Table 4-4R)

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	166
07/2016	126
07/2017	234
07/2018	205
07/2019	219
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	

Table 4-3 Preceding Five Years of Non-Revenue Water

Water Use Type	2015	2016	2017	2018	2019
Non-Revenue Water[(a)(b)]	5.8%	4.5%	6.9%	6.0%	7.3%
	178	138	240	209	255[(c)]

NOTES:
(a) EKI 2020, 2020 Water Demand Analysis and Water Conservation Measure Update, Table 3-2
(b) Estimates of non-revenue water are based on the potable water system and include water losses (both actual and apparent losses), unbilled metered water, and unbilled unmetered water. The recycled water system would be expected to have a degree of water loss, but this loss has not been quantified.
(c) From the 2019-2020 AWWA Water Audit Report.

4.2.5 Current Water Use

Table 4-4 summarizes potable and raw water demand in 2020 by water use sector, as determined by Town meter and billing records for the potable demand and Town staff estimates for the raw water demand. Table 4-4 presents only the portion of "recycled water demand" that offsets potable supply within the potable water service area (i.e., landscape irrigation that would otherwise be irrigated with water supply treated to drinking water standards if recycled water were not applied). Note the terms "water demand" and "water use" are used interchangeably throughout this UWMP as in the DWR Guidebook.

Residential customers represent the highest potable water demand, with 69% of the total water consumed in 2020 by Single or Multi-Family Residential customers. 30.5% of the water use was for Commercial, Industrial, or Landscape customers, with the remaining demand belonging to the

categories of “Other” or “Losses.” “Other” includes fire station meters, hydrant meters, and other incidental uses.

Raw water demand is met by groundwater extracted from the Esposti Irrigation Well for irrigation of Esposti Park landscaping. This volume of raw demand is estimated to be 50 AFY as there is no meter on this well.

Table 4-4 Demands for Potable and Non-Potable Water – Actual (DWR Table 4-1R)

Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume*
Add additional rows as needed			
Single Family		Drinking Water	2,247
Multi-Family		Drinking Water	157
Commercial		Drinking Water	447
Industrial		Drinking Water	124
Landscape	Irrigation	Drinking Water	490
Losses		Drinking Water	269
Other Non-Potable	Recycled	Other Non-Potable Water	504
Other	Esposti Park	Raw Water	50
		TOTAL	4,288
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			

4.2.6 Projected Water Use

The *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update* evaluates projected potable water use by customer category from 2020 to 2040, analyzing many possible demand reduction conditions. For this UWMP, the Town is adopting the analysis contained in *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update* for projected water use from 2025 through 2040, but relies on billing data (as described above) for reporting its 2020 actual demand. A summary of the analysis methodology is given below, along with the resulting projected demands.

Methodology

Future water demands for the Town were estimated by:

1. Applying an estimated growth rate to accounts within each water use sector based on projected population and employment growth rates,

2. Identifying known planned developments within the Town to verify that account growth projections consider all anticipated growth,

3. Evaluating and selecting water demand factors for each water use sector based on review of recent average per account water use representing three scenarios,

4. Estimating future passive savings using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (AWE model), and

5. Calculating estimated future water demand that incorporates the anticipated account growth, water demand factors, and estimated future passive water savings.

This methodology is consistent with California Water Code § 10631(d)(4)(A) which requires that "Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the basis for demand projections were developed in close coordination with the Town and reflect a land-use based approach consistent with the Town's community planning. Demand projections include estimated passive water savings (the natural replacement of older devices and appliance with high efficiency), but do not include savings from future active water conservation programs.

Results

Table 4-5 summarizes the project potable water demand included in the *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update*. The water demand projections for the Town for 2025 are estimated to be 4,910 AFY and projected to increase to 6,258 AFY by 2040 and are comprised primarily of demands from single family units. Passive savings from natural replacement of older toilets, showerheads, clothes washers, and other water using appliances with newer high efficiency devices that are available due to both market shifts and increasing efficiency mandated by the building code and other regulatory requirements are listed as negative values. The demand for the Esposti raw water supply was included in the projections and is expected to remain constant over the planning horizon of this UWMP.

Table 4-5 Use for Potable and Non-Potable Water – Projected (DWR Table 4-2R)

Use Type	Additional Description (as needed)	Projected Water Use* [a] *Report To the Extent that Records are Available*			
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040
Add additional rows as needed					
Single Family		2,909	3,143	3,385	3,644
Multi-Family		362	517	671	826
Commercial [b]		563	570	586	591
Industrial		136	138	141	143
Landscape	Irrigation	569	576	592	598
Losses	Non-revenue Water [c]	304	331	360	388
Other Non-Potable	Esposti Park Irrigation (Raw)	50	50	50	50
Other [d]		17	18	18	18
TOTAL		4,910	5,343	5,803	6,258

**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:
(a) Water demand projections are estimated based on post-drought demand factors for commercial and "other" sectors and pre-drought demand factors for residential, industrial, irrigation and recycled water sectors, based on recent historical use. Growth in accounts is based on Town and ABAG 2018 projections
(b) Institutional/Governmental water use is included with commercial use.
(c) Losses are estimates of non-revenue water are based on the average percentage of water loss reported for 2017 through 2019
(d) "Other" is non-irrigation outdoor water use such as filling fountains and pools, washing cars, etc.

The total Town water demands were projected through 2040 by combining the potable and raw demands described above with the projected recycled water demand that offsets potable water use. These total demands are presented in Table 4-6.

.

Table 4-6 Total Gross Water Use (Potable and Non-Potable) (DWR Table 4-3R)

	2020	2025	2030	2035	2040
Potable Water, Raw, Other Non-potable *From Tables 4-1R and 4-2 R*	4,288	4,910	5,343	5,803	6,258
Recycled Water Demand[1] *From Table 6-4*	1,267	1,594	1,610	1,809	2,368
Optional Deduction of Recycled Water Put into Long-Term Storage[2]	N/A	N/A	N/A	N/A	N/A
TOTAL WATER USE	5,555	6,504	6,953	7,612	8,626

[1]Recycled water demand fields will be blank until Table 6-4 is complete.
*[2] Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier **may** deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3. N/A: not applicable.*

4.2.7 Characteristic Five-Year Water Use

In addition to water demand projections through 2040, projected water demands during a five-year drought were also estimated. The characteristic five-year water use is unconstrained demands, or the gross water demand without drought conditions or mandated conservation. The gross water demand was estimated by assuming an average annual straight-line increase of 2.75% from the 2020 actual water use to the 2025 demand projection. Note the water use in Table 4-7 includes potable and non-potable water use, but excludes recycled water demands. This information will be used in the DRA in Section 7.

Table 4-7 Five-Year Characteristic Water Use

	2020	2021	2022	2023	2024	2025
Annual estimate	4,238	4,356	4,477	4,601	4,729	4,860
Volume change		118	121	124	128	131
Percent increase		2.78%	2.78%	2.78%	2.78%	2.78%

4.3 Water Use for Lower Income Households

Lower income housing is considered in the Town's general planning efforts. As described previously in Section 1.4, the water demand analysis and projections developed for the UWMP are consistent with the general planning background document. Additionally, conservation efforts

include specific programs and policies for lower income householders. Therefore, lower income housing has been considered in this UWMP.

Table 4-8 Inclusion in Water Use Projections (DWR Table 4-5R)

Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc… utilized in demand projections are found.	Appendix C
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes

Approximately 4% of the Town's population falls below the poverty line (United States Census Bureau, 2019) and it is assumed that low-income houses have the same per capita water use as the average consumption in the Town (119 gpcd). Therefore, the water use for low-income communities is estimated to be 146 AFY. For comparison, the total volume of water used by single family residences in 2020 is 2,247 AFY and by multi-family residences is 157 AFY.

4.4 Climate Change Considerations

Sonoma Water has investigated whether existing downscaled climate models can be used or modified to provide reliable estimates of the effects of increased concentrations of carbon dioxide and other greenhouse gases on temperatures and precipitation patterns within Sonoma Water's service area and within the watersheds from which Sonoma Water obtains its water supply during the 20-year planning horizon. As of this time, no detailed analysis exists of potential climate change impacts that takes into consideration the influence of marine layers, whose effects on the region are difficult to model. Given the uncertainties between various downscaled models, Sonoma Water evaluated ensembles of downscaled models for general water supply planning purposes. However, there is not one model that can be selected with any confidence to be analyzed for the required format of this Plan. For these reasons, this Plan assumes that the climatic patterns and associated hydrology experienced over the past 108 years of record (1910 – 2017) provide a reasonable basis for the 20-year planning horizon that would impact the water supply and water demand analysis set forth in the Plan.

The methodology used in the *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update* demand projections are consistent with the requirement to consider climate change on projected demands (EKI, 2020). The demand factors evaluated herein consider the period of 2005-2019, which includes the historic drought of 2012 to 2015 in California. This period includes both the 2011-2013 period, in which customers decreased their water use (in part due to the drought conditions prior to recognition of drought conditions and subsequent imposed restrictions), as well as the observed rebound in demand following the drought (2017-2019). Thus, the periods used to develop the demand projections for the Town reflect conditions representative of hotter, drier weather expected as a result of climate change and the likely hydrological effects of climate change.

5. SBX7-7 BASELINE, TARGETS, AND 2020 COMPLIANCE

5.1 Background

Governor Arnold Schwarzenegger signed into law SB X7-7, also known as the Water Conservation Act of 2009. The goal of SB X7-7 is to reduce statewide water consumption on a per capita basis by 20% by the year 2020. SB X7-7 established new requirements for 2010 UWMPs, specifically requirements to:

- Develop a baseline daily per capita water use
- Establish a daily per capita water use target for 2020 and an interim water use target for 2015 based on the baseline daily per capita water use
- Report planned water conservation efforts to reach water use targets

Water suppliers had the opportunity to recalculate their baselines and water use targets in their 2015 UWMPs. The 2015 UWMP was the final opportunity for suppliers to update their 2020 target, after which the reported value is considered binding. Failure to reach the 2020 water use target established by a water supplier would jeopardize the water supplier's eligibility for State water grants and loans.

This section contains a summary of the Town's SB X7-7 analysis, including a brief description of the methodology and assumptions that were used to determine the 2020 target and baseline. In the 2015 UWMP, the Town demonstrated compliance with the established 2015 interim water use target of 143 gpcd. This section demonstrates the Town's compliance with the SB X7-7 2020 target requirement. As shown in Table 5-1, the Town's 2020 target is 130 gpcd. The completed tables can be found in Appendix E.

Table 5-1 Baseline and Targets Summary from SB X7-7 Verification Form (DWR Table 5-1R)

Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	*1999*	*2003*	*158*	*130*
5 Year	*2008*	*2007*	*154*	
**All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*				

There are no updates to the baselines and targets from those presented in the Town's 2015 UWMP. In addition, there are no new requirements for water use targets and baselines since the 2015 UWMP.

5.2 Baseline and Target Calculations for 2020 UWMPs

The Town has not updated the baseline water use or 2020 target from those in the 2015 UWMP because there are no changes to the service area. Although an area referred to as "North of Arata" was annexed, the Town's water distribution system has not been extended into the area. The parcels in that annexed area continue to be served by private wells. The development plans for those parcels have not been established. The following paragraphs explain how the Town's base daily per capita water use (also known as baseline water use) was determined in the 2015 UWMP.

The baseline water use includes all water entering the water distribution system, including water losses. It does not, however, include recycled water delivered within the supplier's service area, water placed into long-term storage, or water conveyed for use by another urban water supplier (per Water Code §10608.12).

The purpose of developing a baseline daily per capita water use is to ensure compliance with the 2020 water use targets. Most urban water suppliers must provide both a 10- to 15-year and 5-year baseline period. The 10- to 15-year baseline was derived by averaging the annual daily per capita water use over the selected baseline period. To determine whether a 10- or 15-year baseline period is permissible, suppliers had to analyze their recycled water deliveries. According to the 2010 UWMP Guidebook Part II Section D, water suppliers that provided 10% or more of their total deliveries as recycled water in 2008 could choose anywhere between a 10- and 15-year continuous period ending between 2004 and 2010 to calculate their 10- to 15-year baseline period. The Town delivered 695 AF of recycled water in 2008, which is approximately 16% of total deliveries. As such, the Town was permitted to use a 15-year period; however, records prior to 1999 were unreliable; and therefore a 10-year average between 1999 and 2008 was used.

Per the 2010 UWMP Guidebook, water supply agencies also had to determine a 5-year baseline period ending between 2007 and 2010. If the agency's 5-year base gpcd exceeded 100 gpcd, the agency is required to ensure that the derived 2020 water use target was no greater than 95% of this value. If the target method selected already provided a gpcd lower than this value, no further action was required. The Town chose the period from 2003 to 2007 as its 5-year base period with a gpcd of 152. Therefore, the target adopted by the Town could not exceed 95% of 152, or 144 gpcd.

SBX 7-7 requires each supplier to build on the determination of base daily per capita water use by applying a set of assumptions to determine its 2020 compliance target. An interim 2015 target was calculated from the 2020 target and served as a non-enforceable benchmark for suppliers to track their progress toward achieving the 2020 target. In developing the 2020 target, urban water suppliers were required to use one of four DWR-established methods to calculate the target. These methods were:

- Method 1: 80% of base daily per capita water use
- Method 2: Performance standards based on actual water use data for indoor residential water use, landscaped area, and commercial, industrial, and institutional (CII) water use
- Method 3: 95% of the North Coast hydrologic region target (130 gpcd target)
- Method 4: Savings by water sector (indoor residential and CII) and landscape and water loss savings

Each of these methods was described and evaluated the Town's 2010 UWMP in Appendix F, and a resultant 2020 target was calculated for each. In a Town Council Meeting on April 6, 2011, Resolution No. 2777-11 was adopted in which Method 3 was selected, resulting in a 2020 gpcd target of 130 gpcd. This target was not recalculated in this 2020 UWMP.

Appendix E includes SB X7-7 Verification forms from the 2015 UWMP for reference.

5.3 2020 Compliance Daily Per-Capita Water Use (GPCD)

The daily per-capita water use is calculated from the total gross water use and population using the supplied water. The Town produced 3,784 AF of water in 2020, comprised of 85% Russian River well field supplies, 14% of purchased water, and 1% of raw water from the Esposti irrigation well per the Town's records provided in January 2021. The Town's service area includes 28,397 residents in 2020, according to the Department of Finance numbers, less the number of people served by private wells, plus the people served potable water by the Town, but living outside the Town boundary. Therefore, the 2020 daily per-capita water use is 119 gpcd.

Table 5-2 below compares the 2020 target of 130 gpcd with the actual 2020 daily water use of 119 gpcd. The 2020 daily water use does not include any exceptions or adjustments. The 2020 water usage of 119 gpcd falls below the 2020 target and demonstrates the Town's compliance with the 2020 target.

Appendix E includes the SB X7-7 2020 Compliance form.

Table 5-2 2020 Compliance (DWR Table 5-2R)

2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* *(Adjusted if applicable)*		
119	*0*	*119*	*130*	*Yes*
**All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)*				
NOTES:				

5.4 Regional Alliance

The Town Resolution 2777-11 adopted regional targets as well as individual targets from the Town. The regional targets were established by a regional alliance which includes Sonoma Water and its retail contractors. The adoption of regional targets was conducted when it was forecasted that the Town, as well as two other retail contractors, may not meet their individual 2020 targets.

Regional targets were established at 142 gpcd for 2015 and 129 gpcd for 2020. A regional alliance allows for averaging the results of all participants' water reduction efforts. Therefore, if one or more alliance members do not meet their targets, the entire region can still be in compliance as long as the region as a whole meets the regional target.

As discussed above, the Town is in compliance with its 2020 water use target as an individual water supplier and so will not need to utilize regional targets to achieve compliance. With continued implementation of water efficiency programs, including enforcement of water waste prohibitions and conservation programming along with implementation of plumbing code changes, it is projected that the Town will continue to meet its 2020 target. Should the Town implement all of the water conservation programs it is currently considering, the Town could achieve a water use target even lower than its required 2020 mandated target.

6. SYSTEM SUPPLY

6.1 Water Supply Sources

The Town's water supply sources include diverted surface water, purchased surface water, groundwater, and recycled water.

The majority of the Town's potable water supply is surface water diverted at the Town-owned Russian River Well Field under Sonoma Water's surface water rights. The Town also purchases surface water from Sonoma Water, which is delivered to the Town's distribution system through Sonoma Water's Santa Rosa Aqueduct.

The Town owns groundwater wells, also known as off-river wells (to distinguish them from the Town's riverbank wells). Currently, four of the Town's five off-river groundwater wells are inactive. The Town's fifth well, the Esposti Irrigation well, provides raw water only for the irrigation of Esposti Park and is inactive (though permitted) for potable water use.

The Town uses recycled water for urban landscape irrigation within the Town limits and, on a limited scale, toilet flushing at sites near the Windsor Wastewater Treatment Reclamation and Disposal Facility.

Each of the water supply sources used by the Town will be discussed below, with emphasis on how the water is obtained and constraints (physical and legal) that limit the maximum amount of water available.

6.1.1 Purchased Water

The Town purchases surface water from Sonoma Water which is delivered through Sonoma Water's Santa Rosa Aqueduct to the Town public water distribution system (Figure 3-4). Water purchased from Sonoma Water comprises a minority percentage of the Town's total potable supply. In 2020, 544 AF of water was purchased from Sonoma Water and delivered via the Santa Rosa aqueduct, comprising approximately 15% of the total potable water supply.

Sonoma Water obtains its water by Ranney Collector from the federal Russian River Project and from groundwater wells in the Santa Rosa Plain Groundwater Subbasin. Key water features of the Russian River Project are Coyote Valley Dam and Warm Springs Dam. Coyote Valley Dam creates Lake Mendocino on the East Fork Russian River, and Warm Springs Dam creates Lake Sonoma on Dry Creek. Sonoma Water diverts Russian River flow near the Town of Forestville, which it conveys to its eight contractors, including the Town.

Primary constraints on the Town's purchased surface water supply are legal or contractual. Sonoma Water has permitted limits on diversions from the Russian River, and maintenance of minimum stream flows and reservoir storage is required. The Town has contractual limits to access surface water supplied by Sonoma Water, as described in various agreements between Sonoma Water and the Town.

Sonoma Water's current diversion limits are dictated by four State Water Resources Control Board (SWRCB) permits (SWRCB permit numbers 12947A, 12949, 12950 and 16596). Sonoma Water storage limits total 367,500 acre-feet per year (AFY) between Lake Mendocino and Lake Sonoma, and its diversion maximum is 75,000 AFY from the Russian River at its Wohler and

Mirabel facilities. Sonoma Water has applied for an increase in the diversion limit to 101,000 AFY, but this application is not currently being pursued.

A 2006 Restructured Agreement between Sonoma Water and the Town limits the total amount of water available to the Town from the Santa Rosa Aqueduct to no more than 900 AFY. A copy of the agreement between the Town and Sonoma Water is included in Appendix F.

6.1.2 Groundwater

6.1.2.1 Wells

The Town owns five "off-river" groundwater wells designed to provide both potable and raw water. These wells include two Bluebird wells, the Esposti irrigation well, the Esposti potable well, and the Keiser Park well. One of the five wells, the Esposti irrigation well, is active and is used for irrigation only. The remaining four groundwater wells are inactive.

The Bluebird Well #3 was built in 1972 and was kept in stand-by service from the 1980s to 2006. In 2006, the Bluebird Well #3 was taken off-line (put into "inactive" status) due to water quality issues. The arsenic concentration in groundwater extracted from this well exceeded 10 parts per billion (ppb), the Federal and State Environmental Protection Agencies' (EPA) maximum contamination level, and it was subsequently taken off-line indefinitely. A new Bluebird well was drilled on the Bluebird well site, but that replacement well is currently inactive.

The Keiser Park well is also currently inactive due to needed repairs. The two Bluebird wells and the Keiser Park well are not likely to be activated in the foreseeable future.

The Esposti irrigation well provides raw water and is not used as a potable source. The Town also has a new well, referred to as the Esposti potable well, which is currently under development as a potable water source. This well has not yet been permitted for municipal use but is currently being tested and reviewed for potential activation with treatment. The future use of this well is further described in Section 6.1.8.

Table 6-1 provides a summary of the groundwater pumped by the Town. The entirety of the reported volume in Table 6-1 was raw water pumped from the Esposti irrigation well. The volume reported is estimated as there is no meter on that well.

Table 6-1 Groundwater Volume Pumped (DWR Table 6-1R)

☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
☐	All or part of the groundwater described below is desalinated.					
Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Add additional rows as needed						
Alluvial Basin	Santa Rosa Plain Subbasin	50	50	50	50	50
	TOTAL	50	50	50	50	50
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: The groundwater pumped was from the Esposti irrigation well, and it was not treated to potable water standards.						

6.1.2.2 Groundwater Basin and Hydrogeology

According to the California Department of Water Resources (DWR) Bulletin 118, California's Groundwater (2018), the groundwater basin underlying the Town is the Santa Rosa Plain (SRP), a subbasin (DWR number 1-55.01) of the Santa Rosa Valley Groundwater Basin (California Department of Water Resources, 2018). Groundwater in the Santa Rosa Plain generally drains toward the Russian River and is part of the North Coast Hydrologic Region. The Santa Rosa Plain Subbasin is depicted in Figure 6-2. The Santa Rosa Plain Subbasin is the largest basin in Sonoma County and underlies the most populated areas of the County.

Basement rocks (Mesozoic age, up to 67 million years old) underlying the Santa Rosa Plain sediments yield little to no groundwater (California Department of Water Resources, 2003). Conversely, the relatively thick sequence of sediments and younger volcanic flows overlying bedrock do store and yield significant volumes of groundwater. However, the water bearing sediments of the Santa Rosa Plain have variable properties with regards to how much water can be pumped from the wells completed in different areas of the watershed.

As indicated by the Santa Rosa Plain Groundwater Management Plan (GMP) (Santa Rosa Plain Basin Advisory Panel, 2014) and from recently conducted USGS studies (Nishikawa, 2013), the Santa Rosa Plain Subbasin is further differentiated into five hydrogeologic subareas (See Figure 2-10 of the GMP): Uplands, Valley, Windsor, Cotati, and Wilson Grove subareas. However, divisions of the subareas are not necessarily distinct as there are groundwater and surface water interactions and connectivity between these subareas. The two primary hydrogeologic subareas are Windsor in the north and Cotati in the south, separated by the Trenton Ridge Fault. These two subareas are the deepest parts of the basin, ranging from 6,000 to 10,000 below the ground

surface. It has not been determined whether water from these depths is productive enough or is of potable water quality to be feasibly extracted.

The Quaternary (the last 2.6 million years) Alluvium in the Windsor hydrogeologic subarea generally consists of eroded materials from the hills that flank the east and west sides of the valley. The sediments include clay, silt, sand, gravel, cobbles, and boulders. The Quaternary Alluvium ranges from a few feet thick along the edges of the valley and increases to at least 600 feet thick in portions of the Town at the valley center where Highway 101 passes through. Groundwater production in the Quaternary Alluvium generally ranges from 1 to 650 gallons per minute (gpm) due to wide range of clay, silt, and degree of compaction occurring within this formation.

Underlying Quaternary Alluvium is the Glen Ellen Formation, which in the Windsor hydrogeologic subarea ranges from approximately 100 to 150 feet thick. The Glen Ellen formation generally consists of clay-rich creek and river deposits (silt, sand, and gravel) ranging in age from approximately 110,000 to 5.3 million years old. Although some minor intervals of the Glen Ellen are relatively permeable and have can yield high quantities of groundwater, this formation is generally limited by its clay-rich and relatively compacted and cemented properties. Therefore, the Glen Ellen Formation constructed wells generally yield in the tens to a few hundred gpm.

The Petaluma Formation (approximately 1.8 to 23 million years old) underlies the majority of the Glen Ellen at thicknesses ranging up to 3,000 feet in the Windsor hydrogeologic subarea. The Petaluma Formation is principally comprised of weakly to moderately consolidated mudstone with minor lenses sandstone. Due to overall fine-grained nature of the Petaluma Formation, wells completed to this portion of the subsurface yield less than the Glen Ellen and the Quaternary Alluvium.

6.1.2.3 Groundwater Management

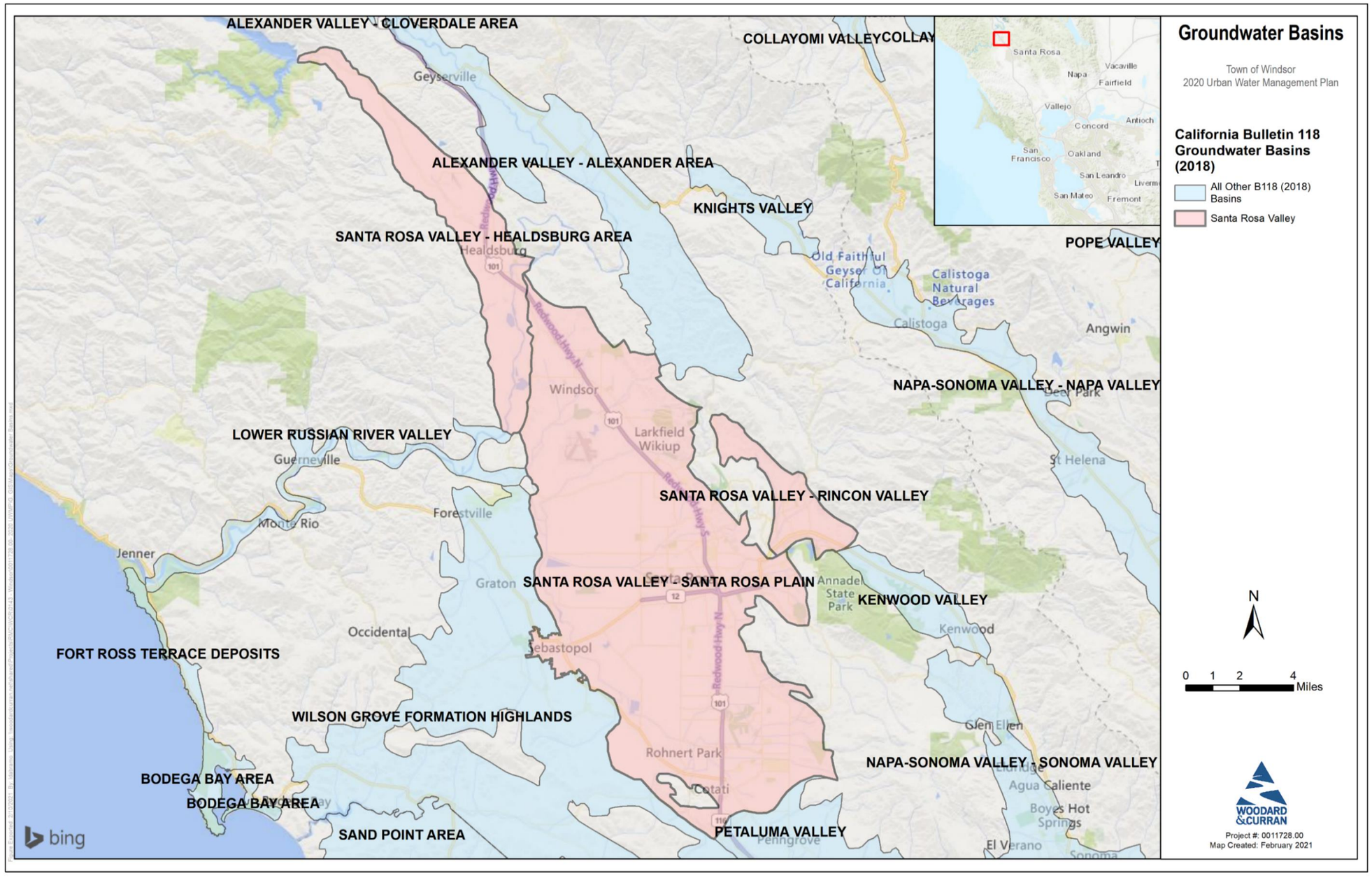
In 2014, the Santa Rosa Plain GMP was adopted. The GMP was developed by the Basin Advisory Panel, a group of local stakeholders that came together to prepare a voluntary GMP. The GMP sets guidelines to voluntarily manage groundwater resources in the basin and allows for eligibility for current and future funding in State programs relating to water and groundwater projects. Additionally, the GMP increases the likelihood of local decision makers being able to manage water resources within the Santa Rosa Plain. The lead agency of the GMP, Sonoma Water, approved the adoption of the GMP on October 8, 2014.

Additionally, in 2014, the Sustainability Groundwater Management Act (SGMA) was enacted, requiring that Groundwater Sustainability Agencies (GSAs) and Groundwater Sustainability Plans (GSPs) be created to sustainably manage groundwater supplies on a local basis throughout California. The Town is a member of the Santa Rosa Plain GSA, which was formed in June 2017, and has a seat on the GSA Board of Directors and Advisory Committee (Figure 6-1). As a "medium priority basin", the GSA must submit a GSP by January 31, 2022. The Santa Rosa Plain GSA is currently in the process of developing a GSP for the subbasin.

Figure 6-1 Governance Structure of the Santa Rosa Plain Groundwater Sustainability Agency



Figure 6-2 Groundwater Basins



6.1.3 Surface Water

The Town's primary source of potable water is surface water diverted at the Russian River Well Field (well field). The well field is Town-owned; however, water pumped from the well field is diverted under Sonoma Water's surface water rights. In 2020, 3,190 AF of water was diverted at the well field, comprising approximately 85% of the Town's total potable water supply.

The Russian River well field was established in 1984 and currently includes five Windsor-owned production wells. These wells are relatively shallow and pull Russian River underflow through layers of gravel and sand as a natural filtration system. The Town has applied for its own SWRCB permits to divert Russian River flow at the Town's Russian River well field facilities. That application is still pending as of the preparation of this Plan.

6.1.4 Stormwater

The Town has no large-scale stormwater recovery system in place for water supply augmentation. The Town does have stormwater low impact development (LID) features throughout the Town. These include infiltration basins in Keiser Park, Hiram Louis Park and Esposti Park; Filterra tree wells along various Town streets; and various swales, rain gardens and other LID features in public and private areas. At this time, these features are largely designed for flood control and water quality treatment purposes.

6.1.5 Wastewater and Recycled Water

The Town collects its wastewater and treats it to disinfected tertiary levels at its wastewater reclamation plant. The entire reclamation system consists of the treatment plant, storage ponds, a discharge point to Mark West Creek (MWC), and a distribution system. The beneficial uses of the Town's recycled water include delivery to the Geysers Geothermal Project for re-injection to create steam for green energy production, agricultural irrigation outside the Town limits, urban landscape irrigation within the Town limits and, on a limited scale, toilet flushing at two sites near the wastewater treatment plant.

6.1.5.1 Coordination

The Town is the owner and operator of the Windsor Wastewater Treatment Reclamation and Disposal Facility; however, it coordinates with several entities for various purposes, including joint planning and development projects and studies, customer coordination, and public outreach. The Town coordinates with other local governments, including Sonoma Water, the City of Santa Rosa, other Sonoma Water contractors, and regional and state regulators. These efforts have resulted in the cooperative preparation of the:

- Recycled Water Storage and Use Study (Woodard & Curran; Brelje & Race, 2020)
- Water Reclamation Master Plan (Brelje & Race, 2001)
- Water Reclamation Joint Use Feasibility Study (Brelje & Race, 2005)
- Urban Recycled Water Facilities Planning Study (West Yost, 2013)

Routine coordination with recycled water recipients and customers is necessary for the ongoing recycled water program. Urban customers include irrigation recipients at Windsor High School, the Vintage Greens Subdivision, Storage Pro, and Windsor Golf Course. Agricultural property owners include Shone Farm (part of the Santa Rosa Junior College), vineyards, and several Town parks. Please see the recycled water customer figure included in Appendix G.

6.1.5.2 Wastewater Collection, Treatment, and Disposal

As described in the Town's *Urban Recycled Water Facilities Study* (West Yost, 2013) and the *Recycled Water Storage and Use Study* (Woodard & Curran; Brelje & Race, 2020), the Town's wastewater collection system consists of:

- 94 miles of public sewer lines,
- One mile of private branch sewers,
- 1,728 manholes,
- 525 cleanouts, and
- Approximately 6,100 private sewer laterals.

Over 90% of the wastewater flow reaches the treatment plant entirely by gravity flow. The remainder requires two lift stations to convey it to the plant. These stations, owned and operated by the Town, are located at Vintage Greens and Shiloh Greens.

All wastewater collected into the system is treated to a tertiary level and is appropriate for use as non-potable recycled water. The wastewater treatment plant is designed with a capacity of 2.25 million gallons per day (MGD) average dry weather flow and 7.2 MGD peak weekly wet weather flow. An estimated 1,643 AF of wastewater was collected by the treatment plant in calendar year 2020, as outlined in Table 6-2.

The Town's Recycled water distribution system is shown in Figure 3-3 and consists of:

- Six recycled water storage ponds with a combined volume of 143.7 MG (441 AF)
- Two separate pump stations, one for urban and agricultural recycled water customers and one for distribution to the Geysers pipeline
- 17.3 miles of distribution pipeline

Recycled water is conveyed from the storage ponds through the Effluent Pump Station and the Geysers Pump Station. The Effluent Pump Station discharges to a 20-inch diameter pipeline that runs southwest from the wastewater treatment plant towards Mark West Creek with smaller branches running to the north and east. The Effluent Pump Station sends water from the wastewater treatment plant to urban and agricultural recycled water customers, and during the discharge season, it also conveys flows to discharge to Mark West Creek. There are four pumps with capacities ranging from 500 GPM to 2,500 GPM. The Geysers Pump Station, which is owned by the Town and operated by the City of Santa Rosa, sends flows through the City's Geysers Pipeline to the Geysers Steam Field. The Geysers Pump Station has four pumps (three on duty, one on standby) with a capacity of 0.56 MGD each.

Table 6-3 presents a breakdown of the actual uses of the Town's recycled water as metered and estimated for the year 2020. As indicated in Table 6-3, of the 1,643 acre-feet collected, 384 AF were discharged to Mark West Creek, 489 AF were recycled within the Town's potable water service area, and 770 AF were recycled outside the potable water service area. The recycled water within the service area is used for golf course and landscape irrigation, institutional use (i.e., high school and fire department), and for maintenance of the wastewater treatment plant. Recycled water outside of the service area is discharged to the Geysers pipeline for geothermal use and for agricultural irrigation outside of the Town's service area.

Table 6-4 illustrates the further breakdown of recycled water use by category. The Town distributes this water for agricultural and urban irrigation, the Santa Rosa Geysers Recharge Project (Geysers), and a small amount for toilet flushing for Windsor High School and a Town fire station. Of these beneficial uses, a portion of the recycled water use offsets potable water demand. The recycled water directed to agricultural fields and to the Geysers, though beneficial, does not offset the Town's potable use, and in fact, is utilized outside of the Town's water service area.

Table 6-4 also presents projected consumption of recycled water by category in five-year increments to 2040. The Town expects that its contribution to the Geysers Geothermal plant may increase substantially between 2020 and 2025, and then again between 2035 and 2040 based on the agreements between the Town, the City of Santa Rosa, and the Geysers plant. (Note that the recycled water projections in the *2020 Water Demand Analysis and Water Conservation Measure Update* (EKI, 2020) are lower because they do not incorporate these recently-reached agreements).

Table 6-2 Wastewater Collected Within Service Area in 2020 (DWR Table 6-2R)

☐	There is no wastewater collection system. The supplier will not complete the table below.
	Percentage of 2015 service area covered by wastewater collection system *(optional)*
	Percentage of 2015 service area population covered by wastewater collection system *(optional)*

Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Windsor Water District	Estimated	1,643	Windsor Water District	Town of Windsor Wastewater Treatment, Reclamation, and Disposal Facility	Yes	No
Total Wastewater Collected from Service Area in 2020:		1,643				

**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:
The volume of wastewater collected is equivalent to the influent into the WWTP from the sewer system.

Table 6-3 Wastewater Treatment and Discharge within Service Area in 2020 (DWR Table 6-3R)

☐	**No wastewater is treated or disposed of within the UWMP service area.** The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional) 2*	Method of Disposal ***Drop down list***	Does This Plant Treat Wastewater Generated Outside the Service Area? ***Drop down list***	Treatment Level ***Drop down list***	**2020 volumes [1]**				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area [3]	Recycled Outside of Service Area	Instream Flow Permit Requirement
Town of Windsor Wastewater Treatment, Reclamation, and Disposal Facility	Mark West Creek	Outfall		River or creek outfall	No	Tertiary	1,643	384	489	770	0
						Total	1,643	384	489	770	0

[1]**Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.
[2] If the **Wastewater Discharge ID Number** is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility

Table 6-4 Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4R)

☐	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.

Name of Supplier Producing (Treating) the Recycled Water:	Windsor Water District
Name of Supplier Operating the Recycled Water Distribution System:	Windsor Water District
Supplemental Water Added in 2020 (volume) *Include units*	0 AF
Source of 2020 Supplemental Water	N/A

Beneficial Use Type *Insert additional rows if needed.*	**Potential** Beneficial Uses of Recycled Water (Describe)	Amount of **Potential** Uses of Recycled Water (Quantity) *Include volume units*[1]	General Description of 2020 Uses	Level of Treatment *Drop down list*	2020 [1]	2025 [1]	2030[1]	2035[1]	2040[1]
Agricultural irrigation	Recycled water can irrigation vineyards, pasture, fodder, and other crops outside of the service area	1,520 AF/year[(a)]	Recycled Non-urban Agricultural and Vineyard	Tertiary	228	228	228	228	228
Landscape irrigation (excluding golf courses)	Recycled water can irrigate additional residential and commercial landscapes within the service area	1,864 AF/year[(b)]	Recycled Urban	Tertiary	247	275	293	492	492
Golf course irrigation	Recycled water can irrigate the Windsor Golf Club	244 AF	Recycled Urban	Tertiary	244	244	244	244	244
Commercial use	Potable offset at the Windsor High School and Fire Department	3 AF/year	Mixed use (H.S., fire department)	Tertiary	3	3	3	3	3
Industrial use									
Geothermal and other energy production	Additional recharge to generate geothermal, renewable energy	1,400 AF/year	Geysers Recharge [(c)]	Tertiary	542	841	841	841	1,400
Seawater intrusion barrier									
Recreational impoundment									
Wetlands or wildlife habitat									
Groundwater recharge (IPR)									
Reservoir water augmentation (IPR)									
Direct potable reuse									
Other (Description Required)	Potable offset for maintenance of wastewater treatment plant	3 AF/year	Dust control; sewer lift station washdown	Tertiary	3	3	3	3	3
				Total:	1,267	1,594	1,612	1,811	2,370
				2020 Internal Reuse	0				

[1] ***Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:
(a) Currently there are 760 acres of crops that can receive 2 AF/acre of recycled water each year, totaling 1,520 AF of recycled water annually. The irrigation acreage could increase or decrease in upcoming years. There is not enough recycled water supply to meet this potential demand.
(b) Currently there are 287 acres of landscape that receive recycled water (of 630 acres that are currently irrigated). There is an additional 302 acres of irrigable, but currently not irrigated land. It is assumed that up to 2 AF/acre can be irrigated with recycled water. Up to 932 acres of could be irrigated with recycled water if there were additional recycled water service connections installed.
(c) The Town expects that its contribution to the Geysers Geothermal plant will increase substantially between 2020 and 2025 and then again between 2035 and 2040.

Table 6-5 below compares the total recycled water beneficially used in 2020 to the 2015 projection for 2020 use, as stated in the Town's 2015 UWMP. This table excludes treated wastewater discharges to Mark West Creek and unmetered and unaccounted for uses. Actual recycled water use in 2020 was only 18 AF less than had been projected in 2015. The golf course used less recycled water due to implementation of water efficient irrigation practices. The Geysers plant received less recycled water because there was a short-term shutdown in 2020. It is expected that recycled water use for geothermal energy production will increase considerable within the next 20 years.

Table 6-5 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual (DWR Table 6-5R)

☐	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.

Beneficial Use Type	2015 Projection for 2020 [1]	2020 Actual Use[1]
Insert additional rows as needed.		
Agricultural irrigation	180	228
Landscape irrigation (excluding golf courses)	227	247
Golf course irrigation	282	244
Commercial use[(a)]	3	3
Industrial use		
Geothermal and other energy production	585	542
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required) [(b)]		3
Total	1,277	1,267

[1] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:
(a) Commercial use includes an estimated 3 AF for toilet flushing at the high school and one fire station. The high school and fire station recycled water use meter combines indoor and outdoor reuse for a total of 3 AF for both those customer accounts.
(b) The "other" category includes dust control and sewer lift station wash downs.

6.1.5.3 Expansion of Recycled Water Use

There are a variety of potential recycled water expansion projects under consideration by the Town, as presented in the Town's 2020 Recycled Water Storage and Use Study. These include the following:

Increase Geysers Discharge. The Town's long-term objective is to eliminate emergency and average discharges to Mark West Creek. Increasing discharges to the Geysers would reduce average year and emergency discharges. The Town is considering increasing Geysers' discharge to Tier 2 (0.75 MGD, 840 AFY). The Town would put out a Notice to Increase to Tier 2 in 2021 and increase would be in effect in 2022. If there is no increase in agricultural and urban recycled water demand, then the Town would put out a Notice to Increase to Tier 3 (1.25 MGD, 1,400 AFY) which would be in effect in 2024.

Conduct Recycled Water Market Assessment. The Town is planning to conduct a recycled water market assessment to, first, understand the recent reductions in recycled water use among the existing customer base and, second, assess the potential to capture additional non-potable demands in its service area or through transfers to Sonoma Water and the Town's service areas. The findings of the assessment will determine the implementation of other potential projects depending on recycled water demand and will be conducted in 2021.

Pursue a Joint Storage Agreement. The Town entered into an agreement with Sonoma Water for the joint storage and management of recycled water. The recycled water joint use program is supported by the Town's NPDES permit and is currently being reviewed by North Coast RWQCB staff . It is recommended that the Town continue to develop the Joint Use Program with Sonoma Water, City of Santa Rosa, and North Coast RWQCB.

Advance Plans for New Storage. The Eastside Road Storage Project has potential for advancement because the Town owns lands intended for the project and preliminary engineering and environmental documentation have been completed. However, there have been delays to the project in part due to the associated loss of woodland (deforestation) which would result from constructing a storage facility. As an alternative to the Eastside Road Storage Project, the Town could collaborate with Sonoma Water and the City of Santa Rosa to develop a regional storage project sited elsewhere. The Town will move forward with one of these options, depending on interest from collaborating agencies. The Eastside Road Storage Project could complete its final design and apply for outside funding as early as 2022, whereas preliminary design and environmental documentation for a new project would begin in 2022. Construction would likely not begin until after 2025.

Connect Additional Customers and Discretionary Lands. Consistent with recommendations of the recycled water market assessment, the Town would coordinate with customers to connect them to the recycled water system and secure additional Town-owned irrigation lands, if needed. This is considered to be a long-term plan implemented beyond 2030.

Table 6-6 summarizes the methods to expand future recycled water use. Additional information about future recycled water use can be found in the *Recycled Water Storage & Use Study* (Woodard & Curran; Brelje & Race, 2020).

Table 6-6 Methods to Expand Future Recycled Water Use (DWR Table 6-6R)

☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
6-11 (Section 6.2.5.3)	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
Add additional rows as needed			
Conduct Recycled Water Market Assessment	Evaluate current and project recycled water demands	2021	NA
Increase Geysers Discharge	Increase recycled water diversion to the Geysers Steam Field to Tier 2 (0.75 MGD)	2021-2022	141[(a)]
Pursue a Joint Storage Agreement	Approve draft agreement for joint recycled water management with the Agency and pursue joint use of existing storage at the airport	2021-2023	
Advance Plans for New Storage	Design and construct 644 AF of storage - the Eastside Road Storage Project or another regional storage project	2021-2026[(b)]	644[(c)]
Connect Additional Customers and Discretionary Lands		Long-term (10 years and beyond)	NA
		Total	785
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			

NOTES:
(a) Increasing Geysers discharge to Tier 2 (0.75 MGD) in combination with an additional 153 AF of joint storage would reduce average year discharges to Mark West Creek by 141 AF per year.
(b) This timeframe incorporates preliminary and final development engineering designs, environmental documents, and funding applications. Construction is not expected until after 2025.
(c) The potential Eastside Road Storage Project, or alternative, would be designed to store approximately 644 AF of recycled water.

6.1.6 Desalinated Water

Due to the Town's distance from the ocean and lack of saline or brackish water in its current supply sources, desalination is currently not being explored as a future water source.

6.1.7 Water Exchanges and Transfers

The Town does not engage in exchanges or transfers of water with other water rights holders.

6.1.8 Future Water Projects

In addition to the plans to expand recycled water use as described in Section 6.1.5.3, the Town Water Master Plan and adopted Capital Improvement Plan (Fiscal Year 2019-2024) includes adding two additional water supplies in the event of curtailments of surface water supplies due to drought or catastrophic events. A summary of future water projects is provided in Table 6-7 and is summarized below.

Northern Windsor Supply Well. A second off-river production well is budgeted in the Town's Capital Improvement Projects program for use as an additional supply of potable water. This new well is referred to as the North Windsor well. The project consists of investigating water quality with a monitoring well to determine if water treatment is necessary, followed by construction of a new production well. The Northern Windsor supply well project is expected to be implemented between 2023 and 2025, depending on water quality testing.

Esposti Potable Well Water Treatment. As mentioned previously, the Town's potable water supply well at Esposti Park is currently constructed, but not yet permitted. The Town has evaluated well head treatment options, environmental issues, and location for a well head treatment system. The Town has budgeted to install an arsenic and manganese treatment system near the well in fiscal year 2022-23, but will not move forward with it until after investigating installation of a northern supply well to determine if a well can be installed that does not require water treatment. The Esposti potable well project is expected to be completed by 2023, depending on implementation of the North Windsor Supply Well.

The order of completion for the Esposti and North Windsor Well projects are dependent on water quality test boring results for the North Windsor Supply Well. If water quality test results indicate lower overall costs for development of a production well at the North Windsor site as compared to the Esposti site, then North Windsor would start in fiscal year 2021-22, and the Esposti well treatment and permitting would be delayed until fiscal year 2023 to 2024, reversing the currently proposed order.

Replacement/New Well at Russian River Well. The Town is considering constructing a new well at the Russian River Well Field site. The project includes design and feasibility evaluation in fiscal year 2023 to 2024 with well construction thereafter to meet operational and future growth demands. There will likely be no new water production off river before 2030.

Table 6-7 Expected Future Water Supply Projects or Programs (DWR Table 6-7R)

☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
6-14 (Section 6.2.8)	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Supplier* *This may be a range*
	Drop Down List (y/n)	*If Yes, Supplier Name*				
Add additional rows as needed						
Esposti Potable Well	No		Evaluation of treatment options, environmental issues, and location	2021-2023[a]	Single-Dry and Multi-Dry Year	350
North Windsor Well	No		New well construction	2023-2025[a]	Single-Dry and Multi-Dry Year	350
Replacement Well at Russian River Well Field	No		New well construction	2023-2025	Average Year	0[b]
Joint Recycled Water Storage Agreement	Yes	Sonoma Water	Shared use of existing recycled water storage at the Airport	2021-2026	All Year Types	141[c]

***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:
(a) The order of completion for the Esposti and North Windsor Well projects are dependent on water quality test boring results for the North Windsor Supply Well. If water quality test results indicate lower overall costs for development of a municipal well at the North Windsor site as compared to the Esposti site, then North Windsor would start in 2021-2023, and Esposti would be delayed until 2023-2025, reversing the currently proposed order.
(b) Well will be used to meet operational needs.
(c) This is the expected decrease in discharge to Mark West Creek from a combination of the shared use of existing recycled water storage at the Airport and increasing Geysers discharge to Tier 2, as described in Section 6.2.5.3

6.1.9 Summary of Existing and Planned Sources of Water

Table 6-8 below provides a summary of the Town's water supply as provided in 2020, as well as the Town's total water supply rights per supply source. Water supply sources projected to 2040 are presented in Table 6-9.

Table 6-8 Water Supplies — Actual (DWR Table 6-8R)

Water Supply	Additional Detail on Water Supply	2020		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Surface water (not desalinated)	Russian River Well Field [a]	3,190	Drinking Water	5,625
Purchased or Imported Water	Surface water purchased from Sonoma Water [b]	544	Drinking Water	
Recycled Water	Potable Offset [c]	489	Recycled Water	N/A
Recycled Water	Other Supply [d]	770	Recycled Water	N/A
Groundwater (not desalinated)	Esposti Irrigation Well	50	Other Non-Potable Water	50[e]
	Total	5,043		5,675
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*				

NOTES:
(a) Under Sonoma Water's surface water right
(b) Transported through Sonoma Water's Santa Rosa Aqueduct
(c) Potable offset uses include landscape and golf course irrigation and toilet flushing at two sites
(d) Does not offset potable water use in the Town's water service area
(e) The total water right for this well has not been determined, therefore, total usage is given.

Table 6-9 Water Supplies – Projected (DWR Table 6-9R)

Water Supply **Drop down list** May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	**Projected Water Supply *** Report To the Extent Practicable							
		2025		**2030**		**2035**		**2040**	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed									
Surface water (not desalinated)	Russian River Well Field [a] [b]	4,725	4,725	4,725	4,725	4,725	4,725	4,725	4,725
Purchased or Imported Water	Surface water purchased from Sonoma Water [a][c]	900	900	900	900	900	900	900	900
Groundwater (not desalinated)	Off-river wells: Esposti Irrigation (Raw), Esposti Potable, North Windsor 3 off-river wells [d]	750	1,700	750	1,700	750	1,700	750	1,700
Recycled Water		1,594	1,594	1,612	1,612	1,811	1,811	2,370	2,370
	Total	7,969	8,919	7,987	8,937	8,186	9,136	8,745	9,695
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*									

NOTES:
(a) The Reasonably Available Volume indicated for the surface water in all years listed is equal to the Total Right of 5,625 AFY and projected to be available by Sonoma Water.
(b) The Town pumps from the Windsor Russian River Well field under Sonoma Water's surface water right.
(c) Transported through the Santa Rosa Aqueduct
(d) It is projected that 50 AFY from the Esposti raw water wells for irrigation will be produced. By 2025, it is expected that an additional 350 AFY of reasonably available potable water supply could be available from the planned Esposti well and 350 AFY from the North Windsor Well, but since neither well is currently operational, the reasonably available volume and safe yield are estimates only.

6.1.10 Special Conditions

Water supplies can be affected by special conditions including climate change and regulatory considerations.

6.1.10.1 Climate Change Impacts

The Town currently depends almost wholly on surface water supplies obtained directly or indirectly from the Russian River – either through the Russian River Well Field or imported surface water from Sonoma Water. The Russian River is a rain-fed river, depending on the timing and magnitude of precipitation events for its flows (unlike snow-fed rivers that rely on Sierra snow melt for seasonal flows). As such, flows in the Russian River, and subsequently the ability to divert those flows, may be affected in the future by climate change impacts on precipitation which are generally believed to result in shorter periods of more intense flows in the future.

Other potential impacts on supplies due to climate change were reported in the Town's *Climate Action 2020 and Beyond* Report (RCPA, 2016). These include:

- Surface water shortages from more frequent and intense droughts
- Increased pumping of groundwater leading to well failure and degraded water quality
- Increased evapotranspiration from open water sources and reservoirs
- Risk of lost connections to energy and water from more frequent and intense wildfires
- Less predictable reservoir operation from extreme floods

Additional impacts and effects from the *Climate Action 2020 and Beyond* report are summarized in Section 3.3.1.

The *North Coast Integrated Water Management Plan, Phase III* (NCIRWMP) report (NCRP, 2014) assessed climate change vulnerability for region encompassing the Russian River and its tributaries. A primary conclusion is that climate change could lead to an increased dependence on groundwater.

As previously mentioned, the Town is planning to develop deep aquifer off-river groundwater supplies to meet a portion of the future demands, primarily in drought conditions. The Town is also participating in the development of a GSP to evaluate and maintain the long-term usability of the underlying Santa Rosa Plain Groundwater Basin.

6.1.10.2 Regulatory Conditions

In addition to climate change, the Town can also experience "regulatory droughts." A regulatory drought occurs when there is project water in the reservoir, however mandatory minimum stream inflow requirements must be met, limiting diversions from the river which could cause ecological harm. Sonoma Water manages the two reservoirs on the Russian River (Lake Mendocino and Lake Sonoma) and determines the amount of water to be released from each reservoir when the lake levels are in the water supply pools. The U.S. Army Corps of Engineers (USACE) determines the amount of water to be released when the lake levels are above the water supply pools and in the flood control pools. Therefore, surface water supplies to the Town can be limited by ecological

regulations, reservoir operations, and rule curves. However, Forecast-Informed Reservoir Operations (FIRO) are being considered for implementation on Lake Mendocino which could increase flexibility of reservoir operations, potentially supplementing water supplies and reducing flood risk.

6.2 Energy Intensity

In addition to the volume, timing, and source of water supplied, the Plan also assesses the energy used to supply and treat water and wastewater in the Town.

Retail potable deliveries are sourced from the Russian River well field and purchased from Sonoma Water. Approximately 85% of the potable water supply is sourced from the well field. There are five wells that pump water from the well field and use roughly 80% of the total energy use to supply, treat, and distribute potable water. The energy use and the volume of water pumped for individual wells is metered, and these metered data have been used to populate the energy use tables (Table 6-10). The volume of water purchased from Sonoma Water is sourced from monthly billing data. The energy use of the Esposti raw water well is not included as it does not produce potable water and the data were not readily available.

Energy is used to distribute the combined well field and imported water supply throughout the Town's distribution network. There are several booster pumps throughout the system, including pumps at Shiloh Ridge, Laughlin Road, the Vinecrest 2HP booster, and other locations. These pumps are individually metered for energy use, and the combined kilowatt hours are reported in the energy use tables (Table 6-10). The energy used for chlorination is less than 10% of the total potable water energy use, so the amount of energy used for treated water supplies in comparison to the amount used for non-treated water supplies is minimal.

The energy intensity of wastewater and recycled water was also evaluated. Between October 2019 and September 2020, 1,716 AF of wastewater was collected, conveyed to the wastewater treatment plant, and treated to a tertiary level. The wastewater treatment plant influent is metered and reported in Table 6-11. All of the wastewater that is collected is also treated, so that volume of water has associated energy use for both collection and treatment processes. Over 90% of the wastewater flows reach the treatment plant entirely by gravity flow, and the remainder requires two lift stations to convey flow to the plant. These stations, owned and operated by the Town, are located at Vintage Greens and Shiloh Greens. Treating wastewater requires much higher relative energy intensity. The energy use at the wastewater treatment plant is metered at a plant level and aggregated in Table 6-11.

A portion of the wastewater is recycled. and the remainder is discharged into Mark West Creek. The distribution of recycled and discharged water is estimated and assumed to be proportional to the distribution of the actual 2020 (January through December) volumes. The energy use associated with discharging to Mark West Creek is embedded in the treatment energy use. The energy use of the recycled water is associated with distributing the water to the Geysers pipeline or recycled water parcels throughout the service area. Recycled water booster pumps are individually metered, and aggregated energy use is reported in Table 6-11.

The Town has installed a solar panel array which floats on pond 7. The solar array went on-line in December 2020 and is expected to provide up to 85% of the energy needed to operate the wastewater plant, Geysers pump station, and Public Works administration building.

Table 6-10 Recommended Energy Reporting – Total Utility Approach (DWR Table O-1B)

Enter Start Date for Reporting Period	10/1/2019	**Urban Water Supplier Operational Control**		
End Date	9/29/2020			
☐ Is upstream embedded in the values reported?		**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
Water Volume Units Used	*AF*	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (volume unit)		*3,753*	*0*	*3753*
Energy Consumed (kWh)		*1,775,062*	*0*	*1,775,062*
Energy Intensity (kWh/volume)		*473.0*	*0.0*	*473.0*

Quantity of Self-Generated Renewable Energy

0 kWh

Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

Metered Data

Data Quality Narrative:

The volume of water reflects the monthly water purchased from Sonoma Water or extracted from the Russian River Well Field. The purchased water reflected billing data, not operator-read or SCADA. The Russian River Well Field water is metered.

Narrative:

The water entering the system uses energy when it is pumped from the Russian River Well Field (approximately 85% of the supply), chlorinated, and conveyed through the distribution network using booster pumps to reach various service areas.

Table 6-11 Recommended Energy Reporting – Wastewater & Recycled Water (DWR Table O-2)

Enter Start Date for Reporting Period	10/1/2019	Urban Water Supplier Operational Control			
End Date	9/29/2020	Water Management Process			
Is upstream embedded in the values reported? ☐		Collection / Conveyance	Treatment	Discharge / Distribution	Total
Volume of Water Units Used	AF				
Volume of Wastewater Entering Process (volume units selected above)		*1,716*	*1,716*	*393*	*3,825*
*Wastewater Energy Consumed (kWh)**		*17,641*	*3,353,227*	*0*	*3,370,868*
Wastewater Energy Intensity (kWh/volume)		*10.3*	*1954.1*	*0.0*	*881.2*
Volume of Recycled Water Entering Process (volume units selected above)		*0*	*0*	*1,323*	*1,323*
Recycled Water Energy Consumed (kWh)		*0*	*0*	*453,177*	*453,177*
Recycled Water Energy Intensity (kWh/volume)		*0.0*	*0.0*	*342.6*	*342.6*

*Treatment kWh includes 50% of the energy consumed at the Corporation Yard shops and admin building.

Quantity of Self-Generated Renewable Energy related to recycled water and wastewater operations

0 kWh

Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

Combination of Estimates and Metered Data

Data Quality Narrative:

All of the wastewater influent metered for October 2019 through September 2020 and totals 1,716 AF. The volume of water that is discharged to Mark West Creek versus recycled is estimated and is proportional to the actual 2020 values (January 2020 through December 2020).

Narrative:

The 1,716 AF of wastewater includes all wastewater that is treated, including wastewater that is treated and then recycled. It is included in both the collect/conveyance and treatment cells because it undergoes both processes - it enters the system, is conveyed to the wastewater treatment plant, and is treated. The energy intensity of distributing the recycled water is identified separately.

7. WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

This section compares the Town's actual and projected water demands as documented in Sections 3 and 4 to the Town's water supplies, as described in Section 6, over the next 20 years in five-year increments. The comparison is made for an "average" water year, as well as for single-dry and multiple-dry year conditions.

The new requirement for a Drought Risk Assessment (DRA) is also addressed in this section. The DRA evaluates the risk of water shortages under a severe drought period lasting the next five consecutive years and provides a basis for planning for those conditions should they occur.

The Town's WSCP is used to create a plan and legal authority for demand reductions in response to water shortage conditions, whether caused by drought or other catastrophic, unexpected causes of supply shortage. The Town's WSCP is discussed in detail in Section 8 and is attached in Appendix H.

7.1 Water Service Reliability Assessment

The assessment of water supply reliability includes (1) a narrative of constraints on water sources, and (2) expected water service reliability for a normal year, single dry year, and five consecutive dry years over the next 20 years in five-year increments.

7.1.1 Service Reliability – Constraints on Water Sources

A constraint on a water source is any particular circumstance that would make a source inconsistent, including legal, environmental, and/or climate factors. Constraints on the Town's water supplies are summarized below.

7.1.1.1 Legal and Environmental Constraints

Legal constraints on the Town's water supply are discussed in Section 6.1.1. These constraints set a cap on the Town's annual water provisions from both the Russian River Well Field and direct purchases via Sonoma Water's Santa Rosa Aqueduct as per the Restructured Agreement with Sonoma Water. Sonoma Water has permitted limits on diversions from the Russian River. Maintenance of reservoir storage and minimum stream flows for the Upper and Lower Russian River and Dry Creek is required as, described in the SWRCB Decision 1610 (California State Water Resources Control Board, 1986). Sonoma Water's current diversion limits are dictated by four State Water Resources Control Board (SWRCB) permits (SWRCB permit numbers 12947A, 12949, 12950 and 16596). Sonoma Water submitted a petition for temporary urgency change to their permits to modify the minimum instream flow requirements in May 2021 (Sonoma Water, 2021).

A 2006 Restructured Agreement between Sonoma Water and the Town limits the total amount of water available to the Town from both sources combined to no more than 5,625 AFY (4,725 AFY from the Russian River Well Field and an additional 900 AFY imported via the Santa Rosa Aqueduct). A copy of the agreement between the Town and Sonoma Water is included in Appendix F.

The Town is projected to pump approximately 750 AF of groundwater annually from existing and planned wells beginning in 2025. The 2022 GSP for the Santa Rosa Plain Subbasin is currently

under development and there will likely be no legal restrictions on this volume of extraction for the Town set in the GSP.

7.1.1.2 Water Quality

There are no water quality constraints on the Town's Russian River Well Field. The Esposti potable well contains arsenic and manganese above the maximum containment levels allowed in California drinking water. The Town is considering treatment of groundwater from that well for arsenic and manganese removal. As presented in Section 6, the Esposti well could reasonably supply up to 350 AF per year (and potentially up to 850 AFY) of potable water once the well and treatment are on-line.

7.1.1.3 Climate Factors

As previously discussed in Section 3.4.1, the Town anticipates potential vulnerabilities to their water supplies due to climate change. Potential climate impacts include more frequent and intense droughts, which can stress water supplies and amplify the differences between supplies and demands. The NCRP, which encompasses the Town, details the potential impacts on climate change on the Russian River watershed in Appendix N of the *North Coast Integrated Water Management Plan, Phase III* (NCRP, 2014), which is also described in Section 3.4.1.

7.1.2 Service Reliability – Year Type Characterization

The water year type, ranging from wet to critically dry, reflects the hydrologic conditions which can impact water supplies, especially surface water supplies.
Table 7-1 summarizes the characteristics of water supplies by year type required for the water service reliability assessment – average, single-dry, and five consecutive dry years. The base years, representing the various hydrologic conditions, were selected to align with Sonoma Water's 2020 UWMP and modeling efforts because, as the Town's wholesaler and primary water supplies, Sonoma Water's anticipated conditions will directly impact the Town. The modeling conducted by Sonoma Water indicates that the year best representing average water supply conditions is 2002; single-dry year conditions is 1977, and multiple-dry year conditions is 1987 through 1991.

The available volume of supply under each of these year types includes surface water supplies made available through Sonoma Water (from both the Russian River Well Field and imported directly from Sonoma Water), off-river groundwater wells for irrigation and drinking water (pending construction), and recycled water. The Town's water supply is assumed to be equal to the Town's total water right under Sonoma Water (5,625 AF), plus local supplies in 2025. Year 2025 was used as a basis for consistency with the Sonoma Water UWMP.

Table 7-1 shows that 100% of water supplies will be available under average, single-dry year, and five consecutive dry years if the Town develops its off-river well capacity as planned. If the currently planned off-river wells are not constructed by 2025, shortfalls increase by 700 AF.

Table 7-1 Basis of Water Year Data (Reliability Assessment) (DWR Table 7-1R)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	Available Supplies if Year Type Repeats	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		☑	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	**% of Average Supply**
Average Year	2002	7,969	100%
Single-Dry Year	1977	7,969	100%
Consecutive Dry Years 1st Year	1987	7,969	100%
Consecutive Dry Years 2nd Year	1988	7,969	100%
Consecutive Dry Years 3rd Year	1989	7,969	100%
Consecutive Dry Years 4th Year	1990	7,969	100%
Consecutive Dry Years 5th Year	1991	7,969	100%
Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES: Assumes the same base years as used in the Sonoma Water (wholesaler) 2020 UWMP and modeling efforts.			

7.1.3 Service Reliability – Supply and Demand Comparison

Table 7-2 presents the Town's anticipated supply versus demand in normal years projected in five-year increments to 2040. The supplies in this table include (1) Russian River supplies, (2) a reasonable yield assumption from the Town's existing and planned off-river wells which are expected to be fully on-line by 2025, and (3) recycled water for potable offset and non-potable demands. While the two planned potable off-river wells are expected to be online by 2025 providing approximately 350 AFY each, there could be delays in constructing these wells due to funding or other circumstances that could create a shortage beginning in 2035 under normal year conditions.

As illustrated in Table 7-2, it is estimated that, in average precipitation years, the Town will have adequate supply to fulfill its demands through 2040.

Table 7-2 Normal Year Supply and Demand Comparison (DWR Table 7-2R)

	2025	2030	2035	2040
Supply totals (*autofill from Table 6-9)*	7,969	7,987	8,186	8,745
Demand totals *(autofill from Table 4-3)*	6,504	6,955	7,614	8,628
Difference	1,465	1,032	572	117
NOTES: These supply totals include the volume anticipated to be obtained from the off-river wells planned to be developed by the Town.				

Table 7-3 presents supply and demand comparisons for single-dry year conditions projected out to 2040. In estimating the supplies available to the Town under single-dry year conditions, Sonoma Water's anticipated curtailment under these conditions was assumed to be applied to all of the Town's Russian River supplies (the Russian River Well Field and imported water). Sonoma Water's modeling efforts revealed a projected shortage beginning in 2030: 16% shortage in 2030, 17% in 2035, and 18% in 2040. The reduction in Russian River supplies is assumed to be proportional to the regional Sonoma Water shortages (i.e., if Sonoma Water's projected supplies are 16% less than demands, then Town's Russian River projected supplies will also be reduced by 16%). The supply shortage is applied to the Town's total Russian River allocation (5,625 AF). It is assumed that off-river groundwater supplies, recycled water supplies, and demand projections are the same in a single-dry year as in a normal year. In May of 2021, the Town requested a voluntary 20% recycled water use reduction for the first time. The impacts of this recycled water reduction request are currently unknown.

As illustrated in Table 7-3, the Town's supply is projected to exceed demand through 2030, but the Town may experience shortages in single dry years beginning in 2035 due to curtailments of Russian River supplies and increasing demands. Table 7-3 also illustrates the anticipated supply shortages if the planned potable off-river wells were not constructed and operational by 2025.

Table 7-3 Detailed Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040
Surface Water from Sonoma Water (Russian River Well Field and Purchased) - Normal Year	5,625	5,625	5,625	5,625
Sonoma Water Single Dry Year Supply Reduction [(a)]	0.0%	15.9%	16.7%	17.6%
Surface Water from Sonoma Water (Russian River Well Field and Purchased) - Single Dry Year	5,625	4,730	4,684	4,633
Groundwater - Esposti Well (raw)	50	50	50	50
Groundwater - Planned Potable Wells [(b)]	700	700	700	700
Recycled water	1,594	1,612	1,811	2,370
Total Water Supplies - Single Dry Year	**7,969**	**7,092**	**7,245**	**7,753**
Potable Water, Raw, Other Non-potable [(c)]	4,910	5,343	5,803	6,258
Recycled Water Demand [(c)]	1,594	1,612	1,811	2,370
Total Water Demands - Single Dry Year (c)	**6,504**	**6,955**	**7,614**	**8,628**
Shortage	**1,465**	**137**	**(369)**	**(875)**
Shortage WITHOUT Planned Potable Wells	**765**	**(563)**	**(1,069)**	**(1,575)**

NOTES:
(a) Source: 2020 Sonoma Water UWMP
(b) Projected 350 AFY from the planned Esposti potable well and 350 AFY from the planned North Windsor off-river wells
(c) From DWR Table 4-3R

Table 7-4 is a summary of Table 7-3 and is a required DWR table.

Table 7-4 Single Dry Year Supply and Demand Comparison (DWR Table 7-3)

	2025	2030	2035	2040
Supply totals*	7,969	7,092	7,245	7,753
Demand totals*	6,504	6,955	7,614	8,628
Difference	1,465	137	(369)	(875)
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*				

Table 7-5 presents the multiple-dry year condition. According to the results of Sonoma Water's water supply reliability modeling, the multiple dry-year drought that occurred beginning in the year 1987 is the worst experienced in the region in terms of impact to water supplies and was therefore used for this condition. Based on the analyses conducted by Sonoma Water, projected Russian River surface water supplies for the Town are the same as a normal precipitation year. Off-river groundwater supplies are assumed to decrease by 5% each consecutive dry year due to decreasing groundwater levels, potential groundwater quality concerns due to reduced recharge (i.e., 100% of groundwater supply in drought year 1, 95% of groundwater supply in drought year 2, 90% of groundwater supply in drought year 3, etc.). Recycled water supplies and demands are forecasted to remain the same under multiple dry years.

As illustrated in Table 7-5, through 2040 projected conditions using the modeled scenario, supplies exceed demands through the first four consecutive years of drought. However, the Town will experience shortages in the fifth and sixth years of the drought under 2040 conditions. Management tools and options, such as limiting the days irrigation may be applied to landscape and enforcing repair of leaks and irrigation overspray, to reconcile the mismatch between supplies and demands are discussed in Section 8.

While Table 7-5 projects future, simulated drought conditions with forecasted supplies and demands, Section 7.2.2 describes the DRA and the impacts of a drought if it began today, under current demands and supplies. Therefore, the analyses diverge between the projected multiple dry year drought and DRA (Section 7.2.2).

Table 7-5 Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4)

		2025*	2030*	2035*	2040*
First year	Supply totals	7,969	7,987	8,186	8,745
	Demand totals	6,504	6,955	7,614	8,628
	Difference	1,465	1,032	572	117
Second year	Supply totals	7,932	7,950	8,149	8,708
	Demand totals	6,504	6,955	7,614	8,628
	Difference	1,428	995	535	80
Third year	Supply totals	7,894	7,912	8,111	8,670
	Demand totals	6,504	6,955	7,614	8,628
	Difference	1,390	957	497	42
Fourth year	Supply totals	7,857	7,875	8,074	8,633
	Demand totals	6,504	6,955	7,614	8,628
	Difference	1,353	920	460	5
Fifth year	Supply totals	7,819	7,837	8,036	8,595
	Demand totals	6,504	6,955	7,614	8,628
	Difference	1,315	882	422	(33)
Sixth year *(optional)*	Supply totals	7,782	7,800	7,999	8,558
	Demand totals	6,504	6,955	7,614	8,628
	Difference	1,278	845	385	(71)
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*					
NOTES: Assumes that groundwater production decreases by 5% every consecutive dry year.					

7.2 Drought Risk Assessment

This section includes the DRA, describes the data and methods used, basis for the supply shortage conditions, the reliability of each source, and provides comparison of the total water supplies and uses during the drought.

7.2.1 DRA Data, Methods, and Basis for Water Shortage Conditions

The DRA is based on the five driest consecutive years on record and assumes that the drought will begin in 2021. Sonoma Water conducted a DRA on a regional scale and found that the five driest consecutive years for the region were 1987 through 1991. Sonoma Water used the Russian River ResSim (RR ResSim) model to estimate water supplies available for downstream demands and minimum instream flow requirements, as well as a separate transmission system hydraulic model to evaluate transmission capacity constraints on delivering water. The RR ResSim model simulates reservoir operations of Lake Mendocino and Lake Sonoma for different hydrologic periods of interest to determine the water supply available for demands on the Russian River, including Sonoma Water diversions. A detailed description of the model can be found in the Sonoma Water 2020 UWMP (Section 5.1.6).

To assess the impact of a potential upcoming long-term drought, the DRA modeling was initialized with October 1, 2020 observed Lake Mendocino and Lake Sonoma storage levels. Since 2020 was a below normal hydrologic year, the reservoir storages levels on this initialization date were also below average, resulting in conservative starting conditions. To make the simulation more conservative for the DRA, the Sonoma Water demands on the system were assumed to be equal to the 2025 projected annual demands, which are about 13,000 AF higher than the 2020 Sonoma Water annual demands, creating a larger demand for the water supply. Using this higher demand assumption conservatively reflects potential increased demand under climate change conditions.

7.2.2 DRA Individual Water Source Reliability

The Town's Russian River water supplies include both water drawn from the Town's Russian River Well Field and water purchased from Sonoma Water and delivered through the Santa Rosa Aqueduct. These supplies are subject to reductions during dry years. When the Lake Sonoma water volume is less than 100,000 AF before July 15, Sonoma Water is required to reduce diversions by 30% and this reduction is passed onto its retailers. Sonoma Water's modeling efforts for their 2020 UWMP indicate that there will not be reduced diversions under a five-year drought. However, in May of 2021, Sonoma Water asked its retailers to reduce Russian River water use by 20%. The Town's UWMP DRA diverges from the Sonoma Water UWMP DRA in that it predicts that there will be continued Russian River supply reductions beginning in 2021 and extending through the DRA period. Specifically, the DRA, as documented herein, assumes a 20% reduction in Russian River surface water supplies in 2021 and 2022 (based on requested Sonoma Water curtailments) and a 25% reduction in supplies in 2023 through 2025. The projected 25% reduction in surface water supplies is based on the State's 25% mandated reduction in the fourth year of the 2012-2016 drought. Assuming that the current drought started in 2020, the fourth year of the drought and potential starting year for a similar 25% supply reduction would begin in 2023 and continue through the end of the drought.

The Town's projected groundwater supply consists of the existing Esposti well, which pumps raw water only for the irrigation of Esposti Park, and two new planned potable wells: Esposti and North

Windsor (see Section 6). It is assumed that off-river groundwater supplies will decrease by 5% each consecutive dry year due to decreasing groundwater levels.

Recycled water supplies are the third leg of the Town's water supplies. Recycled water is generally a consistent supply since there is a continuous source of wastewater from residential, commercial, and industrial customers. However, in May of 2021, the Town requested a 20% voluntary recycled water use reduction for the first time. Additionally, the Town has considered acquiring surplus recycled water from Sonoma County on an as-needed basis, however there are no plans in place at this time as the county is also experiencing reduced volume.

The implementation of additional water saving practices will help the Town meet potential water shortages during drought conditions, as described in the WSCP (Section 8 and Appendix H).

7.2.3 DRA Total Water Supply and Use Comparison

Under a five-year consecutive drought under current conditions (e.g., beginning in 2020), the Town does not expect to meet its total demands or its potable demands without implementing its water shortage contingency plan. Since there are different considerations for supplies, demands, shortages, and WSCP actions for potable and non-potable water, the optional DWR tables were included to identify the DRA for potable (Table 7-6) and non-potable (Table 7-7) water individually. Table 7-8 combines the water sources and is a required DWR table.

Potable Water

The potable demands in the five-year DRA assume linear increases in demand between 2020 actual demands and projected 2025 demands, from 4,238 AF in 2020 to 4,860 AF in 2025 (2.8% increase each year). Assumed available supplies for this period include Russian River supplies for 2025 for consistency with the Sonoma Water 2020 UWMP. This drought assessment does *not* include the use of planned off-river potable wells which are expected to be completed by 2025.

The DRA assumes that the Town would implement demand reduction actions as defined in its WSCP to reduce supply stress. The DRA reveals that the Town would need to implement Stage 3 WSCP demand reduction actions through 2022 and Stage 4 actions between 2023 and 2025, which would reduce demand to the necessary 24% and 35% reduction, respectively. Note that the WSCP only includes demand reduction stages and no supply augmentation actions for potable water.

Non-potable Water

Similar to potable water, non-potable water demands in the DRA assume linear increases between 2020 actual demands and projected 2025 demands, from 1,317 AF in 2020 to 1,644 AF in 2025 (4.5% increase each year). Non-potable water supplies include (a) current raw groundwater production (50 AFY) and (b) recycled water supplies. Recycled water supplies increase annually from 2020 actual supplies to 2025 projected supplies (4.5% increase per year) as a result of population growth, minus a 20% reduction in 2021 (as recently requested by the Town) and an assumed 10% reduction in the remaining drought years. The DRA assumes a 20% recycled water supply reduction in 2021 because of the existing request, and the 10% recycled water supply reduction from 2022 through 2025 assumes a slight decrease in inflows to the WWTP from indoor water conversation as a result of the ongoing drought.

It is assumed that recycled water demands, primarily from recycled water irrigation and landscaping, will be reduced in response to a shortage in non-potable supplies.

Table 7-8 combines the potable and non-potable water supplies, demands, shortages, and WSCP actions into a compiled water DRA. Additional information on WSCP stages and estimated water savings are discussed in Section 8.

Table 7-6 Five-year Drought Risk Assessment Tables to address Water Code Section 10635(b) - Potable (Optional DWR Table 7-5)

2021	Total
Total Water Use - *Potable*	4,356
Total Supplies - *Potable*	3,388
Surplus/Shortfall w/o WSCP Action	(968)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	968
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	22%

2022	Total
Total Water Use [Use Worksheet]	4,477
Total Supplies [Supply Worksheet]	3,388
Surplus/Shortfall w/o WSCP Action	(1,089)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,089
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	24%

2023	Total
Total Water Use [Use Worksheet]	4,601
Total Supplies [Supply Worksheet]	3,176
Surplus/Shortfall w/o WSCP Action	(1,425)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,425
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	31%

2024	Total
Total Water Use [Use Worksheet]	4,729
Total Supplies [Supply Worksheet]	3,176
Surplus/Shortfall w/o WSCP Action	(1,553)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,553
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	33%

2025	Total
Total Water Use [Use Worksheet]	4,860
Total Supplies [Supply Worksheet]	3,176
Surplus/Shortfall w/o WSCP Action	(1,684)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,684
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	35%

Table 7-7 Five-year Drought Risk Assessment Tables to address Water Code Section 10635(b) – Non-Potable (Optional DWR Table 7-5)

2021	Total
Total Water Use - Non-potable	1,377
Total Supplies	1,111
Surplus/Shortfall w/o WSCP Action	(266)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	266
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	19%

2022	Total
Total Water Use [Use Worksheet]	1,439
Total Supplies [Supply Worksheet]	1,300
Surplus/Shortfall w/o WSCP Action	(139)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	139
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	10%

2023	Total
Total Water Use [Use Worksheet]	1,504
Total Supplies [Supply Worksheet]	1,359
Surplus/Shortfall w/o WSCP Action	(145)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	146
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	10%

2024	Total
Total Water Use [Use Worksheet]	1,572
Total Supplies [Supply Worksheet]	1,420
Surplus/Shortfall w/o WSCP Action	(152)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	152
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	10%

2025	Total
Total Water Use [Use Worksheet]	1,644
Total Supplies [Supply Worksheet]	1,485
Surplus/Shortfall w/o WSCP Action	(159)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	159
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	10%

Table 7-8 Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b) (DWR Table 7-5)

2021	Total
Total Water Use	5,733
Total Supplies	4,499
Surplus/Shortfall w/o WSCP Action	(1,234)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,234
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	22%

2022	Total
Total Water Use	5,916
Total Supplies	4,688
Surplus/Shortfall w/o WSCP Action	(1,228)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,228
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	21%

2023	Total
Total Water Use	6,105
Total Supplies	4,535
Surplus/Shortfall w/o WSCP Action	(1,570)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,570
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	26%

2024	Total
Total Water Use	6,301
Total Supplies	4,596
Surplus/Shortfall w/o WSCP Action	(1,705)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,705
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	27%

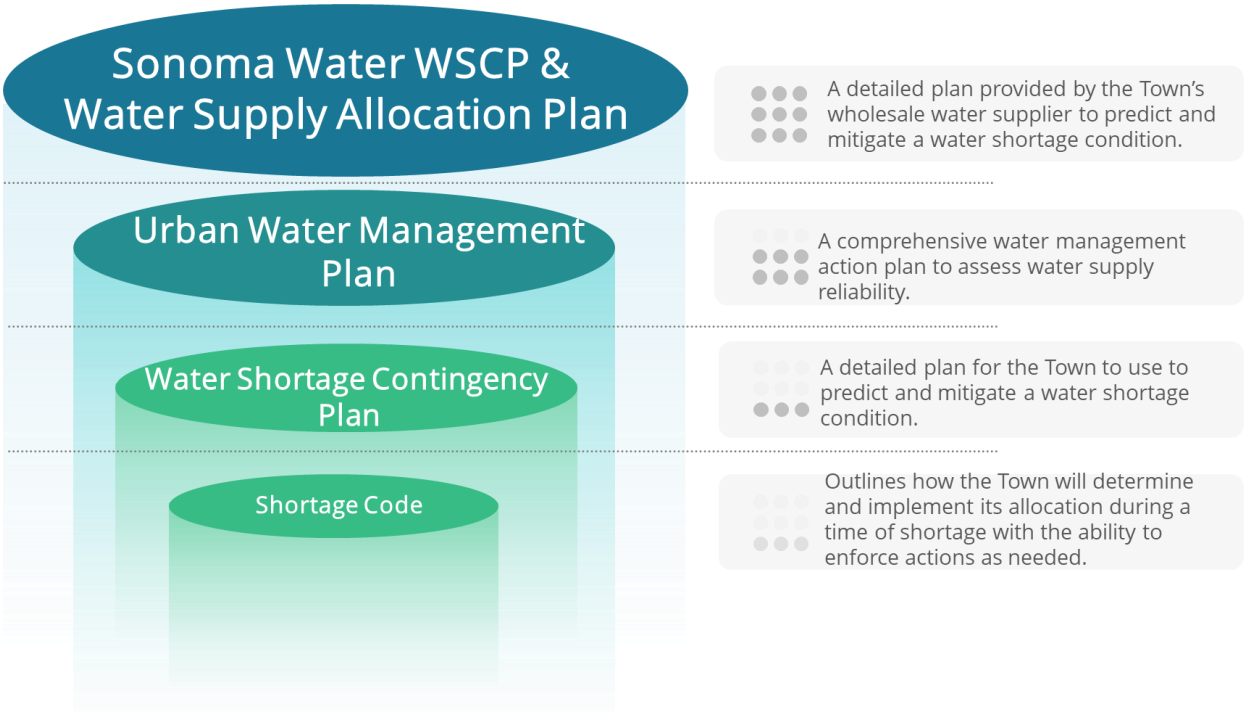
2025	Total
Total Water Use	6,504
Total Supplies	4,661
Surplus/Shortfall w/o WSCP Action	(1,843)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,843
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	28%

8. WATER SHORTAGE CONTINGENCY PLAN

8.1 Overview of the WSCP

The WSCP serves as the operating manual that the Town will use to prevent catastrophic service disruptions through proactive, rather than reactive, mitigation of water shortages. The WSCP contains documented processes and procedures which are given legal authority through the Water Shortage Contingency Response Ordinance. This way, when shortage conditions arise, the Town governing body, its staff, and the public can easily identify and efficiently implement pre-determined steps to mitigate a water shortage to the level appropriate for the degree of water shortfall anticipated. Figure 8-1 illustrates the interdependent relationship between the three procedural documents related to planning for and responding to water shortages.

Figure 8-1 Water Shortage Contingency Plan Flow of Information



A copy of the Town's WSCP is provided in Appendix H. It includes steps to assess if a water shortage is occurring and at what level. The WSCP has prescriptive elements, including an analysis of water supply reliability; the drought shortage actions for each of the six standard water shortage levels that correspond to water shortage percentages ranging from normal conditions (Level 0) to greater than 50% (Level 6), and proceeds by 10% incrementally for each level, from 10% (Level 1) to greater than 50% (Level 6); an estimate of the potential to close the supply gap for each measure; protocols and procedures to communicate identified actions for any current or predicted water shortage conditions; procedures for an annual water supply and demand assessment; monitoring and reporting requirements to determine customer compliance; and reevaluation and improvement procedures for evaluating the WSCP.

8.2 Summary of Water Shortage Response Strategy and Required DWR Tables

This WSCP is organized into three main sections with Section 3 aligned with the California Water Code Section 16032 requirements.

- **Section 1 Introduction and WSCP Overview** gives an overview of the WSCP fundamentals.
- **Section 2 Background** provides information on the Town's water service area.
- **Section 3.1 Water Supply Reliability Analysis** provides a summary of the water supply analysis and water reliability findings from the 2020 UWMP.
- **Section 3.2 Annual Water Supply and Demand Assessment Procedures** provides a description of procedures to conduct and approve the Annual Assessment.
- **Section 3.3 Six Standard Water Shortage Stages** explains the WSCP's six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, 50, and more than 50% shortages.
- **Section 3.4 Shortage Response Actions** describes the WSCP's shortage response actions that align with the defined shortage levels.
- **Section 3.5 Communication Protocols** addresses communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding any current or predicted shortages and any resulting shortage response actions.
- **Section 3.6 Compliance and Enforcement** describes customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions.
- **Section 3.7 Legal Authorities** describes the legal authorities that enable the Town to implement and enforce its shortage response actions.
- **Section 3.8 Financial Consequences of the WSCP Activation** provides a description of the financial consequences of and responses for drought conditions.
- **Section 3.9 Monitoring and Reporting** describes monitoring and reporting requirements and procedures that ensure appropriate data are collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements**.**
- **Section 3.10 WSCP Refinement Procedures** addresses reevaluation and improvement procedures for monitoring and evaluating the functionality of the WSCP.
- **Section 3.11 Special Water Feature Distinction** is a required definition for inclusion in a WSCP per the Water Code.
- **Section 3.12 Plan Adoption, Submittal, and Availability** provides a record of the process the Town followed to adopt and implement its WSCP.

The WSCP is based on adequate details of demand reduction and supply augmentation measures that are structured to match varying degrees of shortage to ensure that relevant stakeholders understand what to expect during a water shortage situation. The Town has documented the minimum supply available over the next five years (Table 7-5) and adopted water shortage levels consistent with the requirements identified in California Water Code Section 10632 (a)(3)(A) (Table 8-1).

The demand reduction measures that align with each shortage level are described in Table 8-2. This table also estimates the extent to which that action will reduce the gap between supplies and demands to demonstrate that the chosen suite of shortage response actions can be expected to deliver the expected outcomes necessary to meet the requirements of a given shortage level.

Supply augmentation actions that align with each shortage level are described in Table 8-3. These augmentations represent short-term management objectives triggered by the WSCP and do not overlap with the long-term new water supply development or supply reliability enhancement projects.

Table 8-1 Water Shortage Contingency Plan Levels (DWR Table 8-1)

Shortage Level	Complete Both	
	Percent Shortage Range[1] *Numerical value as a percent*	Water Shortage Condition (*Narrative description)*
Add additional rows as needed		
0	0% (Normal)	A Level 0 Water Supply Shortage – Condition exists when the Town notifies its water users that no supply reductions are anticipated in this year. The Town proceeds with planned water efficiency best practices to support consumer demand reduction in line with state mandated requirements and local Windsor goals for water supply reliability. Permanent water waste prohibitions are in place as stipulated in the Town's code, including prohibitions of waste of water per Section 12-3-820.
1	Up to 10%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 1 water shortage, or equivalent.
2	11% to 20%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 2 water shortage, or equivalent.
3	21% to 30%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 3 water shortage, or equivalent.
4	31% to 40%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 4 water shortage, or equivalent.
5	41% to 50%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 5 water shortage, or equivalent.
6	>50%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 6 water shortage, or equivalent.
[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		
NOTES: The Town will identify Normal Conditions as Level 0. The Town can choose voluntary versus mandatory status in each shortage level.		

Table 8-2 Demand Reduction Actions (DWR Table 8-2)

Short-age Level	Demand Reduction Actions ***Drop down list***	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforce-ment?
Add additional rows as needed				
0	Other - Prohibit use of potable water for washing hard surfaces	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Washing hard or paved surfaces is prohibited except to alleviate safety or sanitary hazards using a hand held container, hose with an automatic shut off device, or a low-volume high pressure cleaning machine that recycles used water.	No
0	Landscape - Restrict or prohibit runoff from landscape irrigation	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Watering vegetated areas in a manner that causes excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter, or ditch is prohibited.	No
0	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Existing Town requirements are repairs are to be completed within 72 hours.	No
0	Other	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	All new commercial car wash and laundry facilities must re-circulate the wash water.	Yes
0	Other - Require automatic shut of hoses	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	For vehicle washing	No
0	Other	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Use of water prohibited for single pass evaporative cooling systems for air conditioning in all connections installed after July 18, 2007 unless required for health or safety reasons.	Yes

Short-age Level	Demand Reduction Actions ***Drop down list***	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforce-ment?
0	Other water feature or swimming pool restriction	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	All decorative water features must re-circulate water or users must secure a waiver from the Town.	No
0	Other - Prohibit use of potable water for construction and dust control	0-1%	Subject to availability, contractors must use recycled water for dust control in new construction.	No
1	Landscape - Limit landscape irrigation to specific times	0-2%	Watering or irrigation of vegetated areas is prohibited between 7 a.m. and 7 p.m. except by use of a hand held device, hose equipped with an automatic shutoff device, or for adjusting or repairing an irrigation system for short periods of time.	Yes
1	Landscape - Other landscape restriction or prohibition	0-1%	Inspect irrigation systems and promptly repair leaks	Yes
1	Landscape - Limit landscape irrigation to specific days	0-10%	Irrigation shall be limited to 4 days per week for turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes
1	Expand Public Information Campaign	1-5%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 1 Shortage condition and requirements)	No
1	Provide Rebates for Turf Replacement	0-1%	Provide Rebates for Turf Replacement	No
1	Other	0-1%	Unauthorized use of hydrants is prohibited. Authorization for use must be obtained from water supplier.	Yes
2	Increase Water Waste Patrols	0-5%	Increase Water Waste Patrols	Yes

Short-age Level	Demand Reduction Actions ***Drop down list***	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforce-ment?
2	Other - Prohibit use of potable water for construction and dust control	0-1%	Subject to availability, contractors must use recycled water for dust control in new construction.	Yes
2	CII - Restaurants may only serve water upon request	0-2%	CII - Restaurants may only serve water upon request	Yes
2	CII - Lodging establishment must offer opt out of linen service	0-2%	Hotel and lodging establishments must message about the drought, including laundering of linens only upon request	Yes
2	Landscape - Limit landscape irrigation to specific days	5-10%	Irrigation shall be limited to 3 days per week turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes
2	Expand Public Information Campaign	5-10%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 2 Shortage condition and requirements)	No
3	Other water feature or swimming pool restriction	0-1%	No filling of new swimming pools, except public pools	No
3	Landscape - Prohibit certain types of landscape irrigation	0-2%	Watering new or newly replaced turf is prohibited	Yes
3	Landscape - Other landscape restriction or prohibition	0-3%	Prohibit watering of new landscape unless new landscape requires less water than replaced landscape	No
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	0-1%	Car washing is only permitted using a commercial carwash that recirculates water or by high pressure/low volume wash systems.	Yes

Short-age Level	Demand Reduction Actions ***Drop down list***	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforce-ment?
3	Other water feature or swimming pool restriction	0-1%	No use of decorative fountains	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	0-3%	Filling or refilling ornamental lakes and ponds is prohibited. Ornamental lakes and ponds that sustain aquatic life of significant value and were actively managed prior to the storage declaration are exempt.	Yes
3	Landscape - Limit landscape irrigation to specific days	5-10%	Irrigation shall be limited to 2 days per week for turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes
3	Landscape - Other landscape restriction or prohibition	0-1%	With the exception of landscapes watered with non-potable water, limit the installation of new landscaping to drought tolerant trees, shrubs and groundcover. Prohibit installation of new turf or hydroseed with the exception of hydroseeding for erosion control on slopes or bare land. Customers may apply for a waiver to irrigate during an establishment period for the installation of new turf or hydroseed.	Yes
3	Expand Public Information Campaign	0-5%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 3 Shortage condition and requirements)	No

Short-age Level	Demand Reduction Actions ***Drop down list***	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforce-ment?
3	Landscape - Prohibit certain types of landscape irrigation	0-1%	Plant containers, trees, shrubs and vegetable gardens shall be watered only by drip irrigation or hand watering.	Yes
4	Other	0-5%	Provide customer allocation. Town to determine appropriate customer allocation based on shortage conditions.	Yes
4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	All customers must fix leaks or faulty sprinklers promptly/within 2 days or stop water flow.	Yes
4	Landscape - Limit landscape irrigation to specific days	5-10%	Irrigation shall be limited to 1 days per week turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes
4	Landscape - Other landscape restriction or prohibition	0-1%	No new landscape installations or renovations will be permitted unless it is to remove turf and replace with lower-water using landscaping.	Yes
4	Expand Public Information Campaign	5-10%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 4 Shortage condition and requirements)	No
5	Other	0-5%	Provide customer allocation. Town to determine appropriate customer allocation based on shortage conditions.	Yes
5	Landscape - Other landscape restriction or prohibition	1-3%	Allotment for irrigation of mature trees only	Yes

Short-age Level	Demand Reduction Actions ***Drop down list***	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforce-ment?
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	All customers must fix leaks or faulty sprinklers promptly/within 1 day or stop the flow until the repair can be made.	Yes
5	Landscape - Prohibit certain types of landscape irrigation	1-5%	Watering of parks, school grounds, and recreation fields with potable water prohibited, except for rare plant or animal species. Watering of golf course areas with potable water is prohibited. Tree watering may be excluded if allotment is sufficient.	Yes
5	Expand Public Information Campaign	5-10%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 5 Shortage condition and requirements)	No
5	Implement or Modify Drought Rate Structure or Surcharge	0-5%	Drought Rates and Surcharges	Yes
5	Moratorium or Net Zero Demand Increase on New Connections	0-2%	Moratorium or Net Zero Demand Increase on New Connections	Yes
5	Other	0-5%	Other Prohibited Uses: The Town may implement other prohibited water uses as determined by the Town, after notice to customers.	No

Short-age Level	Demand Reduction Actions ***Drop down list***	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforce-ment?
6	Expand Public Information Campaign	5-10+%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 6 Shortage condition and requirements). Note the messaging may require more Emergency Response Communication Protocols depending on the type and severity of the emergency (i.e., earthquake with pipeline breakage that requires boil water notifications).	No
6	Landscape - Prohibit all landscape irrigation	0-5%	The Town may shut off or all non-essential water services or restrict flows by reducing pressure. All irrigation with potable water is prohibited. Exceptions are watering of trees and food gardens.	Yes
6	CII - Other CII restriction or prohibition	0-7%	Water for commercial, manufacturing, or processing purposes shall be reduced in volume by 50% or more if necessary for public health and safety purposes.	Yes
6	Other water feature or swimming pool restriction	0-1%	No new permits for pools will be issued.	Yes
6	Other	0-1%	The Town may discontinue service to consumers who willfully violate any water conservation provisions	Yes
6	Other	0-70%	Water use for public health and safety purposes only. Customer rationing may be implemented.	Yes
NOTES: The Town will coordinate with the Sonoma-Marin Saving Water Partnership and Sonoma Water to the extent practical.				

Table 8-3 Supply Augmentation and Other Actions (DWR Table 8-3)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	How much is this going to reduce the shortage gap? *Include volume units used.*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
	Other Actions (describe)	TBD	Emergency Interties with other neighboring districts including Sonoma Water and City of Rohnert Park.
	Other Actions (describe)	50-250 AFY	Emergency Use of Non-Potable Well for fire. Raw water irrigation well would be redirected for public health and safety use, i.e. fire protection.
NOTES: Existing groundwater well use is subject to permit limitations and available for non-potable uses (i.e. wildfire firefighting protection). The Town and other local jurisdiction's Groundwater Sustainability Plan is under development and will be provided when available. The estimate volume for the raw water well is conditional on further well evaluation.			

9. DEMAND MANAGEMENT MEASURES

The purpose of this section is to describe the Town's efforts in implementing water conservation programs, referred to in this Plan as Demand Management Measures (DMMs), in order to meet its urban water use reduction 2020 targets as set in the 2010 UWMP Plan. There are no new requirements regarding DMMs since the 2015 UWMP.

The DMMs that are required to be described in this 2020 Plan by retail agencies include the following (CWC §10631):

- Water waste prevention ordinances
- Metering
- Conservation pricing
- Public education and outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support
- Other demand management measures that have a significant impact on water use as measured in gpcd, including innovative measures, if implemented.

9.1 Demand Management Measures for Wholesale Agencies

The Town is not a wholesale agency.

9.2 Demand Management Measures for Retail Agencies

Implementation of the required DMMs is described below.

9.2.1 Water Waste Prevention Ordinances

Description

A water waste prevention ordinance explicitly states that the waste of water is to be prohibited. The Town has an adopted water waste prevention ordinance which is in effect at all times, whether or not the Town is in a water shortage condition. A copy of the ordinance (Ordinance No. 2000-129) is presented in Appendix I. The ordinance lists non-essential uses of water which are prohibited as they are deemed wasteful. Examples of prohibited uses of water include over-watering of landscapes leading to excessive runoff and failing to repair water leaks or breaks within a reasonable timeframe.

The primary function of the ordinance is to provide a tool for the Town to use to educate water customers and ultimately to discontinue wasteful water-use practices. Initial water waste violations are typically addressed by issuing a warning in person, by phone, or by using a door tag that indicates the type of violation and the corrective action needed (Water Waste Tag Program). Further site visits and follow up notices are used as needed to ensure prompt action is

taken by the customer to correct the problem. The Town also has the authority to levy a fine or even discontinue service. These higher-level actions are reserved for water customers who flagrantly refuse to correct the water wasting activity or for customers wasting water during a drought.

Additionally, the Town implements the state-mandated Water Efficient Landscape Ordinance requirements. These requirements include, for example, the use of rain sensors, weather-based irrigation controllers, limitations on turf installation, etc.

Implementation over the Past Five Years

The Water Waste Prevention Ordinance, passed in 2000, has remained in effect, along with the state-mandated Water Efficient Landscape Ordinance requirements. The Water Waste Tag Program was coupled with the ordinances to increase awareness of water use and waste. Between 2016 and 2020, 1,207 customers participated in the Water Waste Tag program which was estimated to save 84 AF of water from single-family residences during that time (EKI, 2020). During the last year of pandemic concerns, the Town has continued with water waste searches and notifications but use them as educational outreach and not taken action for violations. The program has remained an educational and outreach tool. The Town continues to follow up on gross water wasters and suspected leaks by conducting meter re-reads to check for misreads or evidence of leaks. These rereads are followed-up with a tag to the customer indicating a suspected leak or unusually high use.

Planned Implementation

The Water Waste Prevention Ordinance, Water Efficient Landscape Ordinance requirements, and Water Waste Tag Program will continue to be implemented for at least the next five years and will be updated as required.

9.2.2 Metering

Description

Metering is an important water conservation element as metering allows for detection of hidden leaks and provides a mechanism for volumetric billing which in turn provides an incentive for water use efficiency. All of the Town's water accounts are metered and have been since 1959. The Town's municipal water uses for Town offices and facilities are also metered.

The Town's large landscapes are served by dedicated irrigation meters. In the context of water metering, "mixed use" refers to indoor and outdoor water use being measured by the same meter. The Town has a program to incentivize mixed-use meter customers to separate irrigation use onto a separate dedicated irrigation meter. In the previous five years, the Town has facilitated the accounts with mixed use meters to split their service to separately meter irrigation uses from domestic uses. All of the Town's meters are read monthly.

The Town's analyses revealed that the cost of pulling and calibrating meters is more than the cost of meter replacement. Therefore, the Town is replacing meters on a regular schedule as they surpass their manufacturers' suggested service life.

Implementation over the Past Five Years

The Town implemented a new policy in 2018 to implement state law that requires submetering between units for all new and existing multi-family residences, mobile home development, and CII customers. Rather than one or a few large meter(s) being applied to an entire multi-family property, as is typical for multi-family customers, each dwelling unit must now be individually metered. The purpose of this measure is to increase awareness of each customer's water use and to associate water billing to water use. According to SB 7, passed in 2016 and made effective January 1, 2018, new multi-family developments must include submeters for individual units. Typically, this would be completed with one master meter being installed for the property and submeters for each unit. This is the preferred method for property owners as it is a more cost-effective way to submeter. Property owners are then required to inform tenants of their individual unit's water use and bill according to water volume consumed.

The Town offered financial incentives to the commercial water customers with "mixed-use" meters (which combine both indoor and outdoor water) to retrofit their site with an irrigation only water meter, splitting their service. In addition to the financial incentive, the Town actively worked with customers to encourage owners of properties with mixed use meters to retrofit them to dedicated meters. The Town no longer serves any commercial customers with mixed use meters (down from 62 commercial mixed used meters in 2015).

Mixed use meters are no longer allowed in the Town's standards or rate structures. As the policies were put into place recently, the extent of water savings from these policies are still being evaluated.

A majority of the Town's existing meters were replaced between 2009 and 2012.

Planned Implementation

The Town is currently working on installing Advanced Metering Infrastructure (AMI) for existing accounts, high water users, large landscape accounts, and new developments. AMI will be implemented when the infrastructure needed (signal towers) is operational. It is expected that AMI will be fully operational as early as the end of 2021; however, this schedule may be impacted by budgetary constraints. AMI and submetering programs can help the Town to more closely track water use, waste, and leaks on a timely basis and may support behavioral water conservation practices. Additionally, the Town will continue to replace existing water meters as required. All meters 15 years or older were replaced for a total of approximately 85% of the total inventory replaced.

9.2.3 Conservation Pricing

Description

Conservation pricing is a pricing structure used by the water supplier to send a signal to their customers regarding water use. A portion of residential customers in the Town are charged on an "increasing block" rate, meaning that the greater the water use, the greater the per-unit cost. Volumetric and increased block pricing are conservation pricing, in that they incentivize efficient use of water. For irrigation accounts, there is a separate pricing structure.

All Windsor water customers with large landscapes qualify to receive a free large landscape water use survey which provides an evaluation of the irrigation system's efficiency, assistance with

developing water budgets and watering schedules, and recommendations for increasing the system efficiency.

There are various water savings incentives and rebates for residential, CII, and irrigation customers. Financial incentives reward demonstrated water savings and offset capital improvement costs. Incentive programs are detailed in Section 9.2.7.

Implementation over the Past Five Years

In 2020, 72% of billing revenue was based on volumetric charges and the remaining 28% was based on fixed charges.

Planned Implementation

Town Council approved a Financial Plan and Rate Update Study, completed on April 20, 2020. The study recommended modifying the Town's tiered water rate structure for residential customers from four tiers to three tiers for better cost of service capture. The study also recommended a 5% across the board water rate increase annually from 2021 to 2024.

9.2.4 Public Education and Outreach

Description

The Town conducts educational activities on ways to conserve water through irrigation, plant selection, in-home conservation, and new conservation technologies (i.e., SMART controllers). During the pandemic, many of the programs were either put on hold or were moved to an on-line format. Outreach includes, but is not limited to, the following:

- Public workshops on topics such as sheet mulching and laundry to landscape systems
- Educational and informational posts on social media
- Door Tags for overwatering
- Information tables at the Town Green farmer's market
- Information postings on the Town website
- Water bill inserts

In addition, the Town receives assistance with water conservation public education and outreach from Sonoma Water as part of a regional messaging campaign coordinated through the Sonoma-Marin Saving Water Partnership. The purpose of the Sonoma-Marin Saving Water Partnership is to establish a financial agreement between local water utilities (including Marin Municipal Water District, Sonoma Water, the Town of Windsor and several others) to identify and recommend implementation of regional water conservation projects in a more cost-effective manner than could be done individually. These programs include school educational programs, public outreach and educational workshops, Qualified Water Efficient Landscaper (QWEL) training, and garden tours.

The Town, in partnership with Sonoma Water, also conducts surveys and audits for commercial, industrial, and institutional, multi-family residences, and single-family residences which increase

education and awareness about water use. These surveys include an evaluation of the indoor plumbing fixtures for potential upgrades, searches for leaks, and evaluations of irrigation system efficiency. The Sonoma Green Business program specifically focuses on CII accounts and offers free, comprehensive water use assessments. There is one certified green business in Windsor.

The Do-It-Yourself Water and Energy Savings Toolkit offers a toolkit for single-family residence customers to measure showerhead flow and check toilets for leaks. This program was rolled out in 2016 and the toolkits are available for checkout at the following Sonoma County library branches: Central Santa Rosa, Cloverdale, Guerneville, Healdsburg, Northwest Santa Rosa, Petaluma, Rincon Valley, Rohnert Park-Cotati, Roseland, Sebastopol, Sonoma Valley, and Windsor.

Implementation over the Past Five Years

Between 2015 and 2020, approximately 1,387 customers have participated in water conservation workshops and other types of direct outreach events; and 389 participated in the Water Survey Program, approximately 5% of single-family residence accounts which was estimated at 48 AF of total water savings (EKI, 2020). Sonoma Water provides direct in-classroom programs, field trips, and group assemblies to thousands of children (primarily elementary school students) across their service area, including in the Town of Windsor. Sonoma Water also provides educational materials and offers an annual video contest to all high school students. There are nearly 5,500 students in the Town of Windsor.

Planned Implementation

The existing public education and outreach programs will continue to be implemented for at least the next five years both individually by the Town and in coordination with Sonoma Water.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

Description

As described in Section 4.2.4, Distribution System Water Loss refers to the difference between all water supplied and all water metered. Losses include both actual water loss and apparent water loss. Actual water loss is due to system leaks. Apparent losses include unmetered authorized uses, such as hydrant flushing and firefighting, and inaccuracies inherent in water metering. In this UWMP, all water system loss is referred to as non-revenue water, regardless of whether the loss is actual or apparent.

The Town has a water loss of approximately 5.8% between 2015 and 2020. Industry standards indicate that 10% or less water loss is acceptable. The Town implements a program which prioritizes repair of leaks, both for Town-owned lines and enforcement of repair requirements for privately owned water lines. The Town also implements a meter replacement program which ensures use of accurate meters. A copy of the American Water Works Association (AWWA) water loss summary sheet is presented in Appendix D.

Implementation over the Past Five Years

Within the last five years, the Town has replaced meters if they were found to be faulty and notified customers of their leaks on a regular basis. Typically, the Town does not need to enforce leak repair as customers voluntarily repair their leaks. The customer is provided a door tag, then up to

three letters, then a phone call, then a certified letter. There were no leak enforcement actions implemented.

Planned Implementation

The Town is in the process of installing an AMI system, which will aid in leak detection on the customer side of the line, as described in Section 9.2.2. Additionally, the Town is completing water loss accounting on an annual basis which will help in identifying and managing distribution system losses.

9.2.6 Water Conservation Program Coordination and Staffing Support

Description

The Town has an Environmental Program Manager who serves as the water conservation coordinator, as well as staff who assist the coordinator with various tasks including staffing information tables, placing water waste door tags, conducting customer water use surveys, and other tasks. The Town also has a part-time program assistant and a staff in utility billing who assists with water conservation data analysis and tracking and follows up on water leaks.

The current Environmental Program Manager for water conservation and water supply planning is Cristina Goulart. Her contact information can be found on the Town's online staff directory under the Water Conservation category (https://www.townofwindsor.com/Directory.aspx) and any questions for the Town's Water Conservation staff can be directed to wc@townofwindsor.com.

Implementation over the Past Five Years

There is a staff of 1.5 fulltime equivalents (FTEs) conducting water conservation program tasks and DMMs. The positions are funded by revenue generated by wholesale sub-fund payment to Sonoma Water and reimbursed to the Town. The Town contracts with Sonoma Water to conduct the Water Efficient Landscape, Garden Smart, and home water audit programs. The Town participates in regional campaigns through the Sonoma-Marin Saving Water Partnership. The Partnership helps identify water conservation programs that would be more efficiently implemented on a regional scale compared to individual member implementation.

Planned Implementation

The Town will continue to support an Environmental Program Manager and a staff of 1.5 FTEs to continue water conservation efforts. Additionally, the Town will continue coordinating its water conservation program with Sonoma Water.

9.2.7 Other DMMs

The Town currently implements a large number of water conservation programs above and beyond the six general DMM categories. Most of the programs described below are financial incentive and rebate programs.

- **Water Efficient Technologies (WET) Rebate Program – Replace Inefficient CII Equipment**

  CII customers who receive a free water use survey are also eligible for incentives for upgrading CII water-using equipment. Eligibility is based on cost-benefit analysis conducted by the Town staff or Town representative who conducts the survey. Financial incentives are offered for drip irrigation, grey water systems for new CII development, landscape conversion or turf removal, rainwater catchment systems, and smart irrigation controllers. Up to $25,000 is available to help upgrade businesses with water efficient equipment for water savings of at least 50,000 gallons per year (0.153 AFY).

- **Urinal Rebates**

  The Town offers rebates of up to $300 per fixture to businesses that retrofit older urinals (> 0.5 gallons per flush) with high efficiency pint flush or waterless urinal models (<0.125 gallons per flush). All new developments require urinals that use 0.25 gallons per flush or less.

- **Toilet Rebates**

  The Town offered rebates of up to $150 for qualifying High Efficiency Toilets for replacement of toilets designed to flush at 3.5 gallons per flush or greater. High Efficiency Toilets are defined as toilets that flush at an average of 1.28 gallons per flush or less. Toilet rebates continued from 2007 to 2017 and 286 customers participated in the High Efficiency Toilet rebate program representing approximately 3.6% of single-family residence accounts. Between 2015 and 2017, 10 residents participated in the program. The cumulative water savings from the High Efficiency Toilet rebate program through 2020 is 72 AFY.

- **High Efficiency Faucet Aerator and Showerhead Giveaway**

  The Town provides free high efficiency faucet aerators and showerheads to water customers along with direct installation. These items provide increased water efficiency in the home and business for very little cost. These items are provided by request, at special events, and during in-home water use surveys.

- **High Efficiency Clothes Washer Rebates**

  The Town offered a $50 rebate to residential customers for qualifying high-efficiency clothes washers. Only the most water and energy efficient models were rebated. The program was very successful and continued from 2006 to 2017 with 1,662 participants (21% of single-family residences). Between 2015 and 2017, 69 residents participated in the program. The cumulative water savings through 2020 is approximately 123 AFY.

- **Water Efficient Landscape Rebates**

  Town water customers may receive rebates of up to $500 for turf removal or for upgrades to higher efficiency sprinkler systems. Higher efficiency sprinkler systems include rotating sprinklers and smart irrigation controllers (i.e., weather-based irrigation controllers). Pre-inspections are required prior to Town approval. Neither artificial turf nor impervious surfaces (such as concrete) is rebated. The program incentivizes the replacement of turf

with climate-appropriate and water-wise landscaping. Approximately 372 customers participated replacing 258,460 acres of turf between 2008 and 2020. 159 customers and 117,579 acres of turf were replaced between 2015 and 2020. The cumulative waters savings from this program in 2020 was 127 AFY.

- **Greywater System Rebates**

  The Town collaborates with the local non-profit organization Daily Acts to facilitate and incentivize "laundry to landscape" greywater projects. Daily Acts provides installation workshops. Town water customers who participate in the workshops can receive free kits, which include the parts necessary to install a laundry to landscape greywater system.

- **Windsor Efficiency PAYS®**

  Windsor Efficiency PAYS® is an on-bill financing program. Qualifying customers are provided financing for plumbing fixture upgrades and lawn removal and replacement. Town-approved, bonded contractors conduct the work, and customers make payments through their utility billing. The program is structured to protect the customer against fixtures or measures which fail before the payment obligation ends, and to provide a net reduction in utility costs even with the added surcharge. There are approximately ten customers currently enrolled in the program; however, the Town is not currently accepting new applicants.

The full suite of the Town's existing water conservation programs is detailed in the demand analysis report entitled *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update* (EKI, 2020). Section 6 of this report describes three water conservation program scenarios (Programs A, B, and C) and the associated estimated water savings from implementation of those programs. Table 6-3a in the report lists the water conservation programs associated with each scenario which focus on (A) outdoor programs, (B) highly-ranked local programs, and (C) highly-ranked regional programs. The *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update* report is presented in Appendix C.

9.3 Water Use Objectives (Future Requirements)

New water use objectives will be developed in 2023 for certain water use sectors. While the water use objectives are still being developed, some proposals include a target for indoor water use of 55 gpcd along with an allotment for outdoor landscape irrigation.

The Town has met its 2020 water use target, as detailed in Section 5. Based on assumptions in population growth projections coupled with the continued implementation of the Town's robust water conservation programs, it is anticipated that the Town's gross water use will be approximately 122 gpcd in 2025. This would be less than the SB X7-7 mandated 2020 water use target of 130 gpcd. Additionally, for a select period in 2020, the Town is achieving a 44 gpcd indoor residential use, which is far below the potential 55 gpcd target.

The continued implementation of the Town's water conservation programs, detailed in this section, will ensure continued increases in water use efficiency and compliance with the SB X7-7 water use targets and the future water use objectives.

10. PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

This chapter details the process of soliciting input from public and private entities regarding this Plan, and includes information regarding public hearings, plan adoption, and submittal to the DWR and other agencies for the Plan approval and implementation.

10.1 Inclusion of All 2020 Data

For reporting of water use and supply information, data for the entire calendar year of 2020 was included in this UWMP.

10.2 Notice of Public Hearing

The Town invited public involvement and input in the UWMP update via public hearings and review/comment of the draft document. Public hearing notifications were published in the Windsor Times on July 1 and 8, 2021. Copies of the published notices are included as Appendix B.

In addition, Sonoma County was contacted directly, by email to inform the appropriate contacts of the hearing location and time.

Table 10-1 Notification to Cities and Counties (DWR Table 10-1R)

City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
City of Healdsburg	Yes	Yes
City of Rohnert Park	Yes	Yes
City of Sonoma	Yes	Yes
City of Cotati	Yes	Yes
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Sonoma County	Yes	Yes

10.3 Public Hearing and Adoption

The public hearing was held on July 21, 2021. The hearing was an opportunity for the public to learn and ask questions regarding the quantity, reliability, and quality of their water supply. The public hearing included a discussion of the Town's compliance of its 2020 water use targets.

Copies of the draft UWMP were distributed for review at the Town's Public Works office, Library, and Town Hall 14 days prior to the hearing.

The Plan was adopted on July 21, 2021 by the Windsor Water District and approved by the Town Council under two resolutions. A copy of the resolutions for adoption is included in Appendix B.

10.4 Plan Submittal

The Town submitted the updated UWMP to the Department of Water Resources via the WUE Data Portal, the California State Library, and Sonoma County by August 20, 2021, which is within 30 days after adoption.

10.5 Public Availability

The final 2020 UWMP is available for review on the Town Website. The 2020 UWMP will also be available in a hard copy form at the Town Hall office, Library, and at the Public Works office for public review upon request.

10.6 Amending an Adopted UWMP

If the Town amends the UWMP after it has been adopted, the amendments will be made available for public review prior to adoption. Amendments to the UWMP will be publicly noticed and presented at a public hearing.

11. REFERENCES

Brelje & Race. (2001). *Water Reclamation Master Plan.* Town of Windsor.

Brelje & Race. (2005). *Evaluation of Joint Operation of the Water Reclamatino Systems of the Airport-Larkfield-Wikiup Sanitation Zone, the Town of Windsor, and the City of Santa Rosa Subregional Reclamation System.*

California Department of Water Resources. (2003). *Evaluation of Groundwater Resources, Sonoma County, Volume 2, Santa Rosa Plain, Bulletin 118-4, California's Groundwater.*

California Department of Water Resources. (2018). 2018 Basin Descriptions. Retrieved from https://cadwr.app.box.com/s/rhqaflj4t5d063he9o314ojzz394idec

California Department of Water Resources. (2021). *Urban Water Management Plan Guidebook 2020.*

Data USA. (2021, February 19). *Windsor, CA Census Place*. Retrieved from https://datausa.io/profile/geo/windsor-ca#about

Department of Finance (DOF). (2020). *E-1 Population Estimates for Cities, Counties, and the State — January 1, 2019 and 2020.*

EKI. (2020). *2020 Water Demand Analysis and Water Conservation Measure Update.* Town of Windsor: EKI Environment & Water, Inc.

M Group. (2019). *Airport Specific Plan Water Demands Estimates memo.*

NCRP. (2014). *North Coast Integrated Regional Water Management Plan.* North Coast Resource Partnership. Retrieved from https://northcoastresourcepartnership.org/site/assets/uploads/2018/04/NCIRWMP_PhaseIII_Aug14_final_w_appendix.pdf

Nishikawa, T. (2013). *Hydrologic and Geochemical Characterization of the Santa Rosa Plain Watershed, Sonoma County, California.* USGS.

RCPA. (2016). *Climate Action 2020 and Beyond.* Sonoma County Regional Climate Protection Authority . Retrieved from https://rcpa.ca.gov/wp-content/uploads/2016/07/CA2020_Plan_7-7-16_web.pdf

Reed Group, Inc. (2015). *Town of Windsor and Windsor Water District and Water Reclamation Financial Plans and Rate Update Study Final Report.*

Santa Rosa Plain Basin Advisory Panel. (2014). *Santa Rosa Plain Watershed Groundwater Management Plan.*

Sonoma County. (2019). *Airport Area Specific Plan, Water Supply Assessment Request.* Permit & Resource Management Department.

Sonoma County. (2019). *Sonoma County Airport Industrial Area Specific Plan.* Santa Rosa, CA. Retrieved from https://sonomacounty.ca.gov/WorkArea/DownloadAsset.aspx?id=2147533307

Town of Windsor. (2015). *2040 Public Review Draft Background Report.*

Town of Windsor. (2018). *2040 General Plan.*

Town of Windsor. (2020, May 11). Windsor 2020 UWMP Population-based Demand Projections_11May2020.pdf.

United States Census Bureau. (2019). *American Community Survey 5-Year Estimates Data.* Retrieved February 19, 2021, from https://data.census.gov/cedsci/table?g=0400000US06_1600000US0685922&tid=ACSDP5Y2019.DP04

United States Census Bureau. (2021, February 19). *Windsor town, California*. Retrieved from https://data.census.gov/cedsci/profile?g=1600000US0685922

West Yost. (2013). *Urban Recycled Water Facilities Planning Study.*

Woodard & Curran. (2019). *Water Master Plan 2019 Update.* Town of Windsor.
Woodard & Curran; Brelje & Race. (2020). *Town of Windsor Recycled Water Storage & Use Study.*

APPENDIX A – URBAN WATER MANAGEMENT PLAN CHECKLIST

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Section 1.1
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Section 1.1
x	x	Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	n/a
x	x	Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5; Appendix B

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 2.5, Appendix B
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2.5.1, Appendix B
	x	Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	n/a
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 3.2
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.4

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.5.1, Table 3-7
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.5.2
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 3.5.1, Table 3-7
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.6
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2, Appendix C
x		Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.2.4, Appendix D
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System Water Use	Appendix C

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4.2.6
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4.2.4, Table 4-3
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.3
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 4.4
x		Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Section 5.1, Section 5.2
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	n/a
x		Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	n/a – did not adjust GPCD compliance
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.2
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020	Baselines and Targets	Section 5.3, Appendix E

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
				Compliance Form.		
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 7.1.2
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, *including changes in supply due to climate change.*	System Supplies	Section 6.1.10
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 6.1
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 6.1.8
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030,2035, 2040 and optionally 2045.	System Supplies	Section 6.1.9, Table 6-9

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.1.2
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.1.2.3
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.1.2.2
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	n/a – basin is not adjudicated

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 6.1.2.3
x	x	Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.1.2, Table 6-1
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 6.1.2, Section 6.1.8, Section 6.1.9
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis.	System Supplies	Section 6.1.7
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled	System Supplies (Recycled Water)	Section 6.1.5

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
				water project.		
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.1.5.2
x	x	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.1.5.2, Table 6-4
x	x	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.1.5.2, Table 6-4, Table 6-5
x	x	Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.1.5.3
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier’s service area.	System Supplies (Recycled Water)	Section 6.1.5.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.1.6
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 6.1.5.2
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Section 6.1.8, Section 6.1.9
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 6.2
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and	Water Supply Reliability Assessment	Section 7.1.1.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
				supply reliability		
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.1.1
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 7.2
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 7.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 7.2.2
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 7.2
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Section 7.2
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Section 8, Appendix H
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Section 8, Appendix H

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Appendix H

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Section 8, Appendix H
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix H

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix H
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix H

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix H
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix H

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Appendix H
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix H
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Appendix H
x	x	Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Appendix H

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Appendix H
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	n/a – Wholesale Only
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Section 9.2
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Section 1

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 1, Appendix B
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Sections 10.2.2,10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Section 1, Appendix B
x	x	Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Section 1; Appendix B

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Appendix B
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.5
x	x	Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 1
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 1
x	x	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 1.4

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 1
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	n/a
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	n/a

APPENDIX B – COUNCIL MEETING AGENDAS AND PUBLIC NOTICE DOCUMENTATION

Recipients List of 2020 UWMP Update Notice

Agency	First Name	Last Name	Title	E-mail	Phone	Mailing Address	City	State	Postal Code
Santa Rosa Water	Jennifer	Burke	Current	jburke@srcity.org		69 Stony Circle	Santa Rosa	CA	95401
Sonoma County Water Agency	James	Jasperse	Chief Engineer/Director of Groundwater Management	jay.jasperse@swca.ca.gov		404 Aviation Boulevard	Santa Rosa	CA	95403
City of Sonoma	Colleen	Ferguson	Public Works Director/Engineer	cferguson@sonomacity.org	707-933-2230	No. 1 The Plaza	Sonoma	CA	95476
City of Rohnert Park	Mary Grace	Pawson	Director of Developmental Services	mpawson@rpcity.org		130 Avram Avenue	Rohnert Park	CA	94928
City of Cotati	Craig	Scott	Current						
City of Petaluma	Jason	Beatty	Director - Public Works & Utilities	jbeatty@cityofpetaluma.org	707-778-4514	11 English Street	Petaluma	CA	94952
Valley of the Moon Water District	Matt	Fullner	Interim General Manager		707-996-1037	PO Box 280	El Verano	CA	95433
County of Sonoma PRMD	J.T.	Wick	Permit Sonoma Director	tennis.wick@sonoma-county.o	707-565-1925	2550 Ventura Avenue	Santa Rosa	CA	95403
Lytton Rancheria of California	Marjorie	Mejia	Chairperson	margiemejia@aol.com		437 Aviation Boulevard	Santa Rosa	CA	95403
City of Healdsburg	Terry	Crowley	Utilities Director	tcrowley@ci.healdsburg.ca.us	707-431-3340	401 Grove Street	Healdsburg	CA	95448

TOWN OF
WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Ms. Jennifer Burke
Director
Santa Rosa Water
69 Stony Circle
Santa Rosa, CA 95401

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Ms. Burke,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Mr. James Jasperse
Chief Engineer/Director of Groundwater Management
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa, CA 95403

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Mr. Jasperse,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF
WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Ms. Colleen Ferguson
Public Works Director/Engineer
City of Sonoma
No. 1 The Plaza
Sonoma, CA 95476

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Ms. Ferguson,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF
WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Ms. Mary Grace Pawson
Director of Developmental Services
City of Rohnert Park
130 Avram Avenue
Rohnert Park, CA 94928

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Ms. Pawson,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Mr. Craig Scott
Director Public Works/Engineering
City of Cotati
201 West Sierra Avenue
Cotati, CA 94931

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Mr. Scott,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF
WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Mr. Jason Beatty
Director - Public Works & Utilities
City of Petaluma
11 English Street
Petaluma, CA 94952

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Mr. Beatty,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Mr. Matt Fullner
Interim General Manager
Valley of the Moon Water District
PO Box 280
El Verano, CA 95433

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Mr. Fullner,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF
WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Mr. J.T. Wick
Permit Sonoma Director
County of Sonoma PRMD
2550 Ventura Avenue
Santa Rosa, CA 95403

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Mr. Wick,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF
WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Ms. Marjorie Mejia
Chairperson
Lytton Rancheria of California
437 Aviation Boulevard
Santa Rosa, CA 95403

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Ms. Mejia,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF
WINDSOR

Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492-0100
Phone: (707) 838-1000
Fax: (707) 838-7349
www.townofwindsor.com

At-large Mayor
Dominic Foppoli

Vice Mayor
Sam Salmon

Councilmember District 3
Debora Fudge

Councilmember
Esther Lemus

Town Manager
Ken MacNab

February 10, 2021

Mr. Terry Crowley
Utilities Director
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

RE: Notice of Preparation of Urban Water Management Plan 2020 Update

Dear Mr. Crowley,

The Urban Water Management Planning Act (California Code, 10610-10656 and 10608) requires that the Town of Windsor update its Urban Water Management Plan (UWMP) every five years. The Town of Windsor is currently reviewing its 2015 UWMP, adopted in 2016, and considering amendments to the document. We invite your participation in this UWMP update process.

The 2020 UWMP is due to the Department of Water Resources by July 1, 2021. The Town will make a draft of the UWMP available for review in spring of 2021 and will hold a public hearing to review findings and receive public input on the draft.

If you have any questions regarding the Town of Windsor's 2020 UWMP update process, please contact Cristina Goulart at:

Town of Windsor, Public Works
9291 Old Redwood Hwy., Bldg. 400
P.O. Box 100
Windsor, CA 95492-100
cgoulart@townofwindsor.com
(707) 838-5357

Sincerely,

Ken MacNab
Town Manager

Cc: Maria De La O, Town Clerk
Sandi Potter, Deputy Director of Water and Environmental Management

TOWN OF WINDSOR & WINDSOR WATER DISTRICT
TOWN CLERK'S OFFICE
WINDSOR CIVIC CENTER, BLDG. 400
9291 Old Redwood Highway
Windsor, CA 95492

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the Windsor Water District Board of Directors and the Town of Windsor Council (Town) will hold a public hearing at its regular meeting on **Wednesday, July 21, 2021 at 6:00 p.m., or as soon thereafter as the matters may be heard,** in the Windsor Town Council Chambers*, 9291 Old Redwood Highway, Bldg. 400, Windsor to consider the following:

- *A Resolution of the Town of Windsor Water District Approving the Updated Urban Water Management Plan*
- *A Resolution of the Town of Windsor Water District Approving the Updated Water Shortage Contingency Plan*

In accordance with California Water Code 10632, the Town is required to provide an Urban Water Management Plan. The Urban Water Management Plan is required to provide projections for water demand and supply for a 20-year forecast and in accordance with the California Urban Water Management Plan Act of 1983 must be updated every five years. The Town's updated Urban Water Management Plan provides a 25-year forecast.

The Town is also required to provide a plan to prepare for cases of water shortage or drought. The Water Shortage Contingency Plan includes a planned response by the Town in the event of water shortage; descriptions of water use reduction methods and enforcement; estimated minimum water supply for three years and a revenue impact analysis. The Water Shortage Contingency Plan is part of the Urban Water Management Plan.

At the public hearing on July 21, 2021, the 2020 updates to the 2015 Urban Water Management Plan and to the 2015 Water Shortage Contingency Plan will be reviewed. The Urban Water Management and Water Shortage Contingency Plans are available for public review at https://www.townofwindsor.com/100/Water-Conservation. Copies of the Urban Water Management Plan and the Water Shortage Contingency Plan are available for review at the Town Clerk's Office, 9291 Old Redwood Hwy, Windsor, CA 95492.

***THIS MEETING WILL NOT BE PHYSICALLY OPEN TO THE PUBLIC**
In order to minimize the spread of the COVID-19 virus, the Town of Windsor is currently conducting Council meetings pursuant to the provisions of the Governor's Executive Order N-29-20, which suspended certain requirements of the Brown Act and the way the public can **participate during the Council meetings. The Water District Board and the Town Council encourages all interested parties to** participate in the Public Hearing, via Zoom, and to comment on the issues being discussed. The Town encourages interested parties to attend the public hearing and comment on the issue being discussed.

If you wish to provide testimony and are unable to attend the meeting via Zoom, written comments can be emailed to Board Members/Councilmembers at (towncouncil@townofwindsor.com) prior to

the hearing. Comments will be made part of the public record. Please reference the July 21, 2021, Town Council agenda for Zoom access information.

Prior to the meeting, staff reports, agendas and Zoom information may be requested from the Public Works Department for a minimal fee to recover reproduction costs and are also accessible on the Town's website prior to the meeting at **www.townofwindsor.com**. Contact Person: Cristina Goulart, Environmental Program Manager, (707) 838-5357.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in the public hearing, please contact the Town Clerk at 707-838-1000. Notification at least 48 hours prior to the meeting will assist staff in assuring that reasonable accommodations are made to provide accessibility to the meeting.

Publish: The Press Democrat
Date: July 1, 2020 and July 8, 2020

I:\80 - Public Works\Infrastructure Planning & Funding\Water\UWMP 2020 Update\Public and Agency Notice

Liz DaBramo

To: Elizabeth Cargay
Subject: RE: 2025-2045 Demand Projs & 2021-2025 DRA projections

From: Close, Colin <CClose@srcity.org>
Sent: Monday, December 28, 2020 11:36 AM
To: Jay Jasperse <Jay.Jasperse@scwa.ca.gov>; Donald Seymour <Donald.Seymour@scwa.ca.gov>; Paul Piazza <Paul.Piazza@scwa.ca.gov>
Cc: Drew McIntyre (dmcintyre@nmwd.com) <dmcintyre@nmwd.com>; Burke, Jennifer <jburke@srcity.org>; Martin, Peter <PMartin@srcity.org>; Thompson, Chelsea <CThompson@cityofpetaluma.org>; Matthew Fullner <mfullner@vomwd.org>; Ryan Grisso <rgrisso@nmwd.com>; 'Carothers, Kent' <kcarothers@ci.petaluma.ca.us>; Craig Scott <CScott@cotaticity.org>; Pawson, Mary Grace (mpawson@rpcity.org) <mpawson@rpcity.org>; Bennett, Nicholas <nbennett@rpcity.org>; Tony Williams <twilliams@nmwd.com>; Carrie Pollard <capollard@marinwater.org>; Colleen Ferguson <cferguson@sonomacity.org>; Sandi Potter <spotter@townofwindsor.com>; Elizabeth Cargay <ecargay@Townofwindsor.com>; Cristina Goulart <cgoulart@townofwindsor.com>
Subject: RE: 2025-2045 Demand Projs & 2021-2025 DRA projections

Dear Jay, Don, and Paul,

The link below provides access to a MS OneDrive folder with the 2020 Water Demand Analysis and Water Conservation Measure Update final reports for Cotati, MMWD, NMWD, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Windsor, and VOMWD.

NOTE: The link expires in seven days.

https://cityofsantarosa-my.sharepoint.com/:f:/g/personal/cc_srcity_org/EtgMldw5cz9GmCX0zi__b1UBRFe3VKZF6iGbsZXpnMZLdQ?e=XgPMgI

Please let me know if you have any difficulty accessing or downloading the files.

Colin Close | Senior Water Resources Planner
Santa Rosa Water | 69 Stony Circle | Santa Rosa, CA 95401
Desk: (707) 543-4524 |Cell: (707) 322-1575 | Email: cclose@srcity.org

From: Close, Colin
Sent: Wednesday, December 23, 2020 4:25 PM
To: Jay Jasperse <Jay.Jasperse@scwa.ca.gov>; Donald Seymour <Donald.Seymour@scwa.ca.gov>; Paul Piazza <Paul.Piazza@scwa.ca.gov>
Cc: Drew McIntyre (dmcintyre@nmwd.com) <dmcintyre@nmwd.com>; Burke, Jennifer <jburke@srcity.org>; Martin, Peter <PMartin@srcity.org>; Thompson, Chelsea <CThompson@cityofpetaluma.org>; Matthew Fullner <mfullner@vomwd.org>; Ryan Grisso <rgrisso@nmwd.com>; 'Carothers, Kent' <kcarothers@ci.petaluma.ca.us>; Craig Scott <CScott@cotaticity.org>; Pawson, Mary Grace (mpawson@rpcity.org) <mpawson@rpcity.org>; Bennett, Nicholas <nbennett@rpcity.org>; Tony Williams <twilliams@nmwd.com>; Carrie Pollard <capollard@marinwater.org>; Colleen

Ferguson <cferguson@sonomacity.org>; Sandi Potter <spotter@townofwindsor.com>; Elizabeth Cargay <ecargay@townofwindsor.com>; Cristina Goulart <cgoulart@townofwindsor.com>
Subject: 2025-2045 Demand Projs & 2021-2025 DRA projections

Hi Jay, Don, and Paul,

Attached you'll find an Excel workbook with three tabs. This replaces the previous demand projections workbook sent to you previously.

1. 2045 demand projs
2. 2025-2045 demand projs (5-yr increments)
3. 2021-2025 demand projs (for Drought Risk Assessment)

Please let me know if you have any questions.

Happy holidays to you and yours!

Colin Close | Senior Water Resources Planner
Santa Rosa Water | 69 Stony Circle | Santa Rosa, CA 95401
Desk: (707) 543-4524 |Cell: (707) 322-1575 | Email: cclose@srcity.org



RESOLUTION NO. 1889-21 WWD

A RESOLUTION OF THE WINDSOR WATER DISTRICT BOARD OF DIRECTORS ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN AND ADOPTING THE 2020 WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the Urban Water Management Planning Act (Act), requires that every urban water supplier which provides 3,000 acre-feet or more of water annually, or which directly or indirectly supplies water for municipal purposes to more than 3,000 customers to prepare an Urban Water Management Plan (UWMP) every five years; and

WHEREAS, the Windsor Water District (District), is an urban water supplier with over 9,000 connections providing approximately 3,500 acre-feet of water per year; and

WHEREAS, the purpose of the Act is to ensure sound planning and efficient management of water resources in the urban sector and to prepare for water shortages; and

WHEREAS, the District's last UWMP was adopted on June 15, 2016, and was subsequently submitted to the California Department of Water Resources; and

WHEREAS, the Act was amended by Senate Bill X7-7, known as the Water Conservation Act (SB X7-7), setting a goal of achieving a 20 percent reduction in statewide urban per capita water use by the year 2020; and

WHEREAS, SB X7-7 requires each urban water retailer to determine their base gross gallons per capita per day (gcpd) interim 2015 and final 2020 community water use targets to achieve the minimum water use reduction requirement, and to report their actual 2015 and 2020 compliance year gross gcpd, and include this information in the 2010 UWMP and subsequent UWMPs; and

WHEREAS, on June 2, 2011, the District Board of Directors conducted a public hearing and adopted the District's interim 2015 and final 2020 community water use targets and included those targets in the 2010 UWMP; and

WHEREAS, the interim 2015 and final 2020 community water use targets were required to be reviewed and updated as part of the 2015 UWMP, and were included in the 2015 UWMP adopted by the District Board of Directors on June 15, 2016; and

WHEREAS, the 2020 UWMP is required to report on compliance with the final 2020 targets; and

WHEREAS, the Act also required all urban water purveyors serving over 3,000 connections or over 3,000 acre-feet of water annually to prepare a Water Shortage Contingency Plan (WSCP); and

WHEREAS, the Windsor Water District has the authority and responsibility to adopt demand reduction measures within its service area; and

WHEREAS, the District last adopted a WSCP in June 2016; and

WHEREAS, the 2020 WSCP has been prepared as a stand-alone document to comply with new requirements, and is included in Appendix H to the 2020 UWMP; and

WHEREAS, the District's 2020 UWMP and 2020 Shortage Plan have been prepared per the requirements of the Act; and

WHEREAS, the District has heretofore prepared, and commencing on July 5, 2021, made available for public review, a Draft 2020 Urban Water Management Plan and an updated Water Shortage Contingency Plan, in compliance with the requirements of the Act, and duly noticed a Public Hearing on said Draft 2020 Plan and Draft Shortage Plan, and having conducted a Public Hearing before the District Board in accordance with said notice on July 21, 2021, said Draft Plan now may be approved as prepared; and

WHEREAS, staff reviewed the District's 2020 UWMP, the 2020 WSCP, the Sonoma County Water Agency's Draft 2020 UWMP and its Draft WSCP, and public comments, and if any changes are needed for clarification, they will be included in an UWMP Errata/Additional Information Sheet and a WSCP Errata/Additional Information Sheet, a copy of which will be located on the Town of Windsor's website; and

WHEREAS, the revised Plan must, after a public review period and a Public Hearing by the Town, and after adoption by the Town Council, be filed with the California Department of Water Resources.

NOW, THEREFORE BE IT RESOLVED that the Board of Directors of the Windsor Water District does adopt the District's 2020 Urban Water Management Plan, and if any changes are needed for clarification, adopts the UWMP Errata/Additional Information Sheet, a copy of which will be located on the Town of Windsor's website; and

BE IT FURTHER RESOLVED that the Board of Directors of the Windsor Water District does adopt the District's 2020 Water Shortage Contingency Plan, and if any changes are needed for clarification, adopts the WSCP Errata/Additional Information Sheet, a copy of which will be located on the Town of Windsor's website.

PASSED, APPROVED AND ADOPTED this 21st day of July 2021, by the following vote:

AYES:	**BOARD MEMBERS FUDGE, LEMUS, VICE PRESIDENT REYNOZA AND PRESIDENT SALMON**
NOES:	**NONE**
ABSTAIN:	**NONE**
ABSENT:	**NONE**

SAM SALMON, PRESIDENT

ATTEST:

MARIA DE LA O, SECRETARY

ORDINANCE NO. 2021-76 WWD

AN ORDINANCE OF THE WINDSOR WATER DISTRICT BOARD OF DIRECTORS AMENDING ARTICLE 8 OF CHAPTER 3, TITLE XII OF THE WATER DISTRICT CODE RELATING TO CONSERVATION OF WATER SUPPLY

WHEREAS, the Windsor Water District's ("District") Water Conservation Ordinance is set forth in Chapter 3 of Title XII of the Windsor Water District Code; and

WHEREAS, on July 21, 2021, the District will consider adoption of the 2020 Urban Water Management Plan and the 2020 Water Shortage Contingency Plan and Windsor Water District staff identified provisions that required revision to ensure consistency with State law mandating water shortage levels one through six; and

WHEREAS, the Board of Directors of the District desires to amend the Water Conservation Ordinance to codify the provisions of the Water Shortage Contingency Plan to ensure public health and safety in the event of water shortage caused by drought, delivery disruption, or natural disaster; and

WHEREAS, Maddaus Water Management prepared a report dated June 2021, entitled "Town of Windsor Water Shortage Contingency Plan" containing recommendations for declaring voluntary or mandatory water conservation in six levels, specifying wasteful water use during declared water emergencies, and providing enforcement and penalties for violations; and

WHEREAS, the District Engineer reviewed and recommends the Water Shortage Contingency Plan and the proposed implementing ordinance.

THE BOARD OF DIRECTORS OF THE WINDSOR WATER DISTRICT DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1. Title XII, Chapter 3, Article 8, Section 800 of the Windsor Water District Code is amended to delete all text therein in its entirety, and to be read and replaced as follows:

> **12-3-800 – Purpose and Authority.**
>
> The purpose of this article is to conserve the water supply of the Town for the greatest public benefit with particular regard to public health, fire protection, and domestic use, to conserve water by reducing waste, and to the extent necessary by reason of the existing water shortage emergency condition to reduce water use fairly and equitably. This article is adopted pursuant to State Law including Water Code Sections 350 to and including 358, and Sections 31026 to and including 31029 and Water Shortage Contingency Plan Water Code Section 10632.

SECTION 2. Title XII, Chapter 3, Article 8, Section 815 of the Windsor Water District Code is amended to delete all text therein in its entirety, and to be read and replaced as follows:

12-3-815 - Suspension of New Connections to the Town's Water System.

(a) After the General Manager/Town Manager declares that a water shortage condition exists, and the declaration is ratified by the Town Council by resolution, and this article becomes effective, and until the date the Town Council by resolution declares that the water shortage has ended, which period is hereinafter referred to as the "suspension period", no new or enlarged connection shall be made to the Town's water system except the following:

1. Connection of fire hydrants.

2. Connection of property previously supplied with water from a private water source (such as a well or spring) upon submittal and approval of the Town Engineer evidence that the private source has failed or dried up or has otherwise been impaired by the drought or water shortage event to such a degree that the source no longer can meet minimal potable water needs of the applicant.

3. During mandatory Level 4, 5, and 6 water shortage emergency, connection of property for which the applicant has: (1) obtained all approvals required for development (including a Building Permit), except potable water supply; agrees to defer installation of turf landscaping until after the suspension period; and, (2) either retrofits good quality water conservation fixtures and devices (one point twenty-eight (1.28) gallon per flush toilets, one point five (1.5) gallon per minute showerheads, and one point five (1.5) gallon per minute faucet aerators for kitchen sinks and lavatories) in five (5) existing single-family detached dwelling units served by the Town, or pays the Town one thousand five hundred ($1,500.00) dollars per equivalent single-family detached dwelling unit for which water service is being applied. These payments shall be used by the Town to help fund its expanded water conservation program efforts during the suspension period. If an applicant chooses the retrofit option and a selected home already has some water-conserving fixtures, the applicant shall install conservation fixtures in additional dwellings as determined necessary by the Town's Water Conservation Coordinator.

b. During the suspension period, applications for water service will be processed only if the applicant acknowledges in writing that such processing shall be at the risk and expense of the applicant and that if the application is approved in accordance with the Town's regulations, such approval shall confer no right upon the applicant or anyone else until the suspension period has expired, and that the applicant releases the Town from all claims of damage arising out of or in any manner connected with the suspension of connections.

c. Upon the termination of the suspension period, the Town will make connections to its water system in accordance with its regulations and the terms of connection agreements for all said applications approved during the suspension period. The water supply then available to the Town will be apportioned equitably among all the customers then being served by the Town without discrimination against services approved during the suspension period.

d. Nothing herein shall prohibit or restrict any modification, relocation, or replacement of a connection to the Town's system if the Town Engineer determines that the demand upon the Town's water supply will not be increased thereby.

SECTION 3. Title XII, Chapter 3, Article 8, Section 820 of the Windsor Water District Code is amended to delete all text and tables therein in its entirety, and to be read and replaced as follows:

12-3-820 - Waste of Water Prohibited.

a. No water furnished by the Town shall be wasted. Waste of water includes, but is not limited to, the following:

1. Washing hard or paved surfaces is prohibited except to alleviate safety or sanitary hazards using a handheld container, hose with an automatic shut-off device, or a low-volume high-pressure cleaning machine that recycles used water.

2. Escape of water through breaks or leaks within the customer's plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. The reasonable time within which to correct such break or leak or, as a minimum, to stop the flow of water from such break or leak shall be as established in the Water Shortage Contingency Plan currently in effect.

3. Watering vegetated areas in a manner that causes excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter, or ditch is prohibited. Every customer is deemed to have the customer's water system under control at all times, to know the manner and extent of the customer's water use and any runoff, and to employ available alternatives to apply irrigation water in a reasonably efficient manner.

4. No landscape watering shall occur within 48 hours after measurable precipitation.

5. Washing or hosing down cars, boats, trailers or other vehicles is prohibited except by use of a handheld container, hose with an automatic shut-off device, or at a commercial car wash.

6. Cleaning, filling, or operating water features, such as decorative fountains, except where the water is part of a recirculating system.

7. Water for single-pass evaporative cooling systems for air conditioning in all connections installed after July 18, 2007, unless required for health or safety reasons.

8. Water for new non-recirculating conveyor car wash systems.

9. Water for new non-recirculating industrial clothes wash systems.

10. Lodging establishments must offer opt-out of linen service.

11. Water for construction dust control when recycled water is available.

b. Waste of water shall also include failure to put to reasonable beneficial use any water withdrawn from the Town's water system as determined by the Town Engineer.

SECTION 4. Title XII, Chapter 3, Article 8, Section 825 of the Windsor Water District Code is amended to delete all text therein in its entirety, and to be read and replaced as follows:

12-3-825 – Prohibition of Non-Essential Use of Water.

a. No water furnished by the Town shall be used for any purpose declared to be non-essential by this article. The restrictions in this section shall not apply to use of recycled wastewater furnished by a government agency.

b. At any and all times that a water shortage emergency condition is declared by the Town Council, as Levels 1, 2, 3, 4, 5, or 6 water shortage emergency as set forth in the following table, all customers may be asked to either voluntarily or by mandate reduce consumption of water furnished by the Town, as specified by resolution of the Town Council, and all customers of the Town must adhere to implement actions as specified in the adopted Water Shortage Contingency Plan, as amended.

Water Shortage Level	**Percent Shortage Range**	**Shortage Response Actions**
0	0% (normal)	A Level 0 Water Supply Shortage- Conditions exist when the Town notifies its water users that no supply reductions are anticipated in the year. The Town proceeds with planned water efficiency best practices to support customer demand reduction in line with State mandated regulations and local Windsor goals for water supply resiliency. Permanent water waste prohibitions are in place as stipulated in the Town's Code including prohibitions of waste of water per Section 12-3-820
1	Up to 10%	Disruption to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 1 shortage, or equivalent.
2	Up to 20%	Disruption to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 2 shortage, or equivalent.
3	Up to 30%	Disruption to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 3 shortage, or equivalent.
4	Up to 40%	Disruption to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 4 shortage, or equivalent.
5	Up to 50%	Disruption to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 5 shortage, or equivalent.
6	> 50%	Disruption to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 6 shortage, or equivalent.

c. The District reserves the right to require additional mandatory measures beyond those in the Water Shortage Contingency Plan as determined by the District Board of Directors or Town Council.

d. Nothing in this chapter limits, or may be construed as limiting, the availability of water for extinguishing fires, meeting the demands of any other similar emergency, or routine inspection and maintenance of fire hydrants.

e. From and after the date that the Windsor Town Council declares that a Levels 4, 5, or 6 water shortage emergency exists, and required mandatory water use reductions water use in excess of the following allotments established for each meter are in addition declared to be non-essential:

1. Residential meters serving single-family detached homes including mother-in-law or second units that are served by the same meter: the Town shall establish an allocation based on water supply availability that shall not exceed sixty-five (65) gallons per capita per day times the number of permanent occupants. Permanent occupants shall be a whole number. Babies, children, adults and senior citizens whose principal place of residence is in the dwelling in question shall each count as one (1) occupant. In determining the number of permanent occupants, the Town shall rely upon data it has acquired from the customer or other sources. Provided sufficient time is available, the Town will attempt to canvas customers to obtain current data on permanent household occupants. Alternatively, without sufficient data, the Town may assume the most recent published United States Census persons per household for an owner-occupied single-family detached dwelling unit as the basis for the allocation times the Town defined allocation of gallons per day per capita.

2. Residential meters serving multiple units: any use in excess of that resulting from application of the mandatory residential water use reduction established by the Windsor Town Council.

3. Irrigation only meters: any use in excess of that resulting from application of the mandatory irrigation water use reduction or occurring outside of the allowed hours and days of the week as established by resolution of the Windsor Town Council.

4. Meters serving any non-residential use (excluding irrigation only metered use and healthcare and public safety use): any use in excess of that resulting from application of the overall water use reduction established by the Windsor Town Council.

5. Meters serving water used for healthcare and public safety (excluding irrigation only use): any use in excess of the minimum amount required to adequately provide for healthcare and public safety.

6. Meters serving mixed uses: an allotment to be determined by the Town Engineer based upon the criteria contained in subsections e.1 through e.5 immediately above.

f. Any customer exceeding their allotment, based on metered billing records, shall be billed and required to pay a penalty established by the Master Fee Schedule at the time the mandatory Level 4, 5, or 6 water shortage emergency is declared. This penalty charge shall be waived for the first bill received after mandatory Level 4, 5, or 6 emergency is implemented and shall terminate the day the suspension period ends.

g. If a connection to the Town's system was not in existence or used in the corresponding billing period established for determination of the mandatory water use reduction requirement, the Town will estimate use in such year based on other historic records and/or water use by customers having similar end-uses.

h. In addition to the non-essential uses and restrictions detailed in this article, the Town Council may by resolution specify additional non-essential uses of water, or other mandatory water use restrictions or penalty fees during the shortage period, as may be required from time to time to conform to State and/or Sonoma County Water Agency declarations, regulations, and requirements with respect to water shortage and water conservation matters.

i. During a declared Level Six water shortage emergency the Town Council may adopt, by resolution, additional water supply measures, including but not limited to: (a) restrictions on delivering water to new connections; (b) increased fees related to penalties for wasteful use of water, or other provisions as necessary in accordance with the adopted Water Shortage Contingency Plan or other Sonoma County Water Agency or state mandate. The District or Town Council may also adopt by resolution provisions for customer rationing of existing connections in accordance with California Water Code Sections 350-359 or other local or state mandate

SECTION 5. Title XII, Chapter 3, Article 8, Section 835 of the Windsor Water District Code is amended to delete all text therein in its entirety, and to be read and replaced as follows:

12-3-835 – Use of Sprinklers Conditional.

a. Any customer of the Town may use sprinklers to apply water furnished by the Town to irrigate any existing turfgrass, garden, landscaped area, trees or shrubs provided said application is properly controlled and performed in a non-wasteful and efficient manner confined to the days of the week specified by resolution of the Town Council and to the hours of 7:00 p.m. and 7:00 a.m. of the next day. In the event low-pressure micro-jet sprayers are present in a drip system, irrigation by the valve(s) controlling same shall also be confined to the hours noted above.

b. The amount of water normally required for landscape irrigation shall be reduced by a percent set by resolution of the Town Council and shall hereafter be known as the ETo Adjustment Factor. This condition shall not apply to residential customers if Level 3 water shortage emergency measures are implemented.

c. In determining the amount of water to apply to turfgrass, customers are encouraged to use the following formula:

Applied water for turfgrass (gallons) =	Area of turfgrass (square ft.) x ETo (inches for a given period of time—typically three (3) to seven (7) days) x ETo Adjustment Factor x conversion factor of zero point sixty-two (0.62)

The ETo Adjustment Factor is based on the assumption that overall irrigation efficiency is sixty-five (65%) percent and that the plant factor for turfgrass is one point zero (1.0). Use of this formula to determine applied water will yield the appropriate amount of water to apply while rationing is in effect.

d. In determining the amount of water to apply to landscaped areas containing a mixture of trees and shrubs, customers are encouraged to use the following formula:

Applied water for mixed trees and shrubs (gallons) =	Area of Landscape (square ft.) x ETo (inches or a given period of time—typically three (3) to seven (7) days) x ETo Adjustment Factor x plant factor of zero point six (0.6) x conversion factor of zero point sixty-two (0.62)

The ETo Adjustment Factor is based on the assumption that overall irrigation efficiency is sixty-five (65%) percent and that the plant factor for mixed trees and shrubs is zero point six (0.6). Use of this formula to determine applied water will yield the appropriate amount of water to apply while mandatory water use restrictions are ~~rationing is~~ in effect.

e. Water applied by sprinklers shall be applied in short enough cycles to avoid run-off to gutters, drains, and other adjacent impervious areas.

f. During the suspension period, use of water by sprinklers is a privilege, and permission to use water in this way may be withdrawn if it comes to the attention of the District Engineer that such use by a given customer is wasteful or in excess of the amount determined in subsection (b) of this section. A common result of wasteful application of water by sprinklers is evidence of runoff to a gutter or other adjacent impervious area.

g. Use of water pursuant to this section may be curtailed or eliminated during periods of water shortage as set forth in the Water Shortage Contingency Plan currently in effect.

SECTION 6. Title XII, Chapter 3, Article 8, Section 840 of the Windsor Water District Code is amended to delete all text therein in its entirety, and to be read and replaced as follows:

12-3-840 – Variances.

In unusual circumstances, application of this chapter may cause unnecessary hardships or results inconsistent with this chapter's purposes and intent. Therefore, variances to some of the requirements of this chapter may be appropriate as described below:

a. The General Manager may grant variances to water use restrictions provisions during a Level 1, 2, or 3 declared Water Shortage Emergency as specified in Water Shortage Contingency Plan. During level 4, 5, or 6 water emergency, as specified in the Water Shortage Contingency Plan, any previously granted variances shall be suspended without notice, unless they are based on a critical health need as determined by a licensed medical professional, with such determination being provided to the General Manager.

b. Customers who seek a variance from this chapter for any reason shall submit to the District a written request for variance, setting forth, in detail, the extraordinary circumstances that support the application. The General Manager may approve the application at their discretion; provided, that the variance allows the applicant to use only the minimum amount of water, in addition to that allowed by this chapter, that the General Manager reasonably believes is necessary to satisfy the circumstances that support the application. Any such variance shall terminate one year after its issuance, subject to an application for its renewal.

c. Any customer of the Town may make a written application for a variance. Applications shall be addressed to:

Utility Billing
Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492

SECTION 7. Title XII, Chapter 3, Article 8, Section 845 of the Windsor Water District Code is amended to delete all text therein in its entirety, and to be read and replaced as follows:

12-3-845 – Enforcement and Penalties

The goal of the provisions of this chapter is to achieve voluntary compliance from the customer, and the District will take reasonable measures to assure the customer has information available to promptly and efficiently address water use issues. Where voluntary compliance cannot be achieved through initial contacts and warnings, then appropriate administrative penalties and further action are required. Except as otherwise provided herein, violations of any provision of this chapter shall be addressed as follows:

Violation	Penalty
First	Personal or written notification of the violation
Second	Written notification and issuance of a notice to correct
Third	Issuance of an administrative penalty per the Master Fee Schedule
Fourth	Issuance of an administrative penalty per the Master Fee Schedule
Fifth	Issuance of an administrative penalty per the Master Fee Schedule
Final	Disconnected water service and/or other penalties as provided in the notice of violation and as determined by the General Manager

a. Violations will be based on observation(s) and documentation of waste by District staff, including but not limited to evidence of continually running water by meter readings, physical inspection, and/or visual observation of the occurrence. Violations are subject to the enforcement provisions in Section 12-3-845.

b. It shall be unlawful for any customer to willfully tamper with or in any way modify or attempt to modify a Town meter or anything within the Town's meter box. Violation shall result in the customer being charged a Meter Tampering Fee plus the cost of labor and materials to remedy any damage caused to the Town's equipment as a result of such tampering.

c. Anyone who willfully takes water from the Town water system without the Town's permission or who willfully tampers with or causes damage to any Town meter or water system appurtenance is liable to the Town in the sum of time and materials, plus citation for code violation, as a civil penalty, for each subsequent act during the suspension period. This sum shall be recoverable by a civil suit in a court of competent jurisdiction. This section does not

limit the Town's right to recover the cost of any Town water taken without the Town's permission.

d. All customer fees required by this section shall be set by a resolution of the Town.

e. There shall be no appeal of the water use restrictions identified in the Chapter or Water Shortage Contingency Plan. Any appeal of other decisions shall be appealable in writing to the General Manager and if still unresolved a second appeal may be sent in writing to the District Board of Directors.

SECTION 8. California Environmental Quality Act.
The Windsor Water District Board finds that this Ordinance is exempt from the requirements of the California Environmental Quality Act ("CEQA") pursuant to CEQA Guidelines Sections 15262(v) adoption of urban water management plans and related water shortage contingency plans pursuant to Section 10652 of the California Water Code is statutorily exempt from the California Environmental Quality Act (CEQA) and per CEQA Guidelines Section 15307 (the activity is a regulatory action taken by the District pursuant to its police power for the maintenance and protection of a natural resource) and no environmental review is required.

SECTION 9. Severability.
The provisions of this Ordinance are severable and if any provision, clause, sentence, word, or part thereof is held illegal, invalid, unconstitutional, or inapplicable to any person or circumstances, such illegality, invalidity, unconstitutionality, or inapplicability shall not affect or impair any of the remaining provisions, clauses, sentences, sections, words or parts thereof of this Ordinance or their applicability to other persons or circumstances.

SECTION 10. Effective Date.
This Ordinance shall take effect and be in force immediately upon adoption.

SECTION 11. Publication or Posting.
This Ordinance shall be published and posted in accordance with the California County Water District Act.

PASSED, APPROVED AND ADOPTED this 21st day of July 2021, by the following vote:

AYES:	**BOARD MEMBERS FUDGE, LEMUS, VICE PRESIDENT REYNOZA AND PRESIDENT SALMON**
NOES:	**NONE**
ABSTAIN:	**NONE**
ABSENT:	**NONE**

SAM SALMON, PRESIDENT

ATTEST:

MARIA DE LA O, SECRETARY

Attachment:

- **Exhibit A –** Ordinance Text Amendment Shown in Underline and Strikeout

EXHIBIT A

ORDINANCE OF THE WINDSOR WATER DISTRICT
AMENDING ARTICLE 8 OF CHAPTER 3, TITLE XII OF THE WATER DISTRICT CODE
RELATING TO CONSERVATION OF WATER SUPPLY

Text Amendments new text shown in underline italic font and deleted text shown in strikeout font

Article 8. - Conservation of Water Supply

12-3-800 - Purpose and Authority.

The purpose of this article is to conserve the water supply of the Town for the greatest public benefit with particular regard to public health, fire protection, and domestic use, to conserve water by reducing waste, and to the extent necessary by reason of the existing water shortage emergency condition to reduce water use fairly and equitably. This article is adopted pursuant to State Law including Water Code Sections 350 to and including 358, and Sections 31026 to and including 31029 and *Water Shortage Contingency Plan Water Code Section 10632.*

12-3-815 - Suspension of New Connections to the Town's Water System.

(a) After the General Manager/Town Manager ~~Town Council by resolution~~ declares that a water shortage condition exists, and the declaration is ratified by the Town Council by resolution, and this article becomes effective, and until the date the Town Council by resolution declares that the water shortage has ended, which period is hereinafter referred to as the "suspension period", no new or enlarged connection shall be made to the Town's water system except the following:

1. Connection of fire hydrants.

2. Connection of property previously supplied with water from a private water source (such as a well or spring) upon submittal and approval of the Town Engineer evidence that the private source has failed or dried up or has otherwise been impaired by the drought or water shortage event to such a degree that the source no longer can meet minimal potable water needs of the applicant.

~~3. During *mandatory* Stage 2 and 3 *Level 4, 5, and 6 water shortage emergency* if the overall mandatory rationing requirement is equal to or less than thirty (30%) percent, connection of property for which the applicant has obtained all approvals required for development (including a Building Permit), except potable water supply, and agrees to defer installation of turf landscaping until after the suspension period.~~

43. During *mandatory* ~~Stage 2 and 3~~ *Level 4, 5 and 6 water shortage emergency* ~~if the overall mandatory rationing requirement is greater than thirty (30%) percent~~, connection of property for which the applicant: has obtained all approvals required for development (including a Building Permit), except potable water supply; agrees to defer installation of turf landscaping until after the suspension period; and, either retrofits good quality water conservation fixtures and devices (one point twenty-eight (1.28) gallon per flush toilets, one point five (1.5) gallon per minute shower heads, and one point five (1.0) gallon per minute faucet aerators for kitchen sinks and lavatories) in five (5) existing single-family detached dwelling units served by the Town, or pays the Town one thousand five hundred

($1,500.00) dollars per equivalent single-family detached dwelling unit for which water service is being applied. These payments shall be used by the Town to help fund its expanded water conservation program efforts during the suspension period. If an applicant chooses the retrofit option and a selected home already has some water conserving fixtures, applicant shall install conservation fixtures in additional dwellings as determined necessary by the Town's Water Conservation Coordinator.

b. During the suspension period, applications for water service will be processed only if the applicant acknowledges in writing that such processing shall be at the risk and expense of the applicant and that if the application is approved in accordance with the Town's regulations, such approval shall confer no right upon the applicant or anyone else until the suspension period has expired, and that the applicant releases the Town from all claims of damage arising out of or in any manner connected with the suspension of connections.

c. Upon the termination of the suspension period, the Town will make connections to its water system in accordance with its regulations and the terms of connection agreements for all said applications approved during the suspension period. The water supply then available to the Town will be apportioned equitably among all the customers then being served by the Town without discrimination against services approved during the suspension period.

d. Nothing herein shall prohibit or restrict any modification, relocation or replacement of a connection to the Town's system if the Town Engineer determines that the demand upon the Town's water supply will not be increased thereby.

12-3-820 - Waste of Water Prohibited.

a. No water furnished by the Town shall be wasted. Waste of water includes, but is not limited to, the following:

1. ~~Washing of sidewalks, walkways, driveways, parking lots and other hard-surfaced areas by direct hosing.~~ *Washing hard or paved surfaces is prohibited except to alleviate safety or sanitary hazards using a handheld container, hose with an automatic shut off device, or a low-volume high pressure cleaning machine that recycles used water.*

2. Escape of water through breaks or leaks within the customer's plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. ~~It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the Town, is a~~ The reasonable time within which to correct such break or leak or, as a minimum, to stop the flow of water from such break or leak *shall be as established in the Water Shortage Contingency Plan currently in effect.*

3. ~~Irrigation in a manner or to an extent which allows excessive runoff of water or unreasonable over-spray of the areas being watered.~~ *Watering vegetated areas in a manner that causes excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter, or ditch is prohibited.* Every customer is deemed to have *the customer's* ~~his~~ water system under control at all times, to know the manner and extent of *the customer's* ~~his~~ water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner.

4. *No landscape watering shall occur within 48 hours after measurable precipitation.*

5. ~~Washing cars, boats, trailers or other vehicles and machinery directly with a hose not equipped with a shutoff nozzle that will cause the water to cease dispensing immediately when not in use.~~ Washing or hosing down cars, boats, trailers or other vehicles is prohibited except by use of a handheld container, hose with an automatic shut off device, or at a commercial car wash.

6. Water for non-recycling decorative water fountains. *Water for non-recycling decorative water fountains. Cleaning, filling, or operating water features, such as decorative fountains, except where the water is part of a recirculating system.*

7. Water for single pass evaporative cooling systems for air conditioning in all connections installed after July 18, 2007 unless required for health or safety reasons.

8. Water for new non-recirculating conveyor car wash systems.

9. Water for new non-recirculating industrial clothes wash systems.

10. Lodging establishments must offer opt out of linen service

11. Water for construction dust control when recycled water is available

b. Waste of water shall also include failure to put to reasonable beneficial use any water withdrawn from the Town's water system as determined by the Town Engineer.

12-3-825 – Prohibition of Non-Essential Use of Water.

a. No water furnished by the Town shall be used for any purpose declared to be non-essential by this article. The restrictions in this section shall not apply to use of recycled wastewater furnished by a government agency.

b. *At any and all times that a water shortage emergency condition is declared by the Town Council, as Levels 1, 2, 3, 4, 5 or 6 water shortage emergency as set forth in the following table, all customers may be asked to either voluntarily or by mandate reduce consumption of water furnished by the Town, as specified by resolution of the Town Council, and all customers of the Town must adhere to implement actions as specified in the adopted Water Shortage Contingency Plan, as amended.*

Water Shortage Level	***Percent Shortage Range***	***Shortage Response Actions***
0	*0% (normal)*	*A Level 0 Water Supply Shortage- Conditions exist when the Town notifies its water users tat no supply reductions are anticipated in the year. The Town proceeds with planned water efficiency best practices to support customer demand reduction in line with State mandated regulations and local Windsor goals for water supply resiliency. Permanent water waste prohibitions are in place as stipulated in the Town's Code including prohibitions of waste of water per Section 12-3-820*
1	*Up to 10%*	*Disruption to the Town's water delivery system or shortages in the amount of water available for delivered*

		by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 1 shortage, or equivalent.
2	*Up to 20%*	*Disruption to the Town's water delivery system or shortages in the amount of water available for delivered by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 2 shortage, or equivalent.*
3	*Up to 30%*	*Disruption to the Town's water delivery system or shortages in the amount of water available for delivered by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 3 shortage, or equivalent.*
4	*Up to 40%*	*Disruption to the Town's water delivery system or shortages in the amount of water available for delivered by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 4 shortage, or equivalent.*
5	*Up to 50%*	*Disruption to the Town's water delivery system or shortages in the amount of water available for delivered by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 5 shortage, or equivalent.*
6	*> 50%*	*Disruption to the Town's water delivery system or shortages in the amount of water available for delivered by Sonoma County Water Agency and/or Sonoma County Water Agency has declared a Level 6 shortage, or equivalent.*

c. *The District reserves the right to require additional mandatory measures beyond those in the Water Shortage Contingency Plan as determined by the District Board or Directors or Town Council.*

d. *Nothing in this chapter limits, or may be construed, as limiting the availability of water for extinguishing fires, meeting the demands of any other similar emergency, or routine inspection and maintenance of fire hydrants.*

~~Stage 1 Water Shortage Emergency Measures – Introductory Stage (fifteen (15%) percent voluntary reduction).~~

~~b. At any and all times that a Stage 1 water shortage emergency condition is declared to exist by the Town Council, all customers are asked to voluntarily reduce consumption of water furnished by the Town by fifteen (15%) percent, unless another percentage reduction is specified by resolution of the Town Council, and all customers of the Town are requested to:~~

~~1. Apply irrigation water only during the evening and early morning hours between 7 p.m. and 9 a.m. of the next day to reduce evaporation losses.~~

~~2. Inspect all irrigation systems, repair leaks, and adjust spray heads to provide optimum coverage and eliminate avoidable over-spray.~~

3. For irrigation valves controlling water applied to turf grass, vary the minutes of run-time consistent with fluctuations in weather.

4. Reduce minutes of run-time for each irrigation cycle if water begins to run off to gutters, ditches, and other adjacent impervious areas before the irrigation cycle is completed.

5. Become informed about and strictly adhere to the Town's Water Waste Prohibitions (refer to Section 12-3-820 hereof).

6. Utilize water conservation incentive, rebate and giveaway programs to replace water guzzling plumbing fixtures and appliances with water efficient models.

7. Take advantage of the free information available from the Town on how to use water efficiently, read a water meter, repair ordinary leaks, and how to apply water efficiently to the landscape.

c. At any and all times that a water shortage emergency condition of Stage 1 or greater is declared to exist by the Town Council, the following uses are declared to be non-essential:

1. Refilling a swimming pool drained after the date on which the initial water shortage emergency condition was originally declared to exist;

2. Water escaping from a broken pipe or leak once discovered and after passage of a reasonable amount of time to determine how to shut off the water (refer to Section 12-3-820 hereof);

3. Non-commercial washing of motor vehicles, trailers and boats except from a bucket with use of a hose equipped with a shutoff nozzle for a quick rinse.

Stage 2 Water Shortage Emergency Measures Mandatory Rationing Community Cooperation Method.

d. At the time of declaration of a Stage 2 or greater water shortage emergency, an overall mandatory rationing requirement for customers to collectively meet shall be established. In determining compliance, the Town shall rely on water production records comparing current production trends to trends that would normally be expected to occur, or as compared to a corresponding billing period identified by resolution of the Town Council. Individual customers who can conserve more than the mandatory conservation requirements established by this article are requested and strongly encouraged to do so voluntarily in order to help those customers who would incur economic hardship in order to meet the rationing level.

e. At any and all times that a water shortage emergency condition of Stage 2 or greater is declared to exist by the Town Council, the following additional uses are declared to be non-essential:

1. Any residential use (excluding irrigation only use) in excess of that resulting from application of the mandatory residential rationing requirement established by the Windsor Town Council.

2. Any irrigation only use in excess of that resulting from application of the mandatory irrigation rationing requirement or occurring outside of the allowed hours or days of the week as established by resolution of the Windsor Town Council.

~~3. Any non-residential use (excluding irrigation only use and healthcare and public safety use) in excess of that resulting from application of the overall mandatory rationing requirement established by the Windsor Town Council.~~

~~4. Any water used for healthcare and public safety (excluding irrigation only use) in excess of the minimum amount required to adequately provide for healthcare and public safety.~~

~~5. Any use of water from a fire hydrant except for fighting fires, human consumption, stock water, essential water system flushing and clean-up purposes, and water used for construction needs. If the overall mandatory rationing requirement is greater than thirty (30%) percent, a permit issued by the Town Engineer shall be required for all hydrant use except for water used for fighting fires or for other emergency use deemed essential by the fire chief.~~

~~6. Watering of any existing turf grass, ornamental plant, garden, landscaped area, tree, shrub or other plant except from a hand-held hose or container or drip irrigation system except as provided in Section 12-3-835 hereof.~~

~~7. Watering of new turf grass or replacement turf grass. If the overall mandatory rationing requirement is greater than thirty (30%) percent, this restriction is extended and applies to watering of any new landscape or replacement landscape except in cases where the replacement landscapes will use less water than the original landscape.~~

~~8. Initial filling of any swimming pool for which approval of a construction permit issued by the Town was made after the date on which the initial water shortage emergency condition was originally declared to exist.~~

~~9. Use for service of drinking water at any restaurant, cafe, cafeteria or other public place where food is sold, served or offered for sale, unless expressly requested by a patron.~~

~~f. Except in cases of blatant non-compliance, as solely determined by the Administrative Services Director, individual billing records will generally not be used during Stage 2 to determine compliance with the provisions of subsections e.1 through e.4 of this section, it being assumed that customers will cooperate to do the best that they can to individually meet or exceed the overall mandatory rationing requirement. Violations of non-essential uses that come to the attention of the Administrative Services Director however, will be enforced pursuant to the provisions of Section 12-3-845 hereof.~~

~~Stage 3 Water Shortage Emergency Measures – Mandatory Rationing – Allotment Method.~~

~~g.~~*e.* From and after the date that the Windsor Town Council, declares that a ~~Stage 3~~ *Levels 4, 5 or 6* water shortage emergency exists, *and required mandatory water use reductions* water use in excess of the following allotments established for each meter are in addition declared to be non-essential:

1. Residential meters serving single-family detached homes including mother-in-law or second units that are served by the same meter: *the Town shall establish an allocation based on water supply availability that shall not to exceed* sixty-five (65) gallons per capita per day times the number of permanent occupants. Permanent occupants shall be a whole number. Babies, children, adults and senior citizens whose principal place of residence is in the dwelling in question shall each count as one (1) occupant. In determining the number of permanent occupants, the Town shall rely upon data it has acquired from the customer or other sources. Provided sufficient time is available, the Town will attempt to canvas customers to obtain

current data on permanent household occupants. *Alternatively, without sufficient data, the Town may assume the most recent published United States Census persons per household for a owner-occupied single-family detached dwelling unit as the basis for the allocation times the Town defined allocation of gallons per day per capita.*

2. Residential meters serving multiple units: any use in excess of that resulting from application of the mandatory residential water use reduction ~~rationing requirement~~ established by the Windsor Town Council.

3. Irrigation only meters: any use in excess of that resulting from application of the mandatory irrigation water use reduction ~~rationing requirement~~ or occurring outside of the allowed hours and days of the week as established by resolution of the Windsor Town Council.

4. Meters serving any non-residential use (excluding irrigation only metered use and healthcare and public safety use): any use in excess of that resulting from application of the overall water use reduction ~~rationing requirement~~ established by the Windsor Town Council.

5. Meters serving water used for healthcare and public safety (excluding irrigation only use): any use in excess of the minimum amount required to adequately provide for healthcare and public safety.

6. Meters serving mixed uses: an allotment to be determined by the Town Engineer based upon the criteria contained in subsections ~~g~~*e*.1 through ~~g~~*e*.5 immediately above.

f~~h~~. Any customer exceeding their allotment, based on metered billing records, shall be billed and required to pay a penalty established by *the Master Fee Schedule* ~~the Windsor Town Council by resolution~~ at the time the *mandatory* ~~Stage 3~~ *Level 4, 5 or 6* water shortage emergency is declared. This penalty charge shall be waived for the first bill received after *mandatory* ~~Stage 3~~ *Level 4, 5 or 6 emergency* is implemented and shall terminate the day the suspension period ends.

*g*i. If a connection to the Town's system was not in existence or used in the corresponding billing period established for determination of the mandatory ~~rationing~~ *water use reduction* requirement, the Town will estimate use in such year based on other historic records and/or water use by customers having similar end uses.

~~j. The Administrative Services Director may increase or decrease the allotment for any customer if he determines that special circumstances exist and that to do so would better achieve equity in allocation of available water or better meet health and safety concerns.~~

~~k~~*h*. In addition to the non-essential uses and restrictions detailed in this article, the Town Council may by resolution specify additional non-essential uses of water, or other mandatory water use restrictions or penalty fees during the shortage period, as may be required from time to time to conform to State *and/or Sonoma County Water Agency* declarations, regulations, and requirements with respect to ~~drought~~ *water shortage* and water conservation matters.

i. During a declared Level Six water shortage emergency the Town Council may adopt, by resolution, additional water supply measures, including but not limited to: (a) restrictions on delivering water to new connections; (b) increased fees related to penalties for wasteful use of water, or other provisions as necessary in accordance with the adopted Water Shortage Contingency Plan or other Sonoma County Water Agency or state mandate. The District or Town Council may also adopt by resolution

provisions for customer rationing of existing connections in accordance with California Water Code Sections 350-359 or other local or state mandate

12-3-835 - Use of Sprinklers Conditional.

a. Any customer of the Town may use sprinklers to apply water furnished by the Town to irrigate any existing turf grass, garden, landscaped area, trees or shrubs provided said application is properly controlled and performed in a non-wasteful and efficient manner confined to the days of the week specified by resolution of the Town Council and to the hours of 7:00 p.m. and ~~9~~7:00 a.m. of the next day. In the event low pressure micro-jet sprayers are present in a drip system, irrigation by the valve(s) controlling same shall also be confined to the hours noted above.

b. The amount of water normally required for landscape irrigation shall be reduced by a percent set by resolution of the Town Council and shall hereafter be known as the ETo Adjustment Factor. This condition shall not apply to residential customers if ~~Stage~~ Level 3 water shortage emergency measures ~~allotments~~ are implemented.

c. In determining the amount of water to apply to turf grass, customers are encouraged to use the following formula:

Applied water for turf grass (gallons) =	Area of turf grass (square ft.) x ETo (inches for a given period of time—typically three (3) to seven (7) days) x ETo Adjustment Factor x conversion factor of zero point sixty-two (0.62)

The ETo Adjustment Factor is based on the assumption that overall irrigation efficiency is sixty-five (65%) percent and that the plant factor for turf grass is one point zero (1.0). Use of this formula to determine applied water will yield the appropriate amount of water to apply while rationing is in effect.

d. In determining the amount of water to apply to landscaped areas containing a mixture of trees and shrubs, customers are encouraged to use the following formula:

Applied water for mixed trees and shrubs (gallons) =	Area of Landscape (square ft.) x ETo (inches or a given period of time—typically three (3) to seven (7) days) x ETo Adjustment Factor x plant factor of zero point six (0.6) x conversion factor of zero point sixty-two (0.62)

The ETo Adjustment Factor is based on the assumption that overall irrigation efficiency is sixty-five (65%) percent and that the plant factor for mixed trees and shrubs is zero point six (0.6). Use of this formula to determine applied water will yield the appropriate amount of water to apply while *mandatory water use restrictions are* ~~rationing is~~ in effect.

e. Water applied by sprinklers shall be applied in short enough cycles to avoid run-off to gutters, drains, and other adjacent impervious areas.

f. During the suspension period, use of water by sprinklers is a privilege and permission to use water in this way may be withdrawn if it comes to the attention of the ~~Town~~ *District* Engineer that such use by a given customer is wasteful or in excess of the amount determined in subsection (b) of this section. A common result of wasteful application of water by sprinklers is evidence of runoff to a gutter or other adjacent impervious area.

g. Use of water pursuant to this section may be curtailed or eliminated during periods of water shortage as set forth in the Water Shortage Contingency Plan currently in effect.

12-3-840 - Variances.

~~Said application shall describe in detail why applicant believes a variance is justified. The Administration Services Director may grant a variance to permit a use of water otherwise prohibited by this article, if he/she *they* determines that failure to do so would cause:~~

~~1. An emergency condition affecting the health, sanitation, fire protection or safety of the applicant or public; or~~

~~2. An unnecessary and undue hardship on the applicant or the public, including but not limited to, adverse economic impacts, such as loss of production or jobs.~~

~~b. The decision of the Administration Services Director to deny an application for variance under this section may be appealed to the Town Council by submitting a written appeal to the Town within fifteen (15) calendar days of the date of the decision. Variances granted by the Town Council shall be prepared in writing and contain any conditions imposed by the Town Council in granting said variance. The Town Council may require the variance be recorded at applicant's expense.~~

In unusual circumstances, application of this chapter may cause unnecessary hardships or results inconsistent with this chapter's purposes and intent. Therefore, variances to some of the requirements of this chapter may be appropriate as described below:

a. The General Manager may grant variances to water use restrictions provisions during a Level 1, 2 or 3 declared Water Shortage Emergency as specified in Water Shortage Contingency Plan. During level 4, 5 or 6 water emergency, as specified in the Water Shortage Contingency Plan, any previously granted variances shall be suspended without notice, unless they are based on a critical health need as determined by a licensed medical professional, with such determination being provided to the General Manager.

b. Customers who seek a variance from this chapter for any reason shall submit to the District a written request for variance, setting forth, in detail, the extraordinary circumstances that support the application. The General Manager may approve the application at their discretion; provided, that the variance allows the applicant to use only the minimum amount of water, in addition to that allowed by this chapter, that the General Manager reasonably believes is necessary to satisfy the circumstances that support the application. Any such variance shall terminate one year after its issuance, subject to an application for its renewal.

c. Any customer of the Town may make written application for a variance. Applications shall be addressed to:

Utility Billing
Town of Windsor
9291 Old Redwood Highway
P.O. Box 100
Windsor, CA 95492

12-3-845 - Enforcement and *Penalties.* ~~Fees.~~

The goal of the provisions of this chapter are to achieve voluntary compliance from the customer, and the District will take reasonable measures to assure the customer has information available to promptly and efficiently address water use issues. Where voluntary compliance cannot be achieved through initial contacts and warnings, then appropriate administrative penalties and further action are required. Except as otherwise provided herein, violations of any provision of this chapter shall be addressed as follows:

Violation	***Penalty***
First	*Personal or written notification of the violation*
Second	*Written notification and issuance of a notice to correct*
Third	*Issuance of an administrative penalty per the Master Fee Schedule*
Fourth	*Issuance of an administrative penalty per the Master Fee Schedule*
Fifth	*Issuance of an administrative penalty per the Master Fee Schedule*
Final	*Disconnected water service and/or other penalties as provided in the notice of violation and as determined by the General Manager*

~~a. During Stage 3 should the Administrative Services Director become aware of any violation of any provision of this article, the following enforcement procedure shall be undertaken:~~

~~1. For the first such violation, the customer shall be given a warning, generally by phone or directly in person by a Town employee, or by leaving a door tag notice informing the customer of the problem and asking that it be corrected.~~

~~2. If the violation continues or is repeated, a certified letter shall be mailed to the customer who receives the water bill. Said letter shall describe the violation and request that it be corrected, cured and abated immediately or within such specified time as the Administrative Services Director determines is reasonable under the circumstances. Said letter shall state the consequences of noncompliance with the request.~~

~~3. If the violation continues, the Administrative Services Director may forthwith order disconnection of the service where the violation occurs.~~

~~b. Before reconnection of a service, the customer must stop the violation, pay all past due charges on the account, and pay a Violation Reconnection Fee.~~

~~c. If, during the suspension period, a water service is disconnected two (2) or more times because of violation of this article, a flow restriction device may be installed by the Town before service is~~

~~reconnected. Furthermore, the customer must stop the violation, pay all past due charges on the account, and pay a Second Violation Reconnection Fee. If a flow restriction device is installed, the Town shall remove same after expiration of the suspension period.~~

a. Violations will be based on observation(s) and documentation of waste by District staff, including but not limited to evidence of continually running water by meter readings, physical inspection, and/or visual observation of the occurrence. Violations are subject to the enforcement provisions in Section 12-3-845.

b. ~~d.~~ It shall be unlawful for any customer to willfully tamper with or in any way modify or attempt to modify a Town meter or anything within the Town's meter box. Violation shall result in customer being charged a Meter Tampering Fee plus the cost of labor and materials to remedy any damage caused to the Town's equipment as a result of such tampering.

c. ~~e.~~ Anyone who willfully takes water from the Town water system without the Town's permission or who willfully tampers with or causes damage to any Town meter or water system appurtenance is liable to the Town in the sum of time and materials, plus citation for code violation, as a civil penalty, for each subsequent act during the suspension period. This sum shall be recoverable by civil suit in a court of competent jurisdiction. This section does not limit the Town's right to recover the cost of any Town water taken without the Town's permission.

d. ~~f.~~ All customer fees required by this section shall be set by a resolution of the Town.

e. There shall be no appeal of the water use restrictions identified in the Chapter or Water Shortage Contingency Plan. Any appeal of other decisions shall be appealable in writing to the General Manager and if still unresolved a second appeal may be sent in writing to the District Board of Directors.

12-3-850 - Severability.

If any section, subsection, sentence, clause, phrase, or word of this article is for any reason held to be invalid, the validity of the remaining portion of this article shall not be affected.

APPENDIX C – 2020 WATER DEMAND ANALYSIS AND WATER CONSERVATION MEASURE UPDATE, EKI 2020 REPORT

2020 Water Demand Analysis and Water Conservation Measure Update

Town of Windsor

November 2020
(EKI C00004.00)

Prepared by:
EKI Environment & Water, Inc.
2001 Junipero Serra Boulevard, Suite 300
Daly City, California 94014
(650) 292-9100

2020 Water Demand Analysis and
Water Conservation Measure Update
Town of Windsor

Table of Contents

1. INTRODUCTION 1-1
2. REGULATORY CONTEXT 2-1
2.1. 2020 UWMP Demand Projections Requirements 2-1
2.2. New Requirements for 2020 UWMPs and Future Demand Planning 2-2
2.2.1. Annual Urban Water Use Objectives 2-2
2.2.2. Supply Reliability 2-4
2.2.3. Water Shortage Contingency Plans 2-4
3. WATER USE CHARACTERISTICS 3-1
3.1. Historical Total and Per Capita Water Use 3-1
3.2. Historical Average Water Use Per Account 3-2
3.3. Estimated Indoor and Outdoor Water Use 3-2
4. WATER DEMAND PROJECTIONS 4-1
4.1. Basis for Account Growth Projections 4-1
4.2. Planned Development Within the Service Area 4-3
4.3. Water Demand Factors 4-3
4.3.1. Potable and Recycled Water 4-3
4.3.2. Non-Revenue Water (Potable Water System) 4-5
4.4. Passive Water Savings Estimates 4-5
4.5. Projected Water Demand Through 2045 4-5
5. CONSERVATION PROGRAM PARTICIPATION 5-1
5.1. Conservation Programs 5-1
5.2. Historical Conservation Program Participation 5-2
5.3. Estimated Savings from Past Conservation Programs 5-3
6. CONSERVATION PROGRAM UPDATE 6-1
6.1. Methodology for Screening of Potential Water Conservation Programs 6-1
6.2. Screening of Regional Conservation Measures 6-2
6.2.1. Agency Actions and Water Rate Based Conservation Programs 6-2
6.2.2. Public Outreach and Education Based Conservation Programs 6-2
6.2.3. Device and Financial Incentive Based Conservation Programs 6-3
6.2.4. Policy and Regulation Based Conservation Programs 6-3
6.2.5. Regional Program Screening Findings 6-4
6.3. Screening of Local Conservation Measures 6-4
6.4. Evaluation of Future Water Conservation Programs 6-6
7. CONCLUSION 7-1
8. REFERENCES 8-1

2020 Water Demand Analysis and
Water Conservation Measure Update
Town of Windsor

Table of Contents

TABLES

Table 3-1. Water Use and Population
Table 3-2. Water Use by Customer Sector
Table 3-3 Number of Accounts by Customer Sector
Table 3-4. Per Account Water Use by Customer Sector
Table 3-5. Monthly Water Use
Table 3-6. Estimated Indoor and Outdoor Water Use

Table 4-1. Population and Employment Growth Projections
Table 4-2. Historical and Projected Account Growth Rate by Customer Sector
Table 4-3. Change in Number of Accounts based on Projected Growth
Table 4-4. Potential Potable Water Demand Factors Considered
Table 4-5. Selected Water Demand Factors
Table 4-6. Projected Water Demand

Table 5-1. Conservation Program Description
Table 5-2. Summary of Conservation Program Participation
Table 5-3. Summary of Conservation School Education Program Participation
Table 5-4. Estimated Water Savings Achieved by Conservation Programs and Passive Savings

Table 6-1. Regional Prioritization of Conservation Measures and Programs
Table 6-2. Town of Windsor Prioritization of Conservation Measures and Programs
Table 6-3a. Conservation Program Scenarios
Table 6-3b. Costs and Savings of Potential Conservation Programs
Table 6-3c. Comparison of Program Scenarios – Costs and Savings

FIGURES

Figure 1-1. Participating Sonoma-Marin Saving Water Partnership Members
Figure 1-2. Town of Windsor Service Area

APPENDICES

Appendix A. California Water Code Revisions per AB-1668, SB-606, and SB-664, Redlines prepared by DWR
Appendix B. AWE Model Assumptions
Appendix C. Prioritization and Screening of Future Water Conservation Measures

ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AFY	acre-feet per year
AMI	advanced metering infrastructure
AWE	Alliance for Water Efficiency
CA	California
CEQA	California Environmental Quality Act
CII	commercial, industrial, and institutional
CWC	California Water Code
DMM	demand mitigation measure
DOF	Department of Finance
DRA	drought risk assessment
DWR	Department of Water Resources
GPCD	gallons per capita per day
GPD	gallons per day
gpf	gallons per flush
HECW	high efficiency clothes washer
HET	high efficiency toilet
HEU	high efficiency urinal
MFR	multi-family residential
PRV	Pressure Reducing Valve
QWEL	Qualified Water Efficient Landscaper
SB	Senate Bill
SCWA	Sonoma County Water Agency
SFR	single family residential
SMSWP	Sonoma-Marin Saving Water Partnership
sq ft	square feet
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan
WWTRDF	Windsor Wastewater Treatment Reclamation and Disposal Facility

1. INTRODUCTION

In preparation for development of their 2020 Urban Water Management Plan (UWMP) updates, nine members of the Sonoma-Marin Saving Water Partnership (SMSWP or Water Contractors) coordinated to conduct a joint update of their water demand projections and water conservation planning efforts (i.e., the *2020 Water Demand and Conservation Project*). The participating SMSWP members include: City of Cotati, City of Petaluma, City of Rohnert Park, City of Santa Rosa, City of Sonoma, Marin Municipal Water District, North Marin Water District, Town of Windsor, and Valley of the Moon Water District. These nine agencies are shown on **Figure 1-1**.

The goals of the *2020 Water Demand and Conservation Project* were to apply a common methodology to conduct the following analysis for each Water Contractor:

- Evaluate and document recent historical water use characteristics and trends, including population and account growth;
- Estimate projected water demands for the years 2025 through 2045 to support both the 2020 UWMP update and coordination and planning efforts with Sonoma County Water Agency (SCWA);
- Update the suite of common regional conservation measures that are being considered for implementation in the future;
- Review and document past participation in water conservation programs; and
- Estimate the potential water savings associated with future water conservation program implementation.

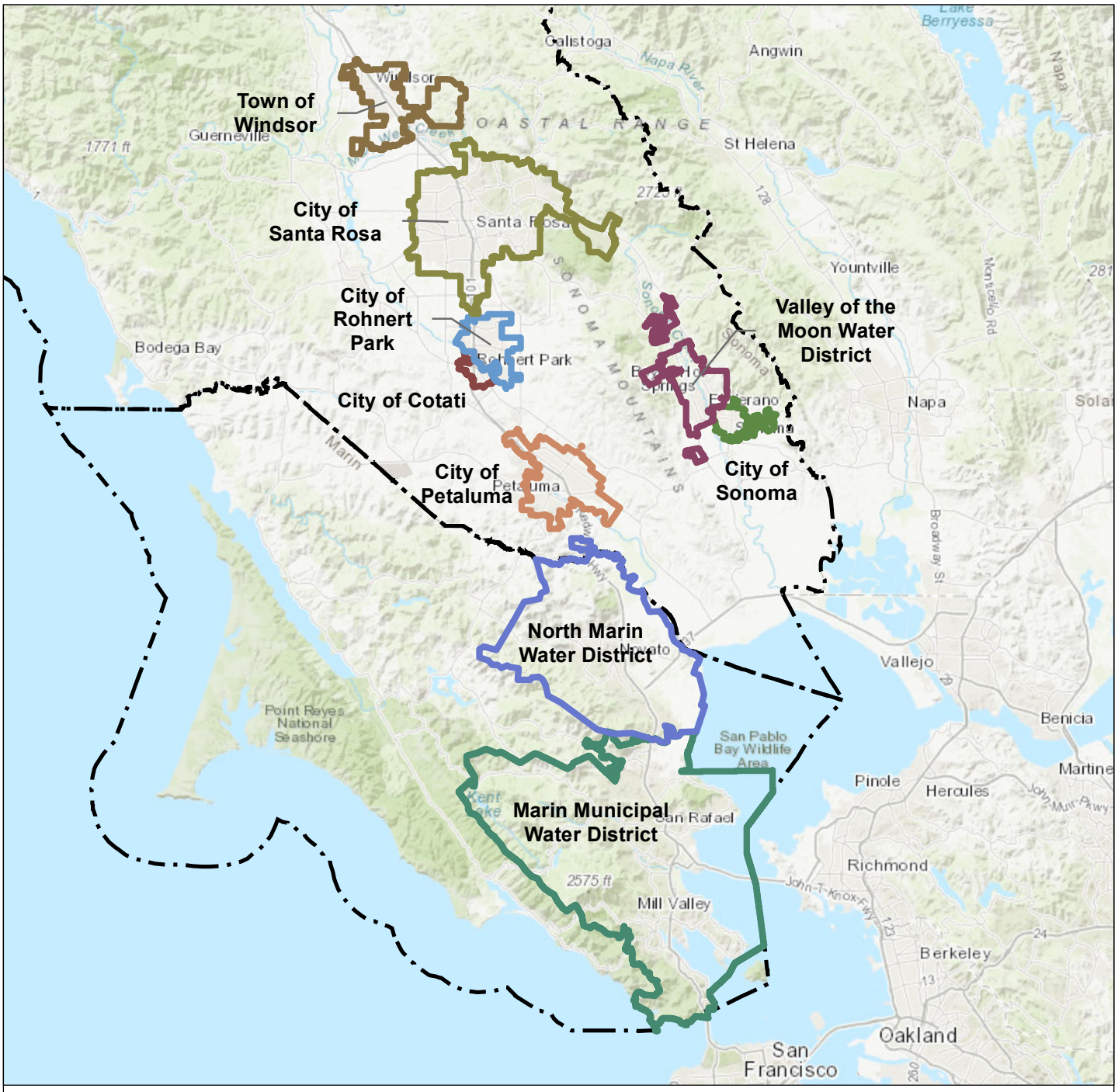
This 2020 Water Demand and Conservation report presents the results for the Town of Windsor (Town), which is located in Sonoma County and serves a population of approximately 28,596 people (**Figure 1-2**). The Town's water supplies include surface water purchased from the Sonoma County Water Agency (SCWA), the Town-owned Russian River Well Field (which diverts water under the SCWA's diversion rights), Town-owned groundwater wells pumped from the Santa Rosa Plain subbasin (Town of Windsor, 2016). The Town also produces recycled water at the Windsor Wastewater Treatment Reclamation and Disposal Facility (WWTRDF), which is used for both agricultural and urban irrigation (Windsor, 2016). Over the years, the Town has worked to increase water efficiency (conservation) among itself and its customers in response to both the SB X7-7 UWMP requirements and as part of the regional SMSWP. This conservation has been achieved through the implementation of water conservation programs, including some administered by the Town and some administered through the regional SMSWP.

This 2020 Water Demand and Conservation report is organized as follows:

- **Section 1** identifies the goals and objectives of this report;
- **Section 2** provides the regulatory context for the demand projections described in this report as well as new requirements related to UWMPs and long-term demand planning that agencies will need to consider in development of their 2020 UWMPs;
- **Section 3** describes historical water use patterns and characteristics within the Town;

- **Section 4** describes the projected water demands through 2045, including the assumptions and methodology used;
- **Section 5** documents past participation in conservation programs and estimated savings associated with program implementation;
- **Section 6** documents the water conservation measure screening process, identifies individual programs and program scenarios for potential future implementation by the Town, and presents the results of a benefit-cost analysis and an estimate of the potential water savings associated with these conservation programs;
- **Section 7** provides conclusions regarding the main findings of the report; and
- **Section 8** provides key references and sources.

Small tables are provided within text throughout the document. Figures and large tables and charts are provided at the end of each section.



Legend

- County Boundary
- City of Cotati
- City of Petaluma
- City of Rohnert Park
- City of Santa Rosa
- City of Sonoma
- Marin Municipal Water District
- North Marin Water District
- Town of Windsor
- Valley of the Moon Water District

Notes

1. All locations are approximate.

Sources

1. Service area boundary provided by respective agencies.
2. Basemap provided by ESRI.

N

0 8 16

Miles

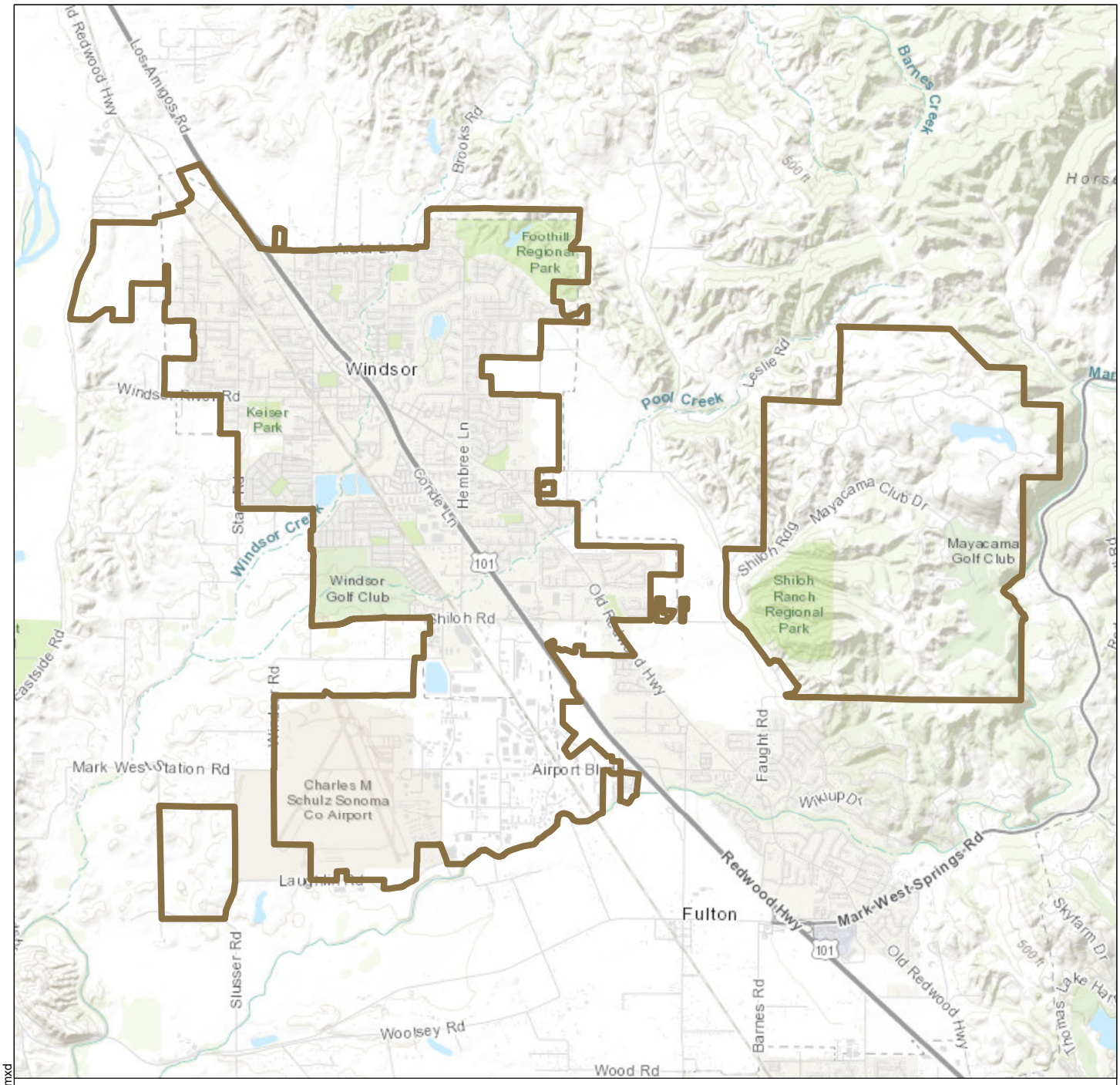
Participating Sonoma-Marin Saving Water Partnership Members

Sonoma-Marin Saving Water Partnership
November 2020
C00004.00

eki environment & water

Figure 1-1

Path: X:\C00004_SonomaMarin\Map\2020\09\SMSWP Map_20200904.mxd



Legend

- County Boundary
- Town of Windsor

N

0 1 2

Miles

Town of Windsor Service Area

Notes

1. All locations are approximate.

Sources

1. Service area boundary provided by Town of Windsor.
2. Basemap provided by ESRI.

Sonoma-Marin Saving Water Partnership
November 2020
C00004.00

Figure 1-2

eki environment & water

Path: X:\C00004_SonomaMarin\Map\2020\08\AgencyBoundaryMaps_20200904.mxd

2. REGULATORY CONTEXT

This section is provided both as regulatory background for the requirements to project future demand in the 2020 UWMP, and for elements of the Town's 2020 UWMP that are beyond the scope of the *2020 Water Demand and Conservation Project,* such as consideration of supply reliability, water shortage contingency planning, and the annual urban water use objectives agencies will be required to report on in 2023 and meet by 2027.

2.1. 2020 UWMP Demand Projections Requirements

California Water Code (CWC) § 10631, excerpted below, describes the requirements to develop water demand projections that consider water use by customer sector, incorporate distribution system water loss, and account for anticipated water savings. As described further in Section 4, water demand projections were developed for the Town using a land-use based approach that is consistent with these requirements, and can be incorporated into the Town's 2020 UWMP.

CWC § 10631

A plan shall be adopted in accordance with this chapter that shall do all of the following:

…

(d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

…

(d)(4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

2.2. New Requirements for 2020 UWMPs and Future Demand Planning

Through the recent *Making Water Conservation a California Way of Life* (Assembly Bill [AB]-1668/Senate Bill [SB]-606) and other legislation, the State has made numerous changes to the requirements for UWMPs and related water conservation planning efforts. In many cases, the updated regulations reference details and methodologies to be developed by the California Department of Water Resources (DWR), and/or are somewhat vague and will benefit from the development of guidelines/further clarification by DWR. DWR is currently developing an updated guidebook to support the development of the 2020 UWMPs, which is expected to be complete by late 2020. This new guidebook is anticipated to provide direction to agencies with respect to many elements of the new legislation.

A summary of key changes to various elements of 2020 UWMP and related planning efforts is provided below. Copies of the revisions to relevant sections of the California Water Code per AB-1668, SB-606, and SB-664 are provided in **Appendix A.**

2.2.1. Annual Urban Water Use Objectives

Beginning in 2023,[1] agencies will be required to report on "annual water use objectives" by November 1 of each year, per CWC § 10609. The specific standards that will be used to determine an agency's annual urban water use objectives are currently under development and are the source of a great deal of uncertainty with respect to the long-term water conservation and demand planning as part of the 2020 UWMP. Although the 2020 UWMP will not identify or calculate these new annual urban water use objectives, the new standards will become effective within the UWMP planning horizon. Per CWC § 10609.25, agencies will be required to "provide a narrative that describes the water demand management measures that the supplier plans to implement to achieve its urban water use objective by January 1, 2027." Details regarding the annual urban water use objectives and other requirements are expected to evolve significantly over the next two years.

- **Residential outdoor water use:** Per CWC § 10609.6, DWR and California State Water Resources Control Board (SWRCB) "shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor residential use" which "incorporate the principles of the model water efficient landscape" and "apply to irrigable lands." DWR is currently working with a contractor to measure all of the single- and multi-family landscape (irrigable) area within urban water suppliers' service areas across the state based on aerial imagery. The result of these measurements will become the basis for an agency's residential landscape water use component of the annual water use objectives. In order to accurately calculate and compare against this metric, agencies will be responsible for identifying what dedicated irrigation accounts are associated with residential water use (including multi-family residential), and what dedicated

[1] DWR acknowledged publicly on 5 December 2019 that this and other related deadlines are likely to slip. DWR indicated that compliance with these objectives will most likely begin in 2024.

irrigation accounts are associated with commercial, industrial and institutional (CII) use. The landscape area measurement process is being lead through a stakeholder workgroup process with periodic public meetings.

- **Residential indoor water use:** Per CWC § 10609.4.(a), "(1) Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily. (2) Beginning January 1, 2025, and until January 1, 2030, the standard for indoor residential water use shall be the greater of 52.5 gallons per capita daily or a standard recommended pursuant to subdivision (b). (3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b)." While the legislation appears to be clear on the method to calculate the indoor residential water use component, the SWRCB has begun the California Environmental Quality Act (CEQA) process for the new water use objective requirements and has expressed concern that using the 55 gallons per capita per day (GPCD) number in the legislation will constitute "backsliding" and thus will need to be ratcheted down.
- **Water loss:** Per CWC § 10608.34.(i), "No earlier than January 1, 2019, and no later than July 1, 2020, the board shall adopt rules requiring urban retail water suppliers to meet performance standards for the volume of water losses. In adopting these rules, the board shall employ full life-cycle cost accounting to evaluate the costs of meeting the performance standards. The board may consider establishing a minimum allowable water loss threshold that, if reached and maintained by an urban water supplier, would exempt the urban water supplier from further water loss reduction requirements." The SWRCB is developing a complicated cost-benefit analysis methodology that would need to be conducted by agencies in order to determine what water loss controls are deemed cost-effective and thus required to be implemented. Water agencies and the California Municipal Utilities Association are advocating for an alternative methodology. The implementation of these requirements has been delayed beyond the 1 July 2020 deadline.
- **CII:** Rather than developing a water volume-based standard for the CII sector, DWR was tasked with developing a set of performance standards through a workgroup process to increase water efficiency, per CWC § 10609.10, with adoption of these performance measures by 30 June 2022. Based on this process, DWR has determined that it is impossible to set such standards today, but agencies will be required to report on progress towards key actions related to potential future standards, such as conversion of mixed CII meters to dedicated irrigation meters, performance of water audits for CII accounts, development of water management plans for CII accounts, detailed classification of CII accounts by industry, etc. The specific actions that agencies will be required to report are not yet known.
- **Recycled Water Use:** In previous UWMPs, calculations of SB X7-7 baselines, targets, and gross water use for compliance were based only on potable water use, and thus the use of recycled water to offset potable water use was an effective method to help agencies conserve potable water and meet their SB X7-7 targets. However, under CWC § 10609.(b)(2)(F), the benefit of recycled water for compliance with annual water use objectives is much more limited: "Provides a bonus incentive for the amount of potable recycled water used the previous year when comparing the previous year's water use with the urban water use objective, of up to 10 percent of the urban water use objective." Thus, adoption and expansion of recycled water use only provides a compliance benefit if it constitutes direct potable reuse, indirect potable reuse, or reservoir augmentation (CWC § 10608.12.(o)).

2.2.2. Supply Reliability

- Agencies will be required to develop procedures to conduct annual water supply and demand assessments to determine its water supply reliability for the current year and one dry year and to conduct these assessments annually beginning in 2022 (CWC § 10632(a)(2)). These procedures are required to include the following (emphasis added):

  (A) The **written decision making process** that an urban water supplier will use each year to determine its water supply reliability.
  (B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

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

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

  (iii) Existing infrastructure capabilities and plausible constraints.

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

  (v) A description and **quantification of each source** of water supply.

- In addition, the requirement to analyze supply reliability for a period of multiple consecutive drought years has been extended from a 3-year period to a 5-year period, per CWC §10631(f) and §10635(a). Specifically, agencies are now required to "compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years."

2.2.3. Water Shortage Contingency Plans

The new regulations also add new requirements related to drought planning and Water Shortage Contingency Plans (WSCPs):

- Agencies will now be required to conduct a drought risk assessment (DRA) as part of their UWMPs to assess water supply reliability (or vulnerability) for a period of drought lasting **five consecutive water years,**[2] starting from the year following that of the UWMP, and to compare water supplies (assessing each source of supply separately) with total projected water use (CWC § 10635(b)) during that period. The DRA five-year period for this 2020 UWMP is 2021-2025. During the 10 March 2020 workshop, DWR indicated that agencies will be expected to identify supply and

[2] While the corresponding Water Supply Assessment (WSA) regulations have not been updated to require analysis of a five-year period, agencies should consider including a five-year drought period in their supply reliability assessment in any new WSAs.

demand on a monthly basis for this purpose, although it is noted that this does not appear to be an explicit requirement of the regulations.

- Per CWC § 10632.5 agencies' WSCPs "shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities" and an agency may submit "a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk."
- WSCPs will be required to use "Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage," or to provide a "cross-reference relating its existing categories to the six standard water shortage levels."

3. WATER USE CHARACTERISTICS

This section describes historical water use by customers within the Town, including changes in use observed during and after the historic 2014 - 2016 drought, changes in average per account water use over time, and estimates of indoor and outdoor water use, based on data provided by the Town. This information is used to provide context and background to support the projections of future demands (Section 4) and estimates of potential conservation program benefits (Section 6).

3.1. Historical Total and Per Capita Water Use

Table 3-1 summarizes the Town's historical water use, service area population, and per capita water use for the years 2005 through 2019 (Windsor, 2020a). Water use is described both in terms of total water produced and average per capita water use. It should be noted that the per capita water use for purposes of comparing water use to SB X7-7 water conservation targets may be different, due to the prescriptive method by DWR for determining an agencies compliance population and total water use.[3] SB X7-7 compliance will need to be separately addressed by the Town's 2020 UWMP.

Total water use, including both potable and recycled water, ranged from 3,700 acre-feet per year (AFY) to 5,161 AFY over this period. Total per capita water use (i.e., including both potable and recycled water use) ranged from 118 GPCD to 175 GPCD. Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use.[4] Urban use consists of approximately 65% of recycled water use (Windsor, 2020d).

Total and per capita potable water use declined following 2008, likely a result of the economic downturn, and from 2013 through 2015, likely influenced by the historic drought conditions, mandatory state-wide restrictions in urban water use imposed by the SWRCB, and local drought response. Total and per capita water use has remained lower than pre-drought conditions, with a slight increase in 2017 through 2019, indicating a degree of rebound following the drought.

Historical water use by customer sector is provided in **Table 3-2**. The single family residential (SFR) sector comprises the largest proportion of the Town's total water use (i.e., 48% in 2019). By comparison, in 2019, dedicated irrigation accounts, including recycled water, collectively comprised 28% of total water use; the CII sectors comprised 15% of total water use; and the multi-family residential (MFR) sector comprised 3.5% of total water use. In 2019, non-revenue water was estimated to be 5.8% of the total water demand.

[3] In previous years, DWR has preferred that the DWR population tool be used for purposes of estimating service area population for purposes of SB x7-7 compliance, so that a uniform method is applied across retailers. The updated 2020 DWR population tool has not yet been released. The population reported by this tool may therefore be somewhat different than the population estimates used herein.

[4] Recycled water is additionally used by the Geysers Geothermal Project (Geysers). Recycled water use by Geysers is not included herein.

3.2. Historical Average Water Use Per Account

The total number of accounts varies over time due to growth and development within the Town and shifts in land use (e.g., redevelopment of industrial areas).

The total number of accounts by customer sector for the 2005 to 2019 period is shown in **Table 3-3**, including a pie chart illustrating the relative proportion of accounts (Windsor, 2020a; 2020b). The SFR sector comprised the highest proportion of accounts in 2019 (80%), followed by recycled water (5.5%), commercial (5.1%), and irrigation (4.1%). From 2005 to 2019, the number of accounts increased between 4.6% and 25% for most sectors. The number of MFR accounts, however, increased by 56% over this period.

Average water use per account is presented in **Table 3-4**. For most sectors, per account water usage has followed the same general trends over time as total water use in the Town (per **Table 3-1**)[5]. However, commercial water use appears to have had a slightly more substantial rebound after the drought, and per account water use by recycled water customers experienced a more significant decrease in water use during the drought relative to other sectors.

3.3. Estimated Indoor and Outdoor Water Use

When designing and estimating the benefits of potential water conservation programs, it is important to understand the relative proportion of water use that is used indoors versus outdoors.

As shown in the first chart in **Table 3-5**, potable water use within the Town varies seasonally, and water use in the summer is often over three times greater than water use during the winter. This seasonality is typically driven by increased irrigation needs in the summer, as compared to the more limited irrigation water use during the wetter and cooler winter months. The second chart in **Table 3-5** shows the seasonality of recycled water use, which is limited to use for irrigation. Based on the recycled water use patterns, irrigation rates appear to be nearly zero during winter months, confirming that it is reasonable and conservative to assume that minimal irrigation with potable water occurs during winter months. It is noted that this is a high-level estimate of indoor and outdoor water use, which errs on the side of estimating higher indoor water use.

Given the water use patterns presented in **Table 3-5**, the minimum average daily water use during winter months (December-March) was used to estimate the indoor water use for all non-irrigation customer sectors. The results of this estimate are shown in **Table 3-6**. Approximately 50% of all potable water use within the Town is estimated to be indoor use, and 50% to be outdoor water use. Including recycled water use, 41% of all water use is estimated to be indoor use, and 59% to be outdoor water use.

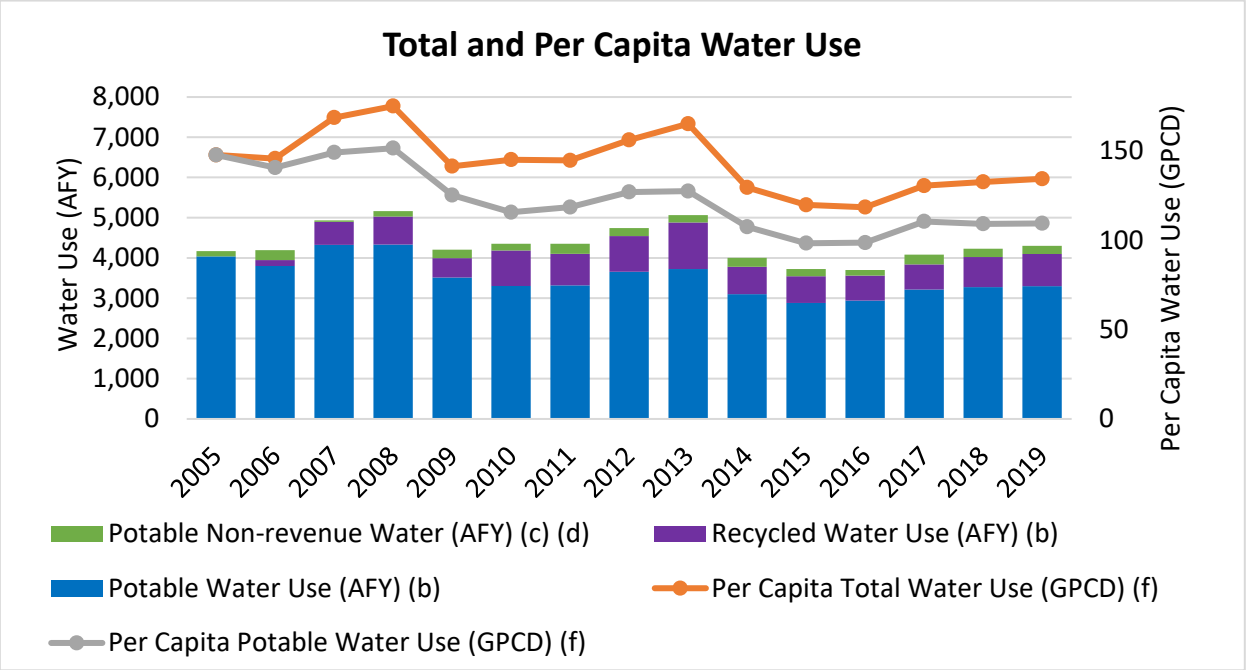
Aside from the dedicated irrigation, recycled and "other" water sectors (presumed 100% outdoor water use), SFR water use is estimated to have the highest proportion of outdoor water use at 48%, followed by industrial at 37% and commercial at 28%. The MFR sector has an estimated 21% outdoor water use, although it should be noted that landscape areas for larger multi-family developments tend to have dedicated irrigation accounts. Further, some industries within the CII sector, such as restaurants and

[5] As shown in Table 3-3, the number of accounts reported in 2000 through 2004 appear to be inconsistent with the number of accounts in subsequent years, and is reflected in the per account water use for this period.

manufacturing, may also experience some degree of seasonality in indoor use, with increased business and production during summer months. Thus, these should be considered high-level estimates of indoor and outdoor use proportions.

Table 3-1
Water Use and Population
Town of Windsor, Sonoma-Marin Saving Water Partnership

Year (a)	Potable Water Use (AFY) (b)	Potable Non-revenue Water (AFY) (c) (d)	Recycled Water Use (AFY) (b)	Total Water Use (AFY)	Service Area Population (e)	Per Capita Potable Water Use (GPCD) (f)	Per Capita Total Water Use (GPCD) (f)
2005	4,038	132	--	4,170	25,212	148	148
2006	3,799	249	146	4,194	25,710	140	146
2007	4,325	35	571	4,931	26,121	149	168
2008	4,332	135	695	5,161	26,325	151	175
2009	3,513	211	481	4,205	26,565	125	141
2010	3,303	168	883	4,354	26,801	116	145
2011	3,318	248	786	4,351	26,867	118	144
2012	3,658	200	884	4,741	27,133	127	156
2013	3,723	185	1,156	5,064	27,382	127	165
2014	3,100	221	680	4,002	27,595	107	129
2015	2,882	178	665	3,724	27,771	98	120
2016	2,942	138	620	3,700	27,879	99	118
2017	3,215	240	626	4,081	27,924	110	130
2018	3,273	209	748	4,230	28,486	109	132
2019	3,300	203	798	4,302	28,596	109	134



Abbreviations:
-- = not available
AFY = acre-feet per year
GPCD = gallons per capita per day

Table 3-1
Water Use and Population
Town of Windsor, Sonoma-Marin Saving Water Partnership

Notes:
(a) Data are presented on a calendar year basis.
(b) Potable and recycled water use per Reference 3. Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use. Urban use consists of approximately 65% of recycled water use (Reference 4).
(c) Estimated non-revenue water per Table 3-2.
(d) Estimates of non-revenue water are based on the potable water system and include both real and apparent losses. The recycled water system would be expected to have a degree of water loss, but this loss has not been quantified.
(e) Population data for 2000-2010 per Reference 1 and 2011-2020 per Reference 2.
(f) Per capita water use is calculated by dividing the annual water use by service area population and the number of days in a year.

References:
1. DOF, 2012. California Department of Finance - Demographic Research Unit, Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 and 2010 Census Counts, Report E-4, released on 1 November 2012.
2. DOF, 2020. California Department of Finance - Demographic Research Unit, Population Estimates for Cities, Counties, and the State, 2011-2020, with 2010 Benchmark, Report E-4, released on 1 May 2020.
3. Windsor, 2020a. Consmpt Tots.xlsx, provided by the Town of Windsor on 6 May 2020.
4. Windsor, 2020b. Recycled water clarifications, provided by Town of Windsor on 29 September 2020.

Table 3-2
Water Use by Customer Sector
Town of Windsor, Sonoma-Marin Saving Water Partnership

Water Use Sector	Water Use (AFY) (a) (b)														
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Single Family Residential	2,784	2,450	2,903	2,834	2,396	2,227	2,204	2,443	2,497	2,014	1,874	1,889	2,058	2,073	2,082
Multi-Family Residential	87	87	115	115	120	165	171	177	167	154	146	151	156	152	152
Commercial (c) (d)	558	582	621	651	502	529	409	422	443	417	405	444	471	506	518
Industrial (d)	--	--	--	--	--	--	131	120	113	110	104	102	101	110	122
Irrigation	546	650	657	713	468	373	398	489	492	389	349	353	413	419	413
Other	62	29	28	19	26	9	5	7	11	16	5	3	15	13	14
Recycled Water (e)	--	146	571	695	481	883	786	884	1,156	680	665	620	626	748	798
Total Water Consumption	**4,038**	**3,945**	**4,896**	**5,026**	**3,994**	**4,185**	**4,103**	**4,541**	**4,879**	**3,780**	**3,546**	**3,562**	**3,841**	**4,021**	**4,098**
Non-revenue Water (f) (g)	3.2%	6.1%	0.8%	3.0%	5.7%	4.9%	7.0%	5.2%	4.7%	6.7%	5.8%	4.5%	6.9%	6.0%	5.8%
	132	249	35	135	211	168	248	200	185	221	178	138	240	209	203
Total Water Use	**4,170**	**4,194**	**4,931**	**5,161**	**4,205**	**4,354**	**4,351**	**4,741**	**5,064**	**4,002**	**3,724**	**3,700**	**4,081**	**4,230**	**4,302**

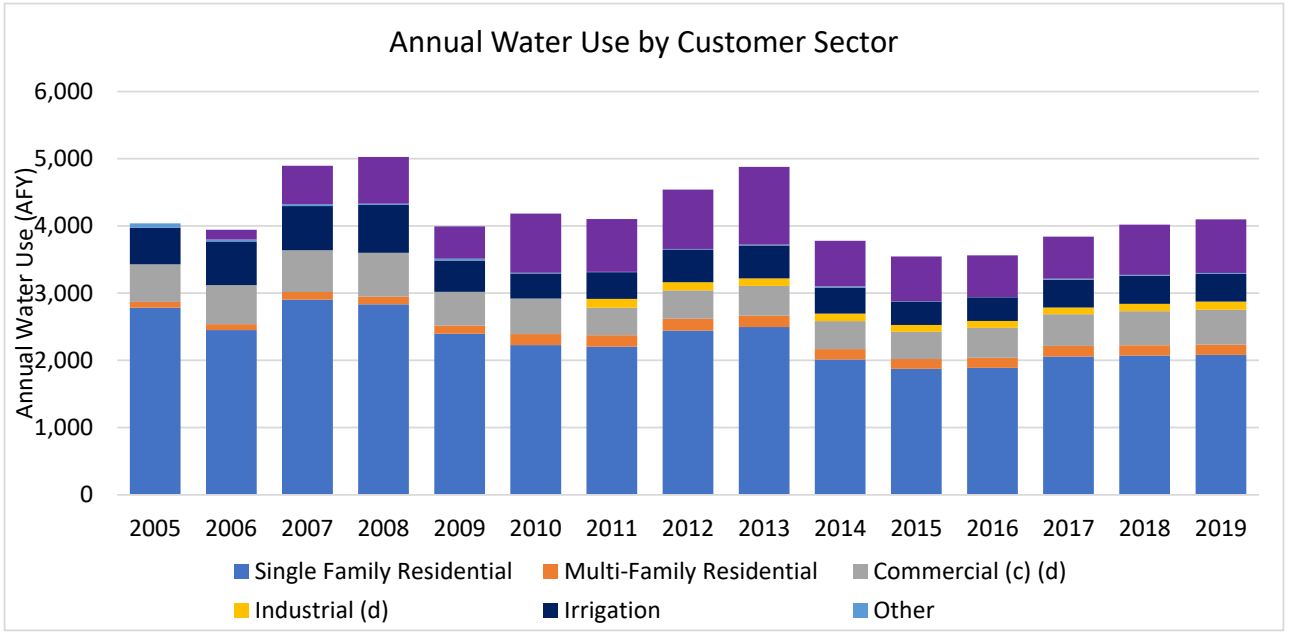


Table 3-2

Water Use by Customer Sector

Town of Windsor, Sonoma-Marin Saving Water Partnership

Abbreviations:

-- = not available

AFY = acre-feet per year

DWR = Department of Water Resources

Notes:

(a) Data are presented on a calendar year basis.

(b) Water use by sector per Reference 3.

(c) Commercial includes institutional water use, per Reference 4.

(d) Industrial was reclassified into a separate sector from commercial beginning in 2011, per Reference 4.

(e) Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use. Urban use consists of approximately 65% of recycled water use (Reference 5).

(f) Non-revenue water for 2004-2014 per Reference 2 and 2016-2018 per Reference 1. For years where non-revenue water data was unavailable, the average percent water loss for 2016-2018 was used. Non-revenue water reports for 2016-2018 are calculated on a fiscal year basis, and the actual water loss in the calendar year shown here are likely to be slightly different.

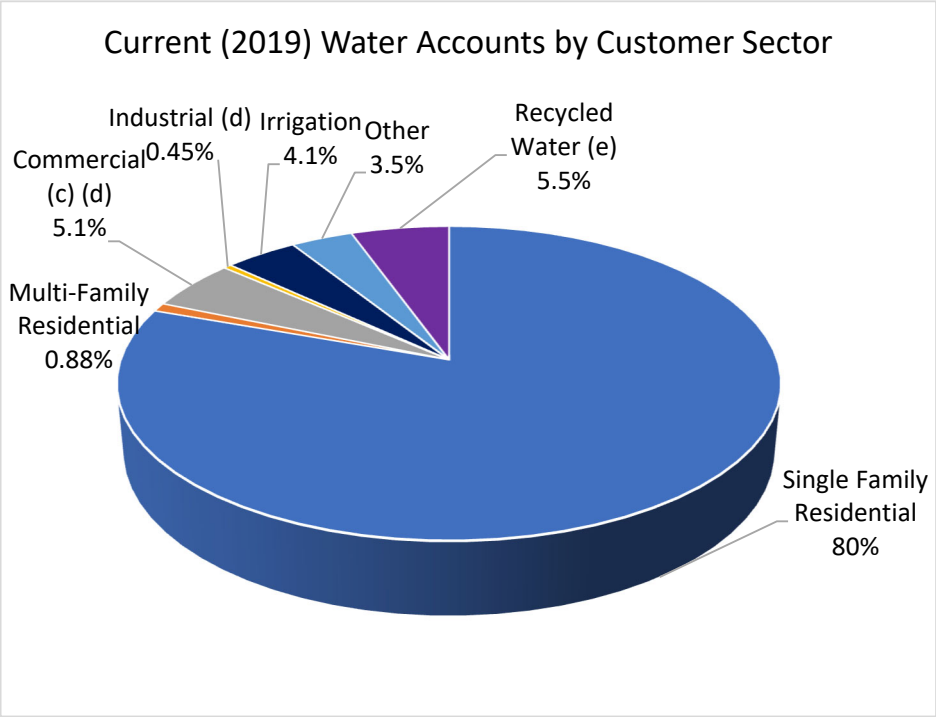
(g) Estimates of non-revenue water are based on the potable water system and include both real and apparent losses. The recycled water system would be expected to have a degree of water loss, but this loss has not been quantified.

References:

1. DWR, 2020. WUEdata - Water Audit Report Data website, accessed 13 June 2020, (https://wuedata.water.ca.gov/awwa_plans).
2. Windsor, 2015. DSS Water Demand & Conservation Model, prepared by Maddaus Water Management, dated 14 July 2015.
3. Windsor, 2020a. Consmpt Tots.xlsx, provided by the Town of Windsor on 6 May 2020.
4. Windsor, 2020b. Cust. Categories.xlsx, provided by the Town of Windsor on 6 May 2020.
5. Windsor, 2020. Recycled water clarifications, provided by Town of Windsor on 29 September 2020.

Table 3-3
Number of Accounts by Customer Sector
Town of Windsor, Sonoma-Marin Saving Water Partnership

Water Use Sector	Number of Accounts (a) (b)														
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Single Family Residential	7,559	7,881	7,861	7,834	8,011	7,839	7,841	7,845	7,877	7,880	7,890	7,901	7,902	7,902	7,905
Multi-Family Residential	55	56	57	66	74	75	71	74	72	72	73	74	79	81	86
Commercial (c) (d)	402	433	438	457	470	476	442	467	452	452	462	473	485	492	504
Industrial (d)	--	--	--	--	--	--	46	46	45	45	44	44	45	44	44
Irrigation	343	357	360	374	374	377	376	377	381	388	393	391	397	398	404
Other	318	317	302	280	278	285	292	283	291	296	309	302	320	323	343
Recycled Water (e)	--	425	482	500	526	531	531	531	536	537	537	538	539	544	542
Total Accounts	**8,677**	**9,469**	**9,500**	**9,511**	**9,733**	**9,583**	**9,599**	**9,623**	**9,654**	**9,670**	**9,708**	**9,723**	**9,767**	**9,784**	**9,828**



Abbreviations:
-- = not available

Table 3-3
Number of Accounts by Customer Sector
Town of Windsor, Sonoma-Marin Saving Water Partnership

Notes:

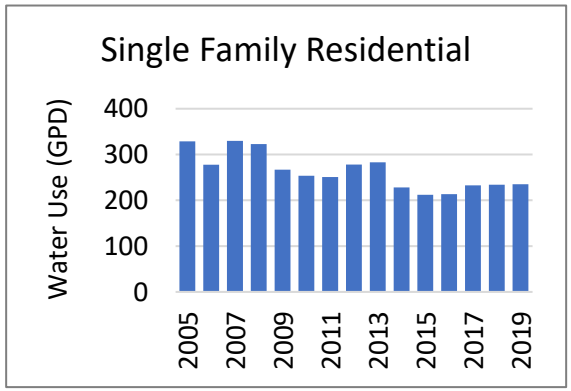
(a) Data are presented on a calendar year basis.
(b) Number of potable water services by sector from 2000-2015 per Reference 1 and 2016-2019 per Reference 2. Number of accounts reported in 2000 through 2004 appear to be inconsistent with the number of accounts in subsequent years.
(c) Commercial includes institutional water use, per Reference 3.
(d) Industrial was reclassified into a separate sector from commercial beginning in 2011, per Reference 3.
(e) Recycled water is used by both urban and agricultural customers, and recycled water accounts included herein represent both urban (including golf courses)

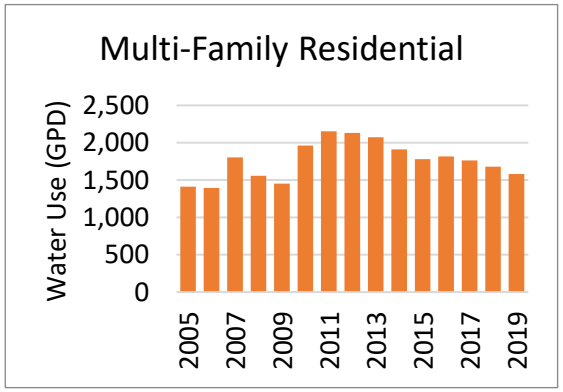
References:

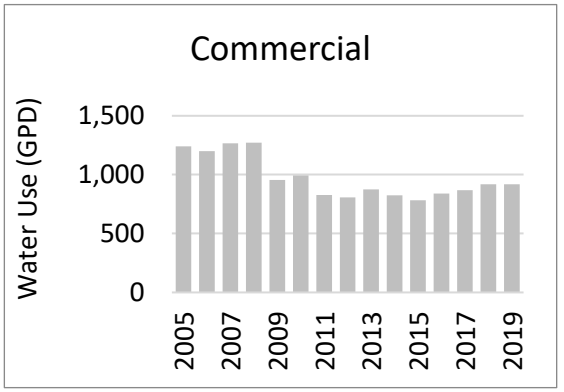
1. Windsor, 2020a. Consmpt Tots.xlsx, provided by the Town of Windsor on 6 May 2020.
2. Windsor, 2020b. UWMP 2016_2020-Mar Service Connections.xlsx, provided by the Town of Windsor on 6 June 2020.
3. Windsor, 2020c. Cust. Categories.xlsx, provided by the Town of Windsor on 6 May 2020.

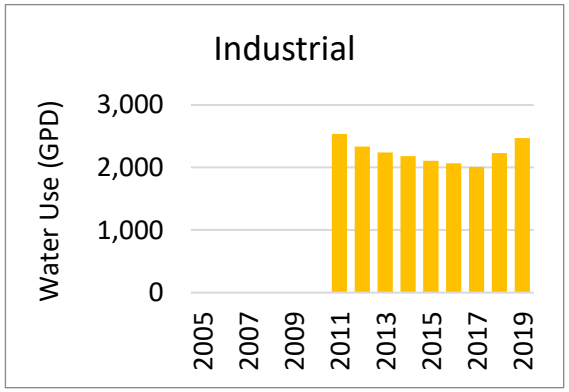
Table 3-4
Per Account Water Use by Customer Sector
Town of Windsor, Sonoma-Marin Saving Water Partnership

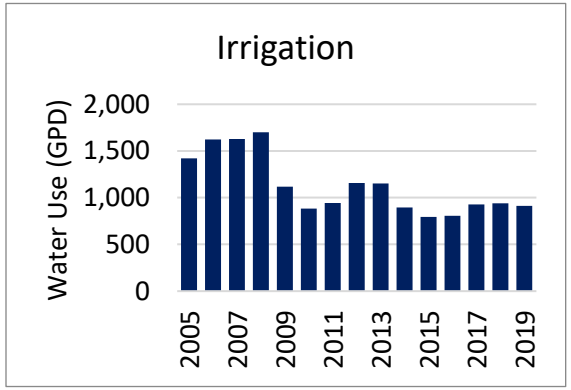
Water Use Sector	Water Use per Account (GPD) (a) (b)														
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Single Family Residential	329	277	329	323	267	253	251	278	283	228	212	213	232	234	235
Multi-Family Residential	1,412	1,394	1,803	1,556	1,451	1,960	2,152	2,130	2,072	1,909	1,779	1,815	1,762	1,679	1,580
Commercial (c) (d)	1,239	1,199	1,264	1,271	954	992	826	806	874	823	782	838	867	917	917
Industrial (d)	--	--	--	--	--	--	2,535	2,334	2,239	2,179	2,106	2,064	2,008	2,230	2,470
Irrigation	1,421	1,623	1,628	1,700	1,117	883	943	1,157	1,152	895	793	805	928	939	911
Other	175	83	84	60	84	27	14	22	34	48	14	10	41	37	36
Recycled Water (e)	--	306	1,058	1,239	816	1,483	1,320	1,485	1,924	1,130	1,104	1,029	1,036	1,226	1,314











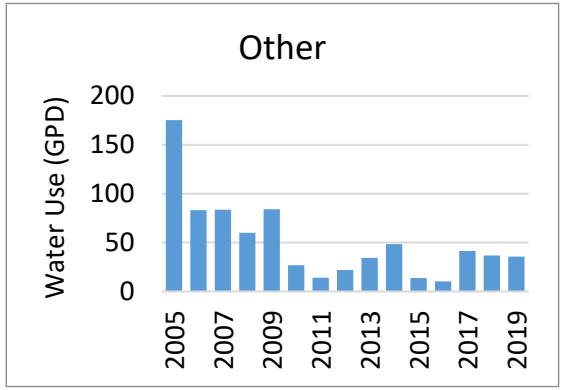
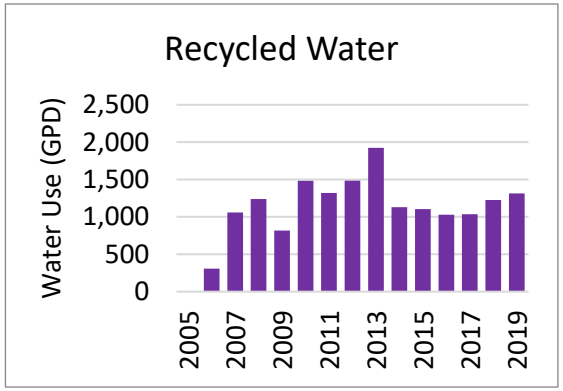


Table 3-4
Per Account Water Use by Customer Sector
Town of Windsor, Sonoma-Marin Saving Water Partnership



Abbreviations:

-- = not available

GPD = gallons per day

Notes:

(a) Data are presented on a calendar year basis.

(b) Water use and number of accounts by sector per Tables 3-2 and 3-3. As shown in Table 3-3, the number of accounts reported in 2000 through 2004 appear to be inconsistent with the number of accounts in subsequent years, and is reflected in the per account water use for this period.

(c) Commercial includes institutional water use, per Reference 1.

(d) Industrial was reclassified into a separate sector from commercial beginning in 2011, per Reference 1.

(e) Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use. Urban use consists of approximately 65% of recycled water use (Reference 2).

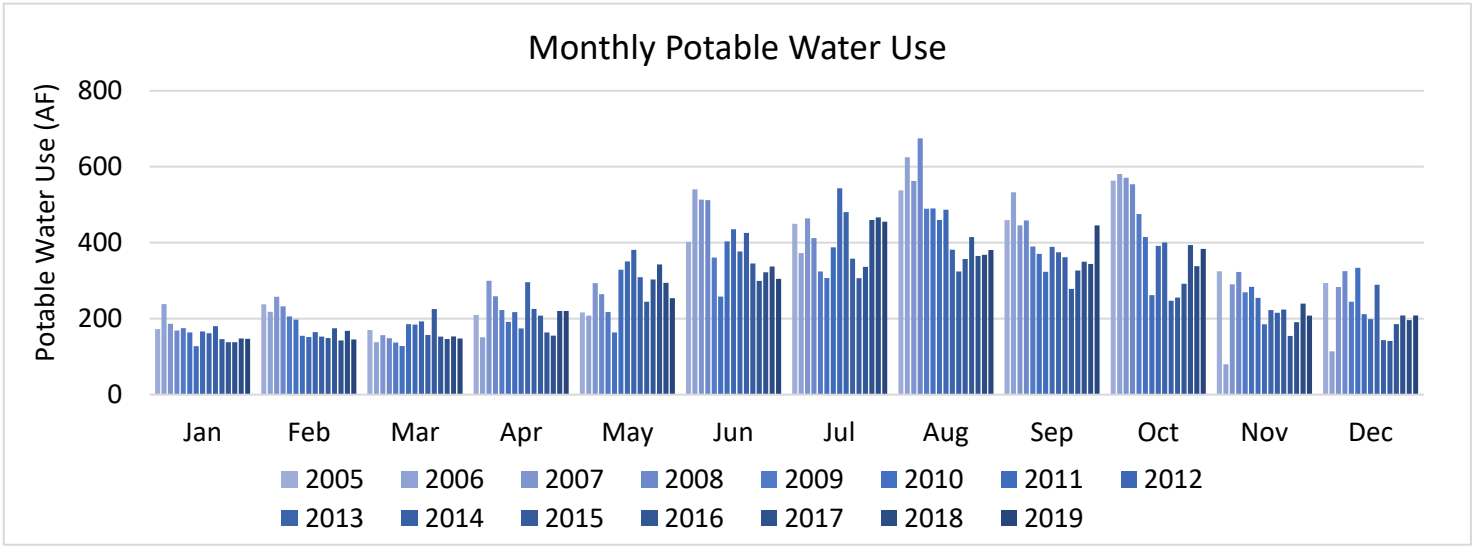
References:

1. Windsor, 2020. Cust. Categories.xlsx, provided by the Town of Windsor on 6 May 2020.
2. Windsor, 2020. Recycled water clarifications, provided by Town of Windsor on 29 September 2020.

Table 3-5
Monthly Water Use
Town of Windsor, Sonoma-Marin Saving Water Partnership

Month	Monthly Water Use (AF) (a)														
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Potable Water Use															
January	173	238	187	169	175	164	128	166	161	180	146	138	138	148	147
February	238	218	258	232	206	198	155	152	165	153	149	175	143	168	145
March	170	138	157	148	137	128	186	184	193	157	225	153	146	153	148
April	210	151	300	259	223	191	217	174	296	226	208	164	155	220	220
May	217	208	293	264	218	164	329	351	381	309	245	303	343	294	254
June	402	540	513	512	361	258	403	435	377	426	345	300	322	337	305
July	450	373	464	412	324	307	388	543	481	358	307	337	460	467	455
August	538	625	563	674	489	490	460	487	382	324	357	415	365	368	380
September	460	532	446	458	390	370	324	389	375	362	278	327	350	344	446
October	563	581	571	554	476	415	262	392	400	247	256	292	394	338	384
November	325	80	291	323	269	284	255	185	223	215	224	154	191	240	208
December	294	114	283	325	245	334	212	199	289	143	141	186	209	196	208
Recycled Water Use (b)															
January	--	2.7	0.79	0.72	0.45	0.50	3.2	7.9	5.7	30	6.8	0.58	0.52	0.62	0.72
February	--	1.1	3.2	3.9	5.1	2.3	3.1	11	7.2	12	2.7	1.5	0.47	9.7	0.57
March	--	0.058	42	19	6.2	2.7	2.9	9.5	21	5.2	41	4.4	2.6	1.8	1.7
April	--	2.3	24	33	35	0.068	39	16	80	29	57	24	4.8	20	18
May	--	0.16	62	60	33	15	63	82	112	89	73	70	77	82	49
June	--	22	95	114	78	174	99	156	105	145	113	86	83	104	113
July	--	30	67	174	70	222	177	218	130	116	100	115	156	140	202
August	--	41	97	106	109	197	186	144	104	92	122	122	128	106	110
September	--	1.3	86	71	56	177	132	148	121	97	84	91	88	125	143
October	--	31	68	69	62	57	47	79	405	50	56	101	78	104	98
November	--	0.69	10	17	13	30	19	8.7	42	13	8.7	3.5	6.1	52	55
December	--	13	16	25	13	4.8	15	1.9	23	1.8	1.2	1.1	1.1	1.7	6.6

Table 3-5
Monthly Water Use
Town of Windsor, Sonoma-Marin Saving Water Partnership



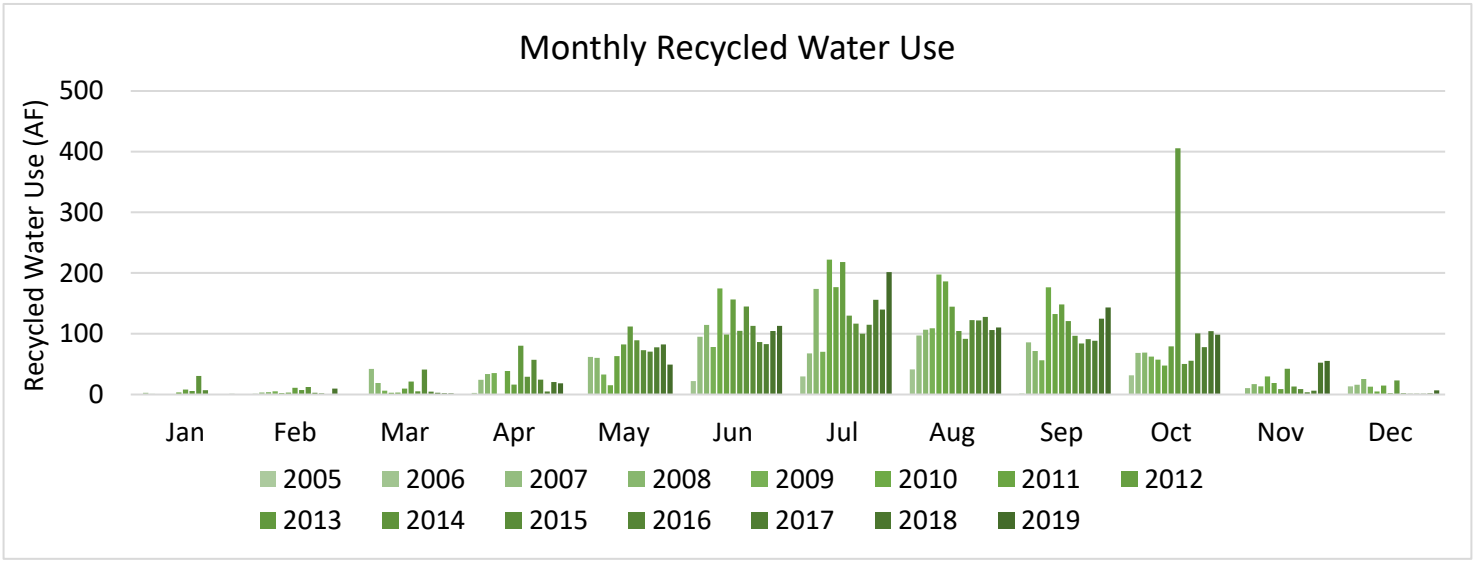


Table 3-5
Monthly Water Use
Town of Windsor, Sonoma-Marin Saving Water Partnership

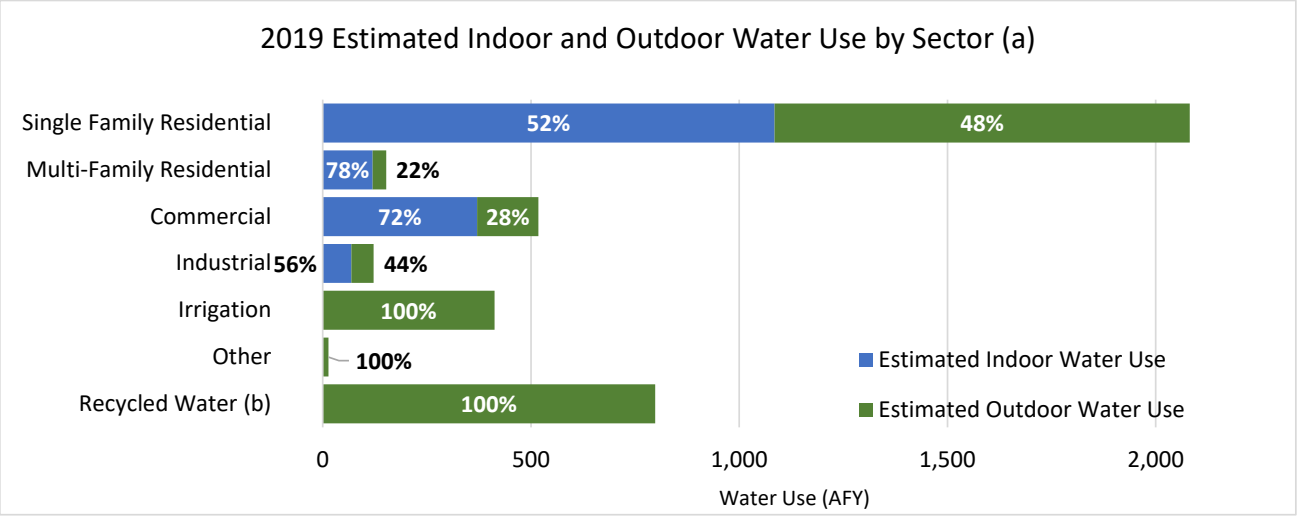
Abbreviations:
-- = not available
AF = acre-feet

Notes:
(a) Monthly potable and recycled water use per Reference 1.
(b) Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use. Urban use consists of approximately 65% of recycled water use (Reference 2).

References:
1. Windsor, 2020a. Consmpt Tots.xlsx, provided by the Town of Windsor on 6 May 2020.
2. Windsor, 2020b. Recycled water clarifications, provided by Town of Windsor on 29 September 2020.

Table 3-6
Estimate Indoor and Outdoor Water Use
Town of Windsor, Sonoma-Marin Saving Water Partnership

Water Use Sector	2017				2018				2019				Average Pct.	
	Indoor Water Use (AFY)	Outdoor Water Use (AFY)	Pct. Indoor	Pct. Outdoor	Indoor Water Use (AFY)	Outdoor Water Use (AFY)	Pct. Indoor	Pct. Outdoor	Indoor Water Use (AFY)	Outdoor Water Use (AFY)	Pct. Indoor	Pct. Outdoor	Indoor Use	Outdoor Use
Single Family Residential	1,057	1,001	51%	49%	1,094	980	53%	47%	1,085	997	52%	48%	52%	48%
Multi-Family Residential	121	35	78%	22%	124	28	82%	18%	119	33	78%	22%	79%	21%
Commercial	326	145	69%	31%	375	130	74%	26%	371	147	72%	28%	72%	28%
Industrial	63	38	62%	38%	78	32	71%	29%	69	53	56%	44%	63%	37%
Irrigation	0	413	0%	100%	0	419	0%	100%	0	413	0%	100%	0%	100%
Other	0	15	0%	100%	0	13	0%	100%	0	14	0%	100%	0%	100%
Total (Potable)	**1,568**	**1,647**	**49%**	**51%**	**1,671**	**1,602**	**51%**	**49%**	**1,644**	**1,656**	**50%**	**50%**	**50%**	**50%**
Recycled Water (b)	0	626	0%	100%	0	748	0%	100%	0	798	0%	100%	0%	100%
Total (Potable & Recycled)	**1,568**	**2,273**	**41%**	**59%**	**1,671**	**2,350**	**42%**	**58%**	**1,644**	**2,455**	**40%**	**60%**	**41%**	**59%**



Abbreviations:
AFY = acre-feet per year
Pct. = Percentage

Table 3-6

Estimate Indoor and Outdoor Water Use

Town of Windsor, Sonoma-Marin Saving Water Partnership

Notes:

(a) The minimum average daily water use from December through March was used to estimate indoor water use for all non-irrigation customer sectors. This method is used to assess the relative proportion of indoor and outdoor use, and conservatively errs on the side of estimating more indoor water use, so that the potential for outdoor water savings is not over-estimated.

(b) Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use. Urban use consists of approximately 65% of recycled water use (Reference 2).

References:

1. Windsor, 2020a. Consmpt Tots.xlsx, provided by the Town of Windsor on 6 May 2020.
2. Windsor, 2020b. Recycled water clarifications, provided by Town of Windsor on 29 September 2020.

4. WATER DEMAND PROJECTIONS

The purpose of this section is to document the basis, methodology, and resulting projected demands for the Town through 2045. As described in more detail below, the future water demands for the Town were estimated by:

1. Applying an estimated growth rate to accounts within each water use sector based on projected population and employment growth rates,
2. Identifying known planned developments within the Town to verify that account growth projections consider all anticipated growth,
3. Evaluating and selecting water demand factors for each water use sector based on review of recent average per account water use representing three scenarios,
4. Estimating future passive savings using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (AWE model), and
5. Calculating estimated future water demand that incorporates the anticipated account growth, water demand factors, and estimated future passive water savings.

This methodology is consistent with California Water Code (CWC) § 10631(d)(4)(A), which requires that "Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the bases for demand projections were developed in close coordination with the Town and reflect a land-use based approach consistent with the Town's community planning. As described in Section 4.4, demand projections include estimated passive water savings, but do not include savings from future active water conservation programs.

4.1. Basis for Account Growth Projections

Water demand increases as new accounts are added to the system, among other factors. In order to estimate how accounts will grow within the Town, recent historical account growth within the Town was considered, as well as projected future growth in population and employment. As described below, it was assumed, that depending on the customer sector, the number of accounts will grow at the same *rate* as the projected population or employment growth.

Table 4-1 presents historical and projected population for the Town, and employment growth projections per 2018 Association of Bay Area Governments (ABAG) Plan Bay Area Projections 2040.[6] Projected

[6] Several growth projections were evaluated as potential bases for growth assumptions, including previous 2013 ABAG Plan Bay Area Projections (ABAG, 2013), ABAG Plan Bay Area Projections 2040 (ABAG, 2018), and 2020 Department of Finance (DOF) Total Estimated and Projected Population for California and Counties (DOF, 2020). The DOF (2020) projections are only available at the County-wide level and show a decline in population over the planning horizon and given the recent historical growth observed in the Town, are not considered appropriately conservative for planning purposes. Although anticipated to be released in 2020, updated ABAG projections are not yet available. Therefore ABAG (2018) projections were selected as the basis for employment growth assumptions for the Town and a 1.5% annual growth rate was applied for population growth assumptions for the Town (Town of Windsor, 2020c).

population is based on a 1.5% annual growth rate for the Town (Town of Windsor, 2020c).[7]

Table 4-2, identifies which growth projection was applied to each potable water use sector (population or employment) at the Town's direction, identifies the average annual growth rate in accounts observed within the Town (based on data presented in **Table 3-3**), and the associated average annual growth rate.

Historical growth rates for accounts within the commercial and irrigation sectors are generally consistent with ABAG (2018) employment projections. The historical growth rate observed for SFR accounts is less than 0.1%, while the MFR historic growth rate (1.6%) more closely resembles projected population rates of 2.1%. Recycled water historical account growth was roughly one third that of employment growth rates, and industrial accounts decreased over the same time period. Based on a comparison of recent historical growth in accounts, these projections are assumed to be reasonably conservative for planning purposes.

The planning horizon for the 2020 UWMP is 2045; however, the ABAG (2018) employment projections extend only through 2040. For purposes of demand projections, it is therefore assumed that the projected growth rates from 2035 through 2040 extend through 2045.

Table 4-2
Historical and Projected Account Growth Rate by Customer Sector

Water Use Sector	Basis for Account Growth	Average Annual Growth (a)	
		Historic (2010-2019)	Growth Projection
Single Family Residential	population	0.094%	2.1%[7]
Multi-Family Residential	population	1.6%	2.1%[7]
Commercial	ABAG 2018 employment	0.65%	0.63%
Industrial	ABAG 2018 employment	-0.48%	0.63%
Irrigation	ABAG 2018 employment	0.80%	0.63%
Other	ABAG 2018 employment	2.3%	0.63%
Recycled Water	ABAG 2018 employment	0.23%	0.63%

Abbreviations:
ABAG = Association of Bay Area Governments

Notes:
(a) Growth is presented on an average annual basis over the indicated period. When applied to account growth, the specific growth rate between each 5-year period was applied to ABAG 2018 employment projections.

[7] Over the planning horizon, a 1.5% annual growth rate is equivalent to a 2.1% per year annual average growth rate.

4.2. Planned Development Within the Service Area

Future demand projections should account for all growth within the Town. In order to verify that the ABAG (2018) growth assumptions appropriately include new developments, known planned developments were inventoried. The Airport Area Specific Plan includes 810 acres of planned growth and redevelopment, including:

- 298,141 sq ft of new mixed-use commercial development,
- 1,586,937 sq ft of new industrial development, and
- 896 additional MFR units.

Full project buildout is anticipated by 2040, with an anticipated 858 AFY of demand in 2040. Buildout is expected to add between 40 and 63 AFY of demand every five years through 2040 (Woodard & Curran, 2019). The 2018 General Plan for the Town of Windsor also estimates planned growth for the Town at 156 dwelling units per year for a possible total of 2,241 new SFR units and 1,669 new MFR residential units by 2040 (1.37% growth; Windsor, 2018).

The number of new accounts associated with these planned developments is estimated and presented in **Table 4-3**, along with the projected increase in accounts over the planning horizon based on the growth projections described in Section 4.1 and taking into account the planned development described under Section 4.2.

4.3. Water Demand Factors

Water use is influenced by a variety of factors, including weather, economic recession, and state and local regulations, among other drivers. Given this, selecting a "representative" baseline year is important to developing the land-use based water demand factors to estimate baseline water use by existing customers, which can then be extrapolated and applied to future growth within the Town.

Water demand factors based on historical use within the Town were used as the basis of future demand projections for potable water accounts, considering in particular the range of water use associated with pre-drought conditions, post-drought conditions, and a midpoint scenario that assumes water use partially rebounds to pre-drought conditions. **Table 3-2** provides historical water use by sector within the Town. To more fully capture total water use within the Town, non-revenue water is estimated as a percentage of potable water production as discussed in 4.3.2, and recycled water use is projected based on planned expansion of the recycled water system infrastructure.

4.3.1. Potable and Recycled Water

As shown in **Table 4-4**, the Town evaluated a range of water demand factors for each water use sector using three water use scenarios, based on recent historical average per account water use for selected time periods, representing pre-drought water use rates, post-drought water use rates, and a partial rebound to pre-drought water use rates. Specifically:

1. *Pre-drought demand factors* based on the maximum per account water use by sector for 2011 through 2013 (**Table 3-4**), generally representing higher water use before drought restrictions were put in place.

2. *Post-drought demand factors* based on the maximum per account water use by sector for 2017 through 2019 (**Table 3-4**), generally representing lower water use than pre-drought conditions but with some amount of rebound.
3. *Partial rebound demand factors* estimated as the midpoint of the pre-drought and post-drought demand factors, representing an average of the two scenarios.

Table 4-4
Potential Water Demand Factors Considered

Water Use Sector	Water Demand Factor (GPD/account)		
	Pre-Drought (2011-2013)	Partial Rebound	Post-Drought (2017-2019)
Single Family Residential	283	259	235
Multi-Family Residential	2,152	1,957	1,762
Commercial	874	895	917
Industrial	2,535	2,502	2,470
Irrigation	1,157	1,048	939
Other	34	38	41
Recycled Water	1,924	1,619	1,314

Abbreviations:
GPD = gallons per day

As shown in **Table 4-5**, below, for purposes of developing the Town's 2045 demand projections, the Town directed EKI to apply pre-drought demand factors to the residential, industrial, irrigation and recycled[8] water sectors, and the partial rebound demand factors to the commercial and "other" sectors.

Table 4-5
Selected Water Demand Factors

Water Use Sector	Water Demand Factor (GPD/account)	Basis for Demand Factor
Single Family Residential	283	Pre-drought
Multi-Family Residential	2,152	Pre-drought
Commercial	917	Post-drought
Industrial	2,535	Pre-drought
Irrigation	1,157	Pre-drought
Other	41	Post-drought
Recycled Water	1,924	Pre-drought

Abbreviations:
GPD = gallons per day

[8] Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use. Urban use consists of approximately 65% of recycled water use (Windsor, 2020d).

4.3.2. Non-Revenue Water (Potable Water System)

Non-revenue water is water that has been produced but not billed, and thus does not generate revenue for the supplier. Non-revenue water includes unbilled authorized uses (such as water for fighting fires and flushing mains) and water losses (including real losses due to distribution system leaks and apparent losses due to metering inaccuracies). Urban water agencies are required to perform an annual audit of water loss of their potable water distribution system, which is used as the basis for estimating future water use associated with non-revenue water. As shown in **Table 4-6**, potable non-revenue water is projected to range from 304 AFY to 410 AFY through 2045, based on the average percentage of water loss reported from 2017 to 2019 (6.2%, see **Table 3-2**).

4.4. Passive Water Savings Estimates

Passive water savings are the water savings associated with the natural replacement of older toilets, showerheads, clothes washers, and other water using appliances with newer high efficiency devices that are available due to both market shifts and increasing efficiency mandated by the building code and other regulatory requirements. The AWE model[9] was used to estimate future passive savings within the Town. The AWE model takes into account estimates of historical population, residential building stock, number of accounts, and projected population and account growth to estimate future passive savings. The estimated passive savings are presented in **Table 4-6** and are subtracted from the water demand projected based on the water demand factors described in Section 4.3 above. Passive savings are only applied to potable water use.

4.5. Projected Water Demand Through 2045

Future water demand was projected for each sector based on their respective demand factors, non-revenue water estimated as a proportion of total potable water production, and estimated passive savings, and is shown in **Table 4-6**. Potable water demand is projected to increase to 6,019 AFY in 2045, which is a 72% increase over 2019 water demand. Recycled water demand is projected to increase to 1,347 AFY, a 69% increase over 2019 water demand. Potable water demand projections are 34% higher than 2015 UWMP projections for 2040, and recycled water demand projections are 153% higher than those projected in the 2015 UWMP for the same year (Windsor, 2016).

[9] Alliance for Water Efficiency, Water Conservation Tracking Tool Version 3, released in July 2016.

Table 4-1
Population and Employment Growth Projections
Town of Windsor, Sonoma-Marin Saving Water Partnership

Category	Growth Projections											Total Growth Rate 2020-2040	Average Annual Growth Rate 2020-2040 (e)
	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045 (d)		
Population													
Historical Population Estimates (a)	27,771	27,879	27,924	28,486	28,596	--	--	--	--	--	--	--	--
Population Projections (b)	--	--	--	--	--	29,585	33,554	36,253	39,040	42,027	45,047	42%	2.1%
Employment													
2018 ABAG Employment Projections (c)	--	--	--	--	--	8,500	9,116	9,230	9,485	9,576	9,667	13%	0.63%

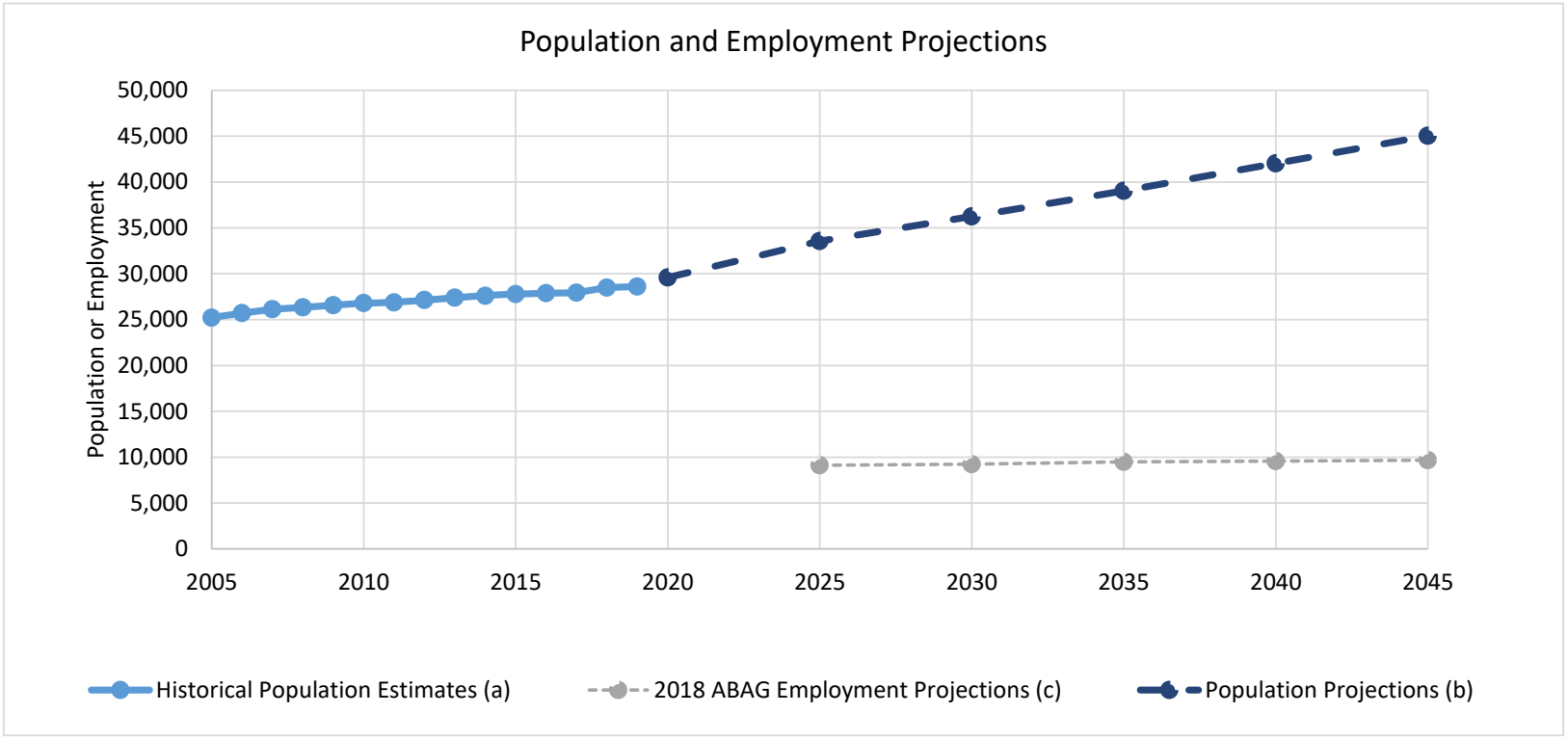


Table 4-1

Population and Employment Growth Projections

Town of Windsor, Sonoma-Marin Saving Water Partnership

Abbreviations:

-- = not available

ABAG = Association of Bay Area Governments

Notes:

(a) Historical population estimates for 2000-2010 per Reference 2 and 2011-2019 per Reference 3.

(b) Population projections for the Town of Windsor service area are per Reference 4, and include the Town of Windsor, the Shiloh/Mayacama Service Area, and the Airport Specific Plan Area. Growth is assumed to be 1.5% based on the Town's Growth Control Ordinance.

(c) 2018 ABAG employment projections per Reference 1. Projections are estimated for the water service area, which extends beyond the Town limits.

(d) ABAG 2018 includes projections through 2040. 2045 employment projections are calculated based on the 2035-2040 growth rate (0.95%).

(e) Population growth rates are calculated as average annual growth from 2020-2040. This is consistent with an annual growth rate (not averaged) of 1.5% from 2019, per Reference 4.

References:

1. ABAG, 2018. Association of Bay Area Governments, Plan Bay Area Projections 2040, released on November 2018.
2. DOF, 2012. California Department of Finance - Demographic Research Unit, Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 and 2010 Census Counts, Report E-4, released on 1 November 2012.
3. DOF, 2020. California Department of Finance - Demographic Research Unit, Population Estimates for Cities, Counties, and the State, 2011-2020, with 2010 Benchmark, Report E-4, released on 1 May 2020.
4. Windsor, 2020. Windsor 2020 UWMP Population-based Demand Projections_11May2020.pdf, provided by the Town of Windsor on 12 May 2020.

Table 4-3
Change in Number of Accounts based on Projected Growth
Town of Windsor, Sonoma-Marin Saving Water Partnership

Projected Number of Accounts

Water Use Sector	Number of Accounts (a)				
	2025	2030	2035	2040	2045 (b)
Single Family Residential	9,178	9,916	10,678	11,495	12,321
Multi-Family Residential	150	214	278	343	367
Commercial (c) (d)	548	555	570	575	581
Industrial (d)	48	48	50	50	51
Irrigation	439	445	457	461	466
Other	373	378	388	392	395
Recycled Water (e)	589	597	613	619	625
Total Accounts	**11,325**	**12,152**	**13,034**	**13,935**	**14,806**

Incremental Increase in Accounts from 2019

Water Use Sector	Number of Accounts, Cumulative				
	2025	2030	2035	2040	2045
Single Family Residential	1,273	2,011	2,773	3,590	4,416
Multi-Family Residential	64	128	192	257	281
Commercial (c) (d)	44	51	66	71	77
Industrial (d)	4	4	6	6	7
Irrigation	35	41	53	57	62
Other	30	35	45	49	52
Recycled Water (e)	47	55	71	77	83
Total New Accounts	**1,497**	**2,324**	**3,206**	**4,107**	**4,978**

Estimate of Known Planned Development

Water Use Sector	Number of Accounts; Cumulative (f)				
	2025	2030	2035	2040	2045
Single Family Residential	560	1,121	1,681	2,241	2,241
Multi-Family Residential	64	128	192	257	257
Commercial (c) (d)	8	16	24	30	30
Industrial (d)	1	2	4	6	6
Irrigation	--	--	--	--	--
Other	--	--	--	--	--
Recycled Water (e)	--	--	--	--	--
Total New Accounts	**633**	**1,267**	**1,901**	**2,534**	**2,534**

Abbreviations:
-- = not available
ABAG = Association of Bay Area Governments

Table 4-3
Change in Number of Accounts based on Projected Growth
Town of Windsor, Sonoma-Marin Saving Water Partnership

Notes:

(a) Growth in number of accounts is estimated based on population projections per Reference 4 and employment projections per Reference 1. Residential sectors are estimated relative to population growth, while all others are estimated relative to employment growth. Multi-family residential accounts are adjusted for known planned development beyond that anticipated by projected growth rates.
(b) ABAG 2018 includes projections through 2040. For purposes of demand and account projections, it is assumed that the employment growth rate remains constant from 2036 through 2045.
(c) Commercial sector includes institutional water use, per Reference 5.
(d) Industrial was reclassified into a separate sector from commercial beginning in 2011, per Reference 5.
(e) Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use. Urban use consists of approximately 65% of recycled water use (Reference 7).
(f) Known planned development per Reference 2 and 3. Multi-family residential accounts are estimated to have 10 dwelling units per account, per Reference 6.

References:

1. ABAG, 2018. Association of Bay Area Governments, Plan Bay Area Projections 2040, released on November 2018.
2. Windsor, 2018. *Town of Windsor 2040 General Plan* , prepared by Town of Windsor, dated 4 April 2018.
3. Woodard & Curran, 2019. *Water Supply Assessment for Sonoma County's Airport Area Specific Plan* , prepared by Woodard & Curran on October 2019.
4. Town of Windsor, 2020a. Windsor 2020 UWMP Population-based Demand Projections_11May2020.pdf, provided by the Town of Windsor on 12 May 2020.
5. Town of Windsor, 2020b. Cust. Categories.xlsx, provided by the Town of Windsor on 6 May 2020.
6. Town of Windsor, 2020c. Response to information requests, provided 27 August 2020.
7. Windsor, 2020d. Recycled water clarifications, provided by Town of Windsor on 29

Table 4-6
Projected Water Demand
Town of Windsor, Sonoma-Marin Saving Water Partnership

Water Use Sector	Projected Demand (AFY) (a)				
	2025	2030	2035	2040	2045
Potable Water					
Single Family Residential	2,909	3,143	3,385	3,644	3,906
Multi-Family Residential	362	517	671	826	885
Commercial	563	570	586	591	597
Industrial	136	138	141	143	144
Irrigation	569	576	592	598	604
Other	17	18	18	18	18
Non-revenue Water (b)	304	331	360	388	410
Estimated Passive Savings (c)	-275	-355	-425	-488	-545
Total Potable Demand	**4,585**	**4,937**	**5,329**	**5,720**	**6,019**
Recycled Water					
Recycled Water (d)	1,271	1,287	1,322	1,335	1,347
Total Recycled Water Demand	1,271	1,287	1,322	1,335	1,347

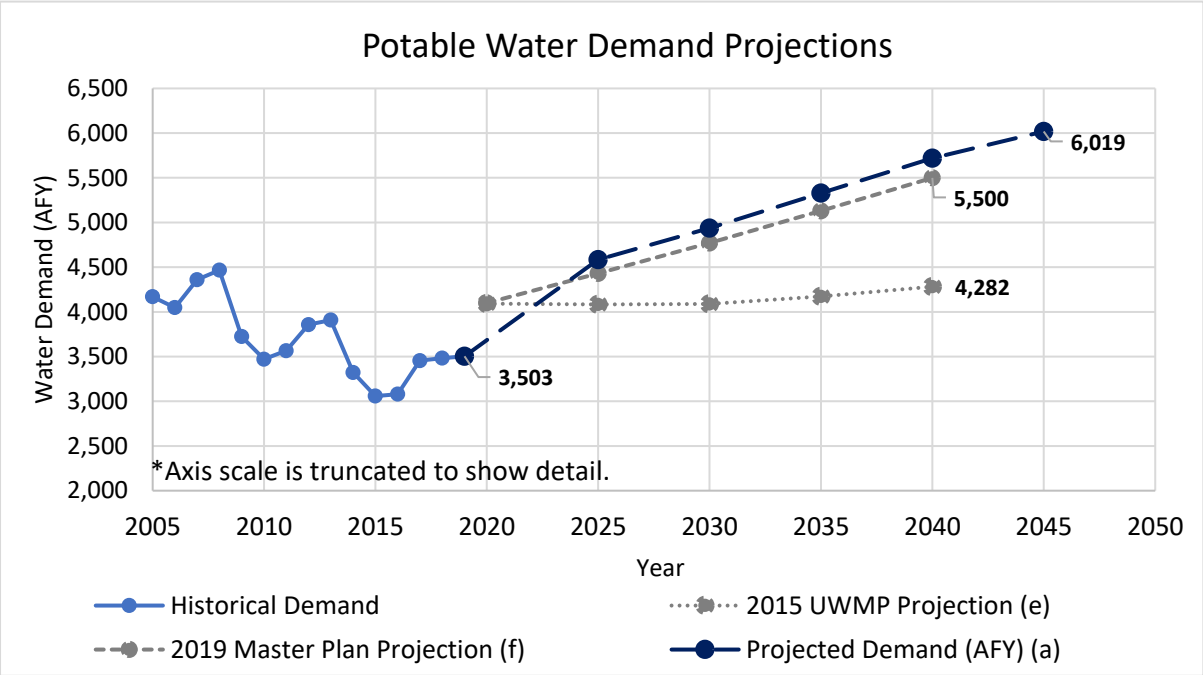
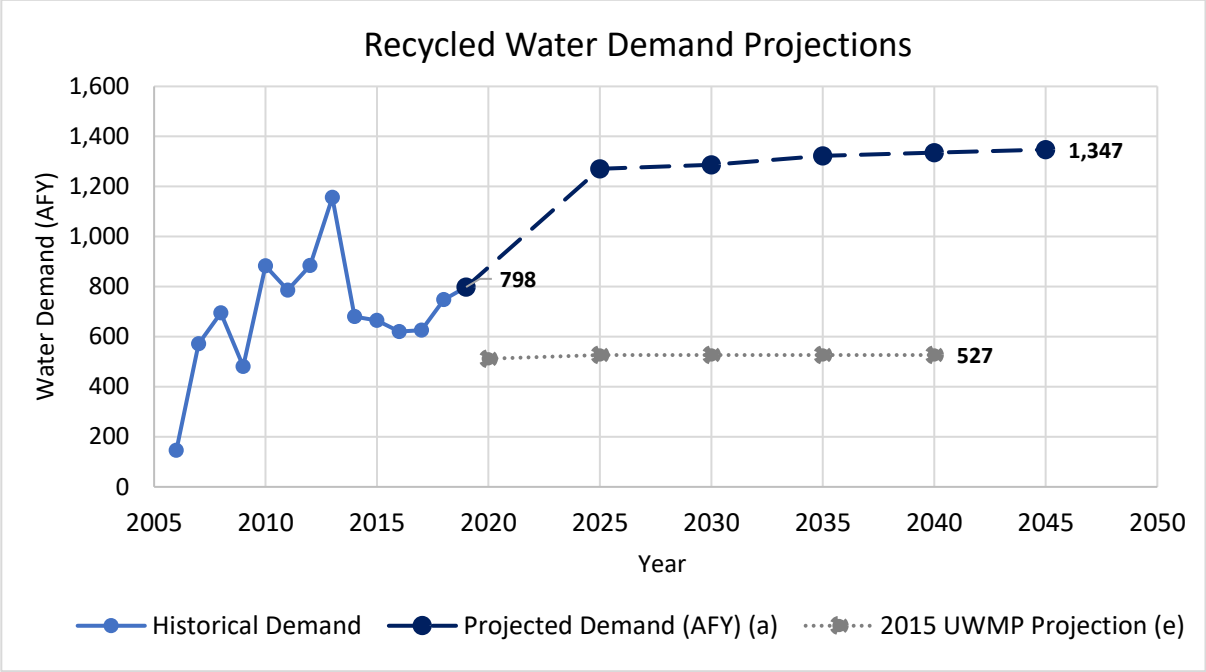


Table 4-6
Projected Water Demand
Town of Windsor, Sonoma-Marin Saving Water Partnership



Abbreviations:
ABAG = Association of Bay Area Governments
AFY = acre-feet per year
AWE = Alliance for Water Efficiency
UWMP = Urban Water Management Plan

Notes:
(a) Water demand projections are estimated based on post-drought demand factors for commercial and "other" sectors and pre-drought demand factors for residential, industrial, irrigation and recycled water sectors, based on recent historical use. Growth in accounts is based on Town and ABAG 2018 projections, as identified in Table 4-1.
(b) Estimates of non-revenue water are based on the average percentage of water loss reported for 2017 through 2019, per Table 3-2.
(c) Passive water savings are based on the AWE Conservation Tracking Tool.
(d) Recycled water is used by both urban and agricultural customers, and recycled water values included herein represent both urban (including golf courses) and agricultural use. Urban use consists of approximately 65% of recycled water use (Reference 4).
(e) 2015 UWMP projections per Reference 2.
(f) 2019 Water Master Plan projections per Reference 3.

Table 4-6
Projected Water Demand
Town of Windsor, Sonoma-Marin Saving Water Partnership

References:

1. ABAG, 2018. Association of Bay Area Governments, Plan Bay Area Projections 2040, released on November 2018.
2. Windsor, 2016. Final 2015 Urban Water Management Plan for the Town of Windsor Water District, prepared by GHD, dated June 2016.
3. Windsor, 2019. Water Master Plan 2019 Update, prepared by Woodard & Curran, dated October 2019.
4. Windsor, 2020. Recycled water clarifications, provided by Town of Windsor on 29 September 2020.

5. CONSERVATION PROGRAM PARTICIPATION

The following section evaluates historical participation in water conservation programs by Town customers and the estimated water savings associated with that participation. This information is used to inform future program selection and implementation assumptions, and to support the demand mitigation measure (DMM) reporting required in UWMPs under CWC § 10631.(e).[10]

5.1. Conservation Programs

The Town currently implements several conservation programs offered directly to customers. These programs are described below.

Table 5-1
Description of Conservation Programs

Program	Description	Eligible Customer Class	Program Run Dates
High efficiency toilet (HET) Rebate Program	$50 Rebate for upgrading from 1.6 gpf, $150 Rebate for upgrading 3.5 gpf, $150 for Commercial.	SFR	2007 - 2017
High efficiency clothes washer (HECW) Rebate Program	$125 rebate	SFR	2006 - 2017
Sheet Mulch/Lawn Transformation/Model Site Tracker Program	Upgrade large existing turf at model sites to water smart landscaping and receive a rebate for grass and water features that are converted to water wise landscapes.	SFR , CII	2006 - 2014
Landscape Rebate Program	Upgrade existing turf to water smart landscaping and receive a rebate for grass and water features that are converted to water wise landscapes.	SFR	2008 - Current
Laundry to Landscape Greywater Program (a)	The Town offers how-to workshops to install greywater systems and provides free parts kits.	SFR	2015-Current
Do-It-Yourself Water & Energy Savings Toolkit (a)	The Town provides a toolkit to checkout for do-it-yourselfers to measure showerhead flow and check toilets for leaks.	SFR	2016-Current
Water Waste Tag Program	The Town gives out water waste tags, but for awareness purposes and does not enforce in non drought years.	SFR	2016 - Current
Water Survey Program	Free low water use shower heads and faucet aerators are given out at public events.	SFR	2015 - Current

[10] The information presented herein supports a portion of the required DMM analysis, focusing on device and education-focused programs. Additional details regarding customer billing rates and structure, conservation staffing levels, customer metering, etc. are required under CWC § 10631.(e), but not addressed herein.

Table 5-1
Description of Conservation Programs

Program	Description	Eligible Customer Class	Program Run Dates
Sonoma Green Business Program (a)	Offers all commercial, industrial, and institutional accounts free comprehensive water use assessments.	CII	2016 - Current
High Efficiency Urinal (HEU) Rebate Program (a)	Offers rebates of up to $300 per fixture to Windsor businesses that retrofit older urinals with high efficiency pint flush or waterless models.	CII	2015 - Current
Water Efficient Technologies (WET) Rebate Program (a)	Offers as much as $25,000 to help upgrade businesses with water efficient equipment. This is only for reducing water more than 50,000 gallons per year.	CII	2015 -Current
Outreach Events	Offers different ways on how to conserve water though irrigation, plant selection and in-home conservation. Workshops may include new technologies such as SMART controllers.	-	2012 - Current

Abbreviations:
CII = commercial, industrial and institutional/governmental
gpf = gallons per flush
HECW = high-efficiency clothes washer
HET = high-efficiency toilet
SFR = single family residential

Notes:
(a) Not included in participation analysis.

In addition to programs offered by the Town, several regional programs are offered through the SMSWP, including: (1) education and outreach to schools, (2) public outreach and educational workshops, (3) Qualified Water Efficient Landscaper (QWEL) Training, and (4) garden tours.

5.2. Historical Conservation Program Participation

Table 5-2 summarizes participation in the Town's conservation programs, including rebates for high-efficiency toilets, urinals, and clothes washers, landscape rebate programs, and public outreach and survey programs for homes and businesses from 2006 through 2019. Of these programs, the HECW Rebate Program has reached the most customers, with 1,662 participants, followed by outreach events with 1,387 total participants. Participation in rebate programs was generally the highest from 2008-2014, with little participation observed in 2017 through 2019. The Water Waste Tag Program, Water Survey Program and outreach events were not implemented prior to 2011 but showed generally consistent participation through 2019. Through the Landscape Rebate Program and Sheet Mulch/Lawn Transformation/Model Site Tracket Program, over 815,000 square feet of turf have been replaced.

Table 5-3 summarizes participation in the regional SMSWP water conservation school education and outreach programs from the 2015-2016 to 2019-2020 school years. Over this period, over 4,000 students were reached by direct instruction and over 22,000 students were reached through indirect instruction such as assemblies, video and poster contests, and other educational materials.

5.3. Estimated Savings from Past Conservation Programs

The AWE model[11] was used to estimate water savings associated with the implementation of all device or turf replacement and audit programs identified in **Table 5-2** for the period of 2010 to 2020. Water savings estimates were based on AWE model default values, values developed for the Town in 2015, and other literature values, as needed. The specific assumptions used in this assessment are presented in **Appendix B**. The results of this analysis are presented in **Table 5-4**.

Based on the record of water conservation program participation within the Town and application of the AWE Model, it is estimated that the Town conservation programs included in this assessment resulted in a savings of between 261 AFY to 453 AFY between 2010 and 2020.[12] In addition, over this period, it is estimated that the Town saved 835 AFY through passive savings. Thus, the total active and passive savings achieved by the Town between 2010 and 2020 is estimated to be approximately 1,027 AFY to 1,288 AFY.

[11] Alliance for Water Efficiency, Water Conservation Tracking Tool Version 3, released in July 2016.

[12] Free ridership refers to customers who participate in a conservation program, but who would have taken the water saving action (e.g., replace a toilet) regardless of whether the conservation program incentive was available. The amount of free ridership is unknown, and thus a range of savings is shown, assuming 0% to 100% free ridership for programs, as appropriate.

Table 5-2
Summary of Conservation Program Participation
Town of Windsor, Sonoma-Marin Saving Water Partnership

Program Name	End Use		Number of Program Participants														Pct. of Accounts (b)
	Sector (a)	Indoor/ Outdoor	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total	
HET Rebate Program	SFR	Indoor	--	9	17	56	78	59	44	8	5	1	5	4	--	--	**286**	**3.6%**
HECW Rebate Program	SFR	Indoor	55	169	171	213	299	272	186	106	122	28	31	10	--	--	**1,662**	**21%**
Landscape Rebate Program	SFR	Outdoor	--	--	11	71	39	11	17	22	42	85	46	16	9	3	**372**	**4.7%**
Sheet Mulch/Lawn Transformation/Model Site Tracker Program (c)	SFR, CII	Outdoor	1	2	2	4	2	2	1	1	1	--	--	--	--	--	**16**	**0.19%**
Water Waste Tag Program	SFR	Both	--	--	--	--	--	--	--	--	--	--	252	306	320	329	**1,207**	**15%**
Water Survey Program (d)	SFR	Both	--	--	--	--	--	--	--	--	--	197	102	48	19	23	**389**	**4.9%**
Outreach Events	--	Both	--	--	--	--	--	--	145	185	218	153	213	154	195	124	**1,387**	**--**
			Total Turf Replaced (sq ft)															
Landscape Rebate Program	SFR	Outdoor	--	--	6,282	48,990	22,265	10,808	8,712	18,709	25,116	59,436	36,386	10,466	8,864	2,427	**258,460**	--
Sheet Mulch/Lawn Transformation/Model Site Tracker Program	SFR, CII	Outdoor	13,800	94,300	101,717	98,495	81,410	70,298	42,420	49,458	5,200	--	--	--	--	--	**557,098**	--
Total (sq ft)			**13,800**	**94,300**	**107,999**	**147,485**	**103,675**	**81,106**	**51,132**	**68,167**	**30,316**	**59,436**	**36,386**	**10,466**	**8,864**	**2,427**	**815,558**	--

Abbreviations
CII = Commercial, Industrial, Institutional
HET = High Efficiency Toilet
HECW = High Efficiency Clothes Washer
SFR = Single-family residential
sq ft = Square feet

Notes
(a) Predominant sector for program participants.
(b) Participation is calculated as a percentage of total accounts of the predominant sector indicated.
(c) Number of participants in the Sheet Mulch/Lawn Transformation/Model Site Tracker Program was not specified in the source data. For summary purposes, each participant record is assumed to be one participant.
(d) One survey record lacked survey date and thus is not included herein.
(e) Colored shading is added for visualization purposes. Green shading represents higher participation values.

Table 5-3
Summary of Conservation School Education Program Participation
Town of Windsor, Sonoma-Marin Saving Water Partnership

Program Name	Number of Students Reached by School Year					
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	Total
Direct Instruction						
Kindergarten	289	288	264	183	207	**1,231**
3rd Grade	364	216	337	306	192	**1,415**
5th Grade	105	342	304	355	179	**1,285**
Middle/High School	0	1	15	72	0	**88**
Total	**758**	**847**	**920**	**916**	**578**	**4,019**
Indirect Instruction						
ZunZun Assembly	987	900	951	995	454	**4,287**
Video Contest	0	6	1	0	0	**7**
WA Poster Contest	282	0	152	0	257	**691**
Materials	2,955	4,077	3,782	3,220	3,329	**17,363**
Total	**4,224**	**4,983**	**4,886**	**4,215**	**4,040**	**22,348**

Abbreviations

SMSWP = Sonoma-Marin Saving Water Partnership

WA = Water Awareness

Notes

(a) School education program participation is presented by number of students reached, per SMSWP, 2020.

(b) Colored shading is added for visualization purposes. Green shading represents higher participation values.

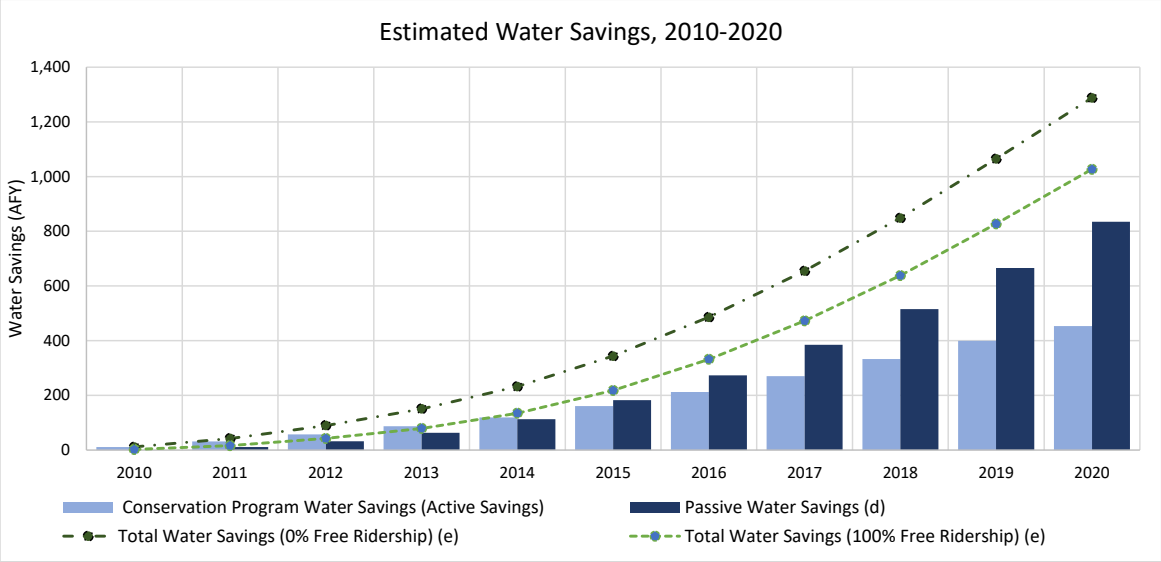
(c) ZunZun Assembly was provided as distance learning in 2019-2020.

Source

SMSWP, 2020. Water Conservation School Education Participation 2015 - 2020, provided by SMSWP on 8 June 2020.

Table 5-4
Estimated Water Savings Achieved by Conservation Programs and Passive Savings
Town of Windsor, Sonoma-Marin Saving Water Partnership

Water Savings Type	End Use		Estimated Cumulative Water Savings (AFY) (b)										
	Sector (a)	Indoor/ Outdoor	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Conservation Programs (Active Water Savings)													
HET Rebate Program	SFR	Indoor	3	8	15	23	30	37	44	51	58	65	72
HECW Rebate Program	SFR	Indoor	5	13	24	36	49	63	76	88	100	112	123
Landscape Rebate Program (c)	SFR	Outdoor	4	10	18	29	40	54	68	84	99	115	127
Sheet Mulch/Lawn Transformation/Model Site Tracker Program (c)	SFR, CII	Outdoor											
Water Waste Tag Program	SFR	Both	0	0	0	0	0	0	7	20	40	64	84
Water Survey Program	SFR	Both	0	0	0	0	0	7	17	27	36	43	48
Conservation Program Water Savings (Active Savings)			*11*	*31*	*58*	*87*	*119*	*161*	*212*	*271*	*333*	*399*	*453*
Passive Water Savings (d)			*0*	*11*	*32*	*63*	*113*	*183*	*273*	*384*	*515*	*666*	*835*
Total Water Savings (100% Free Ridership) (e)			**2**	**16**	**43**	**79**	**135**	**218**	**332**	**473**	**638**	**827**	**1,027**
Total Water Savings (0% Free Ridership) (e)			**11**	**42**	**90**	**151**	**232**	**343**	**486**	**655**	**848**	**1,065**	**1,288**



Abbreviations

CII = Commercial, Industrial, Institutional
HECW = High Efficiency Clothes Washer
HET = High Efficiency Toilet
SFR = Single-family residential

Notes

(a) Predominant sector for program participants.
(b) Water savings are estimated per the AWE model.
(c) The estimated water savings of the landscape rebate program and sheet mulch/lawn transformation/model site tracker program are combined for purposes of this assessment.
(d) Passive water savings are water savings associated with the natural change out of water using fixtures and devices with higher efficiency ones, due to plumbing code and market changes. Passive savings are estimated for the whole service area.
(e) Free ridership refers to customers who participate in a conservation program, but who would have taken the water saving action (e.g., replace a toilet) regardless of whether the conservation program incentive was available. The amount of free ridership is unknown, and thus a range is shown. Free ridership is applied to device and turf replacement programs only.

Sources

1. Town of Windsor, 2020. Program Participation Data, provided by Town of Windsor on 14 May 2020.

6. CONSERVATION PROGRAM UPDATE

The following section evaluates current and potential conservation programs for both the Town and the SMSWP. The purpose of this section is to compile programs that are prioritized by both the Town and by all Water Contractors in the SMSWP collectively in order to calculate the potential water savings and economic feasibility of those programs. Section 6.1 discusses the methodology used to prioritize conservation programs. Section 6.2 describes the programs given high priority for implementation by all nine Water Contractors collectively, and Section 6.3 describes programs given high priority by the Town. Section 6.4 analyzes the potential water savings and cost-benefit for those programs selected by the Town as both individual programs and in three implementation scenarios. By assessing the feasibility of these programs, the Town can make more informed decisions regarding program selection and implementation.

6.1. Methodology for Screening of Potential Water Conservation Programs

In order to evaluate the potential for new conservation programs, a comprehensive list of over 100 conservation programs was developed (**Appendix C**). Each of the nine Water Contractors were first asked to review and identify any additional programs to add to this list. Following receipt of feedback from the Water Contractors, each Water Contractor was asked to review the list and identify:

- Priority (on a scale of 1 to 5, with 5 being the highest priority) as a program to be implemented regionally through the SMSWP;
- Priority (on a scale of 1 to 5, with 5 being the highest priority) as a program to be implemented locally through their agency;
- Preference for the program to be implemented either regionally or locally; and
- Whether each program is currently or has previously been implemented by their agency.

The list of water conservation programs is organized into four categories, specifically: (1) agency actions and water rates, (2) public outreach and education, (3) device-based and financial incentive programs, and (4) policies and regulations. The results of the water conservation program prioritization and screening are summarized for all Water Contractors combined, representing overall regional priorities and preferences (**Table 6-1**), and for each individual Water Contractor, representing each agencies local priorities and preferences. **Table 6-1** shows the average prioritization ranking for all Water Contractors for each program for regional and local implementation as well as the percentage of Water Contractors that prefer each program to be implemented at the local level or the regional level.[13] The results presented in **Table 6-1** are discussed below for each water conservation program category. **Table 6-2** provides the results of this screening for the Town of Windsor, including priorities and preferences for each water conservation program, and identifies the target sector, whether the program addresses indoor or outdoor water use, and the primary end use.

[13] Water Contractors were asked to provide a preference for local or regional implementation for all programs they ranked a priority score of 3 or above. Thus, the percentages of Water Contractors shown in **Table 6-1** does not sum to 100%.

6.2. Screening of Regional Conservation Measures

6.2.1. Agency Actions and Water Rate Based Conservation Programs

Of the 15 agency action and water rate based conservation programs included in the screening list, the Water Contractors identified the following eleven programs as high priority (average score of three or higher) to implement at the local level:

1. Install Advanced Metering Infrastructure (AMI) for High Water Users and Large Landscape Accounts
2. Install AMI in New Development
3. Customer Water Loss Reduction (AMI Leak Detection)
4. Install AMI for Existing Accounts
5. Tiered Water Rates (Conservation Pricing)
6. Water Budgeting/Monitoring for Large Landscape Accounts
7. Water Budget Based Billing for Only Irrigation Customers
8. Modification to or Implementation of Tiered Rate Conservation Pricing
9. Establish Separate Pricing Structure for Irrigation Accounts
10. Rate Structure Evaluation
11. Increase Enforcement of State Water Waste Regulations

By their nature as water retailer actions, these programs do not lend themselves to regional implementation. However, in some cases, such as the "Increase Enforcement of State Water Waste Regulations" program, there may be an opportunity to coordinate across the region at a policy or education level. For example, SB-407[14] requires older plumbing fixtures to be replaced with new, more efficient fixtures that meet current water efficiency standards; this requirement is supposed to be enforced at time of sale. If this or similar policies are being enforced differently across Water Contractor jurisdictions, it could result in confusion among customers. Thus, even for agency action-based programs, there may be opportunity for the Water Contractors to coordinate these efforts and share staff education resources.

6.2.2. Public Outreach and Education Based Conservation Programs

Of the 11 public outreach and education-based water conservation programs included in the screening, the Water Contractors identified the following six programs as high priority (average score of three or higher), with a preference for regional implementation through SMSWP:

1. QWEL Training
2. Public Outreach through Print & Electronic Media – Focused on Outdoor Irrigation
3. Educational Workshops
4. School Education Programs
5. Public Outreach through Print & Electronic Media – Focused on Indoor Conservation
6. Garden tour

[14] SB 407: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200920100SB407

All of these programs are currently being implemented by the SMWSP. In addition to these programs, the Water Contractors also indicated that water use surveys or audits for single-family residential and CII customers were a high priority; however, the Water Contractors generally expressed a preference for these programs to be implemented locally.

6.2.3. Device and Financial Incentive Based Conservation Programs

Of the 61 device- and financial incentive- based water conservation programs included in the screening list, the Water Contractors identified the following 11 programs as high priority (average score of three or higher) to implement at either the regional or local level:

1. Landscape Conversion or Turf Removal – MFR and CII
2. Landscape Conversion or Turf Removal – SFR
3. High Efficiency Faucet Aerator / Showerhead Giveaway – Residential Customers
4. Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates – Large Landscape
5. Drip Irrigation Incentive for SFR
6. High Efficiency Faucet Aerator / Showerhead Giveaway – CII Customers
7. Drip Irrigation Incentive for MFR and CII
8. High Efficiency Clothes Washer Rebate – Residential
9. Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates – SFR
10. Restaurant Spray Nozzle Rebates
11. Incentivize Irrigation Equipment Upgrades – SFR

The above list includes four programs that focus on indoor water use ("High Efficiency Faucet Aerator / Showerhead Giveaway – Residential Customers", "High Efficiency Faucet Aerator / Showerhead Giveaway – CII Customers", "High Efficiency Clothes Washer Rebate – Residential," and "Restaurant Spray Nozzle Rebates"). The remaining preferred programs all focus on outdoor water use, including turf removal and methods to increase irrigation efficiency.

Of these preferred programs, the Water Contractors expressed a preference for two of the programs to be administered at a regional level rather than local level, specifically the "High Efficiency Clothes Washer Rebate – Residential" and the "Restaurant Spray Nozzle Rebates".

6.2.4. Policy and Regulation Based Conservation Programs

Of the 29 policy- and regulation- based water conservation programs included in the screening list, the Water Contractors identified the following six programs as high priority (average score of three or higher) to implement at the local level:

1. Water Waste Ordinance
2. Require Submetering of Landscaping for New MFR and Commercial Developments
3. Require Water Efficiency Plan Reviews for New CII Development
4. Require High Efficiency Clothes Washers in New Development
5. Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development
6. Demand Offset/Water Neutral Policy for Large New Developments

Nearly all of the highest priority programs focus on ensuring efficiency in new developments, and target both indoor and outdoor water use. The Water Contractors expressed that the program "Require Irrigation Designers / Installers be Certified (QWEL)" is a high priority at the local level but were split equally as to whether they would prefer this program to be implemented at a local or regional level. Further, given the shift in state policy regarding recycled water use (i.e., that non-potable use of recycled water use will no longer be counted towards water conservation), some Water Contractors were conflicted as to how recycled water should be considered in policies regarding new development, in particular with respect to the program "Demand Offset/Water Neutral Policy for Large New Development."

6.2.5. Regional Program Screening Findings

With some exceptions, the Water Contractors expressed a strong preference for water conservation programs to be implemented locally rather than regionally through the SMSWP, with the exception of programs that are already implemented regionally by the SMSWP. However, as listed above, there was general consensus among Water Contractors about which water conservation programs are a high priority, and thus important for the region. Given this consensus, while there is not an apparent desire to implement programs regionally, there may be opportunity for further coordination and collaboration on these programs, such as sharing of educational resources, training of staff (e.g., building permit and plan review staff), and collaboration on creating similar program structure and requirements (such as for financial incentive-based programs) across the region.

6.3. Screening of Local Conservation Measures

Table 6-2 shows the results of this screening for the Town of Windsor, and lists the programs considered by the Town to be medium or high priority to consider for the future. **Table 6-2** also identifies the target sector, whether the program addresses indoor or outdoor water use, and the primary targeted end use.

- **Agency Actions and Water Rate Based Conservation Programs.** Eleven agency action and water rate based conservation programs were identified for potential future implementation. Of these, five are existing programs or actions currently implemented by the Town, and six are potential new programs for consideration. The high priority programs preferred by the Town target a mix of indoor and outdoor water use. The potential new programs identified are as follows, in general order of priority:
    - Install AMI for High Water Users and Large Landscape Accounts
    - Water Budget Based Billing for Only Irrigation Customers
    - Water Budgeting/Monitoring for Large Landscape Accounts
    - Install AMI in New Development
    - Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement
    - Water Budget Based Billing for All Customers
- **Public Outreach and Education Based Conservation Programs.** The Town ranked eight public outreach and education-based water conservation programs as medium to high priority for potential future implementation, two of which are not currently implemented by the Town (i.e., "Provide Support with Smart Irrigation Controller Setup" and "School Education Programs").

Of these programs, two target indoor water use, three target outdoor water use, and three target both. The Town indicated that both potential new programs be implemented at the regional level**.** The SMWSP currently implements a variety of public education and outreach programs that are available to school age children, adults, and landscape professionals.

- **Device and Financial Incentive Based Conservation Programs.** Thirty-four device and financial incentive based programs were ranked as medium to high priority for potential future implementation, including ten that would target indoor water use, twenty that would target outdoor water use, and four that would target both. Some of these programs are currently implemented by the Town in various forms. The potential new high priority programs identified are as follows:

    - Incentivize Artificial Turf for Sports Fields
    - Incentivize Gray Water Systems for New CII Development
    - Incentivize Submetering for Existing Customers - CII
    - Incentivize Submetering for Existing Customers - MFR
    - Rain Barrel Rebate
    - Rain Sensor Rebate
    - Rainwater Catchment System Rebate for Large Landscapes
    - Rotating Sprinkler Nozzle Giveaway
    - Rotating Sprinkler Nozzle Rebate
    - Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape
    - Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR
    - Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape
    - Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SFR
    - Soil Moisture Sensor Giveaway
    - Soil Moisture Sensor Rebate
    - Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates
    - Toilet Flapper Giveaway - SFR customers

- **Policy and Regulation Based Conservation Programs.** Twenty-one policy and regulation based programs were identified as highest priority for potential future implementation, fifteen of which would be new programs for the Town. Nine of these programs would target indoor water use, six would target outdoor water use, and two would target both. The following potential new programs given high priority are as follows:

    - Require Efficient (EnergyStar) Dishwashers in New Development
    - Require High Efficiency Clothes Washers in New Development
    - Require Hot Water on Demand / Structured Plumbing in New Residential Development
    - Require Irrigation Designers / Installers be Certified (QWEL)
    - Require Submetering by Unit for Existing Commercial Customers
    - Require Submetering of Landscaping for Existing MFR and Commercial Customers
    - Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development

6.4. Evaluation of Future Water Conservation Programs

Based on the conservation screening process described in Sections 6.2 and 6.3 above, a suite of conservation programs to be considered for future implementation were evaluated. These programs were evaluated both individually and as components in three water conservation program scenarios, as shown in **Table 6-3a**. The three program scenarios represent three potential approaches or strategies for the Town's future conservation programs, specifically:

- **Scenario A** represents a focus on programs that target outdoor water savings,
- **Scenario B** represents a more "business as usual" approach based on programs ranked most highly by the Town, and
- **Scenario C** represents a focus on the programs that all nine Water Contractors collectively identified as highest priority.

Table 6-3a also identifies the customer sectors each program would target as well as whether the program focuses on indoor or outdoor water use, or both.

The benefits and costs associated with implementation of these programs were evaluated using the AWE model, using a series of assumptions documented in **Appendix B**.[15] Key assumptions and considerations related to the methodology used by the AWE model and in this analysis are provided below:

- Financial assumptions related to both costs to the utility and customer water rates were provided by the Town.
- Financial assumptions related to energy costs to the customer were assumed based on typical PG&E rates (PG&E, 2020; PG&E and Sonoma Clean Power, 2020).
- Water savings assumptions were based on a combination of AWE model default assumptions, assumptions developed for the Town as a part of the 2015 UWMP, and water savings factors developed based on other published literature sources.
- Assumed rate of program implementation was based on historical participation levels by Town customers in similar programs.
- For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2021 through 2025; water savings projections beyond this period reflect cumulative savings achieved over time from implementation during this five-year period.
- Benefit-costs ratios are particularly sensitive to the assumed nominal rate of increase of the utility water cost.
- Lost revenue due to reduced water sales is not included as a cost.
- Additional program-specific considerations are provided as notes in the attached tables.

Table 6-3b presents a comparison of individual water conservation measures, and identifies the following information for each program:

[15] Alliance for Water Efficiency, Water Conservation Tracking Tool Version 3, released in July 2016.

- **Net present value of costs and benefits** – represents the present value over the 25-year period discounted to current 2020 dollars.
- **Benefit to cost ratio** – calculated as present value of costs divided by the present value of benefits.
- **Water Utility Costs** – costs that the Town as a water utility will incur to operate the program including administrative costs.
- **Customer Costs** – costs customers will incur to implement a program in the Water Contractor's service area.
- **Utility Benefits** – the avoided cost to the Town to produce the volume of water saved.
- **Customer Benefits** – the savings from reduced water/sewer utility bills and energy savings resulting from reduced use of hot water.
- **Total Water Utility Costs** – includes costs to the Town for program implementation from 2021-2025.
- **Water Savings in 2025** – one-year estimated water savings in 2025.
- **Water Utility Cost of Water Saved for individual programs** – cost of water saved dividing by the lifetime water savings of that program.
- **Water Utility Cost of Water Saved for program scenarios** – weighted average of Water Utility Cost of Water Saved for the individual programs by the cumulative water savings through 2045.

This analysis estimates active program savings based on the AWE model, and does not include additional savings anticipated from passive savings (i.e., water savings associated with the natural replacement of less efficient water using fixtures and appliances due to both market shifts and increasing efficiency mandated by the building code and other regulatory requirements). Based on this analysis, and the assumptions presented in **Appendix B**, the benefit-cost ratios for the Town range from 0.34 to 23.

Table 6-3c presents the results of the analysis of the three conservation program scenarios identified in **Table 6-3a**, and includes a summary of costs and benefits to the Town and customers, estimated cumulative water savings through 2045 (based on assumed program implementation from 2021-2025), and the estimated cost of water saved to the Town. Based on this, the approach of focusing water conservation measures on those ranked highest by the Town (i.e., Scenario B) has a greater benefit to cost ratio than that of Scenarios A or C. The projected water savings associated with implementation of Scenario B is 394 AF by 2025 and 2,491 by 2045, at a cost of approximately $663/AF.

Table 6-1
Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program	
	Regional	Local	Regional Program	Local Program		
AGENCY ACTIONS AND WATER RATES						
Install AMI for High Water Users and Large Landscape Accounts	2.5	4.7	11%	67%	No	✗
Install AMI in New Development	2.4	4.7	0%	67%	No	✗
Customer Water Loss Reduction (AMI Leak Detection)	2.4	4.4	0%	89%	No	✗
Install AMI for Existing Accounts	2.4	4.0	0%	86%	No	✗
Tiered Water Rates (Conservation Pricing)	2.0	3.6	0%	88%	No	✗
Water Budgeting/Monitoring for Large Landscape Accounts	2.5	3.4	0%	83%	No	✗
Water Budget Based Billing for Only Irrigation Customers	2.1	3.4	0%	86%	No	✗
Modification to or Implementation of Tiered Rate Conservation Pricing	2.0	3.4	0%	88%	No	✗
Establish Separate Pricing Structure for Irrigation Accounts	2.0	3.2	0%	83%	No	✗
Rate Structure Evaluation	2.4	3.1	0%	78%	No	✗
Increase Enforcement of State Water Waste Regulations	2.6	3.0	0%	86%	No	✗
Water Budget Based Billing for All Customers	2.3	2.4	0%	50%	No	✗
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	1.9	2.2	17%	67%	No	✗
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement	1.6	1.9	0%	40%	No	✗
Regional UHET and/or Urinal Bulk Purchase Program	1.9	1.7	75%	0%	No	✗
Average by Program Type	2.2	3.3				
PUBLIC OUTREACH AND EDUCATION						
QWEL Training (Qualified Water Efficient Landscaper)	4.3	2.0	89%	0%	Yes	✓
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	4.0	3.9	67%	0%	Yes	✓
Educational Workshops	4.0	3.2	63%	0%	Yes	✓
School Education Programs	4.0	3.1	78%	0%	Yes	✓

Table 6-1
Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program	
	Regional	Local	Regional Program	Local Program		
Water Use Surveys/Audits - SFR	3.5	3.9	22%	44%	No	✗
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	3.6	3.3	57%	0%	Yes	✓
Garden tour	3.6	1.9	86%	0%	Yes	✓
Water Use Surveys/Audits - CII	3.0	3.4	38%	38%	No	✗
Water Use Surveys/Audits - MFR	2.8	3.3	29%	43%	No	✗
Promote Green Building and Certification	3.1	2.2	33%	17%	No	✗
Provide Support with Smart Irrigation Controller Setup	2.9	2.3	60%	0%	No	✗
Average by Program Type	3.5	3.0				
DEVICE-BASED AND FINANCIAL INCENTIVE PROGRAMS						
Landscape Conversion or Turf Removal - MFR and CII	3.9	4.6	11%	78%	No	✗
Landscape Conversion or Turf Removal -SFR	3.9	4.6	22%	67%	No	✗
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	3.0	3.9	11%	44%	No	✗
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	3.1	3.6	38%	38%	No	✗
Drip Irrigation Incentive for SFR	2.4	3.6	25%	50%	No	✗
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	2.9	3.4	14%	57%	No	✗
Drip Irrigation Incentive for MFR and CII	2.4	3.4	25%	50%	No	✗
High Efficiency Clothes Washer Rebate - Residential	3.3	3.3	44%	11%	Yes	✓
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SFR	2.9	3.2	14%	57%	No	✗
Restaurant Spray Nozzle Rebates	3.1	2.8	50%	0%	No	✗
Incentivize Irrigation Equipment Upgrades - SFR	2.1	3.0	17%	50%	No	✗
Indoor Fixture Program For Schools	2.9	2.9	14%	71%	No	✗
Rotating Sprinkler Nozzle Rebate	2.9	2.9	40%	20%	No	✗

Table 6-1
Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program	
	Regional	Local	Regional Program	Local Program		
High Efficiency Clothes Washer Rebate Program - CII	2.8	2.8	29%	29%	No	✗
Direct Install of Efficient Indoor Fixtures - Low Income Residential	2.8	2.6	60%	0%	No	✗
Indoor Fixture Program For Hotels & Motels	2.8	2.2	29%	43%	No	✗
Mulch rebate	2.6	2.7	33%	50%	No	✗
Rain Sensor Rebate	2.5	2.6	33%	50%	No	✗
Incentivize Submetering for Existing Customers - CII	2.4	2.6	25%	25%	No	✗
Incentivize Submetering for Existing Customers - MFR	2.4	2.6	25%	25%	No	✗
Incentivize Gray Water Retrofit for Existing SFR Customers	2.3	2.6	20%	60%	No	✗
Toilet Flapper Giveaway - SFR customers	2.1	2.6	40%	40%	No	✗
Rotating Sprinkler Nozzle Giveaway	2.5	2.1	60%	0%	No	✗
Incentivize Replacement of Inefficient Commercial and Industrial Equipment	2.4	2.4	33%	33%	No	✗
Soil Moisture Sensor Rebate	2.4	2.4	60%	20%	No	✗
High Efficiency Urinal (<0.25 gal/flush) Rebates - CII	2.4	2.4	25%	0%	No	✗
Incentivize Gray Water Systems for New CII Development	2.3	2.4	50%	25%	No	✗
Incentivize Irrigation Equipment Upgrades - Large Landscapes	1.9	2.4	20%	40%	No	✗
Direct Install of Efficient Indoor Fixtures - Residential	2.4	2.2	50%	0%	No	✗
High Efficiency Clothes Washer Install - Low Income Residential Customers	2.4	2.2	50%	0%	No	✗
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	2.4	2.0	80%	0%	No	✗
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	2.4	2.0	60%	20%	No	✗
Incentivize Artificial Turf for Sports Fields	2.3	2.3	75%	0%	No	✗
UHET <1.0 gal/flush Rebate - Residential	2.1	2.3	50%	17%	No	✗
Water Savings Incentive Program for CII	2.1	2.2	40%	40%	No	✗

Table 6-1
Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program	
	Regional	Local	Regional Program	Local Program		
Hot Water on Demand Pump System Rebate	2.0	2.2	60%	20%	No	✗
UHET Direct Installation - CII	2.1	1.8	40%	0%	No	✗
Plumber Initiated UHET and / or Urinal Retrofit Program	2.1	1.8	67%	0%	No	✗
Direct Install of Efficient Indoor Fixtures - Government Buildings	2.1	1.6	50%	0%	No	✗
Rain Barrel Rebate	1.9	2.1	40%	40%	No	✗
Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs	2.0	2.0	33%	33%	No	✗
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	2.0	1.9	50%	0%	No	✗
Dipper Well Rebates	2.0	1.8	50%	0%	No	✗
Rain Sensor Giveaway	2.0	1.7	75%	0%	No	✗
Rebates for Conductivity Controllers on Cooling Towers	2.0	1.6	75%	0%	No	✗
Rainwater Catchment System Rebate for Large Landscapes	1.9	2.0	50%	25%	No	✗
Nonresidential Incentive for Self-closing or Metering Faucets	1.9	1.9	33%	33%	No	✗
Efficient (EnergyStar) Dishwasher Rebates	1.9	1.8	50%	0%	No	✗
Rain Barrel Giveaway	1.9	1.7	75%	0%	No	✗
UHET Direct Installation - Residential	1.9	1.7	50%	0%	No	✗
Autoclave (Steam-Sterilizer) Retrofit Rebates	1.9	1.7	67%	0%	No	✗
Connectionless Food Steamer Rebates	1.9	1.7	67%	0%	No	✗
Dry Vacuum Pumps	1.9	1.6	33%	0%	No	✗
Incentivize Cooling Tower Upgrades	1.9	1.6	50%	0%	No	✗
UHET <1.0 gal/flush Rebate - CII	1.8	1.8	60%	20%	No	✗
Soil Moisture Sensor Giveaway	1.8	1.7	67%	0%	No	✗
Direct Install of Efficient Indoor Fixtures - Commercial and Industrial	1.8	1.7	67%	0%	No	✗

Table 6-1
Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program	
	Regional	Local	Regional Program	Local Program		
Swimming Pool and Hot Tub Cover Rebates	1.3	1.7	50%	25%	No	✗
Urinal Direct Installation - CII	1.5	1.4	50%	0%	No	✗
Tier 4 Exemption	1.3	1.4	25%	25%	No	✗
Incentivize Submetering of Cooling Towers for Existing Customers	1.3	1.4	50%	0%	No	✗
Average by Program Type	2.3	2.3				
POLICIES AND REGULATIONS						
Water Waste Ordinance	2.9	4.3	0%	63%	No	✗
Require Submetering of Landscaping for New MFR and Commercial Developments	2.8	4.0	0%	63%	No	✗
Require Water Efficiency Plan Reviews for New CII Development	2.5	3.7	14%	57%	No	✗
Require High Efficiency Clothes Washers in New Development	2.8	3.3	17%	67%	No	✗
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	2.4	3.1	0%	80%	No	✗
Require Irrigation Designers / Installers be Certified (QWEL)	3.0	2.9	40%	40%	No	✗
Demand Offset/Water Neutral Policy for Large New Developments	2.4	3.0	0%	83%	No	✗
Require Efficient (EnergyStar) Dishwashers in New Development	2.8	2.9	20%	60%	No	✗
Require <0.25 gal/flush Urinals in New Development	2.3	2.8	0%	67%	No	✗
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	1.6	2.8	0%	67%	No	✗
Require Swimming Pool and Hot Tub Covers	2.0	2.7	40%	20%	No	✗
Require Submetering by Unit for New Commercial Developments	2.3	2.6	0%	50%	No	✗
Require Submetering of Landscaping for Existing MFR and Commercial Customers	2.4	2.4	0%	67%	No	✗
Require Hot Water on Demand / Structured Plumbing in New Residential Development	2.3	2.4	25%	50%	No	✗
Require Submetering by Unit for Existing Commercial Customers	2.1	2.4	0%	25%	No	✗

Table 6-1
Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program	
	Regional	Local	Regional Program	Local Program		
Require Submetering for New MFR Developments	1.9	2.4	0%	50%	No	✗
Require Plumbing for Recycled Water in New MFR Development	2.0	2.3	0%	60%	No	✗
Require <1.0 gal/flush Toilets in New Development	2.0	2.3	0%	80%	No	✗
Require Submetering for New Mobile Home Park Developments	2.0	2.3	0%	40%	No	✗
Prohibit Once through Cooling Systems	2.0	2.2	0%	50%	No	✗
Require Plumbing for Recycled Water in New CII Development	1.9	2.2	0%	60%	No	✗
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII Developments	1.8	2.1	25%	50%	No	✗
Require Plumbing for Gray Water in New SFR Development	1.6	2.1	0%	75%	No	✗
Require Submetering of Cooling Towers for New Development	2.0	1.9	0%	33%	No	✗
Require Submetering of Existing MFR (and Mobile Home Park) Customers	1.9	1.9	0%	50%	No	✗
Restrict Landscape Irrigation to Designated Days/Times	1.6	1.8	33%	0%	No	✗
Require Rain Barrels in New Development	1.5	1.8	0%	67%	No	✗
Require Submetering of Cooling Towers for Existing Customers	1.8	1.6	0%	50%	No	✗
Require Cooling Tower Retrofits	1.5	1.4	0%	33%	No	✗
Average by Program Type	2.1	2.5				

Table 6-1
Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Abbreviations:

AMI = advanced metering infrastructure
CII = commercial, industrial, institutional
MFR = multi-family residential
MWELO = Model Water Efficient Landscape Ordinance
PRV = pressure reducing valve
SFR = single-family residential
SMSWP = Sonoma-Marin Saving Water Partnership
UHET = ultra high efficiency toilet

Notes:

(a) Each Water Contractor was asked to rank each conservation program or measure in terms of priority as a regionally-administered program, and as a locally-administered program, where 5 indicated highest priority and 1 indicated the lowest priority. Results are presented as an average of the responses of all nine Water Contractors.

(b) For each program a Water Contractor ranked as "3" or above, the Water Contractor was asked to indicate whether they would prefer the program to be administered regionally or locally. The results are presented as a percentage of the number of Water Contractors. Results of contractors who expressed "no preference" are not shown, and thus the total may not sum to 100% for a given measure.

Table 6-2
Prioritization of Conservation Measures and Programs
Town of Windsor, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Preference (b)	Local Program
AGENCY ACTIONS AND WATER RATES							
Customer Water Loss Reduction (AMI Leak Detection)	5	All	X	X	Water Loss	Locally	Yes, currently
Increase Enforcement of State Water Waste Regulations	5	All		X	Irrigation	Locally	Yes, currently
Install AMI for High Water Users and Large Landscape Accounts	5	All		X	Water Loss	Regionally	No
Modification to or Implementation of Tiered Rate Conservation Pricing	5	All	X	X	All	Locally	Yes, currently
Rate Structure Evaluation	5	All	X	X	All	Locally	Yes, previously
Tiered Water Rates (Conservation Pricing)	5	All	X	X	All	Locally	Yes, currently
Water Budget Based Billing for Only Irrigation Customers	5	CII, IRR		X	Irrigation	Locally	No
Water Budgeting/Monitoring for Large Landscape Accounts	5	IRR	X	X	Irrigation	Locally	No
Install AMI in New Development	4	All	X	X	Water Loss	Locally	No
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement	3	All	X	X	Water loss; Irrigation	No preference	No
Water Budget Based Billing for All Customers	3	All	X	X	All	No preference	No
PUBLIC OUTREACH AND EDUCATION							
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	5	All		X	All Indoor	No preference	Yes, currently
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	5	All	X		Irrigation	No preference	Yes, currently
Water Use Surveys/Audits - CII	5	CII	X	X	All	Locally	Yes, currently
Educational Workshops	4	SFR		X	All Outdoor	No preference	Yes, currently
Provide Support with Smart Irrigation Controller Setup	4	All		X	Irrigation	Regionally	No
School Education Programs	4	SFR, MFR	X	X	All	Regionally	No
Water Use Surveys/Audits - SFR	4	SFR	X	X	All	Locally	Yes, currently
Water Use Surveys/Audits - MFR	3	MFR	X		All Indoor	Locally	Yes, currently
DEVICE-BASED AND FINANCIAL INCENTIVE PROGRAMS							
Direct Install of Efficient Indoor Fixtures - Low Income Residential	5	SFR, MFR	X		Toilet, Faucet, Showerhead	No preference	Yes, previously
Drip Irrigation Incentive for MFR and CII	5	MFR, CII		X	Irrigation	Locally	Yes, currently
Drip Irrigation Incentive for SFR	5	SFR		X	Irrigation	Locally	Yes, currently

Table 6-2
Prioritization of Conservation Measures and Programs
Town of Windsor, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Preference (b)	Local Program
Incentivize Artificial Turf for Sports Fields	5	CII		X	Irrigation	Regionally	No
Incentivize Gray Water Retrofit for Existing SFR Customers	5	SFR		X	Irrigation / Gray Water	Locally	Yes, currently
Incentivize Gray Water Systems for New CII Development	5	CII	X	X	Irrigation / Gray Water	Regionally	No
Incentivize Submetering for Existing Customers - CII	5	MFR, COM, IRR	X	X	All Indoor	No preference	No
Incentivize Submetering for Existing Customers - MFR	5	MFR	X	X	All Indoor	No preference	No
Landscape Conversion or Turf Removal - MFR and CII	5	MFR, CII		X	Irrigation	Locally	Yes, currently
Landscape Conversion or Turf Removal -SFR	5	SFR		X	Irrigation	Locally	Yes, currently
Rain Barrel Rebate	5	SFR		X	Irrigation	Regionally	No
Rain Sensor Rebate	5	All		X	Irrigation	Regionally	No
Rainwater Catchment System Rebate for Large Landscapes	5	MFR, CII		X	Irrigation	Regionally	No
Restaurant Spray Nozzle Rebates	5	CII	X		CII Equipment	No preference	Yes, previously
Rotating Sprinkler Nozzle Giveaway	5	All		X	Irrigation	Regionally	No
Rotating Sprinkler Nozzle Rebate	5	All		X	Irrigation	Regionally	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	5	MFR, CII		X	Irrigation	Regionally	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	5	SFR		X	Irrigation	Regionally	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	5	MFR, CII		X	Irrigation	Regionally	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SFR	5	SFR		X	Irrigation	Locally	No
Soil Moisture Sensor Giveaway	5	All		X	Irrigation	Regionally	No
Soil Moisture Sensor Rebate	5	All		X	Irrigation	Regionally	No
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	5	SFR, MFR, CII	X		Shower	Regionally	No
Toilet Flapper Giveaway - SFR customers	5	SFR, MFR	X		Toilet	Regionally	No
Indoor Fixture Program For Schools	4	CII	X		All Indoor	Locally	Yes, currently
Rain Barrel Giveaway	4	SFR		X	Irrigation	Regionally	No
Rain Sensor Giveaway	4	All		X	Irrigation	Regionally	No
Dipper Well Rebates	3	CII	X		CII Equipment	No preference	No

Table 6-2
Prioritization of Conservation Measures and Programs
Town of Windsor, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Preference (b)	Local Program
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	3	CII	X		Faucet, Showerhead	Locally	Yes, currently
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	3	SFR, MFR	X		Faucet, Showerhead	Locally	Yes, currently
Hot Water on Demand Pump System Rebate	3	SFR, MFR	X		Hot Water	Regionally	No
Mulch rebate	3	SFR		X	Irrigation	Locally	Yes, currently
Tier 4 Exemption	3	SFR	X	X	toilet, Faucet, Showerhead, clothes washer, irrigation	No preference	No
UHET Direct Installation - CII	3	CII	X		Toilet	No preference	No
POLICIES AND REGULATIONS							
Demand Offset/Water Neutral Policy for Large New Developments	5	All	X	X	All	Locally	Yes, currently
Require Efficient (EnergyStar) Dishwashers in New Development	5	SFR, MFR	X		Dishwashers	Regionally	No
Require High Efficiency Clothes Washers in New Development	5	SFR, MFR	X		Clothes Washer	Regionally	No
Require Hot Water on Demand / Structured Plumbing in New Residential Development	5	SFR, MFR	X		Shower/Sink	Regionally	No
Require Irrigation Designers / Installers be Certified (QWEL)	5	All		X	Irrigation	Regionally	No
Require Plumbing for Recycled Water in New MFR Development	5	MFR		X	Irrigation / Recycled Water	Locally	Yes, currently
Require Submetering by Unit for Existing Commercial Customers	5	CII	X		All Indoor	No preference	No
Require Submetering by Unit for New Commercial Developments	5	CII	X		All Indoor	Locally	Yes, currently
Require Submetering of Landscaping for Existing MFR and Commercial Customers	5	MFR, CII		X	Irrigation	Locally	No
Require Submetering of Landscaping for New MFR and Commercial Developments	5	CII		X	Irrigation	Locally	Yes, currently
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	5	All		X	Irrigation	Locally	No
Water Waste Ordinance	5	All		X	All Outdoor	Locally	Yes, currently
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII Developments	4	CII		X	Irrigation / Recycled Water	Regionally	No
Require Plumbing for Recycled Water in New CII Development	4	CII		X	Irrigation / Recycled Water	Locally	Yes, currently
Require Swimming Pool and Hot Tub Covers	4	SFR, MFR		X	Pool/Hot Tub	Regionally	No
Require <0.25 gal/flush Urinals in New Development	3	CII	X		Urinal	No preference	No

Table 6-2
Prioritization of Conservation Measures and Programs
Town of Windsor, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Preference (b)	Local Program
Require Plumbing for Gray Water in New SFR Development	3	SFR		X	Irrigation / Gray Water	Locally	No
Require Submetering for New Mobile Home Park Developments	3	MFR	X		All Indoor	No preference	No
Require Submetering of Cooling Towers for New Development	3	CII	X		Cooling Towers	No preference	No
Require Water Efficiency Plan Reviews for New CII Development	3	CII	X	X	All Indoor	Regionally	No
Restrict Landscape Irrigation to Designated Days/Times	3	All		X	Irrigation	No preference	No

Abbreviations:
AMI = advanced metering infrastructure
CII = commercial, industrial, institutional
COM = commercial
IRR = irrigation account
MFR = multi-family residential
MWELO = Model Water Efficient Landscape Ordinance
PRV = pressure reducing valve
SFR = single-family residential
SMSWP = Sonoma-Marin Saving Water Partnership
UHET = ultra high efficiency toilet

Notes:
(a) Each Water Contractor was asked to rank each conservation program or measure in terms of priority as a locally-administered program, where 5 indicated highest priority and 1 indicated the lowest priority.

(b) For each program a Water Contractor ranked as "3" or above, the Water Contractor was asked to indicate whether they would prefer the program to be administered regionally or locally. N/A indicates no preference given for programs given a ranking lower than three for both local and regional priority.

Table 6-3a
Conservation Program Scenarios
Town of Windsor, Sonoma-Marin Saving Water Partnership

Program	Sector	Indoor/ Outdoor	Program Scenario (a)		
			A) Outdoor Programs	B) Highly-Ranked Local Programs	C) Highly-Ranked Regional Programs
Direct Install of Efficient Indoor Fixtures - Low Income Residential	SFR, MFR	Indoor		X	
Drip Irrigation Incentive for MFR and CII	MFR, CII	Outdoor	X	X	
Drip Irrigation Incentive for SFR	SFR	Outdoor	X	X	
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	SFR, MFR	Indoor			X
Incentivize Gray Water Retrofit for Existing SFR Customers	SFR	Outdoor	X	X	
Landscape Conversion or Turf Removal - MFR and CII	MFR, CII	Outdoor	X	X	X
Landscape Conversion or Turf Removal -SFR	SFR	Outdoor	X	X	X
Rain Sensor Rebate	All	Outdoor	X	X	
Restaurant Spray Nozzle Rebates	CII	Indoor			X
Rotating Sprinkler Nozzle Rebate	All	Outdoor	X	X	
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	MFR, CII	Outdoor			X
Water Use Surveys/Audits - CII	CII	Both	X		X
Water Use Surveys/Audits - SFR	SFR	Both			X

Abbreviations

CII = Commercial, Industrial, and Institutional
MFR = multi-family residential
SFR = Single-family residential

Notes

(a) Program scenarios represent three potential approaches to program selection. Scenario A represents a focus on outdoor water savings, Scenario B represents a more "business as usual" approach based on programs ranked most highly by Windsor, and Scenario C represents a focus on the programs all nine Water Contractors collectively identified as highest priority.

Table 6-3b
Costs and Savings of Potential Conservation Programs
Town of Windsor, Sonoma-Marin Saving Water Partnership

Program (a)	Sector	Indoor/ Outdoor	Note	Present Value of Benefits		Present Value of Cost		Benefit to Cost Ratio		Water Utility Costs 2021-2025 (b)	Water Savings in 2025 (AFY)	Water Utility Cost of Water Saved ($/AF)
				Water Utility	Customers	Water Utility	Customers	Water Utility	Customers			
Direct Install of Efficient Indoor Fixtures - Low Income Residential	SFR, MFR	Indoor	(c)	$20,497,833	$4,566,711	$920,712	$0	22	--	$841,500	93	$164
Drip Irrigation Incentive for MFR and CII	MFR, CII	Outdoor	(d)	$76,622	$69,369	$57,784	$44,449	1.3	1.6	$52,813	2.9	$1,482
Drip Irrigation Incentive for SFR	SFR	Outdoor	(d)	$80,813	$66,279	$234,691	$180,532	0.34	0.37	$214,500	3.0	$5,708
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	SFR, MFR	Indoor		$110,591	$94,137	$67,591	$108,319	1.6	0.87	$61,776	11	$1,077
Incentivize Gray Water Retrofit for Existing SFR Customers	SFR	Outdoor		$245,444	$203,502	$93,876	$216,638	2.6	0.94	$85,800	11	$728
Landscape Conversion or Turf Removal - MFR and CII	MFR, CII	Outdoor		$229,084	$199,280	$220,112	$507,951	1.0	0.39	$201,175	11	$1,829
Landscape Conversion or Turf Removal -SFR	SFR	Outdoor		$74,584	$61,838	$71,663	$165,375	1.0	0.37	$65,497	3.5	$1,829
Rain Sensor Rebate	All	Outdoor		$54,633	$46,505	$46,938	$36,106	1.2	1.3	$42,900	5.6	$1,514
Restaurant Spray Nozzle Rebates	CII	Indoor		$212,228	$1,139,764	$9,245	$7,112	23	160	$8,450	17	$95
Rotating Sprinkler Nozzle Rebate	All	Outdoor		$10,736	$9,279	$7,041	$5,416	1.5	1.7	$6,435	1.2	$1,104
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	MFR, CII	Outdoor		$828,769	$720,946	$184,908	$71,119	4.5	10	$169,000	39	$425
Water Use Surveys/Audits - CII	CII	Both		$280,380	$264,591	$284,474	$355,593	0.99	0.74	$260,000	29	$1,764
Water Use Surveys/Audits - SFR	SFR	Both		$105,134	$306,705	$89,865	$21,336	1.2	14	$82,134	10	$1,632

Abbreviations

AFY = acre-feet per year
CII = Commercial, Industrial, and Institutional
MFR = multi-family residential
SFR = Single-family residential
sq ft = square feet
$/AF = dollars per acre-foot

Table 6-3b
Costs and Savings of Potential Conservation Programs
Town of Windsor, Sonoma-Marin Saving Water Partnership

Notes

(a) Estimated water savings, benefits, and costs are calculated using the AWE model. Assumptions used are presented in Appendix B.
(b) For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2021 through 2025.
(c) The customer benefit cost ratio of the direct install of efficient indoor fixtures - low income residential program is not applicable as it's free for the customers.
(d) The benefit-cost results of the drip irrigation programs are strongly influenced by the lawn size. As lawn size goes up, the unit cost goes down, and the benefit-cost ratio goes up.

Table 6-3c
Comparison of Program Scenarios – Costs and Savings
Town of Windsor, Sonoma-Marin Saving Water Partnership

Scenario (a)	Present Value of Benefits		Present Value of Cost		Benefit to Cost Ratio		Cumulative Water Savings (AF)					Water Utility Cost of Water Saved ($/AF) (b)
	Water Utility	Customers	Water Utility	Customers	Water Utility	Customers	2025	2030	2035	2040	2045	
A) Outdoor Programs	$1,052,296	$920,642	$1,016,579	$1,512,060	1.0	0.61	216	431	504	505	505	$2,011
B) Highly-Ranked Local Programs	$21,269,749	$5,222,763	$1,652,817	$1,156,467	13	4.5	394	1,027	1,563	2,028	2,491	$663
C) Highly-Ranked Regional Programs	$1,840,768	$2,787,261	$927,859	$1,236,804	2.0	2.3	379	761	866	866	866	$1,071

Abbreviations
AF = acre-feet
$/AF = dollars per acre-foot

Notes
(a) For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2021 through 2025. Cumulative water savings achieved beyond 2025 reflect the ongoing benefit of program implementation.
(b) The water utility cost is based on the cumulative savings achieved through 2045 cumulative water savings.

7. CONCLUSION

This report presents the results of demand analysis and projections, developed consistent with CWC § 10631(d)(4)(A), which requires that "Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the bases for demand projections were developed in close coordination with the Town and reflect a land-use based approach consistent with the Town's community planning, using the best available information. It should be noted that all demand and conservation projections have limitations and should be considered estimates that require revisiting as factors that affect demands arise, such as significant economic or population shifts, extreme hydrological conditions, etc.

The methodology used to develop demand projections herein is also consistent with the CWC §10635(b)(4), requirement to consider climate change on projected demands.[16] California experienced a historic drought between 2011-2017. In 2014, Governor Brown issued Executive Order B-26-14 declaring a Drought State of Emergency and requested all Californians to voluntarily reduce water use by 20%. In 2015, the State Water Resources Control Board implemented emergency conservation regulations that, among other things, required water agencies to reduce their water use and prohibited certain types of water uses. As a result, the Town experienced an overall decrease in demands during the historic drought, most significantly during 2014. The demand factors evaluated herein consider both the 2011-2013 period, in which customers increased their water use (in part due to the drought conditions, prior to the imposed restrictions), as well as the observed rebound in demand following the drought (2017-2019). Thus, the periods used to develop the demand projections reflect conditions representative of the hotter, drier weather expected as a result of climate change.

[16] CWC §10635(b)(4) requires that suppliers consider plausible changes on projected supplies and demands under climate change conditions specific to their five-year drought risk assessments. Section 4.5 of the draft 2020 UWMP Guidebook more generally recommends that consideration of climate change be incorporated into all demand projections.

8. REFERENCES

ABAG, 2013. Association of Bay Area Governments, Plan Bay Area Projections 2013, adopted on 18 July 2013.

ABAG, 2018. Association of Bay Area Governments, Plan Bay Area Projections 2040, released on November 2018.

DOF, 2020. California Department of Finance – Demographic Research Unit, Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 1-year Increments, Report P-1, released on 10 January 2020.

PG&E, 2020. Gas Rate Finder, Volume 48-G, No.3, dated in March 2020 (https://www.pge.com/tariffs/GRF0320.pdf).

PG&E and Sonoma Clean Power, 2020. Joint Rate Comparisons, dated July 2020 (https://www.pge.com/pge_global/common/pdfs/customer-service/other-services/alternative-energy-providers/community-choice-aggregation/scp_rateclasscomparison.pdf).

Windsor, 2016. Final 2015 Urban Water Management Plan for the Town of Windsor Water District, prepared by GHD, dated June 2016.

Windsor, 2018. Town of Windsor 2040 General Plan, prepared by Town of Windsor, dated 4 April 2018.

Windsor, 2020a. Consmpt Tots.xlsx, provided by the Town of Windsor on 6 May 2020.

Windsor, 2020b. Cust. Categories.xlsx, provided by the Town of Windsor on 6 May 2020.

Windsor, 2020c. Windsor 2020 UWMP Population-based Demand Projections_11May2020.pdf, provided by the Town of Windsor on 12 May 2020.

Windsor, 2020d. Recycled water clarifications, provided by Town of Windsor on 29 September 2020.

Woodard & Curran, 2019. Water Supply Assessment for Sonoma County's Airport Area Specific Plan, prepared by Woodard & Curran on October 2019.

Appendix A

California Water Code Revisions per AB-1668, SB-606, and SB-664, Redlines prepared by DWR

SB-664 Water: urban water management planning. (2015-2016)

As Amends the Law Today **As Amends the Law on Nov 20, 2015**

SECTION 1. *Section 10632.5 is added to the Water Code, to read:*

10632.5. *(a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.*

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

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

AB-1668 Water management planning. (2017-2018)

As Amends the Law Today | **As Amends the Law on Nov 08, 2018**

SECTION 1. Section 531.10 of the Water Code is amended to read:

531.10. (a) (1) An agricultural water supplier shall submit an annual report to the department that summarizes aggregated farm-gate delivery data, on a monthly or bimonthly basis, using best professional practices. The annual report for the prior year shall be submitted to the department by April 1 of each year. The annual report shall be organized by basin, as defined in Section 10721, within the service area of the agricultural water supplier, if applicable.

(2) The report, and any amendments to the report, submitted to the department pursuant to this subdivision shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(3) The department shall post all reports on its Internet Web site in a manner that allows for comparisons across water suppliers. The department shall make the reports available for public viewing in a timely manner after it receives them.

(b) Nothing in this article shall be construed to require the implementation of water measurement programs or practices that are not locally cost effective.

(c) It is the intent of the Legislature that the requirements of this section shall complement and not affect the scope of authority granted to the department or the board by provisions of law other than this article.

SEC. 2. Section 1120 of the Water Code is amended to read:

1120. This chapter applies to any decision or order issued under this part or Section 275, Part 2 (commencing with Section 1200), Part 2 (commencing with Section 10500) of Division 6, Part 2.55 (commencing with Section 10608) of Division 6, or Chapter 11 (commencing with Section 10735) of Part 2.74 of Division 6, Article 7 (commencing with Section 13550) of Chapter 7 of Division 7, or the public trust doctrine.

SEC. 3. *Section 1846.5 is added to the Water Code, to read:*

1846.5. *(a) An urban retail water supplier who commits any of the violations identified in subdivision (b) may be liable in an amount not to exceed the following, as applicable:*

(1) If the violation occurs in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years or during a period for which the Governor has issued a proclamation of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, ten thousand dollars ($10,000) for each day in which the violation occurs.

(2) For all violations other than those described in paragraph (1), one thousand dollars ($1,000) for each day in which the violation occurs.

(b) Liability pursuant to this section may be imposed for any of the following violations:

(1) Violation of an order issued under Chapter 9 (commencing with Section 10609) of Part 2.55 of Division 6.

(2) Violation of a regulation issued under Chapter 9 (commencing with Section 10609) of Part 2.55 of Division 6, if the violation occurs after November 1, 2027.

(c) Civil liability may be imposed by the superior court. The Attorney General, upon the request of the board, shall petition the superior court to impose, assess, and recover those sums.

(d) Civil liability may be imposed administratively by the board pursuant to Section 1055.

SEC. 4. Section 10608.12 of the Water Code is amended to read:

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "CII water use" means water used by commercial water users, industrial water users, institutional water users, and large landscape water users.

(e) "Commercial water user" means a water user that provides or distributes a product or service.

(f) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(g) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(h) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(i) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(j) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(k) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(l) "Large landscape" means a nonresidential landscape as described in the performance measures for CII water use adopted pursuant to Section 10609.10.

(m) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(n) "Performance measures" means actions to be taken by urban retail water suppliers that will result in increased water use efficiency by CII water users. Performance measures may include, but are not limited to, educating CII water users on best management practices, conducting water use audits, and preparing water management plans. Performance measures do not include process water.

(o) "Potable reuse" means direct potable reuse, indirect potable reuse for groundwater recharge, and reservoir water augmentation as those terms are defined in Section 13561.

(p) "Process water" means water used by industrial water users for producing a product or product content or water used for research and development. Process water includes, but is not limited to, continuous manufacturing processes, and water used for testing, cleaning, and maintaining equipment. Water used to cool machinery or buildings used in the manufacturing process or necessary to maintain product quality or chemical characteristics for product manufacturing or control rooms, data centers, laboratories, clean rooms, and other industrial facility units that are integral to the manufacturing or research and development process is process water. Water used in the manufacturing process that is necessary for complying with local, state, and federal health and safety laws, and is not incidental water, is process water. Process water does not mean incidental water uses.

(q) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050.

(r) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(s) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(t) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(u) "Urban water use objective" means an estimate of aggregate efficient water use for the previous year based on adopted water use efficiency standards and local service area characteristics for that year, as described in Section 10609.20.

(v) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(w) "Urban wholesale water ~~supplier"~~ *supplier,"* means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

SEC. 5. Section 10608.20 of the Water Code is amended to read:

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's ~~2017~~ *2016* report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its ~~internet website,~~ *Internet Web site,* and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

(2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

SEC. 6. Section 10608.48 of the Water Code is amended to read:

10608.48. (a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement both of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier’s pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The department shall require information about the implementation of efficient water management practices to be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

SEC. 7. *Chapter 9 (commencing with Section 10609) is added to Part 2.55 of Division 6 of the Water Code, to read:*

CHAPTER 9. Urban Water Use Objectives and Water Use Reporting

10609. *(a) The Legislature finds and declares that this chapter establishes a method to estimate the aggregate amount of water that would have been delivered the previous year by an urban retail water supplier if all that water had been used efficiently. This estimated aggregate water use is the urban retail water supplier's urban water use objective. The method is based on water use efficiency standards and local service area characteristics for that year. By comparing the amount of water actually used in the previous year with the urban water use objective, local urban water suppliers will be in a better position to help eliminate unnecessary use of water; that is, water used in excess of that needed to accomplish the intended beneficial use.*

(b) The Legislature further finds and declares all of the following:

(1) This chapter establishes standards and practices for the following water uses:

(A) Indoor residential use.

(B) Outdoor residential use.

(C) CII water use.

(D) Water losses.

(E) Other unique local uses and situations that can have a material effect on an urban water supplier's total water use.

(2) This chapter further does all of the following:

(A) Establishes a method to calculate each urban water use objective.

(B) Considers recycled water quality in establishing efficient irrigation standards.

(C) Requires the department to provide or otherwise identify data regarding the unique local conditions to support the calculation of an urban water use objective.

(D) Provides for the use of alternative sources of data if alternative sources are shown to be as accurate as, or more accurate than, the data provided by the department.

(E) Requires annual reporting of the previous year's water use with the urban water use objective.

(F) Provides a bonus incentive for the amount of potable recycled water used the previous year when comparing the previous year's water use with the urban water use objective, of up to 10 percent of the urban water use objective.

(3) This chapter requires the department and the board to solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations pursuant to this chapter.

(4) This chapter preserves the Legislature's authority over long-term water use efficiency target setting and ensures appropriate legislative oversight of the implementation of this chapter by doing all of the following:

(A) Requiring the Legislative Analyst to conduct a review of the implementation of this act, including compliance with the adopted standards and regulations, accuracy of the data, use of alternate data, and other issues the Legislative Analyst deems appropriate.

(B) Stating legislative intent that the director of the department and the chairperson of the board appear before the appropriate Senate and Assembly policy committees to report on progress in implementing this chapter.

(C) Providing one-time-only authority to the department and board to adopt water use efficiency standards, except as explicitly provided in this chapter. Authorization to update the standards shall require separate legislation.

(c) It is the intent of the Legislature that the following principles apply to the development and implementation of long-term standards and urban water use objectives:

(1) Local urban retail water suppliers should have primary responsibility for meeting standards-based water use targets, and they shall retain the flexibility to develop their water supply portfolios, design and implement water conservation strategies, educate their customers, and enforce their rules.

(2) Long-term standards and urban water use objectives should advance the state's goals to mitigate and adapt to climate change.

(3) Long-term standards and urban water use objectives should acknowledge the shade, air quality, and heat-island reduction benefits provided to communities by trees through the support of water-efficient irrigation practices that keep trees healthy.

(4) The state should identify opportunities for streamlined reporting, eliminate redundant data submissions, and incentivize open access to data collected by urban and agricultural water suppliers.

10609.2. *(a) The board, in coordination with the department, shall adopt long-term standards for the efficient use of water pursuant to this chapter on or before June 30, 2022.*

(b) Standards shall be adopted for all of the following:

(1) Outdoor residential water use.

(2) Outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use.

(3) A volume for water loss.

(c) When adopting the standards under this section, the board shall consider the policies of this chapter and the proposed efficiency standards' effects on local wastewater management, developed and natural parklands, and urban tree health. The standards and potential effects shall be identified by May 30, 2022. The board shall allow for public comment on potential effects identified by the board under this subdivision.

(d) The long-term standards shall be set at a level designed so that the water use objectives, together with other demands excluded from the long-term standards such as CII indoor water use and CII outdoor water use not connected to a dedicated landscape meter, would exceed the statewide conservation targets required pursuant to Chapter 3 (commencing with Section 10608.16).

(e) The board, in coordination with the department, shall adopt by regulation variances recommended by the department pursuant to Section 10609.14 and guidelines and methodologies pertaining to the calculation of an urban retail water supplier's urban water use objective recommended by the department pursuant to Section 10609.16.

10609.4. *(a) (1) Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily.*

(2) Beginning January 1, 2025, and until January 1, 2030, the standard for indoor residential water use shall be the greater of 52.5 gallons per capita daily or a standard recommended pursuant to subdivision (b).

(3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b).

(b) (1) The department, in coordination with the board, shall conduct necessary studies and investigations and may jointly recommend to the Legislature a standard for indoor residential water use that more appropriately reflects best practices for indoor residential water use than the standard described in subdivision (a). A report on the results of the studies and investigations shall be made to the chairpersons of the relevant policy committees of each house of the Legislature by January 1, 2021, and shall include information necessary to support the recommended standard, if there is one. The studies and investigations shall also include an analysis of the benefits and impacts of how the changing standard for indoor residential water use will impact water and wastewater management, including potable water usage, wastewater, recycling and reuse systems, infrastructure, operations, and supplies.

(2) The studies, investigations, and report described in paragraph (1) shall include collaboration with, and input from, a broad group of stakeholders, including, but not limited to, environmental groups, experts in indoor plumbing, and water, wastewater, and recycled water agencies.

10609.6. *(a) (1) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor residential use for adoption by the board in accordance with this chapter.*

(2) (A) The standards shall incorporate the principles of the model water efficient landscape ordinance adopted by the department pursuant to the Water Conservation in Landscaping Act (Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code).

(B) The standards shall apply to irrigable lands.

(C) The standards shall include provisions for swimming pools, spas, and other water features. Ornamental water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, shall be analyzed separately from swimming pools and spas.

(b) The department shall, by January 1, 2021, provide each urban retail water supplier with data regarding the area of residential irrigable lands in a manner that can reasonably be applied to the standards adopted pursuant to this section.

(c) The department shall not recommend standards pursuant to this section until it has conducted pilot projects or studies, or some combination of the two, to ensure that the data provided to local agencies are reasonably accurate for the data's intended uses, taking into consideration California's diverse landscapes and community characteristics.

10609.8. *(a) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor irrigation of landscape areas with dedicated irrigation meters or other means of calculating outdoor irrigation use in connection with CII water use for adoption by the board in accordance with this chapter.*

(b) The standards shall incorporate the principles of the model water efficient landscape ordinance adopted by the department pursuant to the Water Conservation in Landscaping Act (Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code).

(c) The standards shall include an exclusion for water for commercial agricultural use meeting the definition of subdivision (b) of Section 51201 of the Government Code.

10609.9. *For purposes of Sections 10609.6 and 10609.8, "principles of the model water efficient landscape ordinance" means those provisions of the model water efficient landscape ordinance applicable to the establishment or determination of the amount of water necessary to efficiently irrigate both new and existing landscapes. These provisions include, but are not limited to, all of the following:*

(a) Evapotranspiration adjustment factors, as applicable.

(b) Landscape area.

(c) Maximum applied water allowance.

(d) Reference evapotranspiration.

(e) Special landscape areas, including provisions governing evapotranspiration adjustment factors for different types of water used for irrigating the landscape.

10609.10. *(a) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, performance measures for CII water use for adoption by the board in accordance with this chapter.*

(b) Prior to recommending performance measures for CII water use, the department shall solicit broad public participation from stakeholders and other interested persons relating to all of the following:

(1) Recommendations for a CII water use classification system for California that address significant uses of water.

(2) Recommendations for setting minimum size thresholds for converting mixed CII meters to dedicated irrigation meters, and evaluation of, and recommendations for, technologies that could be used in lieu of requiring dedicated irrigation meters.

(3) Recommendations for CII water use best management practices, which may include, but are not limited to, water audits and water management plans for those CII customers that exceed a recommended size, volume of water use, or other threshold.

(c) Recommendations of appropriate performance measures for CII water use shall be consistent with the October 21, 2013, report to the Legislature by the Commercial, Industrial, and Institutional Task Force entitled "Water Use Best Management Practices," including the technical and financial feasibility recommendations provided in that report, and shall support the economic productivity of California's commercial, industrial, and institutional sectors.

(d) (1) The board, in coordination with the department, shall adopt performance measures for CII water use on or before June 30, 2022.

(2) Each urban retail water supplier shall implement the performance measures adopted by the board pursuant to paragraph (1).

10609.12. *The standards for water loss for urban retail water suppliers shall be the standards adopted by the board pursuant to subdivision (i) of Section 10608.34.*

10609.14. *(a) The department, in coordination with the board, shall conduct necessary studies and investigations and, no later than October 1, 2021, recommend for adoption by the board in accordance with this chapter appropriate variances for unique uses that can have a material effect on an urban retail water supplier's urban water use objective.*

(b) Appropriate variances may include, but are not limited to, allowances for the following:

(1) Significant use of evaporative coolers.

(2) Significant populations of horses and other livestock.

(3) Significant fluctuations in seasonal populations.

(4) Significant landscaped areas irrigated with recycled water having high levels of total dissolved solids.

(5) Significant use of water for soil compaction and dust control.

(6) Significant use of water to supplement ponds and lakes to sustain wildlife.

(7) Significant use of water to irrigate vegetation for fire protection.

(8) Significant use of water for commercial or noncommercial agricultural use.

(c) The department, in recommending variances for adoption by the board, shall also recommend a threshold of significance for each recommended variance.

(d) Before including any specific variance in calculating an urban retail water supplier's water use objective, the urban retail water supplier shall request and receive approval by the board for the inclusion of that variance.

(e) The board shall post on its Internet Web site all of the following:

(1) A list of all urban retail water suppliers with approved variances.

(2) The specific variance or variances approved for each urban retail water supplier.

(3) The data supporting approval of each variance.

10609.15. *To help streamline water data reporting, the department and the board shall do all of the following:*

(a) Identify urban water reporting requirements shared by both agencies, and post on each agency's Internet Web site how the data is used for planning, regulatory, or other purposes.

(b) Analyze opportunities for more efficient publication of urban water reporting requirements within each agency, and analyze how each agency can integrate various data sets in a publicly accessible location, identify priority actions, and implement priority actions identified in the analysis.

(c) Make appropriate data pertaining to the urban water reporting requirements that are collected by either agency available to the public according to the principles and requirements of the Open and Transparent Water Data Act (Part 4.9 (commencing with Section 12400)).

10609.16. *The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, guidelines and methodologies for the board to adopt that identify how an urban retail water supplier calculates its urban water use objective. The guidelines and methodologies shall address, as necessary, all of the following:*

(a) Determining the irrigable lands within the urban retail water supplier's service area.

(b) Updating and revising methodologies described pursuant to subparagraph (A) of paragraph (1) of subdivision (h) of Section 10608.20, as appropriate, including methodologies for calculating the population in an urban retail water supplier's service area.

(c) Using landscape area data provided by the department or alternative data.

(d) Incorporating precipitation data and climate data into estimates of a urban retail water supplier's outdoor irrigation budget for its urban water use objective.

(e) Estimating changes in outdoor landscape area and population, and calculating the urban water use objective, for years when updated landscape imagery is not available from the department.

(f) Determining acceptable levels of accuracy for the supporting data, the urban water use objective, and compliance with the urban water use objective.

10609.18. *The department and the board shall solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations pursuant to this chapter. The board shall hold at least one public meeting before taking any action on any standard or variance recommended by the department.*

SEC. 8. *Chapter 10 (commencing with Section 10609.40) is added to Part 2.55 of Division 6 of the Water Code, to read:*

CHAPTER 10. Countywide Drought and Water Shortage Contingency Plans

10609.40. *The Legislature finds and declares both of the following:*

(a) Small water suppliers and rural communities are often not covered by established water shortage planning requirements. Currently, most counties do not address water shortages or do so minimally in their general plan or the local hazard mitigation plan.

(b) The state should provide guidance to improve drought planning for small water suppliers and rural communities.

10609.42. *(a) No later than January 1, 2020, the department, in consultation with the board and other relevant state and local agencies and stakeholders, shall use available data to identify small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability. The department shall notify counties and groundwater sustainability agencies of those suppliers or communities that may be at risk within its jurisdiction, and may make the information publicly accessible on its Internet Web site.*

(b) The department shall, in consultation with the board, by January 1, 2020, propose to the Governor and the Legislature recommendations and guidance relating to the development and implementation of countywide drought and water shortage contingency plans to address the planning needs of small water suppliers and rural communities. The department shall recommend how these plans can be included in county local hazard

mitigation plans or otherwise integrated with complementary existing planning processes. The guidance from the department shall outline goals of the countywide drought and water shortage contingency plans and recommend components including, but not limited to, all of the following:

(1) Assessment of drought vulnerability.

(2) Actions to reduce drought vulnerability.

(3) Response, financing, and local communication and outreach planning efforts that may be implemented in times of drought.

(4) Data needs and reporting.

(5) Roles and responsibilities of interested parties and coordination with other relevant water management planning efforts.

(c) In formulating the proposal, the department shall utilize a public process involving state agencies, cities, counties, small communities, small water suppliers, and other stakeholders.

SEC. 9. Section 10801 of the Water Code is amended to read:

10801. The Legislature finds and declares all of the following:

(a) The waters of the state are a limited and renewable resource.

(b) The California Constitution requires that water in the state be used in a reasonable and beneficial manner.

(c) The efficient use of agricultural water supplies is of great statewide concern.

(d) There is a great amount of reuse of delivered water, both inside and outside the water service areas of agricultural water suppliers.

(e) Significant noncrop beneficial uses are associated with agricultural water use, including the preservation and enhancement of fish and wildlife resources.

(f) Significant opportunities exist in some areas, through improved irrigation water management, to conserve water or to reduce the quantity of highly saline or toxic drainage water.

(g) Changes in water management practices should be carefully planned and implemented to minimize adverse effects on other beneficial uses currently being served.

(h) Agricultural water suppliers that receive water from the federal Central Valley Project are required by federal law to prepare and implement water conservation plans.

(i) Agricultural water users applying for a permit to appropriate water from the board are required to prepare and implement water conservation plans.

SEC. 10. Section 10802 of the Water Code is amended to read:

10802. The Legislature finds and declares that all of the following are the policies of the state:

(a) The efficient use of water shall be pursued actively to protect both the people of the state and the state's water resources.

(b) The efficient use of agricultural water supplies shall be an important criterion in public decisions with regard to water.

(c) Agricultural water suppliers shall be required to prepare water management plans to achieve greater efficiency in the use of water.

SEC. 11. Section 10814 of the Water Code is amended to read:

10814. "Person" has the same meaning as defined in Section 10614.

SEC. 12. Section 10817 of the Water Code is amended to read:

10817. "Water use efficiency" means the efficient management of water resources for beneficial uses, preventing waste, or accomplishing additional benefits with the same amount of water.

SEC. 13. Section 10820 of the Water Code is amended to read:

10820. (a) (1) Except as provided in paragraph (2), an agricultural water supplier shall prepare and adopt an agricultural water management plan in the manner set forth in this chapter on or before December 31, 2012, and shall update that plan on December 31, 2015.

(2) (A) The agricultural water management plan shall be updated on or before April 1, 2021, and thereafter on or before April 1 in the years ending in six and one. The plan shall satisfy the requirements of Section 10826.

(B) An agricultural water supplier shall submit its plan to the department no later than 30 days after the adoption of the plan. The plan shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) (1) The department shall review each plan that is due pursuant to paragraph (2) of subdivision (a). The department may coordinate its review with the Department of Food and Agriculture and the board.

(2) The department shall notify an agricultural water supplier that it is not in compliance with this part if the department determines that actions are required to comply with the requirements of this part or if a supplier fails to update a plan as provided in paragraph (2) of subdivision (a). The department shall identify the specific deficiencies and the supplier shall have 120 days to remedy an identified deficiency. The department may provide additional time to remedy a deficiency if it finds that a supplier is making substantial progress toward remedying the deficiency. An agricultural water supplier that fails to submit corrective actions or a completed plan shall not be in compliance with this part.

(3) If the department has not received a plan or the department has determined that the plan submitted does not comply with the requirements of this part, and a revised plan has not been submitted, the department may undertake the following actions:

(A) Contract with a state academic institution or qualified entity to prepare or complete an agricultural water management plan on behalf of the supplier. The costs and expenses related to preparation or completion of a plan, including the costs of the contract and contract administration, shall be recoverable by the department from the supplier.

(B) If a supplier does not provide data necessary for the preparation or completion of a plan to the department or the contracting entity as determined by the department in accordance with subparagraph (A), the department may assess a fine of one thousand dollars ($1,000) per day, not to exceed twenty-five thousand dollars ($25,000), until data is made available.

(4) (A) A plan prepared or completed pursuant to paragraph (3) shall be deemed the adopted plan for the supplier.

(B) Any action to challenge or invalidate the adequacy of the plan prepared or completed pursuant to paragraph (3) shall be brought against the supplier for whom the plan was prepared.

(c) Every supplier that becomes an agricultural water supplier after December 31, 2012, shall prepare and adopt an agricultural water management plan within one year after the date it has become an agricultural water supplier.

(d) A water supplier that indirectly provides water to customers for agricultural purposes shall not prepare a plan pursuant to this part without the consent of each agricultural water supplier that directly provides that water to its customers.

SEC. 14. Section 10825 of the Water Code is amended to read:

10825. (a) It is the intent of the Legislature in enacting this part to allow levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

(b) This part does not require the implementation of water use efficiency programs or practices that are not locally cost effective.

SEC. 15. Section 10826 of the Water Code is amended to read:

10826. An agricultural water management plan shall be adopted in accordance with this chapter. The plan shall do all of the following:

(a) Describe the agricultural water supplier and the service area, including all of the following:

(1) Size of the service area.

(2) Location of the service area and its water management facilities.

(3) Terrain and soils.

(4) Climate.

(5) Operating rules and regulations.

(6) Water delivery measurements or calculations.

(7) Water rate schedules and billing.

(8) Water shortage allocation policies.

(b) Describe the quantity and quality of water resources of the agricultural water supplier, including all of the following:

(1) Surface water supply.

(2) Groundwater supply.

(3) Other water supplies, including recycled water.

(4) Source water quality monitoring practices.

(5) Water uses within the agricultural water supplier's service area, including all of the following:

(A) Agricultural.

(B) Environmental.

(C) Recreational.

(D) Municipal and industrial.

(E) Groundwater recharge, including estimated flows from deep percolation from irrigation and seepage.

(c) Include an annual water budget based on the quantification of all inflow and outflow components for the service area of the agricultural water supplier. Components of inflow shall include surface inflow, groundwater pumping in the service area, and effective precipitation. Components of outflow shall include surface outflow, deep percolation, and evapotranspiration. An agricultural water supplier shall report the annual water budget on a water-year basis. The department shall provide tools and resources to assist agricultural water suppliers in developing and quantifying components necessary to develop a water budget.

(d) Include an analysis, based on available information, of the effect of climate change on future water supplies.

(e) Describe previous water management activities.

(f) Identify water management objectives based on the water budget to improve water system efficiency or to meet other water management objectives. The agricultural water supplier shall identify, prioritize, and implement actions to reduce water loss, improve water system management, and meet other water management objectives identified in the plan.

(g) Include in the plan information regarding efficient water management practices required pursuant to Section 10608.48.

(h) Quantify the efficiency of agricultural water use within the service area of the agricultural water supplier using the appropriate method or methods from among the four water use efficiency quantification methods developed by the department in the May 8, 2012, report to the Legislature entitled "A Proposed Methodology for

Quantifying the Efficiency of Agricultural Water Use." The agricultural water supplier shall account for all water uses, including crop water use, agronomic water use, environmental water use, and recoverable surface flows.

SEC. 16. *Section 10826.2 is added to the Water Code, to read:*

10826.2. *As part of its agricultural water management plan, each agricultural water supplier shall develop a drought plan for periods of limited water supply describing the actions of the agricultural water supplier for drought preparedness and management of water supplies and allocations during drought conditions. The drought plan shall contain both of the following:*

(a) Resilience planning, including all of the following:

(1) Data, indicators, and information needed to determine the water supply availability and levels of drought severity.

(2) Analyses and identification of potential vulnerability to drought.

(3) A description of the opportunities and constraints for improving drought resilience planning, including all of the following:

(A) The availability of new technology or information.

(B) The ability of the agricultural water supplier to obtain or use additional water supplies during drought conditions.

(C) A description of other actions planned for implementation to improve drought resilience.

(b) Drought response planning, including all of the following:

(1) Policies and a process for declaring a water shortage and for implementing water shortage allocations and related response actions.

(2) Methods and procedures for the enforcement or appeal of, or exemption from, triggered shortage response actions.

(3) Methods and procedures for monitoring and evaluation of the effectiveness of the drought plan.

(4) Communication protocols and procedures to inform and coordinate customers, the public, interested parties, and local, regional, and state government.

(5) A description of the potential impacts on the revenues, financial condition, and planned expenditures of the agricultural water supplier during drought conditions that reduce water allocations, and proposed measures to overcome those impacts, including reserve-level policies.

SEC. 17. Section 10843 of the Water Code is amended to read:

10843. (a) An agricultural water supplier shall submit to the entities identified in subdivision (b) a copy of its plan no later than 30 days after review of the plan pursuant to subdivision (b) of Section 10820.

(b) An agricultural water supplier shall submit a copy of its plan to each of the following entities:

(1) The department.

(2) Any city, county, or city and county within which the agricultural water supplier provides water supplies.

(3) Any groundwater management entity within which jurisdiction the agricultural water supplier extracts or provides water supplies.

(4) The California State Library.

SEC. 18. Section 10845 of the Water Code is amended to read:

10845. (a) The department shall prepare and submit to the Legislature, on or before April 30, 2022, and thereafter in the years ending in seven and years ending in two, a report summarizing the status of the plans adopted pursuant to this part.

(b) The report prepared by the department shall identify the outstanding elements of any plan adopted pursuant to this part. The report shall include an evaluation of the effectiveness of this part in promoting efficient agricultural water management practices and recommendations relating to proposed changes to this part, as appropriate.

(c) The department shall provide a copy of the report to each agricultural water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearing designed to consider the effectiveness of plans submitted pursuant to this part.

(d) This section does not authorize the department, in preparing the report, to approve, disapprove, or critique individual plans submitted pursuant to this part.

SEC. 19. Section 10910 of the Water Code is amended to read:

10910. (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system whose service area includes the project site and any water system adjacent to the project site that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system’s total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system’s existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contractholders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) (A) A description of any groundwater basin or basins from which the proposed project will be supplied.

(B) For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree.

(C) For a basin that has not been adjudicated that is a basin designated as high- or medium-priority pursuant to Section 10722.4, information regarding the following:

(i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924.

(ii) If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan.

(D) For a basin that has not been adjudicated that is a basin designated as low- or very low priority pursuant to Section 10722.4, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system

determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by subparagraph (D) of paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available that was not known and could not have been known at the time when the assessment was prepared.

(i) For the purposes of this section, hauled water is not considered as a source of water.

SEC. 20. *This act shall become operative only if Senate Bill 606 of the 2017–18 Regular Session is enacted and becomes effective.*

SB-606 Water management planning. (2017-2018)

As Amends the Law Today | **As Amends the Law on Nov 08, 2018**

SECTION 1. Section 350 of the Water Code is amended to read:

350. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

SEC. 2. Section 377 of the Water Code is amended to read:

377. (a) From and after the publication or posting of any ordinance or resolution pursuant to Section 376, a violation of a requirement of a water conservation program adopted pursuant to Section 376 is a misdemeanor. A person convicted under this subdivision shall be punished by imprisonment in the county jail for not more than 30 days, or by a fine not exceeding one thousand dollars ($1,000), or by both.

(b) A court or public entity may hold a person civilly liable in an amount not to exceed ten thousand dollars ($10,000) for a violation of any of the following:

(1) An ordinance or resolution adopted pursuant to Section 376.

(2) A regulation adopted by the board under Section 1058.5 or Chapter 9 (commencing with Section 10609) of Part 2.55 of Division 6, unless the board regulation provides that it cannot be enforced under this section or provides for a lesser applicable maximum penalty.

(c) Commencing on the 31st day after the public entity notified a person of a violation described in subdivision (b), the person additionally may be civilly liable in an amount not to exceed ten thousand dollars ($10,000) plus five hundred dollars ($500) for each additional day on which the violation continues.

(d) Remedies prescribed in this section are cumulative and not alternative, except that no liability shall be recoverable under this section for any violation of paragraph (2) of subdivision (b) if the board has filed a complaint pursuant to Section 1846 alleging the same violation.

(e) A public entity may administratively impose the civil liability described in subdivisions (b) and (c) after providing notice and an opportunity for a hearing. The public entity shall initiate a proceeding under this subdivision by a complaint issued pursuant to Section 377.5. The public entity shall issue the complaint at least 30 days before the hearing on the complaint and the complaint shall state the basis for the proposed civil liability order.

(f) (1) In determining the amount of civil liability to assess, a court or public entity shall take into consideration all relevant circumstances, including, but not limited to, the nature and persistence of the violation, the extent of the harm caused by the violation, the length of time over which the violation occurs, and any corrective action taken by the violator.

(2) The civil liability calculated pursuant to paragraph (1) for the first violation of subdivision (b) by a residential water user shall not exceed one thousand dollars ($1,000) except in extraordinary situations where the court or public entity finds all of the following:

(A) The residential user had actual notice of the requirement found to be violated.

(B) The conduct was intentional.

(C) The amount of water involved was substantial.

(g) Civil liability imposed pursuant to this section shall be paid to the public entity and expended solely for the purposes of this chapter.

(h) An order setting administrative civil liability shall become effective and final upon issuance of the order and payment shall be made. Judicial review of any final order shall be pursuant to Section 1094.5 of the Code of Civil Procedure.

(i) In addition to the remedies prescribed in this section, a public entity may enforce water use limitations established by an ordinance or resolution adopted pursuant to this chapter, or as otherwise authorized by law, by a volumetric penalty in an amount established by the public entity.

SEC. 3. Section 1058.5 of the Water Code is amended to read:

1058.5. (a) This section applies to any emergency regulation adopted by the board for which the board makes both of the following findings:

(1) The emergency regulation is adopted to prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion, of water, to promote water recycling or water conservation, to require curtailment of diversions when water is not available under the diverter's priority of right, or in furtherance of any of the foregoing, to require reporting of diversion or use or the preparation of monitoring reports.

(2) The emergency regulation is adopted in response to conditions which exist, or are threatened, in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years or during a period for which the Governor has issued a proclamation of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions.

(b) Notwithstanding Sections 11346.1 and 11349.6 of the Government Code, any findings of emergency adopted by the board, in connection with the adoption of an emergency regulation under this section, are not subject to review by the Office of Administrative Law.

(c) An emergency regulation adopted by the board under this section may remain in effect for up to one year, as determined by the board, and is deemed repealed immediately upon a finding by the board that due to changed conditions it is no longer necessary for the regulation to remain in effect. An emergency regulation adopted by the board under this section may be renewed if the board determines that the conditions specified in paragraph (2) of subdivision (a) are still in effect.

(d) In addition to any other applicable civil or criminal penalties, any person or entity ~~that~~ *who* violates a regulation adopted by the board pursuant to this section is guilty of an infraction punishable by a fine of up to five hundred dollars ($500) for each day in which the violation occurs.

(e) (1) Notwithstanding subdivision (b) of Section 1551 or subdivision (e) of Section 1848, a civil liability imposed under Chapter 12 (commencing with Section 1825) of Part 2 of Division 2 by the board or a court for a violation of an emergency conservation regulation adopted pursuant to this section shall be deposited, and separately accounted for, in the Water Rights Fund. Funds deposited in accordance with this subdivision shall be available, upon appropriation, for water conservation activities and programs.

(2) For purposes of this subdivision, an "emergency conservation regulation" means an emergency regulation that requires an end user of water, a water retailer, or a water wholesaler to conserve water or report to the board on water conservation. Water conservation includes restrictions or limitations on particular uses of water or a reduction in the amount of water used or served, but does not include curtailment of diversions when water is not available under the diverter's priority of right or reporting requirements related to curtailments.

SEC. 4. Section 1120 of the Water Code is amended to read:

1120. This chapter applies to any decision or order issued under this part or Section 275, Part 2 (commencing with Section 1200), Part 2 (commencing with Section 10500) of Division 6, Part 2.55 (commencing with Section 10608) of Division 6, or Chapter 11 (commencing with Section 10735) of Part 2.74 of Division 6, Article 7 (commencing with Section 13550) of Chapter 7 of Division 7, or the public trust doctrine.

SEC. 5. Section 10608.12 of the Water Code is amended to read:

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "CII water use" means water used by commercial water users, industrial water users, institutional water users, and large landscape water users.

(e) "Commercial water user" means a water user that provides or distributes a product or service.

(f) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(g) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(h) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(i) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(j) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(k) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(l) "Large landscape" means a nonresidential landscape as described in the performance measures for CII water use adopted pursuant to Section 10609.10.

(m) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(n) "Performance measures" means actions to be taken by urban retail water suppliers that will result in increased water use efficiency by CII water users. Performance measures may include, but are not limited to, educating CII water users on best management practices, conducting water use audits, and preparing water management plans. Performance measures do not include process water.

(o) "Potable reuse" means direct potable reuse, indirect potable reuse for groundwater recharge, and reservoir water augmentation as those terms are defined in Section 13561.

(p) "Process water" means water used by industrial water users for producing a product or product content or water used for research and development. Process water includes, but is not limited to, continuous manufacturing processes, and water used for testing, cleaning, and maintaining equipment. Water used to cool machinery or buildings used in the manufacturing process or necessary to maintain product quality or chemical characteristics for product manufacturing or control rooms, data centers, laboratories, clean rooms, and other industrial facility units that are integral to the manufacturing or research and development process is process water. Water used in the manufacturing process that is necessary for complying with local, state, and federal health and safety laws, and is not incidental water, is process water. Process water does not mean incidental water uses.

(q) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050.

(r) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(s) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(t) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(u) "Urban water use objective" means an estimate of aggregate efficient water use for the previous year based on adopted water use efficiency standards and local service area characteristics for that year, as described in Section 10609.20.

(v) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(w) "Urban wholesale water ~~supplier"~~ *supplier,"* means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

SEC. 6. Section 10608.20 of the Water Code is amended to read:

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's ~~2017~~ *2016* report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its ~~internet website,~~ *Internet Web site,* and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

(2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

SEC. 7. *Section 10608.35 is added to the Water Code, to read:*

10608.35. *(a) The department, in coordination with the board, shall conduct necessary studies and investigations and make a recommendation to the Legislature, by January 1, 2020, on the feasibility of developing and enacting water loss reporting requirements for urban wholesale water suppliers.*

(b) The studies and investigations shall include an evaluation of the suitability of applying the processes and requirements of Section 10608.34 to urban wholesale water suppliers.

(c) In conducting necessary studies and investigations and developing its recommendation, the department shall solicit broad public participation from stakeholders and other interested persons.

SEC. 8. *Section 10609.20 is added to the Water Code, immediately following Section 10609.18, to read:*

10609.20. *(a) Each urban retail water supplier shall calculate its urban water use objective no later than November 1, 2023, and by November 1 every year thereafter.*

(b) The calculation shall be based on the urban retail water supplier's water use conditions for the previous calendar or fiscal year.

(c) Each urban water supplier's urban water use objective shall be composed of the sum of the following:

(1) Aggregate estimated efficient indoor residential water use.

(2) Aggregate estimated efficient outdoor residential water use.

(3) Aggregate estimated efficient outdoor irrigation of landscape areas with dedicated irrigation meters or equivalent technology in connection with CII water use.

(4) Aggregate estimated efficient water losses.

(5) Aggregate estimated water use in accordance with variances, as appropriate.

(d) (1) An urban retail water supplier that delivers water from a groundwater basin, reservoir, or other source that is augmented by potable reuse water may adjust its urban water use objective by a bonus incentive calculated pursuant to this subdivision.

(2) The water use objective bonus incentive shall be the volume of its potable reuse delivered to residential water users and to landscape areas with dedicated irrigation meters in connection with CII water use, on an acre-foot basis.

(3) The bonus incentive pursuant to paragraph (1) shall be limited in accordance with one of the following:

(A) The bonus incentive shall not exceed 15 percent of the urban water supplier's water use objective for any potable reuse water produced at an existing facility.

(B) The bonus incentive shall not exceed 10 percent of the urban water supplier's water use objective for any potable reuse water produced at any facility that is not an existing facility.

(4) For purposes of this subdivision, "existing facility" means a facility that meets all of the following:

(A) The facility has a certified environmental impact report, mitigated negative declaration, or negative declaration on or before January 1, 2019.

(B) The facility begins producing and delivering potable reuse water on or before January 1, 2022.

(C) The facility uses microfiltration and reverse osmosis technologies to produce the potable reuse water.

(e) (1) The calculation of the urban water use objective shall be made using landscape area and other data provided by the department and pursuant to the standards, guidelines, and methodologies adopted by the board. The department shall provide data to the urban water supplier at a level of detail sufficient to allow the urban water supplier to verify its accuracy at the parcel level.

(2) Notwithstanding paragraph (1), an urban retail water supplier may use alternative data in calculating the urban water use objective if the supplier demonstrates to the department that the alternative data are equivalent, or superior, in quality and accuracy to the data provided by the department. The department may provide technical assistance to an urban retail water supplier in evaluating whether the alternative data are appropriate for use in calculating the supplier's urban water use objective.

SEC. 9. *Section 10609.22 is added to the Water Code, to read:*

10609.22. *(a) An urban retail water supplier shall calculate its actual urban water use no later than November 1, 2023, and by November 1 every year thereafter.*

(b) The calculation shall be based on the urban retail water supplier's water use for the previous calendar or fiscal year.

(c) Each urban water supplier's urban water use shall be composed of the sum of the following:

(1) Aggregate residential water use.

(2) Aggregate outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use.

(3) Aggregate water losses.

SEC. 10. *Section 10609.24 is added to the Water Code, to read:*

10609.24. *(a) An urban retail water supplier shall submit a report to the department no later than November 1, 2023, and by November 1 every year thereafter. The report shall include all of the following:*

(1) The urban water use objective calculated pursuant to Section 10609.20 along with relevant supporting data.

(2) The actual urban water use calculated pursuant to Section 10609.22 along with relevant supporting data.

(3) Documentation of the implementation of the performance measures for CII water use.

(4) A description of the progress made towards meeting the urban water use objective.

(b) The department shall post the reports and information on its Internet Web site.

(c) The board may issue an information order or conservation order to, or impose civil liability on, an entity or individual for failure to submit a report required by this section.

SEC. 11. *Section 10609.26 is added to the Water Code, to read:*

10609.26. *(a) (1) On and after November 1, 2023, the board may issue informational orders pertaining to water production, water use, and water conservation to an urban retail water supplier that does not meet its urban water use objective required by this chapter. Informational orders are intended to obtain information on supplier activities, water production, and conservation efforts in order to identify technical assistance needs and assist urban water suppliers in meeting their urban water use objectives.*

(2) In determining whether to issue an informational order, the board shall consider the degree to which the urban retail water supplier is not meeting its urban water use objective, information provided in the report required by Section 10609.24, and actions the urban retail water supplier has implemented or will implement in order to help meet the urban water use objective.

(3) The board shall share information received pursuant to this subdivision with the department.

(4) An urban water supplier may request technical assistance from the department. The technical assistance may, to the extent available, include guidance documents, tools, and data.

(b) On and after November 1, 2024, the board may issue a written notice to an urban retail water supplier that does not meet its urban water use objective required by this chapter. The written notice may warn the urban retail water supplier that it is not meeting its urban water use objective described in Section 10609.20 and is not making adequate progress in meeting the urban water use objective, and may request that the urban retail water supplier address areas of concern in its next annual report required by Section 10609.24. In deciding whether to issue a written notice, the board may consider whether the urban retail water supplier has received an informational order, the degree to which the urban retail water supplier is not meeting its urban water use objective, information provided in the report required by Section 10609.24, and actions the urban retail water supplier has implemented or will implement in order to help meet its urban water use objective.

(c) (1) On and after November 1, 2025, the board may issue a conservation order to an urban retail water supplier that does not meet its urban water use objective. A conservation order may consist of, but is not limited to, referral to the department for technical assistance, requirements for education and outreach, requirements for local enforcement, and other efforts to assist urban retail water suppliers in meeting their urban water use objective.

(2) In issuing a conservation order, the board shall identify specific deficiencies in an urban retail water supplier's progress towards meeting its urban water use objective, and identify specific actions to address the deficiencies.

(3) The board may request that the department provide an urban retail water supplier with technical assistance to support the urban retail water supplier's actions to remedy the deficiencies.

(d) A conservation order issued in accordance with this chapter may include requiring actions intended to increase water-use efficiency, but shall not curtail or otherwise limit the exercise of a water right, nor shall it require the imposition of civil liability pursuant to Section 377.

SEC. 12. *Section 10609.28 is added to the Water Code, to read:*

10609.28. *The board may issue a regulation or informational order requiring a wholesale water supplier, an urban retail water supplier, or a distributor of a public water supply, as that term is used in Section 350, to provide a monthly report relating to water production, water use, or water conservation.*

SEC. 13. *Section 10609.30 is added to the Water Code, to read:*

10609.30. *On or before January 10, 2024, the Legislative Analyst shall provide to the appropriate policy committees of both houses of the Legislature and the public a report evaluating the implementation of the water use efficiency standards and water use reporting pursuant to this chapter. The board and the department shall provide the Legislative Analyst with the available data to complete this report.*

(a) The report shall describe all of the following:

(1) The rate at which urban retail water users are complying with the standards, and factors that might facilitate or impede their compliance.

(2) The accuracy of the data and estimates being used to calculate urban water use objectives.

(3) Indications of the economic impacts, if any, of the implementation of this chapter on urban water suppliers and urban water users, including CII water users.

(4) The frequency of use of the bonus incentive, the volume of water associated with the bonus incentive, value to urban water suppliers of the bonus incentive, and any implications of the use of the bonus incentive on water use efficiency.

(5) The early indications of how implementing this chapter might impact the efficiency of statewide urban water use.

(6) Recommendations, if any, for improving statewide urban water use efficiency and the standards and practices described in this chapter.

(7) Any other issues the Legislative Analyst deems appropriate.

SEC. 14. *Section 10609.32 is added to the Water Code, to read:*

10609.32. *It is the intent of the Legislature that the chairperson of the board and the director of the department appear before the appropriate policy committees of both houses of the Legislature on or around January 1, 2026, and report on the implementation of the water use efficiency standards and water use reporting pursuant to this chapter. It is the intent of the Legislature that the topics to be covered include all of the following:*

(a) The rate at which urban retail water suppliers are complying with the standards, and factors that might facilitate or impede their compliance.

(b) What enforcement actions have been taken, if any.

(c) The accuracy of the data and estimates being used to calculate urban water use objectives.

(d) Indications of the economic impacts, if any, of the implementation of this chapter on urban water suppliers and urban water users, including CII water users.

(e) The frequency of use of the bonus incentive, the volume of water associated with the bonus incentive, value to urban water suppliers of the bonus incentive, and any implications of the use of the bonus incentive on water use efficiency.

(f) An assessment of how implementing this chapter is affecting the efficiency of statewide urban water use.

SEC. 15. *Section 10609.34 is added to the Water Code, to read:*

10609.34. *Notwithstanding Section 15300.2 of Title 14 of the California Code of Regulations, an action of the board taken under this chapter shall be deemed to be a Class 8 action, within the meaning of Section 15308 of Title 14 of the California Code of Regulations, provided that the action does not involve relaxation of existing water conservation or water use standards.*

SEC. 16. *Section 10609.36 is added to the Water Code, to read:*

10609.36. *(a) Nothing in this chapter shall be construed to determine or alter water rights. Sections 1010 and 1011 apply to water conserved through implementation of this chapter.*

(b) Nothing in this chapter shall be construed to authorize the board to update or revise water use efficiency standards authorized by this chapter except as explicitly provided in this chapter. Authorization to update the standards beyond that explicitly provided in this chapter shall require separate legislation.

(c) Nothing in this chapter shall be construed to limit or otherwise affect the use of recycled water as seawater barriers for groundwater salinity management.

SEC. 17. *Section 10609.38 is added to the Water Code, to read:*

10609.38. The board may waive the requirements of this chapter for a period of up to five years for any urban retail water supplier whose water deliveries are significantly affected by changes in water use as a result of damage from a disaster such as an earthquake or fire. In establishing the period of a waiver, the board shall take into consideration the breadth of the damage and the time necessary for the damaged areas to recover from the disaster.

SEC. 18. Section 10610.2 of the Water Code is amended to read:

10610.2. (a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate, and increasing long-term water conservation among Californians, improving water use efficiency within the state's communities and agricultural production, and strengthening local and regional drought planning are critical to California's resilience to drought and climate change.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years now and into the foreseeable future, and every urban water supplier should collaborate closely with local land-use authorities to ensure water demand forecasts are consistent with current land-use planning.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

SEC. 19. Section 10610.4 of the Water Code is amended to read:

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to achieve the efficient use of available supplies and strengthen local drought planning.

SEC. 20. Section 10612 of the Water Code is amended and renumbered to read:

~~**10612.**~~ *10611.3.* ~~"Drought risk assessment"~~ *"Customer"* means a ~~method that examines water shortage risks based on the driest five-year historic sequence for the agency's water supply, as described in subdivision (b) of Section 10635.~~ *purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.*

SEC. 21. *Section 10612 is added to the Water Code, to read:*

10612. *"Drought risk assessment" means a method that examines water shortage risks based on the driest five-year historic sequence for the agency's water supply, as described in subdivision (b) of Section 10635.*

SEC. 22. *Section 10617.5 is added to the Water Code, to read:*

10617.5. *"Water shortage contingency plan" means a document that incorporates the provisions detailed in subdivision (a) of Section 10632 and is subsequently adopted by an urban water supplier pursuant to this article.*

SEC. 23. *Section 10618 is added to the Water Code, to read:*

10618. *"Water supply and demand assessment" means a method that looks at current year and one or more dry year supplies and demands for determining water shortage risks, as described in Section 10632.1.*

SEC. 24. Section 10620 of the Water Code is amended to read:

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation, efficient water use, and improved local drought resilience.

(2) Notwithstanding paragraph (1), each urban water supplier shall develop its own water shortage contingency plan, but an urban water supplier may incorporate, collaborate, and otherwise share information with other urban water suppliers or other governing entities participating in an areawide, regional, watershed, or basinwide urban water management plan, an agricultural management plan, or groundwater sustainability plan development.

(3) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

SEC. 25. Section 10621 of the Water Code is amended to read:

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.

(d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

(e) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

(f) *(1)* Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

(2) By January 1, 2024, each urban retail water supplier shall adopt and submit to the department a supplement to the adopted 2020 plan that includes information required pursuant to subparagraph (B) of paragraph (1) of subdivision (e) of Section 10631. This supplement is not an update or an amendment to the plan and, therefore, an urban water supplier is not required to comply with the public notice, hearing, and adoption requirements of Section 10642 before submitting the information to the department.

SEC. 26. Section 10630 of the Water Code is amended to read:

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.

SEC. 27. *Section 10630.5 is added to the Water Code, to read:*

10630.5. *Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.*

SEC. 28. Section 10631 of the Water Code is amended to read:

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

(1) A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

(2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.

(3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:

(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.

(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(D) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(3) (A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

(4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

(e) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) For the supplement required of urban retail water suppliers by paragraph (2) of subdivision (f) of Section 10621, a narrative that describes the water demand management measures that the supplier plans to implement to achieve its urban water use objective by January 1, 2027, pursuant to Chapter 9 (commencing with Section 10609) of Part 2.55.

~~(B)~~ *(C)* The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph ~~(B)~~ *(C)* of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

(f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(g) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

(h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

SEC. 29. Section 10631.2 of the Water Code is amended to read:

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:

(1) An estimate of the amount of energy used to extract or divert water supplies.

(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.

(3) An estimate of the amount of energy used to treat water supplies.

(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.

(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.

(6) An estimate of the amount of energy used to place water into or withdraw from storage.

(7) Any other energy-related information the urban water supplier deems appropriate.

(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

(c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.

SEC. 30. Section 10631.7 of the Water Code is repealed.

SEC. 31. Section 10632 of the Water Code is repealed.

~~**10632.** (a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:~~

~~(1) The analysis of water supply reliability conducted pursuant to Section 10635.~~

~~(2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:~~

~~(A) The written decisionmaking process that an urban water supplier will use each year to determine its water supply reliability.~~

~~(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:~~

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

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

~~(iii) Existing infrastructure capabilities and plausible constraints.~~

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

~~(v) A description and quantification of each source of water supply.~~

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

~~(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.~~

~~(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:~~

~~(A) Locally appropriate supply augmentation actions.~~

~~(B) Locally appropriate demand reduction actions to adequately respond to shortages.~~

~~(C) Locally appropriate operational changes.~~

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

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

~~(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.~~

~~(6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.~~

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

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

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

~~(8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:~~

~~(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).~~

~~(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).~~

~~(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.~~

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

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

~~(b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes,~~

~~waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.~~

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

SEC. 32. *Section 10632 is added to the Water Code, to read:*

10632. *(a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:*

(1) The analysis of water supply reliability conducted pursuant to Section 10635.

(2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decisionmaking process that an urban water supplier will use each year to determine its water supply reliability.

(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

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

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

(iii) Existing infrastructure capabilities and plausible constraints.

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

(v) A description and quantification of each source of water supply.

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

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

(A) Locally appropriate supply augmentation actions.

(B) Locally appropriate demand reduction actions to adequately respond to shortages.

(C) Locally appropriate operational changes.

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

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

(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.

(6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.

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

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

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

(8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:

(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

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

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

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

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

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

SEC. 33. *Section 10632.1 is added to the Water Code, to read:*

10632.1. *An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before June 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by June 1 of each year, whichever is later.*

SEC. 34. *Section 10632.2 is added to the Water Code, to read:*

10632.2. *An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan, as identified in subdivision (a) of Section 10632, or reasonable alternative actions, provided that descriptions of the alternative*

actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1. Nothing in this section prohibits an urban water supplier from taking actions not specified in its water shortage contingency plan, if needed, without having to formally amend its urban water management plan or water shortage contingency plan.

SEC. 35. *Section 10632.3 is added to the Water Code, to read:*

10632.3. *It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.*

SEC. 36. Section 10635 of the Water Code is amended to read:

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.

(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

(c) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(d) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(e) Nothing in this article is intended to change existing law concerning an urban water supplier’s obligation to provide water service to its existing customers or to any potential future customers.

SEC. 37. Section 10640 of the Water Code is amended to read:

10640. (a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

(b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water

shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

SEC. 38. Section 10641 of the Water Code is amended to read:

10641. An urban water supplier required to prepare a plan or a water shortage contingency plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

SEC. 39. Section 10642 of the Water Code is amended to read:

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

SEC. 40. Section 10644 of the Water Code is amended to read:

10644. (a) (1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.

(c) (1) (A) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before July 1, in the years ending in seven and two, a report summarizing the status of the plans and water shortage contingency plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans and water shortage contingency plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan and water shortage contingency plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans and water shortage contingency plans submitted pursuant to this part.

(B) The department shall prepare and submit to the board, on or before September 30 of each year, a report summarizing the submitted water supply and demand assessment results along with appropriate reported water shortage conditions and the regional and statewide analysis of water supply conditions developed by the department. As part of the report, the department shall provide a summary and, as appropriate, urban water supplier specific information regarding various shortage response actions implemented as a result of annual supplier-specific water supply and demand assessments performed pursuant to Section 10632.1.

(C) The department shall submit the report to the Legislature for the 2015 plans by July 1, 2017, and the report to the Legislature for the 2020 plans and water shortage contingency plans by July 1, 2022.

(2) A report to be submitted pursuant to subparagraph (A) of paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

(d) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

SEC. 41. Section 10645 of the Water Code is amended to read:

10645. (a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

(b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

SEC. 42. Section 10650 of the Water Code is amended to read:

10650. Any actions or proceedings, other than actions by the board, to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan or a water shortage contingency plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan or water shortage contingency plan, or action taken pursuant to either, does not comply with this part shall be commenced within 90 days after filing of the plan or water shortage contingency plan or an amendment to either pursuant to Section 10644 or the taking of that action.

SEC. 43. Section 10651 of the Water Code is amended to read:

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan or a water shortage contingency plan, or an action taken pursuant to either by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

SEC. 44. Section 10653 of the Water Code is amended to read:

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the board and the Public Utilities Commission, for the preparation of water management plans, water shortage contingency plans, or conservation plans; provided, that if the board or the Public Utilities Commission requires additional information concerning water conservation, drought response measures, or financial conditions to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan that complies with analogous federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

SEC. 45. Section 10654 of the Water Code is amended to read:

10654. An urban water supplier may recover in its rates the costs incurred in preparing its urban water management plan, its drought risk assessment, its water supply and demand assessment, and its water shortage contingency plan and implementing the reasonable water conservation measures included in either of the plans.

SEC. 46. Section 10656 of the Water Code is amended to read:

10656. An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.

SEC. 47. *Section 10657 is added to the Water Code, to read:*

10657. *The department may adopt regulations regarding the definitions of water, water use, and reporting periods, and may adopt any other regulations deemed necessary or desirable to implement this part. In developing regulations pursuant to this section, the department shall solicit broad public participation from stakeholders and other interested persons.*

SEC. 48. *This act shall become operative only if Assembly Bill 1668 of the 2017–18 Regular Session is enacted and becomes effective.*

Appendix B

AWE Model Assumptions

AWE CONSERVATION TRACKING TOOL: COMMON ASSUMPTIONS WORKSHEET

Getting Started: On this worksheet you enter information the tracking tool needs to operate. This includes specifying whether to use English or Metric units, setting up customer classes, specifying the first year for forecasts, entering forecasted population, housing, and customer accounts, setting financial assumptions, providing information needed to calculate water and energy savings due to appliance and plumbing standards for toilets, clothes washers, and dishwashers, and providing information needed to calculate water savings for landscape conservation measures included in the conservation measure library. It sounds like a lot, but you probably have developed much of this data for other planning purposes.

Scenario '''Empty'' loaded into model on 7/27/2016 5:44:04 PM

State	CA	Model will use CA plumbing standards	
Volume Units	Acre-Feet (AF)	Flow Units Will Be:	MGD

Population, Housing, and Account Forecasts

Enter Starting Year for Forecasts: 2010

Pop and DU based on Windsor (1.5% growth) pop Estimates, Sector scaled based on Pop and Employment, 2020 sector based on Pop only

Population & Housing	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
Population	26,801	27,771	29,585	33,554	36,253	39,040	42,027	45,047
Single Family Dwelling Units	8,002	8,291	8,833	10,018	10,823	11,656	12,547	13,449
Multi Family Dwelling Units	1,980	2,052	2,186	2,479	2,678	2,884	3,105	3,328

Number of Accounts

Single Family	7,839	7,890	8,405	9,178	9,916	10,678	11,495	12,321
Multi Family	75	73	78	150	214	278	343	367
Commercial	476	462	492	548	555	570	575	581
Industrial		44	47	48	48	50	50	51
Irrigation	377	393	419	439	445	457	461	466
Other	285	309	329	373	378	388	392	395
Not in use								
Not in use								
Not in use								

Industrial sector was reclassified into a separate category from the commercial sector beginning in 2011.

Financial Assumptions

These inputs are used by the tracking tool to standardize costs and benefits, calculate present values, and estimate utility and customer benefits of conservation.

Dollar Base Year	2020
Annual Inflation Rate	3.0%
Nominal Interest Rate	2.3%

Utility Rates in 2010	**Average Class Rate (2020 Dollars)**				**Annual Rate of Increase**			
	Water	Sewer	Electricity	Gas	Water	Sewer	Electricity	Gas

Customer Class	($/Thou Gal)	($/Thou Gal)	($/KWh)	($/Therm)	(%/Yr)	(%/Yr)	(%/Yr)	(%/Yr)	
Single Family	$3.42	$14.95	$0.28	$2.00	5.0%	7.0%	3.0%	3.0%	
Multi Family	$3.42	$14.95	$0.28	$2.00	5.0%	7.0%	3.0%	3.0%	
Commercial	$3.78	$13.45	$0.27	$0.80	5.0%	7.0%	3.0%	3.0%	weighted average of town population and airport population in 2020.
Industrial	$3.72	$13.45	$0.20	$0.76	5.0%	7.0%	3.0%	3.0%	
Irrigation	$3.59		$0.32		5.0%	7.0%	3.0%	3.0%	weighted average of town population and airport population in 2020.
Other									
Not in use									
Not in use									
Not in use									

Information Needed to Calculate Water/Energy Savings from Plumbing/Appliance Standards

These inputs are used by the tracking tool to estimate water and energy savings for national toilet and showerhead standards, which first took effect in 1994, and clothes washer and dishwasher appliance standards, which first included maximum allowable water factors in 2011 and 2010, respectively. Toilet standards took effect in 1992 in California and Texas.

	Single Family	Multi Family
Persons per household	3.04	3.04
Full Baths/Dwelling Unit	2.19	1.78
Half Baths/Dwelling Unit	0.32	0.16
Dwellling Units in 1992	4,747	359

Population in 1990 15,821

Information Needed to Calculate Water Savings for Landscape Measures in Library

Average landscape water use for residential and non-residential sites is used by the model to calculate water savings for various landscape conservation measures included in the program library. Average landscape water use is calculated using the following equation. Alternatively, you can use your own landscape water use estimate by selecting the "Use My Own Estimate" option.

$$use\ per\ site = \left(\frac{1}{irr.eff.}\right) \times (ET_0 \times K_L - R_e)\ \times Area \times C_v, where$$

$irr.eff. = typical\ irrigation\ efficiency$
$ET_0 = reference\ evapotranspiration$
$K_L = landscape\ coefficient\ (\%\ of ET_0\ needed\ by\ crop)$
$R_e = effective\ rainfall\ (\%\ of\ annual\ rainfall\ contributing\ to\ plant\ water\ requirement)$
$C_v = coefficient\ that\ converts\ water\ use\ to\ appropriate\ volume\ units\ (gal\ for\ english\ units, M^3 for\ metric\ units)$

○ Use my own landscape water use estimates ◉ Use model's landscape water use calculator

Reference ET in/yr 34.00

Avg Annual Rainfall	in/yr	29.43
Effective Rainfall	%	25%

Landscape Water Requirement Coefficient (K_L)

Turf	% of ET_0	80%
Other than turf	% of ET_0	40%

		Residential	Non Residential	
Avg Landscape Area Per Site	ft^2			
Avg Turf Area (% of Total)	%			
Avg Irrigation Efficiency (%)	%	75%	81%	Drip Irrigation Saving Estimates

Irrigation Requirement		Residential	Non Residential
Turf Area	in/ft^2/yr	26	24
Other	in/ft^2/yr	8	8

Drip Irrigation Saving Estimates
1.9598 in/ft^2/yr

Avg Landscape Water Use Per Site		Residential	Non Residential
Turf Area	Gal/Yr	0	0
Other	Gal/Yr	0	0
Total	Gal/Yr	**0**	**0**

AWE CONSERVATION TRACKING TOOL: ENTER UTILITY AVOIDED COSTS WORKSHEET

Enter utility avoided costs: The primary benefit of conservation to the utility and its ratepayers is avoiding future water supply and wastewater costs. A utility avoids cost by not having to purchase (or otherwise acquire), transport, treat and distribute water supply, and by not having to collect, treat, and dispose of wastewater. The variable costs of these activities are major components of avoided cost. Conservation, if done at sufficient scale, may also allow the utility to defer or even entirely avoid future expansion of system capacity. This can be a major source of benefit in some cases.

The tracking tool comes with a calculator you can use to estimate your avoided costs. Alternatively, you can enter you own avoided cost estimates by selecting

Scenario '"Empty" loaded into model on 7/27/2016 5:44:04 PM

Download CUWCC Avoided Cost & Environmental Benefits Models

○ Use my own avoided cost estimates ◉ Use model's avoided cost calculator

Tracking Tool Utility Avoided Cost Calculator

Water and Wastewater System Variable Costs (2020 Dollars)

	Water		Wastewater	
	$/AF	Nominal Increase	$/AF	Nominal Increase
Water purchase	$305	6.0%	NA	NA
Energy	$178	6.0%	$284	2.0%
Chemicals	$18	6.0%	$128	6.0%
Other variable cost	$627	6.0%		
Total	**$1,128**	**6.0%**	**$412**	**3.2%**

Variable Cost Forecast

Variable Cost	Units	2010	2015	2020	2025	2030	2035	2040	2045	2040-2045 Ann Grwth %
Water Supply	$/AF	$1,128	$1,307	$1,514	$1,754	$2,033	$2,355	$2,729	$3,162	3.0%
Wastewater	$/AF	$412	$416	$421	$426	$431	$436	$441	$446	0.2%

AWE CONSERVATION TRACKING TOOL: DEFINE CONSERVATION ACTIVITIES WORKSHEET

Define conservation activities: Click the Define/Edit/Delete button to setup and edit conservation activities. You can use the form to define your own activities or import activities from the tracking tool's library. Once imported, library activities can be customized. Conservation activity specifications are stored in a table on this worksheet. This table is hidden by default. You can unhide the table by clicking the "Show Activities Table" button. You can edit activities directly in the table if you find this easier than using the form. HOWEVER, DO NOT DELETE TABLE ROWS. ONLY USE THE FORM TO DELETE CONSERVATION ACTIVITIES.

Scenario '"Empty" loaded into model on 7/27/2016 5:44:04 PM

NOTE: You can define activities in the table rather than using the form. BUT ONLY USE THE FORM TO DELETE ACTIVITIES.

Activity ID	Activity Name	Class	Savings, Per Unit (gpy)	Savings, Annual Rate of Decay (%)	Savings, Peak Period (% of Annual Savings)	Savings, Useful Life (yrs)	Savings, Participant Free Riders (% of Participants)	Utility Costs, Year Denominated	Utility Costs, Initial Fixed ($)	Utility Costs, Initial Variable ($/unit)	Utility Costs, Years of Follow-up (yrs)	Utility Costs, Follow-up Fixed ($/yr)	Utility Costs, Follow-up Variable ($/unit/yr)	Participant Costs, Year Denominated	Participant Costs, Initial ($)	Participant Costs, Years of On-going (yrs)	Participant Costs, On-going ($/Yr)	Participant Savings, Sewer (gpy)	Participant Savings, Gas (Therms/Gal)	Participant Savings, Electricity (KWh/Gal)	Plumbing Code, Year Effective	Plumbing Code, Unit Savings (gpy)	Plumbing Code, Natural Replacement Rate NRR (%)
1	Direct Install of Efficient Indoor Fixtures - Low Incom	Single Family	15,252	0%				2020		$425.00				2020	$0.00								
2	Drip Irrigation Incentive for MFR and CII	Commercial	7,163	0%		12		2020		$406.25				2020	$312.50								
3	Drip Irrigation Incentive for SFR	Single Family	1,488	0%		12		2020		$325.00				2020	$250.00								
4	High Efficiency Faucet Aerator / Showerhead Giveav	Single Family	1,862	0%	80%	5	0%	2020		$31.20				2020	$50.00			0.00	0.0000	0.0000	0	0	0.00%
5	Incentivize Gray Water Retrofit for Existing SFR Cus	Single Family	5,638	0%		10		2020		$130.00				2020	$300.00								
6	Landscape Conversion or Turf Removal - MFR and (	Irrigation	11	0%	80%	10	0%	2020		$0.65				2020	$1.50			0.00	0.0000	0.0000	0	0	0.00%
7	Landscape Conversion or Turf Removal -SFR	Single Family	11	0%	80%	10	0%	2020		$0.65				2020	$1.50			0.00	0.0000	0.0000	0	0	0.00%
8	Rain Sensor Rebate	Single Family	2,760	0%		5		2020		$65.00				2020	$50.00								
9	Restaurant Spray Nozzle Rebates	Commercial	43,830	0%		5	0%	2020		$65.00				2020	$50.00			43,830.00	0.0083				
10	Rotating Sprinkler Nozzle Rebate	Single Family	1,434	0%		2	0%	2020		$9.75				2020	$7.50								
11	Smart Irrigation Controller (Weather-Based Irrigation	Irrigation	96,645	0%	70%	10	0%	2020		$1,300.00				2020	$500.00			0.00	0.0000	0.0000	0	0	0.00%
12	Water Use Surveys/Audits - CII	Commercial	108,686	20%		5	0%	2020		$2,000.00				2020	$2,500.00								
13	Water Use Surveys/Audits - SFR	Single Family	12,373	20%	68%	5	0%	2020		$210.60				2020	$50.00			4,949.20	0.0010	0.0000	0	0	0.00%
14																							
15																							
16																							
17																							

AWE CONSERVATION TRACKING

Enter annual conservation activity: Use this worksheet to enter the annual activity levels for the conservation activities you defined on the 4. Define Activities worksheet. You can enter activity through the end of your forecast period, but this is not required. It is okay to enter activity for shorter periods. You also can start an activity in

Enter Annual Conservation Activity

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	396	396	396	396	396																				
2	Commercial	Drip Irrigation Incentive for MFR and CII	26	26	26	26	26																				
3	Single Family	Drip Irrigation Incentive for SFR	132	132	132	132	132																				
4	Single Family	High Efficiency Faucet Aerator / Showerhead	396	396	396	396	396																				
5	Single Family	Incentivize Gray Water Retrofit for Existing S	132	132	132	132	132																				
6	Irrigation	Landscape Conversion or Turf Removal - MF	61900	61900	61900	61900	61900																				
7	Single Family	Landscape Conversion or Turf Removal -SFR	20153	20153	20153	20153	20153																				
8	Single Family	Rain Sensor Rebate	132	132	132	132	132																				
9	Commercial	Restaurant Spray Nozzle Rebates	26	26	26	26	26																				
10	Single Family	Rotating Sprinkler Nozzle Rebate	132	132	132	132	132																				
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	26	26	26	26	26																				
12	Commercial	Water Use Surveys/Audits - CII	26	26	26	26	26																				
13	Single Family	Water Use Surveys/Audits - SFR	78	78	78	78	78																				

Annual Program Overhead Cost (2020 dollars)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Enter additional program cost not included in activity definitions																									

Model calculation tables below this line. Do not delete or modify.

Effective Conservation Activity

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	396	792	1,188	1,584	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980
2	Commercial	Drip Irrigation Incentive for MFR and CII	26	52	78	104	130	130	130	130	130	130	130	130	104	78	52	26	0	0	0	0	0	0	0	0	0
3	Single Family	Drip Irrigation Incentive for SFR	132	264	396	528	660	660	660	660	660	660	660	660	528	396	264	132	0	0	0	0	0	0	0	0	0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	396	792	1,188	1,584	1,980	1,584	1,188	792	396	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	132	264	396	528	660	660	660	660	660	660	528	396	264	132	0	0	0	0	0	0	0	0	0	0	0
6	Irrigation	Landscape Conversion or Turf Removal - MF	61,900	123,800	185,700	247,600	309,500	309,500	309,500	309,500	309,500	309,500	247,600	185,700	123,800	61,900	0	0	0	0	0	0	0	0	0	0	0
7	Single Family	Landscape Conversion or Turf Removal -SFR	20,153	40,306	60,459	80,612	100,765	100,765	100,765	100,765	100,765	100,765	80,612	60,459	40,306	20,153	0	0	0	0	0	0	0	0	0	0	0
8	Single Family	Rain Sensor Rebate	132	264	396	528	660	528	396	264	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Commercial	Restaurant Spray Nozzle Rebates	26	52	78	104	130	104	78	52	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Single Family	Rotating Sprinkler Nozzle Rebate	132	264	264	264	264	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	26	52	78	104	130	130	130	130	130	130	104	78	52	26	0	0	0	0	0	0	0	0	0	0	0
12	Commercial	Water Use Surveys/Audits - CII	26	47	63	77	87	61	41	24	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Single Family	Water Use Surveys/Audits - SFR	78	140	190	230	262	184	122	72	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Gross Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	18.5	37.1	55.6	74.1	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.6	1.1	1.7	2.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.3	1.7	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.6	1.2	1.8	2.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.4	1.8	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	2.3	4.5	6.8	9.1	11.3	9.1	6.8	4.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	2.3	4.6	6.9	9.1	11.4	11.4	11.4	11.4	11.4	11.4	9.1	6.9	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	2.1	4.3	6.4	8.5	10.7	10.7	10.7	10.7	10.7	10.7	8.5	6.4	4.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.7	1.4	2.1	2.8	3.5	3.5	3.5	3.5	3.5	3.5	2.8	2.1	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	1.1	2.2	3.4	4.5	5.6	4.5	3.4	2.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	3.5	7.0	10.5	14.0	17.5	14.0	10.5	7.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.6	1.2	1.2	1.2	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	7.7	15.4	23.1	30.8	38.6	38.6	38.6	38.6	38.6	38.6	30.8	23.1	15.4	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	8.7	15.6	21.2	25.6	29.2	20.5	13.5	8.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	3.0	5.3	7.2	8.7	10.0	7.0	4.6	2.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Gross Water Savings		**51.6**	**100.9**	**147.8**	**193.1**	**237.3**	**218.2**	**201.5**	**187.1**	**174.3**	**162.7**	**149.8**	**137.0**	**123.0**	**109.0**	**95.0**	**93.9**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**

Peak Gross Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	1.8	3.6	5.4	7.2	9.1	7.2	5.4	3.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	1.7	3.4	5.1	6.8	8.5	8.5	8.5	8.5	8.5	8.5	6.8	5.1	3.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

7	Single Family	Landscape Conversion or Turf Removal -SFR	0.6	1.1	1.7	2.2	2.8	2.8	2.8	2.8	2.8	2.8	2.2	1.7	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	5.4	10.8	16.2	21.6	27.0	27.0	27.0	27.0	27.0	27.0	21.6	16.2	10.8	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	2.0	3.6	4.9	5.9	6.8	4.8	3.1	1.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Gross Water Savings		**11.5**	**22.6**	**33.3**	**43.8**	**54.1**	**50.3**	**46.9**	**43.8**	**40.9**	**38.3**	**30.6**	**23.0**	**15.3**	**7.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Off Peak Gross Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	18.5	37.1	55.6	74.1	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.6	1.1	1.7	2.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.3	1.7	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.6	1.2	1.8	2.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.4	1.8	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	0.5	0.9	1.4	1.8	2.3	1.8	1.4	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	2.3	4.6	6.9	9.1	11.4	11.4	11.4	11.4	11.4	11.4	9.1	6.9	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	0.4	0.9	1.3	1.7	2.1	2.1	2.1	2.1	2.1	2.1	1.7	1.3	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.1	0.3	0.4	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	1.1	2.2	3.4	4.5	5.6	4.5	3.4	2.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	3.5	7.0	10.5	14.0	17.5	14.0	10.5	7.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.6	1.2	1.2	1.2	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	2.3	4.6	6.9	9.3	11.6	11.6	11.6	11.6	11.6	11.6	9.3	6.9	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	8.7	15.6	21.2	25.6	29.2	20.5	13.5	8.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	0.9	1.7	2.3	2.8	3.2	2.2	1.5	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Gross Water Savings		**40.1**	**78.4**	**114.5**	**149.3**	**183.2**	**167.9**	**154.6**	**143.4**	**133.4**	**124.4**	**119.2**	**114.0**	**107.7**	**101.4**	**95.0**	**93.9**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**

Active Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	18.5	37.1	55.6	74.1	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.6	1.1	1.7	2.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.3	1.7	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.6	1.2	1.8	2.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.4	1.8	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	2.3	4.5	6.8	9.1	11.3	9.1	6.8	4.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	2.3	4.6	6.9	9.1	11.4	11.4	11.4	11.4	11.4	11.4	9.1	6.9	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	2.1	4.3	6.4	8.5	10.7	10.7	10.7	10.7	10.7	10.7	8.5	6.4	4.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.7	1.4	2.1	2.8	3.5	3.5	3.5	3.5	3.5	3.5	2.8	2.1	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	1.1	2.2	3.4	4.5	5.6	4.5	3.4	2.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	3.5	7.0	10.5	14.0	17.5	14.0	10.5	7.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.6	1.2	1.2	1.2	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	7.7	15.4	23.1	30.8	38.6	38.6	38.6	38.6	38.6	38.6	30.8	23.1	15.4	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	8.7	15.6	21.2	25.6	29.2	20.5	13.5	8.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	3.0	5.3	7.2	8.7	10.0	7.0	4.6	2.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Active Water Savings		**51.6**	**100.9**	**147.8**	**193.1**	**237.3**	**218.2**	**201.5**	**187.1**	**174.3**	**162.7**	**149.8**	**137.0**	**123.0**	**109.0**	**95.0**	**93.9**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**

Peak Active Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	1.8	3.6	5.4	7.2	9.1	7.2	5.4	3.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	1.7	3.4	5.1	6.8	8.5	8.5	8.5	8.5	8.5	8.5	6.8	5.1	3.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.6	1.1	1.7	2.2	2.8	2.8	2.8	2.8	2.8	2.8	2.2	1.7	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	5.4	10.8	16.2	21.6	27.0	27.0	27.0	27.0	27.0	27.0	21.6	16.2	10.8	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	2.0	3.6	4.9	5.9	6.8	4.8	3.1	1.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Active Water Savings		**11.5**	**22.6**	**33.3**	**43.8**	**54.1**	**50.3**	**46.9**	**43.8**	**40.9**	**38.3**	**30.6**	**23.0**	**15.3**	**7.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Off Peak Active Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	18.5	37.1	55.6	74.1	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7	92.7
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.6	1.1	1.7	2.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.3	1.7	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.6	1.2	1.8	2.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.4	1.8	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	0.5	0.9	1.4	1.8	2.3	1.8	1.4	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	2.3	4.6	6.9	9.1	11.4	11.4	11.4	11.4	11.4	11.4	9.1	6.9	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	0.4	0.9	1.3	1.7	2.1	2.1	2.1	2.1	2.1	2.1	1.7	1.3	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.1	0.3	0.4	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	1.1	2.2	3.4	4.5	5.6	4.5	3.4	2.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	3.5	7.0	10.5	14.0	17.5	14.0	10.5	7.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.6	1.2	1.2	1.2	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	2.3	4.6	6.9	9.3	11.6	11.6	11.6	11.6	11.6	11.6	9.3	6.9	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	8.7	15.6	21.2	25.6	29.2	20.5	13.5	8.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

13	Single Family	Water Use Surveys/Audits - SFR	0.9	1.7	2.3	2.8	3.2	2.2	1.5	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Active Water Savings		**40.1**	**78.4**	**114.5**	**149.3**	**183.2**	**167.9**	**154.6**	**143.4**	**133.4**	**124.4**	**119.2**	**114.0**	**107.7**	**101.4**	**95.0**	**93.9**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**	**92.7**

Passive Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Passive Water Savings		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Peak Passive Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Passive Water Savings		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Off Peak Passive Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Passive Water Savings		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Customer Water Bill Savings (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$25,656	$52,332	$80,060	$108,872	$138,798	$141,560	$144,377	$147,250	$150,180	$153,169	$156,217	$159,325	$162,496	$165,730	$169,028	$172,391	$175,822	$179,321	$182,889	$186,529	$190,241	$194,026	$197,888	$201,826	$205,842
2	Commercial	Drip Irrigation Incentive for MFR and CII	$873	$1,781	$2,725	$3,706	$4,724	$4,818	$4,914	$5,012	$5,112	$5,213	$5,317	$5,423	$4,425	$3,384	$2,301	$1,174	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$834	$1,702	$2,604	$3,541	$4,514	$4,604	$4,695	$4,789	$4,884	$4,981	$5,080	$5,181	$4,228	$3,234	$2,199	$1,121	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$3,133	$6,390	$9,776	$13,294	$16,948	$13,828	$10,578	$7,192	$3,668	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$3,161	$6,448	$9,864	$13,414	$17,101	$17,442	$17,789	$18,143	$18,504	$18,872	$15,398	$11,778	$8,009	$4,084	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$3,095	$6,314	$9,660	$13,136	$16,747	$17,080	$17,420	$17,766	$18,120	$18,481	$15,079	$11,534	$7,842	$3,999	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$961	$1,959	$2,997	$4,076	$5,197	$5,300	$5,406	$5,513	$5,623	$5,735	$4,679	$3,579	$2,434	$1,241	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$1,548	$3,157	$4,829	$6,567	$8,373	$6,831	$5,225	$3,553	$1,812	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$5,343	$10,900	$16,675	$22,675	$28,908	$23,587	$18,042	$12,267	$6,256	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$804	$1,640	$1,672	$1,706	$1,740	$887	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$11,199	$22,843	$34,946	$47,522	$60,585	$61,791	$63,020	$64,275	$65,554	$66,858	$54,551	$41,727	$28,372	$14,468	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$13,250	$24,325	$33,630	$41,497	$48,195	$34,532	$23,288	$14,018	$6,354	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$4,099	$7,526	$10,405	$12,839	$14,911	$10,684	$7,205	$4,337	$1,966	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Wastewater Savings		**$73,956**	**$147,317**	**$219,844**	**$292,844**	**$366,740**	**$342,943**	**$321,959**	**$304,114**	**$288,031**	**$273,309**	**$256,321**	**$238,548**	**$217,804**	**$196,140**	**$173,528**	**$174,686**	**$175,822**	**$179,321**	**$182,889**	**$186,529**	**$190,241**	**$194,026**	**$197,888**	**$201,826**	**$205,842**

Wastewater Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	3.5	7.0	10.5	14.0	17.5	14.0	10.5	7.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	1.2	2.1	2.9	3.5	4.0	2.8	1.9	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Wastewater Savings		**4.7**	**9.1**	**13.4**	**17.5**	**21.5**	**16.8**	**12.3**	**8.1**	**4.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Customer Sewer Bill Savings (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Commercial	Drip Irrigation Incentive for MFR and CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$23,571	$49,023	$76,468	$106,025	$137,820	$114,655	$89,422	$61,993	$32,233	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$8,875	$16,613	$23,418	$29,462	$34,889	$25,488	$17,527	$10,756	$4,971	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Wastewater Savings		**$32,446**	**$65,635**	**$99,886**	**$135,488**	**$172,709**	**$140,143**	**$106,949**	**$72,750**	**$37,205**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Customer Electricity Savings (KWh)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Single Family	Rain Sensor Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	Water Use Surveys/Audits - SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Electricity Savings		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Customer Electricity Bill Savings (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Commercial	Drip Irrigation Incentive for MFR and CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Electricity Savings		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Customer Gas Savings (Therms)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Commercial	Drip Irrigation Incentive for MFR and CII	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Single Family	Drip Irrigation Incentive for SFR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

6	Irrigation	Landscape Conversion or Turf Removal - MF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Single Family	Landscape Conversion or Turf Removal -SFR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Single Family	Rain Sensor Rebate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Commercial	Restaurant Spray Nozzle Rebates	9,497	18,993	28,490	37,986	47,483	37,986	28,490	18,993	9,497	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Single Family	Rotating Sprinkler Nozzle Rebate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Commercial	Water Use Surveys/Audits - CII	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Single Family	Water Use Surveys/Audits - SFR	924	1,664	2,255	2,728	3,107	2,183	1,443	852	379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Gas Savings		**10,421**	**20,657**	**30,744**	**40,714**	**50,589**	**40,169**	**29,933**	**19,845**	**9,875**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Customer Gas Savings (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Commercial	Drip Irrigation Incentive for MFR and CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$7,626	$15,253	$22,879	$30,505	$38,131	$30,505	$22,879	$15,253	$7,626	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$1,850	$3,330	$4,515	$5,462	$6,220	$4,370	$2,889	$1,705	$758	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Gas Savings		**$9,477**	**$18,583**	**$27,393**	**$35,967**	**$44,351**	**$34,875**	**$25,768**	**$16,958**	**$8,384**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

User Entered Utility Avoided Water System Cost (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Commercial	Drip Irrigation Incentive for MFR and CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Avoided Cost		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

User Entered Utility Avoided Wastewater System Cost (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Commercial	Drip Irrigation Incentive for MFR and CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Avoided Cost		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

User Entered Other Utility Avoided Cost (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Commercial	Drip Irrigation Incentive for MFR and CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

12	Commercial	Water Use Surveys/Audits - CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Avoided Cost		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Model Calculator Utility Water System Avoided Cost (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$28,952	$59,685	$92,200	$126,497	$162,574	$167,735	$172,895	$178,056	$183,216	$188,377	$194,356	$200,336	$206,315	$212,295	$218,274	$225,203	$232,131	$239,060	$245,989	$252,917	$260,945	$268,973	$277,002	$285,030	$293,058
2	Commercial	Drip Irrigation Incentive for MFR and CII	$893	$1,840	$2,843	$3,900	$5,013	$5,172	$5,331	$5,490	$5,649	$5,808	$5,993	$6,177	$5,089	$3,927	$2,692	$1,389	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$942	$1,941	$2,998	$4,114	$5,287	$5,455	$5,623	$5,790	$5,958	$6,126	$6,320	$6,515	$5,368	$4,142	$2,839	$1,465	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$3,535	$7,288	$11,258	$15,446	$19,851	$16,385	$12,667	$8,697	$4,474	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$3,567	$7,354	$11,360	$15,586	$20,031	$20,667	$21,303	$21,938	$22,574	$23,210	$19,158	$14,810	$10,168	$5,231	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$3,329	$6,864	$10,603	$14,547	$18,696	$19,289	$19,883	$20,476	$21,070	$21,663	$17,881	$13,823	$9,490	$4,883	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$1,084	$2,235	$3,452	$4,736	$6,087	$6,280	$6,473	$6,666	$6,860	$7,053	$5,821	$4,500	$3,090	$1,590	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$1,746	$3,600	$5,562	$7,630	$9,807	$8,094	$6,258	$4,296	$2,210	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$5,463	$11,261	$17,396	$23,867	$30,674	$25,318	$19,573	$13,438	$6,914	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$907	$1,870	$1,926	$1,982	$2,038	$1,051	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$12,045	$24,831	$38,359	$52,627	$67,637	$69,784	$71,931	$74,078	$76,225	$78,372	$64,687	$50,008	$34,334	$17,664	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$13,546	$25,133	$35,085	$43,678	$51,139	$37,067	$25,264	$15,355	$7,022	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$4,626	$8,583	$11,983	$14,917	$17,465	$12,659	$8,628	$5,244	$2,398	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Avoided Cost		**$80,635**	**$162,486**	**$245,025**	**$329,527**	**$416,299**	**$394,957**	**$375,829**	**$359,525**	**$344,571**	**$330,609**	**$314,216**	**$296,170**	**$273,854**	**$249,733**	**$223,806**	**$228,056**	**$232,131**	**$239,060**	**$245,989**	**$252,917**	**$260,945**	**$268,973**	**$277,002**	**$285,030**	**$293,058**

Model Calculator Utility Wastewater System Avoided Cost (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Commercial	Drip Irrigation Incentive for MFR and CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$1,477	$2,960	$4,451	$5,948	$7,452	$5,976	$4,492	$3,002	$1,504	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$500	$903	$1,226	$1,487	$1,697	$1,195	$792	$469	$209	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Avoided Cost		**$1,977**	**$3,863**	**$5,677**	**$7,435**	**$9,150**	**$7,171**	**$5,284**	**$3,470**	**$1,713**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Total Avoided Water and Wastewater Production Cost (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Direct Install of Efficient Indoor Fixtures - Low	$28,952	$59,685	$92,200	$126,497	$162,574	$167,735	$172,895	$178,056	$183,216	$188,377	$194,356	$200,336	$206,315	$212,295	$218,274	$225,203	$232,131	$239,060	$245,989	$252,917	$260,945	$268,973	$277,002	$285,030	$293,058
2	Commercial	Drip Irrigation Incentive for MFR and CII	$893	$1,840	$2,843	$3,900	$5,013	$5,172	$5,331	$5,490	$5,649	$5,808	$5,993	$6,177	$5,089	$3,927	$2,692	$1,389	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Single Family	Drip Irrigation Incentive for SFR	$942	$1,941	$2,998	$4,114	$5,287	$5,455	$5,623	$5,790	$5,958	$6,126	$6,320	$6,515	$5,368	$4,142	$2,839	$1,465	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Single Family	High Efficiency Faucet Aerator / Showerhead	$3,535	$7,288	$11,258	$15,446	$19,851	$16,385	$12,667	$8,697	$4,474	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Single Family	Incentivize Gray Water Retrofit for Existing S	$3,567	$7,354	$11,360	$15,586	$20,031	$20,667	$21,303	$21,938	$22,574	$23,210	$19,158	$14,810	$10,168	$5,231	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Irrigation	Landscape Conversion or Turf Removal - MF	$3,329	$6,864	$10,603	$14,547	$18,696	$19,289	$19,883	$20,476	$21,070	$21,663	$17,881	$13,823	$9,490	$4,883	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Single Family	Landscape Conversion or Turf Removal -SFR	$1,084	$2,235	$3,452	$4,736	$6,087	$6,280	$6,473	$6,666	$6,860	$7,053	$5,821	$4,500	$3,090	$1,590	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Single Family	Rain Sensor Rebate	$1,746	$3,600	$5,562	$7,630	$9,807	$8,094	$6,258	$4,296	$2,210	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Commercial	Restaurant Spray Nozzle Rebates	$6,939	$14,222	$21,847	$29,815	$38,127	$31,294	$24,065	$16,440	$8,418	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Single Family	Rotating Sprinkler Nozzle Rebate	$907	$1,870	$1,926	$1,982	$2,038	$1,051	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Irrigation	Smart Irrigation Controller (Weather-Based Ir	$12,045	$24,831	$38,359	$52,627	$67,637	$69,784	$71,931	$74,078	$76,225	$78,372	$64,687	$50,008	$34,334	$17,664	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Commercial	Water Use Surveys/Audits - CII	$13,546	$25,133	$35,085	$43,678	$51,139	$37,067	$25,264	$15,355	$7,022	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Single Family	Water Use Surveys/Audits - SFR	$5,126	$9,486	$13,209	$16,404	$19,163	$13,854	$9,421	$5,713	$2,607	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Avoided Cost		**$82,612**	**$166,349**	**$250,702**	**$336,962**	**$425,449**	**$402,127**	**$381,113**	**$362,996**	**$346,284**	**$330,609**	**$314,216**	**$296,170**	**$273,854**	**$249,733**	**$223,806**	**$228,056**	**$232,131**	**$239,060**	**$245,989**	**$252,917**	**$260,945**	**$268,973**	**$277,002**	**$285,030**	**$293,058**

Appendix C

Prioritization and Screening of Future Water Conservation Measures

Prioritization and Screening of Future Water Conservation Measures
Marin-Sonoma Saving Water Partnership

INSTRUCTIONS: Please review and complete the orange highlighted cells using the provided dropdown lists. Comments and clarifications may be added to the comments column on the right. You may use the filter features to help navigate this list. "Preference for Implementation" need only be completed when a program is given a priorty of 3 or greater. See READ ME tab for additional information.

Conservation Measure/Program	Type	Indoor / Outdoor	Primary End Use	Sector	Priority as a Regional Program	Priority as a Local Program	Preference for Implementation	Current Implementation Status	Notes / Comments	Source	Added By
Agency Actions and Water Rates											
Customer Water Loss Reduction (AMI Leak Detection)	Agency action	Both	Water Loss	All						2015 Screening	EKI
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement	Agency action	Both	Water loss; Irrigation	All						Added 2020	EKI
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	Agency action	Indoor	Toilet, Urinal, Faucet, Showerhead	All					Enforcement of SB 407 at time of sale.	2015 Screening	EKI
Increase Enforcement of State Water Waste Regulations	Agency action	Outdoor	Irrigation	All					Assumes water waste regulations per Executive Order B-40-17 rulemaking is completed largely as currently proposed.	Added 2020	EKI
Install AMI for Existing Accounts	Agency action	Both	Water Loss	All						2015 Screening	EKI
Install AMI for High Water Users and Large Landscape Accounts	Agency action	Outdoor	Water Loss	All						2015 Screening	EKI
Install AMI in New Development	Agency action	Both	Water Loss	All						2015 Screening	EKI
Rate Structure Evaluation	Agency action	Both	All	All						2015 Screening	EKI
Regional UHET and/or Urinal Bulk Purchase Program	Agency action	Indoor	Toilet / Urinal	All					Fixtures are purchased in bulk at a discounted rate and then sold to customers at the discounted rate	2015 Screening	EKI
Water Budgeting/Monitoring for Large Landscape Accounts	Agency action	Both	Irrigation	IRR						2015 Screening	EKI
Establish Separate Pricing Structure for Irrigation Accounts	Water Rates	Outdoor	Irrigation	IRR						2015 Screening	EKI
Modification to or Implementation of Tiered Rate Conservation Pricing	Water Rates	Both	All	All						2015 Screening	EKI
Tiered Water Rates (Conservation Pricing)	Water Rates	Both	All	All						2015 Screening	EKI
Water Budget Based Billing for All Customers	Water Rates	Both	All	All						2015 Screening	EKI
Water Budget Based Billing for Only Irrigation Customers	Water Rates	Outdoor	Irrigation	CII, IRR						2015 Screening	EKI
Public Outreach and Education											
Water Use Surveys/Audits - CII	Audit/ Survey	Both	All	CII						2015 Screening	EKI
Water Use Surveys/Audits - MFR	Audit/ Survey	Indoor	All Indoor	MFR						2015 Screening	EKI
Water Use Surveys/Audits - SFR	Audit/ Survey	Both	All	SFR						2015 Screening	EKI
Educational Workshops	Public Outreach/ Workshop	Outdoor	All Outdoor	SFR						Added 2020	MMWD
Garden tour	Public Outreach/ Workshop	Outdoor	Outdoor	SFR						Added 2020	MMWD
Promote Green Building and Certification	Public Outreach/ Workshop	Both	All	All						2015 Screening	EKI
Provide Support with Smart Irrigation Controller Setup	Public Outreach/ Workshop	Outdoor	Irrigation	All						Added 2020	EKI
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	Public Outreach/ Workshop	Outdoor	All Indoor	All						2015 Screening	EKI
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	Public Outreach/ Workshop	Indoor	Irrigation	All						2015 Screening	EKI
QWEL Training (Qualified Water Efficient Landscaper)	Public Outreach/ Workshop	Outdoor	Irrigation	All						Added 2020	EKI
School Education Programs	Public Outreach/ Workshop	Both	All	SFR, MFR						2015 Screening	EKI
Device-Based and Financial Incentive Programs											
Direct Install of Efficient Indoor Fixtures - Commercial and Industrial	Direct Install/ No-Cost Device	Indoor	Toilet, Urinal, Faucet, Showerhead	CII						2015 Screening	EKI
Direct Install of Efficient Indoor Fixtures - Government Buildings	Direct Install/ No-Cost Device	Indoor	Toilet, Urinal, Faucet, Showerhead	CII						2015 Screening	EKI
Direct Install of Efficient Indoor Fixtures - Low Income Residential	Direct Install/ No-Cost Device	Indoor	Toilet, Faucet, Showerhead	SFR, MFR						2015 Screening	EKI
Direct Install of Efficient Indoor Fixtures - Residential	Direct Install/ No-Cost Device	Indoor	Toilet, Faucet, Showerhead	SFR, MFR						2015 Screening	EKI
High Efficiency Clothes Washer Install - Low Income Residential Customers	Direct Install/ No-Cost Device	Indoor	Clothes Washer	SFR, MFR						Added 2020	EKI
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	Direct Install/ No-Cost Device	Indoor	Faucet, Showerhead	CII						2015 Screening	EKI
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	Direct Install/ No-Cost Device	Indoor	Faucet, Showerhead	SFR, MFR						2015 Screening	EKI
Rain Barrel Giveaway	Direct Install/ No-Cost Device	Outdoor	Irrigation	SFR						Added 2020	EKI
Rain Sensor Giveaway	Direct Install/ No-Cost Device	Outdoor	Irrigation	All						2015 Screening	EKI
Rotating Sprinkler Nozzle Giveaway	Direct Install/ No-Cost Device	Outdoor	Irrigation	All						Added 2020	EKI
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	Direct Install/ No-Cost Device	Outdoor	Irrigation	MFR, CII						2015 Screening	EKI
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	Direct Install/ No-Cost Device	Outdoor	Irrigation	SFR						Added 2020	EKI
Soil Moisture Sensor Giveaway	Direct Install/ No-Cost Device	Outdoor	Irrigation	All						Added 2020	EKI
Toilet Flapper Giveaway - SFR customers	Direct Install/ No-Cost Device	Indoor	Toilet	SFR, MFR					Could be used for CII customers, but hasn't been yet.	Added 2020	Santa Rosa
UHET Direct Installation - CII	Direct Install/ No-Cost Device	Indoor	Toilet	CII						2015 Screening	EKI
UHET Direct Installation - Residential	Direct Install/ No-Cost Device	Indoor	Toilet	SFR, MFR						2015 Screening	EKI
Urinal Direct Installation - CII	Direct Install/ No-Cost Device	Indoor	Urinal	CII						Added 2020	EKI
Autoclave (Steam-Sterilizer) Retrofit Rebates	Rebate/ Financial Incentive	Indoor	CII Equipment	CII					More info: https://www.energy.gov/eere/femp/water-efficient-technology-opportunity-steam-sterilizer-condensate-retrofit-kit	Added 2020	EKI
Connectionless Food Steamer Rebates	Rebate/ Financial Incentive	Indoor	CII Equipment	CII					More info: https://www.energy.gov/eere/femp/water-efficient-technology-opportunity-connectionless-food-steamer	Added 2020	EKI
Dipper Well Rebates	Rebate/ Financial Incentive	Indoor	CII Equipment	CII					Incentivize replacement of perpetual-flow holders for ice cream dippers & utensils; https://server-products.com/equipment/conservewell/utensil-holder/87740.htm	Added 2020	EKI
Drip Irrigation Incentive for MFR and CII	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR, CII						2015 Screening	EKI
Drip Irrigation Incentive for SFR	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						2015 Screening	EKI
Dry Vacuum Pumps	Rebate/ Financial Incentive	Indoor	CII Equipment	CII						2015 Screening	EKI
Efficient (EnergyStar) Dishwasher Rebates	Rebate/ Financial Incentive	Indoor	Dishwashers	SFR						2015 Screening	EKI
High Efficiency Clothes Washer Rebate - Residential	Rebate/ Financial Incentive	Indoor	Clothes Washer	SFR, MFR						2015 Screening	EKI
High Efficiency Clothes Washer Rebate Program - CII	Rebate/ Financial Incentive	Indoor	Clothes Washer	CII						2015 Screening	EKI
High Efficiency Urinal (<0.25 gal/flush) Rebates - CII	Rebate/ Financial Incentive	Indoor	Urinal	CII						2015 Screening	EKI

Prioritization and Screening of Future Water Conservation Measures
Marin-Sonoma Saving Water Partnership

INSTRUCTIONS: Please review and complete the orange highlighted cells using the provided dropdown lists. Comments and clarifications may be added to the comments column on the right. You may use the filter features to help navigate this list. "Preference for Implementation" need only be completed when a program is given a priorty of 3 or greater. See READ ME tab for additional information.

Conservation Measure/Program	Type	Indoor / Outdoor	Primary End Use	Sector	Priority as a Regional Program	Priority as a Local Program	Preference for Implementation	Current Implementation Status	Notes / Comments	Source	Added By
Hot Water on Demand Pump System Rebate	Rebate/ Financial Incentive	Indoor	Hot Water	SFR, MFR						2015 Screening	EKI
Incentivize Artificial Turf for Sports Fields	Rebate/ Financial Incentive	Outdoor	Irrigation	CII						2015 Screening	EKI
Incentivize Cooling Tower Upgrades	Rebate/ Financial Incentive	Indoor	Cooling Towers	CII						Added 2020	EKI
Incentivize Gray Water Retrofit for Existing SFR Customers	Rebate/ Financial Incentive	Outdoor	Irrigation / Gray Water	SFR						2015 Screening	EKI
Incentivize Gray Water Systems for New CII Development	Rebate/ Financial Incentive	Both	Irrigation / Gray Water	CII						2015 Screening	EKI
Incentivize Irrigation Equipment Upgrades - Large Landscapes	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR, CII, IRR						2015 Screening	EKI
Incentivize Irrigation Equipment Upgrades - SFR	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						2015 Screening	EKI
Incentivize Replacement of Inefficient Commercial and Industrial Equipment	Rebate/ Financial Incentive	Indoor	CII Equipment	CII					Example: SoCal Water Smart Water Savings Incentive Program: https://socalwatersmart.com/en/commercial/water-savings-incentive-program/	2015 Screening	EKI
Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs	Rebate/ Financial Incentive	Both	Water loss; Irrigation	All					PRVs must be installed by customers with pressure exceeding 80 psi, per the plumbing code	2015 Screening	EKI
Incentivize Submetering for Existing Customers - CII	Rebate/ Financial Incentive	Both	All Indoor	MFR, COM, IRR						2015 Screening	EKI
Incentivize Submetering for Existing Customers - MFR	Rebate/ Financial Incentive	Both	All Indoor	MFR						2015 Screening	EKI
Incentivize Submetering of Cooling Towers for Existing Customers	Rebate/ Financial Incentive	Indoor	Cooling Towers	CII						2015 Screening	EKI
Indoor Fixture Program For Hotels & Motels	Rebate/ Financial Incentive	Indoor	All Indoor	CII						2015 Screening	EKI
Indoor Fixture Program For Schools	Rebate/ Financial Incentive	Indoor	All Indoor	CII						2015 Screening	EKI
Landscape Conversion or Turf Removal - MFR and CII	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR, CII						2015 Screening	EKI
Landscape Conversion or Turf Removal -SFR	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						2015 Screening	EKI
Mulch rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						Added 2020	MMWD
Nonresidential Incentive for Self-closing or Metering Faucets	Rebate/ Financial Incentive	Indoor	Faucet	CII						Added 2020	Sonoma
Plumber Initiated UHET and / or Urinal Retrofit Program	Rebate/ Financial Incentive	Indoor	Toilet	All						2015 Screening	EKI
Rain Barrel Rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						2015 Screening	EKI
Rain Sensor Rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	All						2015 Screening	EKI
Rainwater Catchment System Rebate for Large Landscapes	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR, CII						2015 Screening	EKI
Rebates for Conductivity Controllers on Cooling Towers	Rebate/ Financial Incentive	Indoor	Cooling Towers	CII						2015 Screening	EKI
Restaurant Spray Nozzle Rebates	Rebate/ Financial Incentive	Indoor	CII Equipment	CII						2015 Screening	EKI
Rotating Sprinkler Nozzle Rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	All						2015 Screening	EKI
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR, CII						2015 Screening	EKI
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SFR	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						2015 Screening	EKI
Soil Moisture Sensor Rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	All						2015 Screening	EKI
Swimming Pool and Hot Tub Cover Rebates	Rebate/ Financial Incentive	Outdoor	Pool/Hot Tub	SFR, MFR						Added 2020	EKI
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	Rebate/ Financial Incentive	Indoor	Shower	SFR, MFR, CII					Reduce hot water use before showering https://www.thinkevolve.com/	Added 2020	EKI
Tier 4 Exemption	Rebate/ Financial Incentive	Both	toilet, Faucet, Showerhead, clothes washer, irrigation	SFR					Exemption from high tier water rates w/installation of devices	Added 2020	MMWD
UHET <1.0 gal/flush Rebate - CII	Rebate/ Financial Incentive	Indoor	Toilet	CII						2015 Screening	EKI
UHET <1.0 gal/flush Rebate - Residential	Rebate/ Financial Incentive	Indoor	Toilet	SFR, MFR						2015 Screening	EKI
Water Savings Incentive Program for CII	Rebate/ Financial Incentive	Indoor	All Indoor	CII					Financial incentive to reward demonstrated water savings and offset capital improvement costs; Example: SoCal Water Smart Water Savings Incentive Program: https://socalwatersmart.com/en/commercial/water-savings-incentive-program/	2015 Screening	EKI
Policies and Regulations											
Demand Offset/Water Neutral Policy for Large New Developments	Policy/ Regulation	Both	All	All						Added 2020	EKI
Prohibit Once through Cooling Systems	Policy/ Regulation	Both	CII Equipment	CII						2015 Screening	EKI
Require <0.25 gal/flush Urinals in New Development	Policy/ Regulation	Indoor	Urinal	CII						2015 Screening	EKI
Require <1.0 gal/flush Toilets in New Development	Policy/ Regulation	Indoor	Toilet	All					State minimum efficiency is 1.28 gal/flush	Added 2020	EKI
Require Cooling Tower Retrofits	Policy/ Regulation	Indoor	Cooling Towers	CII						2015 Screening	EKI
Require Efficient (EnergyStar) Dishwashers in New Development	Policy/ Regulation	Indoor	Dishwashers	SFR, MFR						2015 Screening	EKI
Require High Efficiency Clothes Washers in New Development	Policy/ Regulation	Indoor	Clothes Washer	SFR, MFR						2015 Screening	EKI
Require Hot Water on Demand / Structured Plumbing in New Residential Development	Policy/ Regulation	Indoor	Shower/Sink	SFR, MFR						2015 Screening	EKI
Require Irrigation Designers / Installers be Certified (QWEL)	Policy/ Regulation	Outdoor	Irrigation	All						2015 Screening	EKI
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII Developments	Policy/ Regulation	Outdoor	Irrigation / Recycled Water	CII					Example: https://sfwater.org/index.aspx?page=686	Added 2020	EKI
Require Plumbing for Gray Water in New SFR Development	Policy/ Regulation	Outdoor	Irrigation / Gray Water	SFR						2015 Screening	EKI
Require Plumbing for Recycled Water in New CII Development	Policy/ Regulation	Outdoor	Irrigation / Recycled Water	CII						Added 2020	EKI
Require Plumbing for Recycled Water in New MFR Development	Policy/ Regulation	Outdoor	Irrigation / Recycled Water	MFR						Added 2020	EKI
Require Rain Barrels in New Development	Policy/ Regulation	Outdoor	Irrigation	SFR						2015 Screening	EKI
Require Submetering by Unit for Existing Commercial Customers	Policy/ Regulation	Indoor	All Indoor	CII						Added 2020	EKI
Require Submetering by Unit for New Commercial Developments	Policy/ Regulation	Indoor	All Indoor	CII						Added 2020	EKI
Require Submetering for New MFR Developments	Policy/ Regulation	Indoor	All Indoor	MFR						2015 Screening	EKI
Require Submetering for New Mobile Home Park Developments	Policy/ Regulation	Indoor	All Indoor	MFR						2015 Screening	EKI
Require Submetering of Cooling Towers for Existing Customers	Policy/ Regulation	Indoor	Cooling Towers	CII						Added 2020	EKI
Require Submetering of Cooling Towers for New Development	Policy/ Regulation	Indoor	Cooling Towers	CII						Added 2020	EKI
Require Submetering of Existing MFR (and Mobile Home Park) Customers	Policy/ Regulation	Indoor	All Indoor	MFR						Added 2020	EKI
Require Submetering of Landscaping for Existing MFR and Commercial Customers	Policy/ Regulation	Outdoor	Irrigation	MFR, CII						Added 2020	EKI
Require Submetering of Landscaping for New MFR and Commercial Developments	Policy/ Regulation	Outdoor	Irrigation	CII						Added 2020	EKI
Require Swimming Pool and Hot Tub Covers	Policy/ Regulation	Outdoor	Pool/Hot Tub	SFR, MFR						2015 Screening	EKI

Prioritization and Screening of Future Water Conservation Measures
Marin-Sonoma Saving Water Partnership

INSTRUCTIONS: Please review and complete the orange highlighted cells using the provided dropdown lists. Comments and clarifications may be added to the comments column on the right. You may use the filter features to help navigate this list. "Preference for Implementation" need only be completed when a program is given a priorty of 3 or greater. See READ ME tab for additional information.

Conservation Measure/Program	Type	Indoor / Outdoor	Primary End Use	Sector	Priority as a Regional Program	Priority as a Local Program	Preference for Implementation	Current Implementation Status	Notes / Comments	Source	Added By
Require Water Efficiency Plan Reviews for New CII Development	Policy/ Regulation	Both	All Indoor	CII						2015 Screening	EKI
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	Policy/ Regulation	Outdoor	Irrigation	All						2015 Screening	EKI
Restrict Landscape Irrigation to Designated Days/Times	Policy/ Regulation	Outdoor	Irrigation	All					Under all conditions, not just drought	2015 Screening	EKI
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	Policy/ Regulation	Outdoor	Irrigation	All						2015 Screening	EKI
Water Waste Ordinance	Policy/ Regulation	Outdoor	All Outdoor	All						Added 2020	MMWD

Abbreviations:
AMI = advanced metering infrastructure
CII = commercial, industrial, institutional
COM = commercial
HET = high efficiency toilet
HEU = high efficiency urinal
Info = information
IRR = irrigation account
MFR = multi-family residential
MWELO = Model Water Efficient Landscape Ordinance
PRV = pressure reducing valve
SFR = single-family residential
SMSWP = Sonoma-Marin Saving Water Partnership
UHET = ultra high efficiency toilet

APPENDIX D – AMERICAN WATER WORKS ASSOCIATION WATER LOSS AUDIT REPORT FORM

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.
Copyright © 2014, All Rights Reserved.

? Click to access definition
+ Click to add a comment

Water Audit Report for: Town of Windsor/ Windsor Water District (CA4910017)
Reporting Year: 2019-2020 | 7/2019 - 6/2020

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

					Pcnt:	Value:	
Volume from own sources:	7	3,334.527	acre-ft/yr	3			acre-ft/yr
Water imported:	7	473.500	acre-ft/yr	5			acre-ft/yr
Water exported:	n/a	0.000	acre-ft/yr				acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 3,808.027 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	5	3,552.570	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	n/a	0.000	acre-ft/yr			
Unbilled unmetered:	8	36.573	acre-ft/yr		36.573	acre-ft/yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: ? 3,589.143 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 218.884 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:	6	3.500	acre-ft/yr		3.500	acre-ft/yr
Customer metering inaccuracies:	3	8.097	acre-ft/yr		8.097	acre-ft/yr
Systematic data handling errors:	7	3.500	acre-ft/yr		3.500	acre-ft/yr

Apparent Losses: ? 15.097 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 203.787 acre-ft/yr

WATER LOSSES: 218.884 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: ? 255.457 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	7	145.7	miles
Number of active AND inactive service connections:	7	5,577	
Service connection density:		38	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 5 78.0 psi

COST DATA

Total annual cost of operating water system:	10	$7,632,391	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$7.47	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	5	$433.12	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 67 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

APPENDIX E – SB X7-7 TABLES

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*
NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate	
Method Used to Determine 2020 Population (may check more than one)	
☑	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☐	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	28,397
NOTES: People served by the Town's potable water system (Town limits and outside service areas) minus residents using private potable well water.	

SB X7-7 Table 4: 2020 Gross Water Use							
Compliance Year 2020	**2020 Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**2020 Deductions**					**2020 Gross Water Use**
		Exported Water *	**Change in Dist. System Storage*** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use***	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	3,784			-		-	**3,784**

*** Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Russian River Well Field
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	3,190	-	3,190

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s) Meter Error Adjustment

Complete one table for each source.

Name of Source	Esposti Well
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	50		50

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:
The Esposti well produces raw water that is used only to irrigate Esposti Park.

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Purchased Water from Sonoma Water
This water source is *(check one)* **:**	
☐	The supplier's own water source
☑	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	544		544

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:
Russian River surface water purchased from Sonoma Water and delivered through the Santa Rosa Aqueduct.

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
3,784	28,397	**119**
NOTES:		

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD (Enter "0" if Adjustment Not Used)			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
119	-	-	-	-	119	130	**YES**

[1] *All values are reported in GPCD*

[2] ***2020 Confirmed Target GPCD*** *is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.*

NOTES:

APPENDIX F – 2006 RESTRUCTURED AGREEMENT BETWEEN SONOMA WATER AND THE TOWN

RESTRUCTURED AGREEMENT FOR WATER SUPPLY

by and between

SONOMA COUNTY WATER AGENCY
CITY OF COTATI
CITY OF PETALUMA
CITY OF ROHNERT PARK
CITY OF SANTA ROSA
CITY OF SONOMA
FORESTVILLE WATER DISTRICT
NORTH MARIN WATER DISTRICT
VALLEY OF THE MOON WATER DISTRICT
TOWN OF WINDSOR

****

TABLE OF CONTENTS

PART 1 - GENERAL 1
1.1 Recital of Purposes 1
1.2 Definitions 1
1.3 Term of Agreement 9
1.4 Previous Agreements Terminated or Modified 9
1.5 Enforcement 10
1.6 Amendments 11
1.7 Pledge of Revenues 11
1.8 Books, Records and Accounts 12
1.9 Water Contractors' Duty to Provide Funds 13
1.10 Severability 13
1.11 Third Party Beneficiaries 13
1.12 Water Conservation Requirements 13
1.13 Recycled Water and Local Supply Project Requirements 14
1.14 Transitional Provisions Applicable to Forestville 15
1.15 Local Production Capacity Goal 15

PART 2 - PLANNING, FINANCING, ACQUISITION, CONSTRUCTION, OPERATION AND MAINTENANCE 16
2.1 Financing Additions to the Existing Transmission System 16
2.2 Scheduling of Additions and Replacements to the Existing Transmission System 16
2.3 Further Modifications to Transmission System 17
2.4 Potter Valley Project 18
2.5 Water Conservation Projects 20
2.6 Recycled Water and Local Supply Projects 20
2.7 Water Management Planning 20
2.8 Watershed Planning and Restoration 21
2.9 Planning Coordination 22
2.10 Operation and Maintenance 22

PART 3 - WATER SUPPLY 23
3.1 Delivery Entitlements of Water Contractors 23
3.2 Conditions on Other Agency Customer Deliveries 25
3.3 Deliveries in Excess of Entitlement Limits 26
3.4 Surplus Water 28
3.5 Shortage of Water and Apportionment 29
3.6 Fire Fighting Service 34

3.7 Quality of Water 35
3.8 Points of Delivery 35
3.9 Risk of Loss and Responsibility 35
3.10 Place of Use of Water Delivered to North Marin 35
3.11 Measurement 36
3.12 Marin Municipal Water Deliveries 36
3.13 Damages for Peaking on the Transmission System or Taking Water in Excess of Average Daily Rate of Flow Entitlement Limits in Violation of Section 3.3 37

PART 4 - CHARGES AND PAYMENTS 38
4.1 Separate Charges and Funds 38
4.2 Operation and Maintenance Charge 39
4.3 Allocation of Capital Costs to North Marin 40
4.4 Remaining Facility, Additional Facility and Replacement Facility Capital Cost Payments by North Marin 41
4.5 Payment of Remaining Facilities, Additional Facilities, Replacement Facilities, and Potter Valley Project Capital Costs 42
4.6 Aqueduct Facilities Capital Charges 43
4.7 Storage Facilities Capital Charge 47
4.8 Common Facilities Capital Charge 48
4.9 North Marin Capital Charge 48
4.10 Power; Revenues 49
4.11 Payment for Surplus Water and Water Sold To Marin Municipal 50
4.12 Minimum Payments by Other Agency Customers 51
4.13 Operations and Maintenance Charge – Water Management Planning 51
4.14 Operations and Maintenance Charge – Watershed Planning and Restoration 51
4.15 Operations and Maintenance Charge – Recycled Water and Local Supply 53
4.16 Operations and Maintenance Charge – Water Conservation 53
4.17 Payments by Town of Windsor 54
4.18 Payment of Russian River Conservation Charge and Russian River Projects Charge by North Marin 54
4.19 Billing and Time of Payment 56

PART 5 - Water Advisory Committee/Technical Advisory Committee 57
5.1 Purpose 57
5.2 Powers 57
5.3 Composition and Voting 57

RESTRUCTURED AGREEMENT FOR WATER SUPPLY

THIS AGREEMENT is made on June 23, 2006 by and between the following public entities:

SONOMA COUNTY WATER AGENCY, herein called "Agency",
CITY OF COTATI, herein called "Cotati",
CITY OF PETALUMA, herein called "Petaluma",
CITY OF ROHNERT PARK, herein called "Rohnert Park",
CITY OF SANTA ROSA, herein called "Santa Rosa",
CITY OF SONOMA, herein called "Sonoma",
FORESTVILLE WATER DISTRICT, herein called "Forestville",
NORTH MARIN WATER DISTRICT, herein called "North Marin",
VALLEY OF THE MOON WATER DISTRICT, herein called "Valley of the Moon", and
TOWN OF WINDSOR, herein called "Windsor",

The parties hereto hereby mutually covenant and agree as follows:

PART 1 - GENERAL

1.1 Recital of Purposes

Among the purposes of this Agreement are to provide a water supply or a supplemental water supply for each of the Water Contractors, to encourage water conservation and recycled water use that reduces potable water use, to provide environmental improvements and enhancements to allow for sustainable and continued use of Russian River Project water, to encourage the development of local supply projects to offset potable water use, and to provide for payment to the Agency for water delivered hereunder sufficient to enable it to pay the capital costs of major replacements and additions to the Transmission System and to meet its Revenue Bond Obligations and its expenses of operating and maintaining the Transmission System.

1.2 Definitions

When used herein, unless otherwise distinctly expressed or manifestly incompatible with the intent of this Agreement, the terms:

(a) "Acre feet" and "AF" mean one acre-foot or 325,850 gallons of water.

(b) "Additional Facilities" means the additional facilities that must be constructed or acquired after the completion of the Russian River-Cotati Intertie in order for the Agency to be able to make the deliveries authorized by Sections 3.1 and 3.2, including, but not limited to: an aqueduct generally paralleling the Intertie Aqueduct; an aqueduct generally paralleling the south part of the Petaluma Aqueduct from the Intertie Aqueduct to Kastania Reservoir; an aqueduct generally paralleling the Sonoma Aqueduct; an aqueduct connecting the Kawana Springs and Ralphine reservoirs; the transmission line pumping plants necessary to regulate flows to Storage Facilities; 55.5 million gallons of reservoir storage; 56.9 mgd of Russian River water production capacity; water-treatment facilities; and Emergency Wells.

(c) "Aqueduct Facilities" means the pipelines of the Intertie, Petaluma, Santa Rosa and Sonoma Aqueducts, an additional pipeline to be constructed generally paralleling the Intertie Aqueduct, a pipeline to be constructed generally paralleling the south part of the Petaluma Aqueduct from the Intertie Aqueduct to Kastania Reservoir, and a pipeline to be constructed or acquired generally paralleling the Sonoma Aqueduct.

(d) "Capital Cost" means the total funds expended for capital improvements, major replacements, or portions thereof, as context requires, including, but not limited to, planning, engineering, environmental impact analysis, right of way, financial and legal fees, interest during construction, and materials, construction, and replacement costs.

(e) "Common Facilities" means all Transmission System facilities except Storage Facilities and Aqueduct Facilities, but including additional facility aqueduct capacity constructed specifically to make the deliveries that have been authorized by Section 3.12, and including the Potter Valley Project or portion thereof if acquired pursuant to Section 2.4.

(f) "Corporate Territory" means the boundary from time to time existent of a city, agency, district or other governmental entity with powers to accept and distribute water.

(g) "Customer" means any of the following customers of the Agency:

(1) "Water Contractor" means a party signatory to this Agreement except the Agency and Forestville.

(2) "Other Agency Customer" means the Agency, the County of Sonoma, California-American Water Company (with respect to the Larkfield Water District), Forestville Water District, Lawndale Mutual Water Company, Kenwood Village Water Company, Penngrove Water Company, the City of Sebastopol, the State of California, and Santa Rosa Junior College.

(3) "Marin Municipal" means the Marin Municipal Water District.

(4) "Russian River Customer" means any Agency customer within Sonoma County who has or in the future will have contracts with the Agency to divert or redivert water directly from the Russian River or Dry Creek without the use of the Transmission System.

(5) "Regular Customer" means the any of the Water Contractors or the Other Agency Customers.

(h) "Emergency Wells" means auxiliary groundwater production wells that may be utilized to provide additional delivery capacity when necessary due to drought, equipment failure, or other transmission capacity impairment, inability to divert Russian River Project water (for water quality reasons or otherwise), or any other reason beyond the control of the Agency.

(i) "Entitlement" means the quantity of water a Regular Customer shall from time to time require at such rates of flow as are necessary to meet its peak day's demand, subject to the delivery limitations set forth in Sections 2.2, 3.1, 3.2, and 3.5.

(j) "Entitlement Limits" means the maximum amounts of water the Agency is obligated to deliver to any Regular Customer from the Transmission System, as specified in Sections 3.1(a), 3.2(a), 3.2(c), and 3.2(d).

(k) "Fiscal Year" (abbreviated FY) means the period from July 1 through the following June 30.

(l) "Forestville Aqueduct" means the existing pipeline from the Santa Rosa Aqueduct to Forestville, the existing booster pumping plant, the existing 300,000-gallon reservoir, and all other facilities financed with the proceeds of the sale of Series E of the Agency's 1955 Bonds.

(m) "Intertie Aqueduct" means the existing 48-inch inside diameter pipeline extending from the Mirabel Park intake facilities on the Russian River to the Petaluma Aqueduct in the vicinity of Cotati with appurtenances thereto including turnouts to serve Forestville, Santa Rosa, Cotati and Rohnert Park. The Intertie Aqueduct consists of three reaches: "Reach 1" from the Mirabel intake facilities to Forestville, "Reach 2" from Forestville to the extension of Hall Road and "Reach 3" from the extension of Hall Road to the junction with the Petaluma Aqueduct at Cotati. Reach 3 is further divided into "Reach 3a" from the extension of Hall Road to Occidental Road, "Reach 3b" from Occidental Road to the Cotati reservoirs and "Reach 3c" from the Cotati reservoirs to the Petaluma Aqueduct.

(n) "Kawana Pipeline" means the pipeline connecting the Reach 3a of the Intertie Aqueduct with Kawana Springs Reservoirs.

(o) "Local Supply Project" means a water supply project undertaken by one or more Water Contractors, which reduces demand on the Transmission System during the months of June, July, August, or September.

(p) "Marin Municipal" means the Marin Municipal Water District.

(q) "mgd" means a million gallons of water per day.

(r) "Oakmont Pipeline" means that certain pipeline and appurtenances generally parallelling the Sonoma Aqueduct that were constructed by the Agency pursuant to an agreement between the City of Santa Rosa and Agency dated April 29, 1986.

(s) "Operation and Maintenance Costs" means the Agency's costs of operating the Transmission System including its power costs, costs of maintaining the Transmission System in a good state of repair, payments made to the owner of the Potter Valley Project to insure the continued operation of the Potter Valley Project provided they are annually approved by the Water Advisory Committee, regardless of whether or not such payments result in the ultimate transfer of title to all or part of the Potter Valley Project to the Agency, and costs of administering the Transmission System and furnishing the water supplies pursuant to this Agreement; provided, however, that costs relating to the use of Transmission System facilities for public recreation purposes, except (1) costs to permit limited passive public recreation on Transmission System lands not in conflict with operational or water quality requirements, or (2) necessary

costs associated with land ownership, shall not constitute "Operation and Maintenance Costs."

(t) "Ordinance No. 1" means Ordinance No. 1 of the Agency adopted on December 28, 1970, providing for the issuance of the Revenue Bonds, together with any other ordinances of the Agency supplemental thereto or amendatory thereof.

(u) "Other Agency Customer" means the Agency, the County of Sonoma, California-American Water Company (with respect to the Larkfield Water District), Forestville Water District, Lawndale Mutual Water Company, Kenwood Village Water Company, Penngrove Water Company, the City of Sebastopol, the State of California, and Santa Rosa Junior College.

(v) "Petaluma Aqueduct" means the existing pipeline and appurtenances, including turnouts, from the Santa Rosa Aqueduct to Petaluma. The "south part" of the Petaluma Aqueduct means the portion thereof south of the junction thereof with the Intertie Aqueduct and the "north part" means the portion north of said junction to Scenic Avenue.

(w) "Potter Valley Project" means Federal Energy Regulatory Commission Project No. 77.

(x) "Recycled Water" means wastewater treated to applicable standards set forth in Title 22 of the California Code of Regulations, Division 4 Environmental Health, as may be amended from time to time.

(y) "Recycled Water and Local Supply Sub-Charge" and "Recycled Water and Local Supply Fund" mean the sub-charge and fund established by the Agency under Section 4.15.

(z) "Recycled Water Project" means any programs, projects, or facilities that produce or deliver recycled water, provided that the recycled water produced or delivered by such projects or facilities (1) results in a reduction in use of potable water from the Transmission System, (2) reduces the amount of water diverted from the Russian River or its tributaries, (3) provides an environmental benefit which increases or avoids reduction to the water supply or Transmission System capacity available to the Water Contractors, or reduces the cost of providing such supply or capacity, or (4) assists the Agency to comply with the federal or state Endangered Species Act or any other environmental law or regulation, which compliance is required for the Agency to

provide the water supply or Transmission System capacity to the Water Contractors as provided in this Agreement.

(aa) "Regular Customer" means the any of the Water Contractors or the Other Agency Customers.

(bb) "Remaining Facilities" means those portions of the Russian River-Cotati Intertie authorized to be constructed or acquired by the Tenth Amended Agreement For Water Supply and Construction of the Russian River-Cotati Intertie Project, dated November 14, 1997, which have not been constructed or acquired on the effective date of this Agreement, including, but not limited to, 20 mgd of standby pump and collector capacity; the Wohler-Forestville pipeline; the Eldridge-Madrone pipeline; Collector No. 6, and the Oakmont Pipeline.

(cc) "Revenue Bond Obligations" means the payment of principal of and interest on the Revenue Bonds and all other obligations and covenants of the Agency with respect to the Revenue Bonds, including specifically any covenant to establish and maintain rates and charges to provide revenue coverage in excess of a specified amount.

(dd) "Revenue Bonds" means any of the following if issued or entered into for sole purpose of financing the Capital Cost of Transmission System facilities or other facilities authorized to be constructed, acquired, or funded under this Agreement: (1) all series or issues of revenue bonds issued pursuant to ordinances and resolutions of the Agency or of any joint powers authority of which the Agency is a member or (2) any loan agreement, grant agreement, lease-purchase agreement, certificate of participation agreement, note, commercial paper, or other debt or financing agreement entered into by the Agency or by any joint powers authority of which the Agency is a member. As used in this Agreement, the term "issue Revenue Bonds" includes entering into any of the agreements set forth in clause (2) of the preceding sentence, and the term "holders of Revenue Bonds" includes any holders of or counterparties to any such agreements.

(ee) "Russian River Conservation Charge" means the charge established in Subsection (a) of Section 4.18 of this Agreement.

(ff) "Russian River-Cotati Intertie" means the Intertie Aqueduct and associated intake facilities on the Russian River, including the diversion dam, intake works, infiltration ponds, collectors, water treatment facilities, groundwater wells having a minimum production capacity of 7 mgd, a Russian River water quality monitoring system,

pumps, telemetry equipment and related buildings and appurtenances, and associated storage facilities.

(gg) "Russian River Customer" means any Agency customer within Sonoma County who has or in the future will have contracts with the Agency to divert or redivert water directly from the Russian River or Dry Creek without the use of the Transmission System.

(hh) "Russian River Project" means Coyote Valley Dam/Lake Mendocino on the Russian River, Warm Springs Dam/Lake Sonoma on Dry Creek, and related works as contemplated by House Document Number 585, 81st Congress, 2nd Session, House Document Number 547, Eighty-Seventh Congress, Agency Board of Directors Resolutions No. 6847 adopted May 24, 1955, No. 7798 adopted September 27, 1955, No. DR00793-1 adopted September 25, 1961 and Resolution No. DR68485 adopted December 23, 1980, or any agreement between the Agency and the United States related to Coyote Valley Dam or Warm Springs Dam.

(ii) "Russian River Projects Charge" means the charge established in Subsection (b) of Section 4.18.

(jj) "Russian River Projects Fund" means the fund established by the Agency to pay or partially pay for: (1) carrying out the Agency's Coyote Valley Dam Project and Warm Springs Dam Project channel-stabilization works obligations to the United States Government and the State of California under Agency Board of Directors Resolutions No. 6847 adopted May 24, 1955, No. 7798 adopted September 27, 1955, No. DR00793-1 adopted September 25, 1961 and Resolution No. DR68485 adopted December 23, 1980; (2) securing and defending appropriative water rights which are necessary for the realization of the full benefits of the Coyote Valley Dam and Warm Springs Dam Projects; (3) the Agency's share of the United States Government's investment, operation and maintenance, and major replacement costs associated with the Coyote Valley Dam and Warm Springs Dam Projects; (4) the acquisition of all or part of the Potter Valley Project or contributions made to the Project owner to insure the continued operation of all or part of the Project; and (5) fishery mitigation and enhancement projects undertaken by the Agency in the Russian River and Eel River and their tributaries.

(kk) "Santa Rosa Aqueduct" means the existing pipeline and appurtenances, including turnouts, from the collector wells at Wohler to the Ralphine Tank farm on the east extension, and to Scenic Avenue on the south extension.

(ll) "Sonoma Aqueduct" means the existing pipeline and appurtenances, including turnouts, from the Ralphine reservoirs to Sonoma. The Sonoma Aqueduct consists of two reaches: "Reach 1" from the Ralphine reservoirs to Pythian Road and "Reach 2" from Pythian Road to the Sonoma reservoirs.

(mm) "Storage Facilities" means all reservoirs on the Transmission System, the pipeline connecting the Kawana Springs Reservoirs with the Intertie Aqueduct; the pipeline connecting the Kawana Springs and Ralphine reservoirs; the Oakmont Pipeline; the pipeline connecting the Kastania reservoir with the Petaluma Aqueduct; the existing booster pumping plant and the existing 300,000-gallon reservoir components of the Forestville Aqueduct; and transmission line pumping plants necessary to regulate flows to storage facilities.

(nn) "Surplus Customer" means any person or entity who, as of the date of this agreement, was being served Surplus Water by the Agency.

(oo) "Surplus Water" has the meaning defined in subsection (a) of Section 3.4 of this Agreement.

(pp) "Transmission System" means the Agency's water production, storage, treatment and transmission facilities, including but not limited to the Santa Rosa, Petaluma, and Sonoma Aqueducts, the Russian River-Cotati Intertie, Emergency Wells, the Warm Springs Hydroelectric Project, future water production, storage, treatment and transmission facilities to be constructed as set forth in Sections 2.2 and 2.3, and the Potter Valley Project, if acquired by the Agency pursuant to Section 2.4.

(qq) "Trustee" means the Trustee or Trustees for the Agency (or for any joint powers authority of which the Agency is a member) and the holders of the Revenue Bonds appointed pursuant to ordinances or resolutions of the Agency relating to Revenue Bonds, or any successor(s) or assignee(s) thereof.

(rr) "Warm Springs Dam Project" means that certain project authorized for the Russian River, Dry Creek, California, by the Flood Control Act of 1961, enacted October 23, 1962 (Public Law 874, 87th Congress).

(ss) "Warm Springs Hydroelectric Project" means Federal Energy Regulatory Commission Project No. 3351.

(tt) "Water Advisory Committee" means the advisory committee established in Part 5 of this Agreement.

(uu) "Water Conservation Project" means (1) any program, project, or activity that will reduce potable water use within a Regular Customer's service area (including, but not limited to, activities undertaken pursuant to Section 1.12 of this Agreement, but excluding Recycled Water Projects or Local Supply Projects approved after the date of this Agreement), or (2) any materials, supplies, Agency staff time, or contractor services provided by the Agency in support of any Regular Customer's Water Conservation Project.

(vv) "Water Contractor" means a party signatory to this Agreement except the Agency and Forestville.

1.3 Term of Agreement

This Agreement shall become effective upon its execution by all the parties hereto and shall remain in effect until June 30, 2040, or, if any Revenue Bonds are outstanding on June 30, 2040, until such date as all Revenue Bonds shall have been paid in full and all obligations and covenants of the Agency with respect to any Revenue Bonds shall have been discharged. The Agency shall enter into renewal agreements for periods not to exceed forty years each with any or all of the Water Contractors requesting the same for water supplies within the delivery capabilities of the Agency's Transmission System, at a cost no greater than the Agency's Operation and Maintenance Costs and unreimbursed Capital Costs allocated on a proportionate use basis, it being understood that such renewal agreements shall provide for Entitlements and Entitlement Limits for each customer as set forth herein.

1.4 Previous Agreements Terminated or Modified

(a) The Eleventh Amended Agreement for Water Supply, dated January 26, 2001, between the Agency and the Water Contractors is terminated as of the effective date of this Agreement and superseded by this Agreement.

(b) Existing agreements between the Agency and Windsor are terminated and amended as follows, effective as of the effective date of this Agreement:

(1) All prior agreements between the Agency and Windsor for water deliveries from the Transmission System are terminated as of the effective date of this

Agreement, including the Application for Water Service, dated April 1, 1987. All water deliveries to Windsor from the Transmission System shall be made in accordance with this Agreement.

(2) The Agreement for the Sale of Water between the Sonoma County Water Agency and the Windsor Water District, dated June 8, 1991, is amended as follows:

(i) By deleting the text of Section 4 ("Shortage of Water and Apportionment") thereof and replacing it with the following: "In the event of a shortage in the quantity of water available to its customers, including the Town of Windsor, the Agency shall apportion water as provided in the Restructured Agreement for Water Supply, dated _____. In such event, (1) the Town of Windsor shall limit its total diversions and rediversions of water from the Russian River, including both diversion and rediversions pursuant to this agreement and all of its other diversions and rediversions, to the amounts of water that the Agency allocates to the Town of Windsor, and (2) in determining the amount of water available for allocation, the Agency shall include the amount of water available for diversion or rediversion by the Town of Windsor under its water rights in addition to the amount available to the Agency under its own water rights."

(ii) By adding at the end of Section 10 ("Payment") the following: "The Town of Windsor shall also pay any charges required by the Restructured Agreement for Water Supply, dated _____, including the charges required by Section 4.17(b) of that agreement."

1.5 Enforcement

The failure of any Water Contractor to perform its obligations hereunder shall not excuse the remaining Water Contractors from performing their obligations hereunder nor excuse the Agency from performing its obligations hereunder to said remaining Water Contractors. Each and all of the provisions of this Agreement shall be enforceable by action brought by any party hereto for specific performance or any other appropriate action at law for damages or in equity for other appropriate relief to the end that no party hereto shall suffer from the default of any other party. Nothing in this Agreement shall preclude any Water Contractor from seeking unilateral redress under the law from the Agency, or any other party, Customer, or entity. Any owner or holder

of Revenue Bonds may also enforce any provision of this Agreement inuring to the benefit of the holders of the Revenue Bonds.

1.6 Amendments

(a) Except as hereafter provided, this Agreement may be amended only with the consent of all the parties hereto.

(b) Any annual delivery limit contained in Section 3.1 may be modified by written Agreement between the Agency and the Water Contractor to which such annual delivery limit applies without the consent of the other parties to this Agreement for the purpose of conforming such annual delivery limits to a general plan which is applicable to the service area of such Water Contractor. Copies of any such written agreements shall be provided to all the parties to this Agreement.

(c) As of the effective date of this Agreement, Forestville is no longer a Water Contractor, and this Agreement may be amended without the consent of Forestville, provided, however, that Forestville's consent shall only be required for any amendment that impairs or affects any then-existing obligation of the Agency to supply water to Forestville from the Transmission System.

(d) If any amendment to this Agreement reduces the revenues to be received by the Agency or otherwise impairs the ability of the Agency to meet its Revenue Bond Obligations, then such amendment shall be effective only with the consent of the Trustee. The Trustee shall give such consent if the Trustee determines that, following such amendment, the Water Contractors will be obligated under this Agreement to make payments to the Agency sufficient to enable the Agency to pay principal of and interest on the Revenue Bonds and to meet all its other Revenue Bond Obligations. In making such determination, the Trustee may rely upon such certificates or opinions from qualified attorneys, engineers or accountants as the Trustee may deem necessary and obtain from the Agency.

1.7 Pledge of Revenues

Each party hereto acknowledges that anything herein to the contrary notwithstanding, all sums paid to the Agency pursuant to this Agreement are "Revenues of the Transmission System" of the Agency as defined in Ordinance No. 1, except (a) the payments and credits set forth in Section 4.4, (b) the payments of the Russian River Conservation Charge and the Russian River Projects Charge made

pursuant to Section 4.11 and 4.18, (c) the payments of the Water Management Planning Sub-Charge made pursuant to Section 4.13, (d) the payments of the Watershed Planning and Restoration Sub-Charge made pursuant to Section 4.14, (e) the payments of the Recycled Water and Local Supply Sub-Charge made pursuant to Section 4.15, and (f) the payments of the Water Conservation Sub-Charge made pursuant to Section 4.16, and are pledged to the payment of the Agency's Transmission System Revenue Bond Obligations. All said sums shall be received, allocated and paid out pursuant to and consistent with Ordinance No. 1 and other obligations and covenants of the Agency with respect to Revenue Bonds. All references in this Agreement to the accounting for, allocating, paying, and crediting of monies are subject to the priority established by Ordinance No. 1 on all such revenues.

The parties hereto recognize that the Revenue Bonds are to be paid from revenues, as provided herein, and that it is the intention of the parties that the charges set forth herein will be sufficient to pay the Revenue Bonds and to meet the Revenue Bond Obligations not met from other sources of funds. The Water Contractors, therefore, agree to pay promptly such charges notwithstanding any deficiency in the quantity or quality of water to which they or any of them would be entitled pursuant to this Agreement. The provisions of this Agreement are made for the benefit of the owners and holders from time to time of the Revenue Bonds and may be enforced by or on behalf of any such owner or holder.

1.8 Books, Records and Accounts

The Agency shall keep or cause to be kept, proper books, records and accounts in which complete and accurate entries shall be made of all monies received from all entities, including the Agency's Regular Customers, and of the basis for and application of said money, including detailed sub accounts showing expenditures made from Operation and Maintenance Charge revenues for Water Conservation Projects, Recycled Water Projects, Local Supply Projects, water management planning, and watershed planning and restoration. Said books, records and accounts will be available during normal business hours for inspection by the Water Contractors or their authorized representatives. The Agency will transmit to the Water Contractors two reports each year of the receipts and expenditures of the Transmission System. The first report will be issued no later than February 1 and shall be accompanied by a preliminary budget for the following Fiscal Year, and will show expenditures for the first half of the Fiscal Year together with estimated year-end expenditures and estimated expenditures for the following Fiscal Year. The second report will be issued after the end of each Fiscal Year and will contain a budgetary accounting of Transmission System expenditures,

revenues and balances for the Fiscal Year. Each month the Agency shall supply each Water Contractor with a summary showing the amount of water delivered during the preceding month to each Regular Customer and Surplus Customer.

1.9 Water Contractors' Duty to Provide Funds

Each Water Contractor shall use any and all means legally available to it (including, without limitation, the enactment and maintenance in effect of legislation establishing fees, tolls, rates and charges pertaining to the operation of its water distribution system) so as to produce monies sufficient in amount to meet the monetary obligations incurred by it pursuant to this Agreement and to enable it to maintain its water distribution system in good working order.

1.10 Severability

If any one or more sections, provisions, promises, or conditions of this Agreement is declared void or voidable for any reason by a final judgment or order of a court of competent jurisdiction, it is hereby declared to be the intention of each party and agreed that each and all of the other sections, provisions, promises and conditions of this Agreement shall be and remain in full force and effect.

1.11 Third Party Beneficiaries

Except for the holders of the Revenue Bonds, no third party beneficiaries are intended or established by this Agreement.

1.12 Water Conservation Requirements

(a) The Regular Customers of the Agency, and the Agency, shall (1) become members of the California Urban Water Conservation Council ("CUWCC") within six months of the effective date of this Agreement and remain as members in good standing; (2) sign the "Memorandum of Understanding Regarding Urban Water Conservation in California" ("MOU") maintained by the CUWCC and implement the Best Management Practices ("BMPs") of water conservation as are promulgated by CUWCC from time to time, or implement alternative water conservation measures that secure at least the same level of water savings, and shall complete and file the annual CUWCC report form; and (3) implement or use their best efforts to secure the implementation of any water conservation requirements that may be added as terms or conditions of the Agency's appropriative water rights permits or licenses, or with which the Agency must

comply under compulsion of regulation or law. In addition to and notwithstanding the foregoing, all Regular Customers of the Agency shall require metered billing of all customer accounts they serve.

(b) Should the Water Advisory Committee determine and so notify any Water Contractor that its efforts to achieve compliance with the water conservation practices required by this Section 1.12 are unsatisfactory, then such Water Contractor shall bring its water conservation program into compliance within six months after such notice, or within such additional time as may be granted by the Water Advisory Committee. Should such Water Contractor's noncompliance as determined by the Water Advisory Committee continue for six months after such notice of noncompliance, or beyond such additional time as may be granted by the Water Advisory Committee, then the Water Contractor shall thereafter pay a surcharge on all water delivered by the Agency pursuant to this Agreement equal to ten percent of the Operation and Maintenance Charge until the Water Advisory Committee determines that such Water Contractor is in compliance. The proceeds of any surcharge paid pursuant to this section shall be deposited and paid out in the same manner as the proceeds of the Water Conservation Fund.

(c) The Agency shall use its best efforts to modify its rules and regulations and existing contracts with Other Agency Customers to implement the water conservation requirements set forth in Section 1.12(a) and the default provisions set forth in Section 1.12(b). With respect to Russian River Customers, the Agency shall use its best efforts to encourage and, where and when possible, require said customers to sign the "MOU" maintained by the CUWCC and implement the "BMPs" of water conservation as are promulgated by CUWCC from time to time.

(d) Nothing in this section shall limit Regular Customers to implementing only those Water Conservation Projects contemplated by the CUWCC BMPs. Regular Customers are encouraged to implement Water Conservation Projects that go beyond the CUWCC BMPs.

1.13 Recycled Water and Local Supply Project Requirements

Within ten (10) years from the effective date of this Agreement, the Water Contractors shall use their best efforts to carry out or participate in Recycled Water or Local Supply Projects capable of delivering Recycled Water or potable water sufficient to reduce the Water Contractors' collective deliveries from the Transmission System (including, in the case of Windsor, reductions in withdrawals from Windsor's Russian

River wells), by at least 7,500 acre-feet per year, with approximately 50% of such reduction resulting from Recycled Water Projects.

1.14 Transitional Provisions Applicable to Forestville

As of the effective date of this Agreement, the Agency's right, title, and interest in facilities comprising the Forestville Aqueduct shall be transferred as follows:

(a) The existing Forestville pipeline from the Santa Rosa Aqueduct to Forestville and the storage building at the existing booster pumping plant shall be transferred to Forestville.

(b) The existing booster pumping plant and the existing 300,000-gallon reservoir shall become Storage Facilities.

(c) Subject to the limitation in subsection (d) of this section, the Agency shall provide funding to Forestville for the Capital Costs of an 8" pipeline to be constructed by Forestville from the Intertie Aqueduct at the extension of Templeman Road, west on Templeman Road to State Highway 116, then north on State Highway 116 West to Kay Lane. The pipeline shall be funded as a common facility. Forestville shall commence construction on the pipeline within five years of the effective date of this Agreement; provided, however, that if the commencement of construction is delayed due to the application to Forestville of any circumstance specified in the second paragraph of Section 2.2 of this Agreement, then the Agency's General Manager/Chief Engineer may authorize an extension of the commencement date.

(d) The Agency's funding obligation under this section shall be limited to $690,000, increased by the change in the ENR Construction Cost Index between the effective date of this Agreement and the date of commencement of construction of the pipeline.

1.15 Local Production Capacity Goal

In order to mitigate against drought, earthquakes, spills, temporary impairments, and other events impacting the quantity or quality of water available from the Transmission System, and other emergencies that can befall an urban water supply system, it is highly desirable that each Water Contractor achieve and maintain local water production capacity capable of satisfying approximately forty percent (40%) of the Water Contractor's average day of the maximum month demand.

PART 2 - PLANNING, FINANCING, ACQUISITION, CONSTRUCTION, OPERATION AND MAINTENANCE

2.1 Financing Additions to the Existing Transmission System

The Agency will, subject to all applicable limitations specified in this Agreement and all applicable legal and regulatory limitations, finance additions to the Transmission System with cash available pursuant to Sections 3.6, 4.2, 4.6, 4.7, 4.8, 4.12, payments made by Marin Municipal pursuant to Section 4.11, payments made by North Marin pursuant to Section 4.4 and 4.9, any state, federal, or other grants or loans which may become available, and, if the Agency decides to issue new series or issues of Revenue Bonds, proceeds from the sale of Revenue Bonds.

2.2 Scheduling of Additions and Replacements to the Existing Transmission System

Subject to the availability of sufficient cash or proceeds from the sale of Revenue Bonds (if the Agency decides to issue new series or issues of Revenue Bonds) and any state, federal, or other grants or loans which may become available, and subject to all applicable limitations specified in this Agreement, the Agency will (1) construct or acquire additions to the existing Transmission System sufficient to meet the delivery Entitlements set forth in Section 3.1 and 3.2 at such times as may be necessary to enable it to reliably deliver to each of the Water Contractors such Entitlements at the time that each contractor shall require the same and to make the deliveries authorized pursuant to Section 3.12; (2) construct additional Russian River water production facilities (up to a total capacity of 168.9 mgd) so that the total water production capacity available at all times is not less than the average daily delivery to the Regular Customers and Marin Municipal (excluding Surplus Water and water in excess of Entitlement Limits) during the month of highest historical use plus 20 mgd; (3) construct, acquire, or lease Emergency Wells with capacities which are from time to time determined by the Water Advisory Committee; (4) construct Additional Facilities (up to a total capacity of 174.3 million gallons) to the extent necessary to maintain a quantity of water in storage equal to 1.5 times the average daily delivery to the Regular Customers except North Marin during the month of highest historical use; and (5) replace existing facilities and construct Additional Facilities, related buildings and appurtenances as necessary to insure the reliable and efficient operation of the Transmission System and to insure that the quality of the water delivered complies with all applicable state and federal water quality requirements.

The time within which the Agency shall be obligated to construct such additions and replacements to the existing Transmission System shall be extended, however, as a result of any delays caused by fire, earthquake, other acts of God, acts of the public enemy, riots, insurrections, governmental regulations on the sale or transportation of materials or supplies, strikes affecting such construction or transportation of materials or supplies in connection therewith, any State or Federal environmental regulations or restrictions, shortages and/or delay in the obtaining of materials, shortages of or allocations of fuel and other sources of energy, litigation resulting in court orders restraining the construction of such additions and replacements, inability of Agency for any reason to deliver the Revenue Bonds or any series thereof, or any other causes beyond the control of Agency or any contractor constructing any part of such additions and replacements.

2.3 Further Modifications to Transmission System

(a) With the approval of the Water Advisory Committee and subject to the availability of sufficient funds, the Agency may undertake studies, and prepare technical reports, financial plans, and environmental documents for Transmission System facilities in addition to those authorized to be constructed by this Agreement. If such activities are undertaken pursuant to this paragraph, the cost thereof shall be considered to be costs of Common Facilities and shall be paid from funds available pursuant to subsection (c) of Section 4.2, or from the proceeds of Revenue Bonds and payments made by North Marin pursuant to Section 4.4. If the cost is paid from the proceeds of Revenue Bonds and payments made by North Marin, the cost shall be allocated as provided in subsection (b), paragraph 9 of Section 4.3 and Section 4.9.

(b) Except for the facilities described in Section 2.2, the Agency will not construct or acquire additions to the Transmission System that would increase the charges payable by, or diminish or impair the water available to, any of the Water Contractors except on such terms and conditions as may be agreed upon in writing by the Agency and each Water Contractor who would be required to make any additional payment by reason of such construction or whose water supply might be diminished or impaired by such construction. If such addition is a booster pump or any other device, method, or system that would enlarge or increase the capacity of any one customer to the detriment of other users, then such addition or alteration shall not be made by Agency except by amendment to this Agreement. If a question arises as to whether an addition or alteration to the Transmission System requires an amendment of this Agreement pursuant to this section, then such question shall be submitted to the Water Advisory Committee and its decision shall be conclusive.

2.4 Potter Valley Project

(a) All or part of the Potter Valley Project may be acquired upon a determination by the Board of Directors of the Agency that such acquisition is necessary to insure the Agency's continued ability to make the water deliveries authorized by this Agreement and maintain fisheries and other incidental benefits to the Russian River basin, provided, however, that no part nor all of the Potter Valley Project shall be acquired without the affirmative vote of at least six (6) representatives of the Water Contractors on the Water Advisory Committee representing at least two-thirds of the total weighted votes as calculated pursuant to Section 5.3(a). The Agency shall not be liable to any of its Customers for any damage resulting from any Agency decision regarding the acquisition or non-acquisition of any part or all of the Potter Valley Project.

(b) The Agency shall commence a process upon the effective date of this Agreement to evaluate the water supply and fisheries benefits provided by the Potter Valley Project within the Russian River watershed, the economic and operational feasibility of acquiring the Potter Valley Project, and whether alternative actions could reduce the need for the Agency to acquire the Potter Valley Project. Alternative actions to be evaluated may include the increased use of recycled water to reduce agricultural and other diversions from the Russian River and its tributaries; the modification of instream flow requirements in the Russian River; and the completion of state and/or federal recovery plans for salmonid species listed as threatened or endangered in the Russian River watershed. The cost of such evaluations shall be paid from Watershed Planning and Restoration Sub-Charge funds available pursuant to subsection 4.14; however, the Agency shall use its best efforts to obtain the agreement of other interested parties who divert water from the Russian River or its tributaries (including municipal and agricultural diverters) to pay for a portion of such costs and to participate in the implementation of such alternative actions. Before acquiring the Potter Valley Project, the Agency shall conduct an environmental analysis of the acquisition pursuant to CEQA, which analysis may include an evaluation of alternative flow regimes from the Potter Valley Project into the Russian River and the Eel River.

(c) Upon determination by Agency that alternative actions could reduce the need for the Agency to acquire the Potter Valley Project, the Agency and the Water Contractors shall engage in a cooperative process to implement said other actions.

2.5 Water Conservation Projects

Subject to the restrictions set forth in Section 4.16, the Agency may undertake or fund any cost-effective Water Conservation Project that has been approved by the Water Advisory Committee.

2.6 Recycled Water and Local Supply Projects

Subject to the approval of the Water Advisory Committee, the Agency may (a) construct, fund, or partially fund studies or investigations or the Capital Cost of local Recycled Water Projects and Local Supply Projects, or (b) enter into agreements for the acquisition and sale of Recycled Water (or the rights to Recycled Water). The Agency and the Water Contractors shall seek financial contributions for local Recycled Water and Local Supply Projects funded under this section from benefitted wastewater treatment plant owners, sanitation districts, and other benefitted parties. Projects constructed, funded, or partially funded by the Agency under this section shall not be part of the Transmission System, and the operation and maintenance cost of such projects shall be the responsibility of the Water Contractors or other parties carrying out, sponsoring, or participating in such projects. The benefits from any Recycled Water Project shall be apportioned equitably based upon the respective financial contributions to the Recycled Water Project by the parties funding such project. The Capital Costs (including Revenue Bond Obligations, if any) of Local Supply Projects or Recycled Water Projects or of acquiring Recycled Water or the rights thereto shall be paid or partially paid from the Recycled Water and Local Supply Fund.

2.7 Water Management Planning

The Agency shall periodically prepare a draft regional Urban Water Management Plan pursuant to the Water Code for consideration by the Water Contractors. Each Water Contractor shall provide the Agency with all information and data the Agency reasonably determines to be necessary to allow the Agency to prepare the draft regional Urban Water Management Plan. The Agency shall use its best efforts to prepare a draft regional Urban Water Management Plan that meets the requirements of the Water Code. Each Water Contractor shall either adopt the draft regional Urban Water Management Plan prepared by the Agency as its Urban Water Management Plan, or prepare and adopt its own Urban Water Management Plan pursuant to the Water Code. Before adopting the Urban Water Management Plan prepared by the Agency, a Water Contractor shall evaluate the Plan, and adoption of the Plan by a Water

Contractor shall constitute a determination by that Water Contractor that the Plan meets the requirements of the Water Code as to that Water Contractor.

2.8 Watershed Planning and Restoration

(a) The Agency may undertake any action, study, or project approved by the Water Advisory Committee related to (1) the development or implementation of watershed restoration and maintenance plans and projects (including, but not limited to, stream restoration projects, water quality monitoring studies and projects, public education and outreach activities, and funding of third-party studies and projects) or (2) groundwater studies and investigations. Before undertaking any such action, study or project: (1) the Agency shall consider suggestions received from the public, Water Contractors, and interested parties and organizations such as the Russian River Watershed Association as to the actions, studies, and projects to be undertaken by the Agency hereunder; and (2) the Agency and the Water Contractors shall identify and use their best efforts to obtain funding contributions from other parties that would benefit from the actions, studies, or projects authorized hereunder, including but not limited to federal and state loans and grants, municipalities (including Russian River Customers, county and special district governments), and urban and industrial development, gravel mining, agriculture, forest harvesting, recreation, and sport and commercial fishing interests.

(b) The authority granted to the Agency under this Section 2.8 is permissive and not mandatory, and that nothing in this Section 2.8 shall (1) require the Agency to undertake any action or project unless such action or project is approved by the Agency, (2) impair or affect the Agency's right to undertake any action or project not funded under this Agreement, or (3) require the Agency to engage in any regulatory activity.

(c) The Agency may carry out projects and activities within the scope of subsection (a) above that primarily or exclusively benefit one or more Water Contractors, provided (1) each such project and activity is approved by the Water Advisory Committee and the benefitted Water Contractors, and (2) some or all benefitted Water Contractors enter into an agreement with the Agency for such project or activity and agree to pay supplemental charges as approved by the Agency and the Water Advisory Committee to defray all or a portion of the cost of the project or activities.

2.9 Planning Coordination

(a) The parties to this Agreement shall consult with agencies that have planning and zoning powers within their water service territories in the manner set forth in California Government Code Section 65352.5 in order to promote close coordination and consultation between water supply agencies and land use approval agencies to ensure that proper water supply planning occurs in order to accommodate projects that will result in increased demands on water supplies.

(b) The parties to this Agreement shall consult with agencies that have building regulatory powers pursuant to the Government Code and Health and Safety Code to promote use of water conservation equipment, fixtures, appliances, devices and techniques.

2.10 Operation and Maintenance

The Agency shall operate and maintain the Transmission System in a good state of repair.

PART 3 - WATER SUPPLY

3.1 Delivery Entitlements of Water Contractors

Subject to Section 3.5, the Agency shall deliver to each Water Contractor at the points of delivery hereinafter set forth such quantities of water as the Water Contractor shall from time to time require at such rates of flow as are necessary to meet its peak day's demand, subject to the following:

(a) The Agency shall not be obligated to deliver water in excess of the following:

Water Contractor/Aqueduct	Average Daily Rate of Flow During Any Month	Annual Amount During Fiscal Year (excluding Surplus Water)
Santa Rosa		
From Reach 1, 2, and 3a of the Intertie Aqueduct	40.0 mgd	
From the Santa Rosa Aqueduct	40.0 mgd	
From the Sonoma Aqueduct	4.0 mgd	
Maximum combined total from all aqueducts	56.6 mgd	29,100 AF
North Marin		
From Petaluma Aqueduct	19.9 mgd	14,100 AF
Petaluma		
From Petaluma Aqueduct	21.8 mgd	13,400 AF
Rohnert Park		
From Petaluma Aqueduct or Reach 3 of Intertie Aqueduct	15.0 mgd	7,500 AF

Valley of the Moon		
From Sonoma Aqueduct	8.5 mgd	3,200 AF
Sonoma		
From Sonoma Aqueduct	6.3 mgd	3,000 AF
Cotati		
From Petaluma Aqueduct or Reach 3 of Intertie Aqueduct	3.8 mgd	1,520 AF
Windsor		
From Santa Rosa Aqueduct	1.5 mgd	900 AF
From Russian River Diversions	7.2 mgd	4,725 AF

The delivery limits for Windsor include both water delivered by the Agency through the Transmission System and water diverted by Windsor through facilities owned by Windsor under its own water rights and under the Agency's water rights pursuant to the agreement between the Agency and Windsor dated January 8, 1991. Windsor shall not divert any water under the Agency's water rights through its own facilities except and to the extent that water is unavailable for diversion under any of Windsor's available water rights, as such rights currently exist or may exist in the future. Windsor shall act with diligence to take all actions necessary to obtain and retain any water rights to which Windsor may be entitled. For purposes of allocations pursuant to Section 3.5(a), (1) Windsor shall be considered to be a "Russian River Customer" with respect to its direct Russian River diversions, and (2) in determining the amount of water available for allocation under Section 3.5(a), the Agency shall include the amount of water available for diversion by Windsor under Windsor's water rights in addition to the amount available to the Agency under its own water rights. For purposes of allocations pursuant to Section 3.5(b), Windsor's average daily rate of flow during any month Entitlement Limit shall be 1.5 mgd.

(b) North Marin shall not take delivery of water at an instantaneous delivery rate greater than its average delivery rate for such day, if such instantaneous delivery rate would increase the Agency's cost of electrical energy. North Marin shall not take delivery of water at a rate of more than 19.9 mgd during more than 14 days of any month, nor at a rate of more than 20.9 mgd during any day of any month. Irrespective of its delivery Entitlement, North Marin shall nevertheless have the right to a flow rate of 14.8 mgd in the Petaluma Aqueduct.

(c) No Water Contractor shall take delivery of water at an average rate during any month that is greater than 2.0 times the average rate of delivery to that contractor during the preceding 12 months. The Agency also shall adopt this requirement as a service rule applicable to Other Agency Customers. However, if any Regular Customer was during the preceding 12 months subject to a curtailment in deliveries pursuant to Section 3.5, then the limit prescribed by this subsection shall be 2.0 times the average rate of delivery that such customer would have received in the absence of such curtailment. This rule shall not apply to Water Contractors who utilize local sources of supply to reduce demand on the Transmission System during the peak summer period of June 1 through September 30, and whose average production rate for said period from all of the contractor's local sources is equal to at least 2.0 times the average production rate of all of that contractor's local sources during the eight months immediately preceding the peak summer period.

(d) No Water Contractor shall take delivery of water during any month at an average rate that is greater than 1.3 times the average rate of delivery to that contractor during the peak month of the prior three calendar years without the written consent of the Agency. The Agency also shall adopt this requirement as a service rule applicable to Other Agency Customers. Such consent shall be given by the Agency if and only if sufficient transmission capacity exists to make such increased deliveries and the deliveries to the other Water Contractors required to be made pursuant to this section. However, if any Water Contractor was during the preceding three calendar years subject to a curtailment in deliveries pursuant to Section 3.5, then the limit prescribed by this subsection shall be 1.3 times the average rate of delivery that such contractor would have received during the peak month of the prior three calendar years in the absence of such curtailment.

(e) For purposes of determining Santa Rosa's average daily rate of flow during any month Entitlement Limit under this subsection, all water delivered to Santa Rosa from the Kawana Pipeline or from the pipeline connecting the Kawana Springs and Ralphine reservoirs shall be deemed delivered from Reach 3a of the Intertie Aqueduct.

3.2 Conditions on Other Agency Customer Deliveries

The Agency may furnish water from the Transmission System to Other Agency Customers subject, however, to the following conditions:

(a) The total quantity of water delivered to all the Other Agency Customers shall not exceed an average of 2.7 million gallons per day during any month.

(b) The Agency shall not enter into contracts to furnish water to any Other Agency Customer except itself or the County of Sonoma for use on land within two miles of the Corporate Territory of a Water Contractor or Forestville except with the prior written consent of such Water Contractor or Forestville, which consent will be subject to the condition that the Agency shall cease delivering water to such customer whenever a Water Contractor or Forestville is willing and able to furnish water to such customer. Water delivered by the Agency from the Transmission System to the Agency or the County of Sonoma shall not be used for residential, commercial, or private industrial purposes.

(c) The Agency shall not deliver more than an average of 0.5 million gallons per day during any month from the south part of the Petaluma Aqueduct to Other Agency Customers.

(d) The Agency shall not deliver more than an average of 1.5 million gallons per day during any month from Reach 1 of the Intertie Aqueduct to Forestville.

(e) The Agency shall not sell water from the Transmission System except as expressly authorized by this Agreement.

3.3 Deliveries in Excess of Entitlement Limits

(a) No Regular Customer may take delivery of water in excess of its average daily rate of flow during any month Entitlement Limit as set forth in Sections 3.1 or 3.2, except upon the following conditions:

first, that such excess delivery does not impair or delay the delivery to any other Regular Customer of its Entitlements; and

second, that the Regular Customer taking the excess delivery is then proceeding in good faith, with plans and funding to develop a reliable water supply, sufficient to supply its needs in excess of its Entitlement Limits; and

third, that either

(1) all the Water Contractors approve such excess delivery; or

(2) such excess delivery is made during a period when deliveries to another Water Contractor are less than its Entitlement Limits, such excess delivery does not exceed the unused amounts of said contractor's Entitlement Limits, and said contractor has notified the Agency in writing of its consent to said delivery.

(b) Any Water Contractor may transfer any portion of its annual amount during any fiscal year Entitlement Limit to any other Water Contractor for such periods of time and pursuant to such terms as agreed to by the transferor Water Contractor and the transferee Water Contractor, subject to the following:

(1) Such transfer shall not impair or delay the delivery to any other Regular Customer of its Entitlements.

(2) Notice of a proposed transfer, including adequate information to identify any impacts to deliveries of water to other Water Contractors, shall be provided to all the other Water Contractors individually, to the Water Advisory Committee, and to the Agency. Upon request of any other Water Contractor, the transferor and transferee Water Contractors shall promptly meet to identify and resolve any potential impacts of the proposed transfer. If any Water Contractor determines that the proposed transfer will impair or delay the delivery of its Entitlements, such Water Contractor may file a written objection to the proposed transfer with the Water Advisory Committee, with a copy to the Agency. Such objection must be filed no later than 45 days after the Water Contractor receives notice of the proposed transfer. Thereafter, the Water Advisory Committee shall determine whether the proposed transfer will impair or delay the delivery of the objecting Water Contractor's Entitlements, and whether there are measures that will eliminate such impairment or delay. In the absence of an objection to a proposed transfer by any Water Contractor, the approval of the Water Advisory Committee is not required.

(3) The average daily rate of flow during any month Entitlement Limit of the transferee Water Contractor as set forth in Sections 3.1 or 3.2 and the other delivery limitations applicable to the transferee Water Contractor shall not be affected by, and shall remain applicable notwithstanding, any transfer under this subsection.

(4) Payments to the Agency for delivery of the transferred water to the transferee Water Contractor shall be based upon the Aqueduct rate applicable to the transferee Water Contractor pursuant to this Agreement.

(5) The transferor and transferee Water Contractors shall be responsible for all regulatory compliance relating to the transfer, including compliance with the provisions of the California Environmental Quality Act. To the greatest extent permitted by law, the transferor and transferee Water Contractors shall indemnify and defend each of the other Water Contractors and the Agency from any claims, damages, or judicial or administrative proceedings arising out of any actions related to this Subsection 3.3(b), whether or not there is concurrent negligence on the part of the other Water Contractors or the Agency or each of them, but excluding liability due to the sole active negligence or willful misconduct of any of the other Water Contractors, the Agency, or each of them. The latter exclusion shall operate only as to the particular Water Contractor or Agency whose sole active negligence or willful misconduct caused the exclusion.

3.4 Surplus Water

(a) Surplus Water is water that from time to time may be available for delivery from the Transmission System in excess of the amounts required to meet the Agency's contractual obligations and the requirements of all the Agency's Regular Customers for uses other than those described in subdivision (b) of this section.

(b) Surplus Water may be used only for the following purposes:

(1) replenishment of surface water supply reservoirs or recreational lakes, including but not limited to Ralphine, Spring, and Stafford Lakes, or

(2) replenishment of groundwater basins;

provided, however, that Surplus Water also may be provided for use for irrigation of land used for commercial production of food or fiber if such provision of water is required by any agreement in existence on the effective date of this Agreement.

(c) The Agency shall deliver Surplus Water only from separate metered turnouts on the Transmission System or the North Marin Aqueduct.

(d) The Water Contractors shall have first priority on deliveries of Surplus Water.

(e) The Agency desires to transfer all of its Surplus Customers to the Water Contractors. The parties to this Agreement shall cooperate in the voluntary permanent transfer of Surplus Customers from the Agency to the party whose corporate territory encompasses the site of a given Surplus Customer or whose corporate territory boundary is within two miles of the turnout(s) serving said customer. Should a given Surplus Customer lie within two miles of more than one party, the parties shall meet and confer with the Agency and by mutual agreement determine who is best suited to take over said Surplus Customer. Nothing in this subsection shall require a Water Contractor to take over service of any Agency Surplus Customer. Should a given party opt not to take over Surplus Customers who lie within their corporate territory or within two miles of the boundary of same, then any other party to this Agreement whose corporate territory lies within Sonoma County may apply to the Agency to take over said Surplus Customers. Parties who agree to take on such service shall be known as Surplus Water providers.

(f) Surplus Water providers agree to interrupt delivery of Surplus Water upon notification by Agency if Agency determines, in its sole discretion, that there exists an immediate or pending problem involving loss of Transmission System storage, inadequate pumping capacity, a valid complaint from any Regular Customer that they are not receiving their appropriate Entitlement as a result of Surplus Water deliveries, or any other problem impacting the delivery capability of the Transmission System. Surplus Water providers shall notify their customers of Agency's right to require such delivery interruptions. Notwithstanding the right of the Agency to notify and cause the interruption of delivery of Surplus Water, a Surplus Water provider may also interrupt delivery of Surplus Water at any time it determines it is necessary or prudent to do so in order to satisfy the demands of its non-Surplus Customers; or for water system maintenance, repair, or planned or unplanned outage of any nature whatsoever, including but not limited to a perceived, threatened or actual water shortage. Deliveries of Surplus Water shall not be deemed to be included as part of any Regular Customer's Entitlement or Entitlement Limit.

3.5 Shortage of Water and Apportionment

(a) (1) The Agency shall use its best efforts to obtain, perfect, and maintain appropriative water rights in amounts sufficient to be able to make the water deliveries provided for in this Agreement. In its operation of the Russian River Project, the Agency shall use all reasonable means to prevent a deficiency in the

quantity of water that is available to the Agency for diversion and rediversion under the Agency's water rights. However, nothing in the preceding two sentences shall be construed to limit the Agency's discretion to take appropriate actions in good faith to resolve any issue that may arise under the federal Endangered Species Act or any other federal or state law affecting the Agency's water rights or operation of the Russian River Project.

(2) If by reason of drought, environmental laws or regulations, other causes beyond the control of the Agency, or any change in the amounts of water imported by the Potter Valley Project into the Russian River watershed (whether or not such change is caused by any action or inaction of the Agency) a deficiency does occur, the Agency shall not be liable to any of its customers for any damage arising therefrom.

(3) In the event of a deficiency pursuant to subsection 3.5(a)(2), the Agency first shall cease all deliveries of Surplus Water to other than the Water Contractors; second, shall cease deliveries of all Surplus Water; third, shall cease deliveries to Regular Customers in excess of their respective annual Entitlement Limits; and fourth, shall apportion the available supply of water as follows:

> (i) first, deliver to each of its Regular Customers, not in excess of their respective Entitlement Limits, authorize Agency's Russian River Customers to divert or redivert not in excess of the amounts for which those customers have contracted to purchase from the Agency, and deliver to Marin Municipal not in excess of the amounts, if any, that are required to be delivered pursuant to the Third Amended Offpeak Water Supply Agreement dated January 25, 1996, the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996, amendments to these agreements that have been approved by the Water Advisory Committee, or subsequent agreements between the Agency and Marin Municipal that have been approved by the Water Advisory Committee, the quantities of water required by each such customer for human consumption, sanitation, and fire protection as determined by the Agency after taking into consideration all other sources of potable water then available to said customer, including, for Russian River Customers, water available under their own water rights;

(ii) second, to the extent additional water is available to the Agency, allocate that water proportionately as follows: deliver such water to Agency's Regular Customers based upon their respective average daily rate of flow during any month Entitlement Limits, authorize the Agency's Russian River Customers to divert or redivert such water based upon the delivery limits set forth in the agreements between the Agency and its Russian River Customers, and deliver such water to Marin Municipal pursuant to and to the extent required by the Third Amended Offpeak Water Supply Agreement dated January 25, 1996, the Amended Agreement for the sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996, amendments to these agreements that have been approved by the Water Advisory Committee, or subsequent agreements between the Agency and Marin Municipal that have been approved by the Water Advisory Committee;

(iii) provided, however, that no Customer shall receive under subsections 3.5(a)(3)(i) and 3.5 (a)(3)(ii) a total quantity of water in excess of its reasonable requirements or its said Entitlement Limits or contracted amount, whichever is less.

(b) (1) In the event of a temporary impairment of the capacity of the Transmission System by reason of natural disaster, sabotage or other causes beyond the control of the Agency, the Agency shall not be liable to any of its customers for any damage arising therefrom.

(2) In the event of a Section 3.5(b)(1) impairment, the Agency shall:

(i) first, deliver to each of its Regular Customers the quantity of water, not in excess of the respective average daily rate of flow during any month Entitlement Limit, required by it for human consumption, sanitation, and fire protection as determined by the Agency after taking into consideration all other sources of potable water then available to said customer;

(ii) second, to the extent additional Transmission System capacity is available to the Agency, deliver a quantity of water to the Regular Customers in proportion to their respective average daily rate of flow during any month Entitlement Limits, provided, however, that no Regular

Customer shall receive under subsections 3.5 (b)(2)(i) and (b)(2)(ii) a total quantity of water in excess of its reasonable requirements or its average daily rate of flow Entitlement Limit, whichever is less;

(iii) third, to the extent additional Transmission System capacity is available, deliver water to Regular Customers in excess of their average daily rate of flow Entitlement Limits pursuant to Section 3.3;

(iv) fourth, to the extent additional Transmission System capacity is available, deliver water to Marin Municipal not in excess of the delivery limitations in Section 3.12;

(v) fifth, to the extent additional Transmission System capacity is available, deliver Surplus Water to the Water Contractors;

(vi) sixth, to the extent additional Transmission System capacity is available, deliver Surplus Water to other than the Water Contractors.

(3) However, deliveries to Marin Municipal shall not be reduced or curtailed under this Section 3.5(b) because of inadequate capacity in the new aqueduct to be constructed generally paralleling the portion of the Petaluma Aqueduct that extends from the Ely Pumping Plant to Kastania Reservoir, if such new aqueduct is paid for and dedicated to the Agency pursuant to Section 13 of the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996.

(c) (1) In determining "human consumption, sanitation, and fire protection" amounts pursuant to this Section 3.5, the Agency shall take into account the level of water conservation achieved by the Customer and the resulting decrease in end user ability to reduce water use (the hardening of demand) resulting from such conservation. The allocations pursuant to subsection 3.5(a)(3)(i) shall be determined using a methodology which rewards and encourages water conservation; avoids cutbacks based upon a percentage of historic consumption, and, among other things, bases the amounts necessary for "human consumption, sanitation, and fire protection" upon no greater than average indoor per capita water use determined from recent retail billing records for winter water use by all of the Water Contractors; and, if necessary or appropriate for equitable purposes, considers commercial, industrial and institutional water uses separately and determines that element of the subsection 3.5(a)(3)(i) allocation

based on winter water use from recent retail billing records for commercial, industrial, and institutional uses.

(2) The fundamental purpose of the "reasonable requirements" limitation is to ensure that no Customer receives more water during a shortage than that Customer reasonably needs. In determining "reasonable requirements" pursuant to this Section 3.5, the Agency may take into account the hardening of demand resulting from the level of conservation achieved by the Customer; the extent to which the Customer has developed Recycled Water Projects and Local Supply Projects; and the extent to which the Customer has implemented water conservation programs (including conservation required pursuant to the provisions of Section 1.12 of this Agreement). It is the intention of the parties to this Agreement that the Agency make its "reasonable requirements" determinations so as to encourage Customers to implement water conservation, Recycled Water, and Local Supply Projects.

(d) The Agency shall at all times have an adopted water shortage allocation methodology sufficient to inform each Customer of the water that would be available to it pursuant to Section 3.5(a) in the event of reasonably anticipated shortages, which methodology shall be consistent with this Section 3.5 and shall be included in the Urban Water Management Plan prepared pursuant to Section 2.7.

(e) The parties agree that it is extremely difficult and impractical to determine the damage caused to the Agency or other Customers as a result of the taking of water by any Customers in excess of the limitations contained in this Section 3.5. If any Customer takes delivery of water from the Transmission System or otherwise from the Russian River system in violation of this Section 3.5, then it shall pay the Agency, in addition to all other applicable charges, liquidated damages in an amount equal to 50 percent of the applicable Operation and Maintenance Charge (including all sub-charges) times the amount of water taken in violation of the provisions of this Section 3.5. The Agency shall use its best efforts to incorporate this liquidated damages provision into its agreements with Other Agency Customers, Russian River Customers, Marin Municipal Water District, and into the Agency's rules and regulations for the provision of water service, and impose liquidated damages pursuant to this Section 3.5(e). The existence of this liquidated damage provision shall not limit or restrict the Agency from physically limiting the quantity of water taken to the amounts authorized by this Section 3.5 or from pursuing all other available legal and equitable remedies applicable to such violations. By affirmative vote, the Water Advisory Committee may request that the Agency physically limit the quantity of water taken by a Regular

Customer to the amounts authorized by this Section 3.5 or that the Agency pursue all other available legal and equitable remedies applicable to such violations. The proceeds of any liquidated damages assessed pursuant to this subsection shall be deposited and paid out in the same manner as the proceeds of the Operation and Maintenance Charge.

(f) Notwithstanding subsections (a) and (b) above, as an alternative method for allocation under this Section 3.5 during a period of water deficiency or temporary Transmission System impairment, the Water Advisory Committee (or, in the event of a Transmission System temporary impairment affecting fewer than all of the Water Contractors, the Water Advisory Committee representatives of the Water Contractors affected by the temporary impairment) may, by unanimous vote, determine how water shall be allocated among the affected Water Contractors. The Agency shall provide a calculation methodology or other information adequate to enable the determination, in a manner consistent with this Section 3.5, of the volume of water to which (i) the Water Contractors as a group, and (ii) all other Customers would be respectively entitled. Any alternative method for allocation determined by the Water Advisory Committee pursuant to this subsection shall apply only to the volume of water to which the Water Contractors are entitled as a group.

(g) In the event that Transmission System capacity is expanded by the construction of facilities other than those authorized by this Agreement, then notwithstanding anything in this Section 3.5 to the contrary, any allocations made pursuant to this section to Forestville that are based upon the average daily rate of flow during any month Entitlement Limits shall not use a denominator greater than 133.4 mgd.

3.6 Fire Fighting Service

Anything herein to the contrary notwithstanding, the Agency may furnish water for fire fighting from hydrants or standpipes on the Transmission System, provided, however, that such service within two miles of the Corporate Territory of a Water Contractor may be furnished only if and during the period of time said Water Contractor consents thereto in writing. The Agency shall set fees sufficient to recover the full cost of installing and maintaining and supplying water to fire hydrants. All revenue from such fees shall be treated the same as money received from the Operation and Maintenance Charge and shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1. Agency shall adopt service rules limiting hydrant water usage to fire suppression, fire training and limited temporary uses such as providing metered construction water.

3.7 Quality of Water

(a) The Agency warrants that it will use its best efforts to insure that all water delivered hereunder shall be of such purity and quality required to meet minimum standards for human domestic consumption from time to time established by the state and federal governments. The Agency shall not be liable to any of its Customers for any damage arising from the quality of water that it delivers under this Agreement, except for damages based on any breach of the warranty described in the preceding sentence.

(b) The payment obligations of the Water Contractors set forth in Part 4 shall not be affected in any manner by the quality of the water delivered by the Agency hereunder.

3.8 Points of Delivery

All water furnished to each Water Contractor hereunder shall be delivered at the discharge flange of meters at turnouts owned and maintained by the Agency. Turnouts in addition to those now existing shall be constructed from time to time at such locations as shall be agreed upon by the Agency and the Water Contractors involved. Water delivered to Petaluma and North Marin at the McNear meter station shall be delivered at a hydraulic gradient of not less than 175 feet mean sea level. Turnouts installed for Regular Customers shall be not less than 8 inches in diameter. Turnout installation charges shall be determined from time to time by resolution of the Board of Directors of the Agency and shall be payable by the Customer prior to turnout installation by Agency.

3.9 Risk of Loss and Responsibility

Title and risk of loss with respect to all water delivered hereunder shall pass from the Agency to the Water Contractor at the point of delivery thereof as set forth in Section 3.8. The Agency shall not be responsible for the control, transmission, distribution, handling or use of water beyond the point of delivery thereof. Each Water Contractor shall be responsible for installing and maintaining any device it deems necessary to reduce or regulate the pressure under which the water may be delivered hereunder.

3.10 Place of Use of Water Delivered to North Marin

(a) North Marin may exchange water delivered under this Agreement for an equal amount of water delivered to it by Marin Municipal.

(b) Except as provided in subdivision (a) of this section, North Marin shall not permit any water delivered under this Agreement to be used outside of its own distribution system service areas.

3.11 Measurement

All water delivered by the Agency from the Transmission System shall be measured by meters installed and maintained by the Agency. The Agency shall test the accuracy of each meter not less frequently than annually and provide each Water Contractor with a report of such test. Each Water Contractor shall have the right at any time and at its expense to make additional tests of any meter. If a meter is found to be reading 2 percent or more fast or slow, it shall immediately be repaired to bring it within 2 percent accuracy or be replaced by the Agency.

3.12 Marin Municipal Water Deliveries

The Agency, pursuant to the Third Amended Offpeak Water Supply Agreement dated January 25, 1996 and the Amended Agreement For The Sale Of Water Between The Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996, amendments to these agreements that have been approved by the Water Advisory Committee, or subsequent agreements between the Agency and Marin Municipal that have been approved by the Water Advisory Committee, may deliver water to Marin Municipal when and to the extent that the Transmission System has capacity in excess of that required by Agency to supply its Regular Customers the Entitlements set forth in Sections 3.1 and 3.2. However, deliveries to Marin Municipal shall not be reduced or curtailed because of inadequate capacity in the new aqueduct to be constructed generally paralleling the portion of the Petaluma Aqueduct that extends from the Ely Pumping Plant to Kastania Reservoir, if such new aqueduct is paid for by Marin Municipal and dedicated to the Agency pursuant to Section 13 of the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District dated January 25, 1996.

The maximum delivery rate to Marin Municipal between May 1 and October 31 shall not exceed 12.8 mgd. The total quantity of water delivered to Marin Municipal in any Fiscal Year shall not exceed 14,300 Acre Feet. Deliveries of water to Marin Municipal shall be made either through a separately metered turnout or through North Marin's metered turnout(s). If water is delivered through North Marin's metered turnout(s), then North Marin shall maintain in good repair and calibration metered turnouts at points of delivery from its system into Marin Municipal's system and shall

read such meters on or about the end of each month and provide to Agency an accounting of water delivered during the preceding month to Marin Municipal. In making such accounting, North Marin shall deduct from the total of water delivered to Marin Municipal any exchange water as provided in Section 3.10 of this Agreement and any water produced by North Marin and delivered to Marin Municipal.

3.13 Damages for Peaking on the Transmission System or Taking Water in Excess of Average Daily Rate of Flow Entitlement Limits in Violation of Section 3.3

The parties to this Agreement recognize that the Agency will have increased costs, in amounts that will be difficult to determine, if any Regular Customer takes water in violation of subsection (b), (c) or (d) of Section 3.1 or subsection (a) of Section 3.3. Accordingly, if any Regular Customer takes delivery of water from the Transmission System in violation of subsection (b), (c) or (d) of Section 3.1 or subsection (a) of Section 3.3, then it shall pay the Agency, in addition to all other applicable charges, liquidated damages in an amount equal to twenty-five percent (25%) of the applicable Operation and Maintenance Charge (including all sub-charges) times the amount of water taken in violation of these provisions. The assessment of liquidated damages pursuant to this section for a violation by a Regular Customer of subsection (b), (c) or (d) of Section 3.1 or subsection (a) of Section 3.1 may be waived by the Agency upon a showing by the contractor that the taking of delivery of water in violation thereof resulted from an act of God or other unforeseeable circumstances over which the Regular Customer had no control. The existence of this liquidated-damage provision shall not limit or restrict the Agency from physically limiting the quantity of water taken to the amounts authorized by this Agreement or from pursuing all other available legal and equitable remedies applicable to such violations. The proceeds of any liquidated damages assessed pursuant to this subsection shall be deposited and paid out in the same manner as the proceeds of the Operation and Maintenance Charge.

PART 4 - CHARGES AND PAYMENTS

4.1 Separate Charges and Funds

(a) On or before April 30 preceding each Fiscal Year during which any of the following charges are payable, the Agency will establish the amount of the following charges for the ensuing Fiscal Year:

(1) the Operation and Maintenance Charge, including
    (a) the Water Management Planning Sub-Charge,
    (b) the Watershed Planning and Restoration Sub-Charge,
    (c) the Recycled Water and Local Supply Sub-Charge,
    (d) the Water Conservation Sub-Charge,
(2) the Aqueduct Facilities Capital Charges, including
    (a) the Santa Rosa Aqueduct Capital Sub-Charge,
    (b) the Sonoma Aqueduct Capital Sub-Charge,
    (c) the Petaluma Aqueduct Capital Sub-Charge,
(3) the Storage Facilities Capital Charge,
(4) the Common Facilities Capital Charge, and
(5) the North Marin Capital Charge.

In determining the amount of these charges, the Agency shall include a reasonable allowance for usual contingencies and errors in estimation, and to maintain a prudent reserve in an amount determined from time to time by the Water Advisory Committee.

(b) All monies received in payment of said charges shall be received, allocated, and paid out consistent with the obligations and covenants of the Agency with respect to Revenue Bonds.

(c) In establishing each of said charges, the Agency shall assume that the quantity of water (other than Surplus Water) to be delivered from each aqueduct of the Transmission System shall be the same as the amount of water delivered from said aqueduct during the twelve months preceding such establishment, or the average annual amount of water delivered during the preceding 36 months, whichever is less.

If because of drought or other water-supply reduction, state or federal order, or other similar condition, the Agency anticipates that any such quantities will not be predictive of future usage, the Agency may use a different amount with the prior approval of the Water Advisory Committee.

4.2 Operation and Maintenance Charge

(a) The Operation and Maintenance Charge shall be a uniform annual charge per acre foot and shall be paid by all Regular Customers for all water delivered from the Transmission System.

(b) The aggregate amount of money to be received by the Agency from the Operation and Maintenance Charge for each Fiscal Year shall be sufficient to produce water sale revenues to cover the Agency's estimate of its Operation and Maintenance Costs for such Fiscal Year, to produce water sale revenues as required by Sections 4.13, 4.14, 4.15, and 4.16, and to produce additional revenues in amounts determined from time to time by the Water Advisory Committee to pay the Capital Costs of Common Facilities and Storage Facilities pursuant to subdivision (c) of this section.

(c) All money received by the Agency in payment of the Operation and Maintenance Charge shall be deposited and paid out as set forth in Section 1.7, and subdivision (b) of Section 4.1. After making the payments required by Section 1.7, remaining money received from the Operation and Maintenance Charge may be used to pay the Agency's operation and maintenance expenses, to make the deposits required by Sections 4.13, 4.14(g), 4.15, and 4.16(a), and to fund a prudent reserve for those expenses. Money received from the Operation and Maintenance Charge in excess of that necessary for operation and maintenance expenses, to make the deposits required by Sections 4.13, 4.14(g), 4.15, and 4.16(a), and to maintain a prudent reserve may from time to time be disbursed as provided in Section 4.5 to pay Capital Costs of Common Facilities and Storage Facilities. If money received from the Operation and Maintenance Charge is appropriated for expenditure for Storage Facilities, the funds shall be transferred to the Storage Facilities capital fund referred to in subsection (c) of Section 4.7. At the time of the transfer, an amount shall also be transferred to North Marin's account established pursuant to subsection (c) of Section 4.4, which amount shall bear the same proportion to the amount transferred to the Storage Facilities capital fund that the total amount payable by North Marin for the Operation and Maintenance Charge, exclusive of sub-charges, in the prior Fiscal Year bears to the total operation and maintenance revenue, exclusive of revenue from sub-charges, received by the Agency from sources other than North Marin during the prior Fiscal Year.

4.3 Allocation of Capital Costs to North Marin

(a) The Capital Costs of Remaining Facilities shall be allocated to North Marin in proportion to the following ratios:

	Facility	Ratio
1.	Storage Facilities	-0-
2.	Common Facilities	11.2/90.4

(b) The portions of the Capital Costs of the Additional Facilities, replacement facilities, and the Potter Valley Project, or the portion thereof that is to be acquired pursuant to Section 2.4 hereof, shall be allocated to North Marin are as follows:

Facility	Ratio
1. 2nd pipeline, generally paralleling Intertie Aqueduct Reach 1	8.7/55.8
2. 2nd pipeline, generally paralleling Intertie Aqueduct Reach 2	8.7/55.8
3. 2nd pipeline, generally paralleling Intertie Aqueduct Reach 3a	8.7/55.8
4. 2nd pipeline, generally paralleling Intertie Aqueduct Reach 3b and 3c	8.7/42.4
5. 2nd pipeline, generally paralleling Petaluma Aqueduct from its junction with Intertie Aqueduct to Kastania Reservoir	5.1/38.8
6. 2nd pipeline, generally paralleling Sonoma Aqueduct	-0-
7. Storage Facilities	-0-
8. Russian River Water Production Facilities	8.7/55.8

9. All Common Facilities except Russian River Water Production Facilities, but including the Potter Valley Project 19.9/146.2

4.4 Remaining Facility, Additional Facility and Replacement Facility Capital Cost Payments by North Marin

The portion of the Capital Costs of the facilities allocated to North Marin pursuant to Section 4.3 shall be recovered by the Agency as follows:

(a) Each time the Agency decides to issue further series or issues of Revenue Bonds to finance the Capital Costs of constructing or acquiring any Remaining Facilities, Additional Facilities, or replacement facilities, or acquiring all or part of the Potter Valley Project, the Agency shall, prior to initiating the procedures for the issuance of such Revenue Bonds, notify North Marin of the Agency's estimate of the total cost of the Remaining Facilities, replacement facilities, Additional Facilities, or Potter Valley Project acquisition proposed to be financed by said series or issues of Revenue Bonds and of North Marin's portion of the cost allocated in accordance with Section 4.3. North Marin shall have the right, at its election, to pay North Marin's portion, or any part or parts thereof, of the cost of such Remaining Facilities, replacement facilities, Additional Facilities, or Potter Valley Project acquisition in cash, provided, however, that North Marin shall make its election on or before such date as the Agency shall specify, which date will give the Agency sufficient time to determine the amount of Revenue Bonds to be sold, but shall not be earlier than 30 days after said notification. If North Marin elects to make a cash payment, it shall do so on the date the Revenue Bonds are sold or on such later date as the Agency may agree upon and which will nevertheless enable the Agency to meet its obligations for said construction or acquisition. If North Marin elects to make a cash payment, the amount payable shall exclude interest during construction and financing charges.

(b) Upon completion of the construction or acquisition referred to in subdivision (a) of this section, any deficiency in the amount theretofore paid or credited and the actual amount of North Marin's portion thereof shall be paid by North Marin to the Agency.

(c) All payments made by North Marin pursuant to subdivisions (a) and (b) of this section shall be deposited in a separate account from which the Agency will make disbursements only to make payments that otherwise must be made by revenues received from the North Marin Capital Charge, or for the Agency's expenses in constructing the Remaining Facilities, Additional Facilities, and replacement facilities or

in acquiring all or part of the Potter Valley Project, up to the proportionate amounts allocated to North Marin utilizing the ratios contained in Section 4.3. The balance of the account shall earn interest at the Sonoma County Treasurer's pooled investment fund rate, which interest income shall be credited to the account on June 30 of each year. Any surplus funds in the account shall be paid to North Marin within 30 days of receipt of a written request therefor.

(d) If the Agency decides to levy one or more Aqueduct Capital Charges to produce revenue to fund, without issuing Revenue Bonds, (a) major replacements of portions or all of any aqueduct facility pursuant to Section 4.6(e) of this Agreement or (b) capital improvements to existing Aqueduct Facilities, then North Marin shall pay its portion of the Capital Costs of such replacements or improvements to the Agency in cash at the time such Capital Costs are incurred by the Agency. The Capital Costs of major replacements to the facilities specified in Subsection 4.3(b) shall be allocated to North Marin based upon the ratios set forth in Subsections 4.3(b). The Capital Costs of major replacements to the Intertie Aqueduct shall be allocated to North Marin based on the following cost distribution ratios:

Intertie Aqueduct Reach 1	11.2/70.4
Intertie Aqueduct Reach 2	11.2/68.9
Intertie Aqueduct Reach 3	11.2/58.9

4.5 Payment of Remaining Facilities, Additional Facilities, Replacement Facilities, and Potter Valley Project Capital Costs

(a) The Capital Costs of Remaining Facilities, Additional Facilities, replacement facilities and Potter Valley Project, except the portions thereof paid by North Marin pursuant to Section 4.4, shall be paid by the Agency with cash available pursuant to Sections 4.2, 4.6, 4.7 and 4.8, subdivision (b) of Section 4.11, and, if the Board of Directors of the Agency decides to issue Revenue Bonds, with the proceeds from the sale of Revenue Bonds. The Agency may sell Revenue Bonds to the extent necessary to pay for said Capital Costs, to establish bond reserves and to pay all expenses incurred in the issuance of such bonds.

(b) From time to time the Agency shall determine the percentage of the Revenue Bonds that are attributable to Aqueduct Facilities, Storage Facilities, Common Facilities, and North Marin's Capital Costs. In making these calculations, the Agency shall not include in the portions of the Revenue Bonds that are attributable to Aqueduct Facilities, Storage Facilities and Common Facilities, the portions of the Revenue Bonds, if any, that

are attributable to North Marin's Capital Costs. The Agency shall not include in these calculations any Capital Costs for which North Marin paid cash pursuant to Section 4.4, or the costs of any major replacement facilities financed by the imposition of Aqueduct Facilities Capital Charges without the issuance of Revenue Bonds pursuant to subdivision (e) of Section 4.6.

4.6 Aqueduct Facilities Capital Charges

(a) Aqueduct Facilities Capital Charges consist of the Santa Rosa Aqueduct Capital Sub-Charge, the Sonoma Aqueduct Capital Sub-Charge, and the Petaluma Aqueduct Capital Sub-Charge. The Aqueduct Facilities Capital Charges shall be annual charges per acre foot set for each aqueduct as provided in subdivision (b) of this section and shall be paid by all Regular Customers of the Agency except North Marin for all water delivered from the Transmission System except Surplus Water. All water delivered to Santa Rosa and Windsor shall be deemed to be delivered from the Santa Rosa Aqueduct, all water delivered to Rohnert Park, Cotati, and Petaluma shall be deemed to be delivered from the Petaluma Aqueduct, and all water delivered to Sonoma and Valley of the Moon shall be deemed to be delivered from the Sonoma Aqueduct.

(b) The aggregate amount to be received by the Agency from the various Aqueduct Facilities Capital Charges for each Fiscal Year shall be sufficient to produce water sale revenues to pay the Agency's Revenue Bond Obligations (after crediting any projected payments to be made pursuant to subdivision (e) of Section 4.6) for such Fiscal Year times the percentage for Aqueduct Facilities determined pursuant to subdivision (b) of Section 4.5, and to produce additional revenues in amounts determined from time to time by the Water Advisory Committee to pay the Capital Costs of Aqueduct Facilities pursuant to subdivision (c) of this section. The aggregate amount shall be allocated to the respective aqueducts based on the following cost distribution ratios applied to the estimated, or when known, actual Capital Costs for the various Aqueduct Facilities:

Facility	Ratio
2nd pipeline, generally paralleling Intertie Aqueduct, Reach 1, Reach 2 and Reach 3a	
Santa Rosa Aqueduct	6.6/55.8
Petaluma Aqueduct	20.9/55.8
Sonoma Aqueduct	6.8/55.8

2nd pipeline, generally paralleling Intertie Aqueduct, Reach 3b and 3c

Santa Rosa Aqueduct	-0-
Petaluma Aqueduct	20.9/42.4
Sonoma Aqueduct	-0-

2nd pipeline, generally paralleling Petaluma Aqueduct from its junction with the Intertie Aqueduct to Kastania Reservoir

Santa Rosa Aqueduct	-0-
Petaluma Aqueduct	20.9/38.8
Sonoma Aqueduct	-0-

2nd pipeline, generally paralleling Sonoma Aqueduct

Santa Rosa Aqueduct	-0-
Petaluma Aqueduct	-0-
Sonoma Aqueduct	6.8/6.8

(These ratios are determined with the allocations in Sections 4.3 and 4.4 of Capital Costs to North Marin, and with the following allocations to Common Facilities:

2nd pipeline generally paralleling Reaches 1, 2 and 3a of the Intertie Aqueduct: 12.8/55.8

2nd pipeline generally paralleling Reach 3b and 3c of the Intertie Aqueduct: 12.8/42.4

2nd pipeline generally paralleling the Petaluma Aqueduct from its junction with the Intertie Aqueduct to Kastania Reservoir: 12.8/38.8)

(c) All money received by the Agency in payment of Aqueduct Facilities Capital Charges shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1. After making the payments required to satisfy the Agency obligations and covenants with respect to the Revenue Bonds used to finance the Capital Cost of the Aqueduct Facilities, remaining money received from the Aqueduct Facilities Capital

Charges may be disbursed from time to time to pay pursuant to subdivision (a) of Section 4.5 the portions of the Capital Costs of the Remaining Facilities and Additional Facilities which are also Aqueduct Facilities that are not allocated to North Marin in Section 4.3.

(d) If at the end of any Fiscal Year the balance in the Aqueduct Facilities Capital Charge fund is insufficient to meet said Revenue Bond Obligations for the ensuing Fiscal Year attributed to the Aqueduct Facilities, Agency will determine the deficits in the payment received by it for deliveries from the Santa Rosa, Petaluma, and Sonoma Aqueducts respectively. Before August 1 of the following Fiscal Year:

(1) Additional charges for water delivered in amounts equal to the deficits with respect to the Santa Rosa Aqueduct shall be paid by Santa Rosa and Windsor in the following manner: The share of such additional charge to be paid by each of said Water Contractors shall be proportionate to the difference between the base share component and the sum of the Aqueduct Facilities Capital Charge payments made by said Water Contractor during said Fiscal Year. The base share component allocated to a Water Contractor is the number obtained by multiplying the said total principal and interest payment for said Fiscal Year by said Water Contractor's average daily rate of flow during any month Entitlement Limit set forth in subdivision (a) of Section 3.1 and by dividing by the total of said average daily rate of flow during any month Entitlement Limits for all Water Contractors being served from the Santa Rosa Aqueduct.

(2) Additional charges for water delivered in an amount equal to the deficit with respect to the Sonoma Aqueduct shall be paid by Sonoma and Valley of the Moon in the following manner: The share of such additional charge to be paid by each of said Water Contractors shall be proportionate to the difference between the base share component and the sum of the Aqueduct Facilities Capital Charge payments made by said Water Contractor during said Fiscal Year. The base share component allocated to a Water Contractor is the number obtained by multiplying the said total principal and interest payment for said Fiscal Year by said Water Contractor's average daily rate of flow during any month Entitlement Limit set forth in subdivision (a) of Section 3.1 and by dividing by the total of said average daily rate of flow during any month Entitlement Limits for all Water Contractors being served from the Sonoma Aqueduct.

(3) Additional charges for water delivered in an amount equal to the deficit with respect to the Petaluma Aqueduct shall be paid by Rohnert Park, Cotati and Petaluma in the following manner excluding North Marin and Marin Municipal: The share of such additional charge to be paid by each of said Water Contractors shall be

proportionate to the difference between the base share component and the sum of the Aqueduct Facilities Capital Charge payments made by said Water Contractor during said Fiscal Year. The base share component allocated to a Water Contractor is the number obtained by multiplying said total principal and interest payment for said Fiscal Year by said Water Contractor's average daily rate of flow during any month Entitlement Limit set forth in subdivision (a) of Section 3.1 and by dividing by the total of all said average daily rate of flow during any month Entitlement Limits for all Water Contractors being served from the Petaluma Aqueduct.

(e) If the Agency decides to issue a new series or issue of Revenue Bonds to finance major replacements of portions or all of any aqueduct facility or if, with the approval of the Water Advisory Committee, the Agency decides to levy one or more Aqueduct Facilities Capital Charges to produce revenue to finance major replacements of portions or all of any aqueduct facility, then the aggregate amount to be received by the Agency from the respective Aqueduct Facilities Capital Charges for each Fiscal Year shall be sufficient to produce water sales revenues, in addition to those required by subdivision (b) of this section, in amounts determined from time to time by the Water Advisory Committee to pay the Capital Costs of such major replacements. The Capital Costs of major replacements to the facilities specified in Subsection 4.6(b) above shall be allocated based upon the ratios set forth in Subsection 4.6(b). The Capital Costs of major replacements to the Intertie Aqueduct shall be allocated to the respective aqueducts based on the following cost distribution ratios:

Intertie Aqueduct Reach 1:

Santa Rosa Aqueduct	31.5/70.4
Petaluma Aqueduct	19.7/70.4
Sonoma Aqueduct	8.0/70.4

Intertie Aqueduct Reach 2:

Santa Rosa Aqueduct	30.0/68.9
Petaluma Aqueduct	19.7/68.9
Sonoma Aqueduct	8.0/68.9

Intertie Aqueduct Reach 3:

Santa Rosa Aqueduct	20.0/58.9
Petaluma Aqueduct	19.7/58.9
Sonoma Aqueduct	8.0/58.9

4.7 Storage Facilities Capital Charge

(a) The Storage Facilities Capital Charge shall be a uniform annual charge per acre foot and shall be paid by all Regular Customers of the Agency for all water delivered from the Transmission System except Surplus Water, provided however, that North Marin shall not be obligated to pay any Storage Facilities Capital Charge if North Marin maintains potable storage reservoirs within its system with a total capacity equal to or greater than one and one-half times the average daily volume of water delivered by the Agency to North Marin during the previous July with the highest water delivery to North Marin.

(b) The aggregate amount to be received by the Agency from the Storage Facilities Capital Charge for each Fiscal Year shall be sufficient to produce water sale revenues to pay the Agency's Revenue Bond Obligations for such Fiscal Year (after crediting any projected payments to be made pursuant to subdivision (e) of Section 4.6) times the percentage for Storage Facilities determined pursuant to subdivision (b) of Section 4.5, and to produce additional revenues in amounts determined from time to time by the Water Advisory Committee to pay the Capital Costs of Storage Facilities pursuant to subdivision (c) of this section.

(c) All money received by the Agency in payment of the Storage Facilities Capital Charge shall be deposited and paid out as set forth in Section 1.7, and subdivision (b) of Section 4.1. After making the payments from the Storage Facilities capital fund required by Section 1.7, remaining money in said fund may be disbursed from time to time to pay Capital Costs of Remaining Facilities, Additional Facilities and replacement facilities that also are Storage Facilities, pursuant to Section 4.5.

(d) If at the end of any Fiscal Year the balance in the Storage Facilities capital fund is insufficient to meet said Revenue Bond Obligations for such Fiscal Year attributed to the Storage Facilities, each Water Contractor except North Marin will, before August 1, pay to the Agency an additional charge per acre foot for all water delivered to it during the Fiscal Year which additional charge when multiplied by all Acre Feet sold to Regular Customers except North Marin shall be equal to said deficit.

4.8 Common Facilities Capital Charge

(a) The Common Facilities Capital Charge shall be a uniform annual charge per acre foot and shall be paid by all Regular Customers of the Agency except North Marin for all water delivered from the Transmission System except Surplus Water.

(b) The aggregate amount to be received by the Agency from the Common Facilities Capital Charge for each Fiscal Year shall be sufficient to produce water sale revenues to pay the Agency's Revenue Bond Obligations for such Fiscal Year (after crediting any projected payments to be made pursuant to subdivision (e) of Section 4.6) times the percentage for Common Facilities determined pursuant to subdivision (b) of Section 4.5.

(c) All money received by the Agency in payment of the Common Facilities Capital Charge shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1. After making the payments required by Section 1.7, additional money received from the Common Facilities Capital Charge may be disbursed from time to time pursuant to subdivision (a) of Section 4.5 to pay the portions of the Capital Costs of Remaining Facilities, Additional Facilities, replacement facilities and the Potter Valley Project that also are Common Facilities and that are not allocated to North Marin in Section 4.3, and to satisfy the requirements of Section 6.04 of Ordinance No. 1 if the amount of money received from the charge established by Section 4.2 is insufficient in any Fiscal Year.

(d) If at the end of any Fiscal Year the balance in the Common Facilities capital fund is insufficient to meet the Agency's Revenue Bond Obligations for such Fiscal Year on the Revenue Bonds attributed to Common Facilities, each Water Contractor except North Marin shall, before August 1, pay to the Agency an additional charge per acre foot for water delivered to it during the Fiscal Year, which additional charge when multiplied by all Acre Feet sold to the Water Contractors shall be equal to said deficit.

4.9 North Marin Capital Charge

(a) The North Marin Capital Charge shall be a uniform annual charge per acre foot and shall be paid by North Marin for all water delivered to it from the Transmission System except Surplus Water.

(b) The aggregate amount to be received by the Agency from the North Marin Capital Charge for each Fiscal Year shall be sufficient to produce water sale revenues to pay the Agency's Revenue Bond Obligations for such Fiscal Year (after crediting any projected

payments to be made pursuant to subdivision (e) of Section 4.6) times the percentage for North Marin's Capital Costs determined pursuant to subdivision (b) of Section 4.5.

(c) All money received by the Agency in payment of North Marin Capital Charge shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1. After making any payments required by Section 1.7, additional money received from the North Marin Capital Charge shall be deposited in the separate account described in subdivision (c) of Section 4.4.

(d) If at the end of any Fiscal Year the balance in the separate fund described in subdivision (c) of Section 4.4 is insufficient to meet the portion of the Agency's Revenue Bond Obligations for such Fiscal Year on the Revenue Bonds attributed to North Marin's Capital Costs, North Marin will, before August 1, pay to the Agency an additional charge per acre foot for water delivered to it during the Fiscal Year, which additional charge when multiplied by all Acre Feet sold to North Marin shall be equal to said deficit.

(e) If any money received pursuant to the Common Facilities Capital Charge is used pursuant to subdivision (c) of Section 4.8 to satisfy the requirements of Section 6.04 of Ordinance No. 1, then the North Marin Capital Charge shall be increased by the appropriate amount so that North Marin pays its appropriate share of such requirements.

(f) If North Marin has not maintained storage reservoirs within its system with at least the capacity required by subdivision (a) of Section 4.7, and if, as a result, the Agency constructs additional storage, then the North Marin Capital Charge shall be increased by an amount sufficient to pay for the Capital Costs or Revenue Bonds costs of such additional storage.

4.10 Power; Revenues

All power from the Warm Springs Hydroelectric Project and the Potter Valley Project shall be applied to the operation of the Transmission System or shall be sold, as the Agency shall from time to time determine. All revenues arising from the operation of these projects shall be treated the same as money received from the Operation and Maintenance Charge and shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1.

4.11 Payment for Surplus Water and Water Sold To Marin Municipal

(a) The Agency will sell Surplus Water at a price per acre foot of not less than 120% of the then current Operation and Maintenance Charge. All revenue from the sale of Surplus Water shall be treated the same as money received from the Operation and Maintenance Charge and shall be deposited and paid out as set forth in Section 1.7 and subdivision (b) of Section 4.1.

(b) Water delivered to Marin Municipal shall be sold at a per acre foot price that shall not be less than the sum of the Operation and Maintenance Charge determined pursuant to Section 4.2, the Russian River Conservation and Russian River Projects Charges determined pursuant to Section 4.18, and a capital charge. For the Third Amended Offpeak Water Supply Agreement dated January 25, 1996, or any amendment to that agreement that has been approved by the Water Advisory Committee, the capital charge shall be the total of all charges paid to Agency by Marin Municipal minus the sum of the Operation and Maintenance Charge and the Russian River Conservation and Russian River Projects Charges. For the Amended Agreement For The Sale of Water Between the Sonoma County Water Agency and Marin Municipal Water District dated January 25, 1996, or any amendment to that agreement that has been approved by the Water Advisory Committee, the capital charge shall be the charge established by paragraph b. of Section 10 of that agreement. Any subsequent agreement between the Agency and Marin Municipal for the sale of water to be transported through the Transmission System pursuant to Section 3.12 shall specify the capital charge that applies to this section of this Agreement. All money received by the Agency from the Operation and Maintenance Charge on water sold to Marin Municipal shall be credited to the operation and maintenance fund. All money received by the Agency from the Russian River Conservation and Russian River Projects Charges on water sold to Marin Municipal shall be credited to the Russian River Projects Fund and shall be used only for the purposes set forth in subsection (jj) of Section 1.2. The balance of the money received by the Agency from water sold to Marin Municipal shall be deposited and paid out as set forth in Section 1.7, and subdivision (b) of Section 4.1. After making the payments required by Section 1.7 and Ordinance No. 1, additional money received may be disbursed from time to time to pay the Capital Costs of Storage Facilities or Common Facilities authorized to be constructed in Section 2.2, provided, however, that only the money received from $31.50 per acre foot of the capital charge (which rate is based on the Agency's past and projected future capital investment in Storage Facilities) may be used to pay the Capital Costs of new Storage Facilities.

4.12 Minimum Payments by Other Agency Customers

Anything herein to the contrary notwithstanding, the Agency will not sell any water to be delivered through the Transmission System (other than Surplus Water) to any Other Agency Customer at a total price per acre foot that is less than 120% of the highest price per acre foot then currently being paid by any Water Contractor; provided, however, that this limitation shall not apply to water sold to Forestville. The respective components of said price shall be credited to the appropriate fund referred to in subdivision (a) of Section 4.1 and the excess shall be credited to the aqueduct capital fund for the aqueduct from which service is taken. Forestville's charge shall be the same as the total charge for Water Contractors for water delivered from the Santa Rosa Aqueduct, except that during the first ten (10) full Fiscal Years following execution of this Agreement, Forestville shall not pay the Santa Rosa Aqueduct Capital Sub-Charge.

4.13 Operations and Maintenance Charge – Water Management Planning

The Agency shall calculate and collect as a part of the Operations and Maintenance Charge a Water Management Planning Sub-Charge. The aggregate amount of money to be received by the Agency from the Water Management Planning Sub-Charge in each Fiscal Year shall be sufficient to produce water sale revenues to cover the Agency's reasonable estimate of its costs for such Fiscal Year to carry out the provisions of Section 2.7. All money received by the Agency in payment of the Water Management Planning Sub-Charge shall be deposited by the Agency into a Water Management Planning Fund and used to pay the Agency's costs in carrying out the provisions of Section 2.7.

4.14 Operations and Maintenance Charge – Watershed Planning and Restoration

(a) The Agency shall calculate and collect as a part of the Operations and Maintenance Charge a Watershed Planning and Restoration Sub-Charge.

(b) The aggregate amount of money to be received by the Agency from the Watershed Planning and Restoration Sub-Charge in each Fiscal Year shall be sufficient to produce water sale revenues to cover the Agency's reasonable estimate of costs for such Fiscal Year (net of funding provided by other sources, including the Russian River Projects Fund and the Agency's General Fund) of carrying out: (1) fishery mitigation, enhancement, and environmental compliance activities and projects undertaken by the Agency, including the Agency's costs of complying with the Endangered Species Act or any other applicable federal, state, or local environmental statute or regulation, if such

activities, projects, and costs are reasonably necessary, to enable the Agency to provide water to Regular Customers under this Agreement; (2) the evaluations undertaken pursuant to Section 2.4(b); and (3) actions, studies or projects authorized pursuant to Section 2.8 of this Agreement that are not covered by other funding sources and contributions. The Agency shall not use proceeds from the Watershed Planning and Restoration Sub-Charge to pay for the capital cost or operation and maintenance cost of recreation facilities.

(c) Notwithstanding Subsection 4.14(b) above, during the first five full Fiscal Years following the effective date of this Agreement, the Watershed Planning and Restoration Sub-Charge shall not exceed $35.00 per acre-foot.

(d) To assist in determining the appropriate share of fishery mitigation, enhancement, and environmental compliance activities and projects undertaken by the Agency to be paid by the Water Contractors under the Watershed Planning and Restoration Sub-Charge, the Agency shall, from time to time as reasonably necessary, prepare an analysis that (1) identifies planned fishery mitigation, enhancement, and environmental compliance activities and projects, (2) identifies the costs and beneficiaries of such activities and projects, (3) proposes an allocation of costs among all benefitted parties, and (4) recommends sources of funding for such activities and projects.

(e) The Agency shall use its best efforts to amend its existing contracts with Russian River Customers to require Russian River Customers to pay the Watershed Planning and Restoration Sub-Charge or fund or implement watershed planning and restoration projects at a level equivalent to that funded by the Agency under this Agreement.

(f) In addition to the Watershed Planning and Restoration Sub-Charge, the Agency may assess against the Water Contractors such supplemental charges as are authorized and agreed to under Section 2.8(c). Supplemental charges under this subsection shall not be included in determining the minimum payments by Other Agency Customers pursuant to Section 4.12 or by Windsor pursuant to Section 4.17.

(g) All money received by the Agency in payment of the Watershed Planning and Restoration Sub-Charge shall be deposited by the Agency into a Watershed Planning and Restoration Fund and used for the purposes set forth in Section 4.14(b). All money received by the Agency in payment of any supplemental charges pursuant to Section 4.14(d) shall be deposited into separate account(s) and used to pay the costs of projects authorized and agreed to pursuant to Section 2.8(c).

4.15 Operations and Maintenance Charge – Recycled Water and Local Supply

The Agency shall calculate and collect as a part of the Operations and Maintenance Charge a Recycled Water and Local Supply Sub-Charge. The Recycled Water and Local Supply Sub-Charge shall be a uniform charge per acre-foot and shall be paid by all Regular Customers and Russian River Customers for all water taken from the Transmission System or under the Agency's water rights. The aggregate amount of money to be received by the Agency from the Recycled Water and Local Supply Sub-Charge in each Fiscal Year shall be sufficient to produce water sale revenues to cover the Agency's estimate of its costs for such Fiscal Year to carry out the provisions of Section 2.6; provided, however, that during the first five full Fiscal Years following the effective date of this Agreement, the Recycled Water and Local Supply Sub-Charge shall not exceed $35.00 per acre-foot. The Agency shall use its best efforts to amend its existing contracts with Russian River Customers to require Russian River Customers to pay the Recycled Water and Local Supply Sub-Charge. Monies collected from the Recycled Water and Local Supply Sub-Charge shall be deposited in a Recycled Water and Local Supply Fund created by the Agency. The Recycled Water and Local Supply Fund shall be used only to pay or partially pay for the costs of Recycled Water Projects or the acquisition of Recycled Water or the rights thereto pursuant to Section 2.6 of this Agreement. Notwithstanding the foregoing sentence, revenue from the Recycled Water and Local Supply Sub-Charge collected by the Agency from Windsor pursuant to Section 4.17(b) shall be placed in a separate account and made available to Windsor for funding Windsor's local or regional Recycled Water Projects.

4.16 Operations and Maintenance Charge – Water Conservation

(a) The Agency shall calculate and collect as a part of the Operations and Maintenance Charge a Water Conservation Sub-Charge. Monies collected from the Water Conservation Sub-Charge shall be deposited in a Water Conservation Fund created by the Agency. The Water Conservation Fund shall be used only to pay or partially pay for the cost of Water Conservation Projects. The aggregate amount of money to be received by the Agency from the Water Conservation Sub-Charge for each Fiscal Year shall be sufficient to cover the Agency's estimate of the total cost of all Water Conservation Projects for such Fiscal Year. From and after July 1, 1998, a total of fifteen million dollars ($15,000,000) shall be expended to implement Water Conservation Projects pursuant to the Water Conservation Plan dated June 29, 1998. The $15,000,000 shall be allocated as follows: Cotati 2.10%, Petaluma 18.53%, Rohnert Park 10.37%, Santa Rosa 40.25%, Sonoma 4.15%, Forestville 0.66%, North Marin 19.50%, Valley of the Moon 4.43%. Until the total of $15,000,000 has been expended as set forth above, the

Agency shall not fund Water Conservation Projects for or on behalf of Windsor. The Water Conservation Projects for which said $15,000,000 is to be expended, have been approved by the Water Advisory Committee.

(b) The Agency shall use its best efforts to amend its existing contracts with Russian River Customers to require Russian River Customers to fund or implement Water Conservation Projects at a level equivalent to that funded by the Agency under this Agreement. Notwithstanding the penultimate sentence in Section 4.16(a), revenue from the Water Conservation Sub-Charge collected by the Agency from Windsor pursuant to Section 4.17(b) shall be placed in a separate account and made available to Windsor for funding Windsor's Water Conservation Projects.

4.17 Payments by Town of Windsor

(a) Notwithstanding anything in this Agreement to the contrary, for the first fifteen (15) full Fiscal Years following execution of this Agreement, the amount payable by Windsor for water delivered by the Agency through the Transmission System shall be 120% of the highest price per acre foot then currently being paid by any Water Contractor receiving water from the Santa Rosa Aqueduct. The respective components of said price shall be credited to the appropriate fund referred to in subdivision (a) of Section 4.1 and the excess shall be credited to the aqueduct capital fund for the aqueduct from which service is taken. Beginning with the sixteenth (16th) full Fiscal Year following execution of this Agreement and thereafter, all water delivered to Windsor by Agency through the Transmission System will be deemed delivered from the Santa Rosa Aqueduct and the amount payable by Windsor for said water determined accordingly.

(b) For all water diverted directly by Windsor from the Russian River using its own facilities, whether under the Agency's water rights or Windsor's water rights, Windsor shall pay only the charges set forth in the Agreement for Sale of Water between the Agency and Windsor dated January 8, 1991, as amended, including the sub-charges set forth in Sections 4.13, 4.14, 4.15, and 4.16.

4.18 Payment of Russian River Conservation Charge and Russian River Projects Charge by North Marin

In addition to the other charges provided for in this Part, North Marin shall pay the following additional per-acre-foot charges:

(a) A Russian River Conservation Charge shall be paid in lieu of the property taxes levied by the Agency on property in Sonoma County, to pay the capital, Operation and Maintenance Costs associated with the Warm Springs Dam Project. The Russian River Conservation Charge shall be a charge per acre foot of water delivered to North Marin hereunder, except Surplus Water. The charge shall be determined annually on or before April 30 preceding each Fiscal Year and shall be payable by North Marin during the ensuing Fiscal Year. The Russian River Conservation Charge shall be determined by multiplying the tax rate levied by the Agency in the then current Fiscal Year to pay the costs associated with the Warm Springs Dam Project times the assessed value of secured and unsecured property situated within Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Forestville and Valley of the Moon and dividing the product by the total number of Acre Feet of water delivered to Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Forestville and Valley of the Moon pursuant to Section 3.1 and 3.3 during the twelve month period ending on March 31. All money received by the Agency from the Russian River Conservation Charge on water sold to North Marin shall be credited to the Russian River Projects Fund and shall be used only for the purposes set forth in subsection (jj) of Section 1.2.

(b) A Russian River Projects Charge shall be paid in lieu of the property taxes levied on property in Sonoma County and other Agency general fund monies which are transferred to the Agency's Russian River Projects Fund and expended for the purposes enumerated in subsection (jj) of Section 1.2. The Russian River Projects Charge shall be effective on the first day of the first month following the effective date of this Agreement and shall thereafter be determined annually on or before April 30 preceding each Fiscal Year and shall be payable by North Marin during the ensuing Fiscal Year. The Russian River Projects Charge shall be determined by dividing the total amount of Agency monies expended from the Agency's Russian River Projects Fund in the preceding ten Fiscal Years, exclusive of the funds contributed to the Fund by North Marin and Marin Municipal Water District, and interest earnings attributable to funds contributed by North Marin and Marin Municipal Water District, by the sum of the total acre-feet of water delivered by the Agency to Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Forestville and Valley of the Moon pursuant to Sections 3.1 and 3.3 of this Agreement during the preceding ten Fiscal Years and multiplying the quotient by the ratio that the assessed value of secured and unsecured property situated within Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Forestville and Valley of the Moon bears to the assessed value of all secured and unsecured property within Sonoma County, provided, however, in no event shall the Russian River Projects Charge exceed $20.00 per acre-foot. The Agency shall keep proper books, records and accounts in which complete and accurate entries shall be made of all Agency general fund monies

transferred to the Agency's Russian River Projects Fund and all expenditures made from the fund for the purposes set forth in subsection (jj) of Section 1.2. The Agency shall maintain a separate account within the Russian River Projects Fund for Russian River Projects Charges paid by North Marin and Marin Municipal Water District. Monies expended from the Russian River Projects Fund shall be deemed to have been expended from the North Marin and Marin Municipal Water District account in the proportion that the balance of that account bears to the total Russian River Projects Fund balance at the end of the Fiscal Year quarter preceding the expenditure. All money received by the Agency from the Russian River Projects Charge on water sold to North Marin shall be credited to the Russian River Projects Fund and shall be used only for the purposes set forth in subsection (jj) of Section 1.2.

4.19 Billing and Time of Payment

Except as otherwise expressly provided herein, all charges payable to the Agency shall be billed each month and paid within 30 days after receipt of bill. Notwithstanding any dispute between the Agency and a Water Contractor, such Water Contractor will pay all its bills when due and shall not withhold all or any part of any payment pending the final resolution of such dispute. If the resolution of the dispute results in a refund to the Water Contractor, the Agency shall make such refund plus any interest earned by investment of the disputed funds as promptly as it is able to do so, consistent with its meeting its Revenue Bond Obligations.

PART 5 - Water Advisory Committee/Technical Advisory Committee

5.1 Purpose

(a) There is hereby created the Water Advisory Committee and the Technical Advisory Committee.

(b) The purpose of the Water Advisory Committee is to perform the functions specified herein and to review all proposals set forth by the Agency which involve a significant capital outlay for the Transmission System or any other project which would significantly change the level of service or add significantly to the operations and maintenance expense of the Transmission System or other expense to be borne by the Water Contractors. The purpose of the Technical Advisory Committee is to advise the Water Advisory Committee.

5.2 Powers

Except as provided herein to the contrary, the power of the Water Advisory Committee is limited to that of collective spokesperson for the Water Contractors and shall be advisory only in nature. Nothing shall preclude a Water Contractor from setting forth a view contrary to that of the majority of the Committee. No action of the Committee limits or impairs any right or power of any Water Contractor. The Technical Advisory Committee shall have no powers other than the power to make recommendations to the Water Advisory Committee.

5.3 Composition and Voting

(a) The Water Advisory Committee shall be composed of one representative and one alternate who shall serve in absence of the representative, to be selected by each Water Contractor. The representative and alternate shall be elected members of and appointed by the governing board of the Water Contractor. The Water Advisory Committee shall generally meet quarterly as it determines necessary, which shall include at least one meeting per calendar year with a liaison from the Board of Directors of the Agency who is a member of and appointed by said Board. Each Water Contractor's representative will be allocated a weighted vote proportional to the average daily rate of flow during any month Entitlement Limit from the Transmission System applicable to such Water Contractor. An affirmative vote of said Committee shall be recorded and require both of the following: (1) the affirmative vote of more than fifty percent (50%) of the total weighted votes as defined above; and (2) the

affirmative vote of at least five (5) representatives. If the Water Advisory Committee does not affirmatively vote to approve any matter before it for a decision, then the matter shall be deemed not approved. A representative or alternate appointed by the Board of Directors of the Marin Municipal Water District, each of which must be members of said board, may attend and participate, debate, express opinions and present information at meetings of the Water Advisory Committee but shall not have a vote. If the approval, determination, or consent of the Water Advisory Committee is authorized or required on any non-advisory matter pursuant to this Agreement, the vote of the Water Advisory Committee on such matter shall be evidenced by a writing, executed by the chairperson or secretary, evidencing (a) the vote of each member, (b) whether the vote of the Committee was in the affirmative, and (c) if the vote was in the affirmative, a description of the approval, determination, or consent given by the Committee.

(b) The Technical Advisory Committee shall be composed of one non-elected representative selected by each Water Contractor. The Technical Advisory Committee shall generally meet monthly as it determines necessary. Each Water Contractor's representative will be allocated the same weighted vote applicable to that Water Contractor under Section 5.3(a). An affirmative vote of said Committee shall require both of the following: (1) the affirmative vote of more than fifty percent (50%) of the total weighted votes as defined above; and (2) the affirmative vote of at least five (5) representatives. A representative or alternate appointed by the Marin Municipal Water District Board of Directors may attend and participate, debate, express opinions and present information at meetings of the Water Advisory Committee but shall not have a vote. The Water Advisory Committee may require the Technical Advisory Committee to create subcommittees and ad hoc committees. Persons serving on such committees shall be elected officials, staff or contract staff of the Water Contractor they represent.

(c) The Technical Advisory Committee shall create a standing Water Conservation Subcommittee. The Water Conservation Subcommittee shall make recommendations to the Technical Advisory Committee with respect to any determination of the Water Advisory Committee contemplated under Section 1.12 of this Agreement, and shall perform other such duties with respect to Water Conservation Projects as may be requested by the Technical Advisory Committee.

(d) Once every two years, on a date selected by the Water Advisory Committee, the Water Advisory Committee shall elect from among its members two officers: a chairperson and vice chairperson. Officers shall serve for the ensuing two Fiscal Years. An officer may serve a second or subsequent consecutive two-year terms only if each

such term is approved by a unanimous vote of the Water Contractors. Furthermore, an officer can be removed and replaced at any meeting called by five Water Advisory Committee members provided all Water Advisory Committee members are notified in writing a minimum of five working days prior to the meeting. In the event an officer either: (1) loses his/her status as a duly elected local official serving on the governing board of the Water Contractor they represent or (2) loses his/her appointment as representative of the Water Contractor on the Water Advisory Committee, the officer position held shall be vacated. The Water Advisory Committee shall elect a new officer who shall fill out the balance of the vacated term. Voting for officers shall be as provided in subsection (a) of this section.

(e) By November of each year, subject to the limitations in Section 4.16(a), the Water Advisory Committee shall review proposed Water Conservation Projects, Recycled Water Projects, and Local Supply Projects and approve and report to the Agency those projects that are to receive funding in the next or later fiscal years. It is the intent of the parties to this Agreement that over the term of the Agreement, Regular Customers shall receive funding support for Water Conservation Projects, Recycled Water Projects, and Local Supply Projects in proportion to the amounts paid by Regular Customers under Sections 4.15 and 4.16.

(f) Commencing with the first Fiscal Year following the effective date of this Agreement, the Agency shall include in its operating budget the amount of $30,000 which the Agency shall expend as the Water Advisory Committee directs for purposes associated with the orderly implementation and operation of the provisions of this Agreement and other associated purposes deemed appropriate by the Committee. The annual amount may be fixed at a higher or lower amount in subsequent Fiscal Years as determined by vote of the Committee pursuant to subsection (a) of this section. The Water Advisory Committee shall decide which, if any, consultant or consultants, firm or firms shall be hired to carry out this work.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date first above written.

SONOMA COUNTY WATER AGENCY

By: Paul L. Kelley Date: 6/23/06

ATTEST:

Eve T. Lewis

CITY OF COTATI

By: Janet Orchard Date: 5.9.06
Mayor

ATTEST:

Terry L. Hubbard Date: 5-9-06
City Clerk

CITY OF PETALUMA

By: David A. Glass Date: 5-15-06
Mayor

ATTEST:

Katie Crump
Deputy City Clerk

CITY OF ROHNERT PARK

By: Date: 06-05-06
Tim Smith Mayor

ATTEST:

Judy Hauff
City Clerk

CITY OF SANTA ROSA

By: Jane Bender
Mayor

Date: 5/31/06

ATTEST:

Deputy City Clerk

CITY OF SONOMA

By:
Mayor

Date: 4-19-06

ATTEST:

Gay Rainsberger
City Clerk

FORESTVILLE COUNTY WATER DISTRICT

Date: 5/12/06

By:
President

ATTEST:

Secretary

NORTH MARIN WATER DISTRICT

Date: 5/22/06

By: _____
President

ATTEST:

_____
Acting Secretary

TOWN OF WINDSOR

Date: 5.17.06

_____
Mayor

ATTEST:

_____
Deputy Town Clerk

VALLEY OF THE MOON WATER DISTRICT

Date: 5-25-06

By: _____
President

ATTEST:

_____
Deputy Secretary

JONWRM 050106

Memorandum of Understanding Regarding Water Transmission System Capacity Allocation During Temporary Impairment

This Memorandum is made by and between the following public agencies:

SONOMA COUNTY WATER AGENCY (Agency)
CITY OF COTATI (Cotati)
CITY OF PETALUMA (Petaluma)
CITY OF ROHNERT PARK (Rohnert Park)
CITY OF SANTA ROSA (Santa Rosa)
CITY OF SONOMA (Sonoma)
FORESTVILLE WATER DISTRICT (FWD)
NORTH MARIN WATER DISTRICT (NMWD)
VALLEY OF THE MOON WATER DISTRICT (VOMWD)

TOWN OF WINDSOR (Windsor)

SECTION 1 - RECITALS

(a) The Sonoma County Water Agency (Agency) was created by California state legislation (Statutes of 1949, Chapter 994 as amended). The Agency operates and maintains a water supply and transmission system (Transmission System) authorized by the Eleventh Amended Agreement for Water Supply (Eleventh Amended Agreement) between and among the Agency and eight public entities: Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, FWD, NMWD, VOMWD, dated October 25, 1974 and last amended January 26, 2001, by means of which water is furnished to the parties thereto. The Agency furnishes water to Windsor pursuant to the application for water service approved on April 1, 1987. Windsor is one of the Agency's "other Agency customers" as that term is defined in the Eleventh Amended Agreement. The Agency furnishes water to Marin Municipal Water District (MMWD) pursuant to the Third Amended Offpeak Water Supply Agreement and Agreement for Sale of Water Between the Sonoma County Water Agency and Marin Municipal Water District both of which were last amended by the Supplemental Water Supply Agreement dated January 25, 1996.

(b) The Agency has proposed a Water Supply, Transmission, and Reliability Project (WSTRP). As of the date of this agreement, the Agency is preparing an environmental impact report for the project. The objective of the WSTRP is to provide a safe, economical, and reliable water supply to meet the defined future needs of the Agency's service area. If the WSTRP is approved by the Agency's Board of Directors and the new facilities described therein are fully permitted, constructed, and operational, it is estimated that the WSTRP will increase the amount of water that can be diverted by the Transmission System from the Russian River (a combination

of re-diversion of stored water and direct diversion of available flows) to approximately 101,000 acre-feet per year, and increase the Transmission System's delivery capacity from 92 million gallons per day (mgd) to approximately149 mgd.

(c) All of the facilities authorized by the Eleventh Amended Agreement have not been constructed. Limitations exist in the existing Transmission System, which may preclude reliable delivery of some of the delivery entitlements enumerated in Sections 3.1 and 3.2 of the Eleventh Amended Agreement.

(d) On January 4, 2005 the Board of Directors of the Agency adopted Resolution No. 05-0007 declaring that the capacity of the water transmission system is temporarily impaired. One of the projects authorized by the Eleventh Amended Agreement as well as prior agreements is Collector No. 6 - a portion of the 20 mgd of collector capacity defined in Section 1.1(s) of said agreement. As of the date of this MOU, installation of Collector No. 6 is nearly completed and it is projected to be placed in service by the summer of year 2006. This project and its connecting pipeline are designed to achieve a reliable monthly summertime production capacity of 92 mgd from the Transmission System.

(e) The highest Peak Demand measured during an Agency billing month was 80 mgd in August 2000. Although year-to-year increases in Peak Demand are highly variable due to variations in summer weather, the average annual increase in Peak Demand historically has been approximately 2 mgd. Due to the temporary impairment of the Transmission System capacity, the water production capacity of the Transmission System may be exceeded during Summer Months if Peak Demand continues to increase as it has historically.

(f) Section 3.5 of the Eleventh Amended Agreement provides how water will be apportioned in the event of a temporary impairment of the capacity of the Transmission System.

(g) Since August of 2001, the parties to this MOU have been negotiating a new agreement, termed the Restructured Agreement for Water Supply (Restructured Agreement) to replace the Eleventh Amended Agreement.

(h) The parties recognize that in the near term during periods of high demand usually caused by high temperatures, the deficiency in reliable Transmission System capacity may cause potable water storage tank levels to become unacceptably low and unable to recover in response to each day's demand. The parties further recognize that the best interim management option to counter and reverse declining storage tank water levels is for the Agency's customers to: (1) use Standby Local Supply Production Capacity and/or (2) reduce demand on the Transmission System by shifting or temporarily delaying key large components of demand, such as large irrigation accounts on automatic control systems.

SECTION 2 - DEFINITIONS

The terms used in this MOU that are defined in Section 1.1 of the Eleventh Amended Agreement shall have the meaning set forth in said Section 1.1. In addition, the following terms are defined for this MOU:

(a) "Standby Local Supply Production Capacity" means the potable water capacity from surface supply lakes or wells that the parties to this agreement (other than the Agency) can produce from their own facilities. Such production capacity may be: (1) sources of supply permitted by the California Department of Health Services for regular and normal use but are standing idle or are not being fully utilized at the time a hot spell event occurs or, (2) well water sources which are permitted for use for short periods of time during emergencies.

(b) "Peak Demand" means the average day demand in mgd during the maximum use summer month.

(c) "Special Operations Group" is the group described in Section 5 hereof.

(d) "Summer Months" means June, July, August and September. Measurements of use during Summer Months are based on an Agency billing month, which may vary by several days from the calendar period of an actual month.

(e) "Periods of Temporary Impairment," mean the Summer Months occurring during the term of this MOU when the Transmission System is capable of reliably delivering an average of no more than 92 mgd in a month, as solely determined by the Agency.

SECTION 3 - PURPOSE

The purpose of this MOU is to establish an equitable allocation of 92 mgd of water from the Transmission System during Periods of Temporary Impairment and to implement a special operational response in order to optimize allocation of the available supply, coordinate Standby Local Supply Production Capacity, to avoid the necessity for the imposition of the water delivery curtailments prescribed by Section 3.5 of the Eleventh Amended Agreement, or, if adopted, Section 3.5 of the Restructured Agreement, to provide greater certainty for water contractors, and to set forth the necessary cooperative actions and planning to mitigate or avoid the consequences of Periods of Temporary Impairment. All other terms and conditions of the Eleventh Amended Agreement or, if adopted, the Restructured Agreement, shall remain in full force and effect. In the event the Restructured Agreement becomes approved during the term of this MOU, the allocations set forth in Table 1 of this MOU shall continue to apply during the term of this MOU and shall govern allocation of water during Periods of Temporary Impairment.

SECTION 4 - TEMPORARY DELIVERY CAPACITY ALLOCATION

(a) The purpose of this MOU is set forth in Section 3. It is not the intent of this MOU to diminish the delivery entitlements set forth in Sections 3.1, 3.2 and 3.3 of the Eleventh Amended, or if adopted, Sections 3.1, 3.2 and 3.3 of the Restructured Agreement; nor shall expansion of the average daily potable water capacity in mgd that the parties to this MOU, other than the Agency, can reliably produce throughout the Summer Months from their own facilities, or the implementation of any water conservation action, program or project or implementation or expansion of any recycled water project that reduces potable water demand on the Transmission System by any party to this MOU diminish said delivery entitlements.

(b) During the term of this MOU, whether or not the Restructured Agreement is fully executed, each of the parties to this MOU agrees to use its best efforts to limit its demand on the Transmission System during Periods of Temporary Impairment to the applicable rates set forth in Table 1.

Table 1
Peak Demand Allotments
for Summers of 2006 through 2008

	Mgd
Cotati	1.9
Petaluma	17.1
Rohnert Park	5.4
Sonoma	3.8
Santa Rosa	39.1
Town of Windsor	1.5
Valley of the Moon WD	4.9
Forestville WD	0.9
Other Agency Customers (1)	1.7
North Marin Aqueduct (2)	15.7
Total	92.0

Notes:
(1) Forestville WD and Town of Windsor are shown separate from Other Agency Customers.
(2) Apportionment of deliveries into the North Marin Aqueduct is governed by the agreement: Intertie Agreement Between NMWD and MMWD dated March 11, 1993.

(c) During Periods of Temporary Impairment, the liquidated damages provided for in Section 3.3(b) of the Eleventh Amended Agreement, or, if adopted, Section 3.13 of the Restructured Agreement, shall apply. Liquidated damages will be assessed only if a party takes water from the Transmission System in an amount in excess of its average during month delivery limits as set forth in Sections 3.1, 3.2 and 3.3 of the Eleventh Amended Agreement or, if adopted, the Average Daily Rate of Flow During Any Month delivery limits as set forth in Sections 3.1, 3.2

and 3.3 of the Restructured Agreement. The parties further agree, however, that the provisions of Sections 3.1(c) and (d) of the Eleventh Amended Agreement or, if adopted, Sections 3.1(c) and (d) of the Restructured Agreement, shall not apply during the 12-month period following the date this MOU is terminated.

(d) Table 1 may be amended by the affirmative vote of more than fifty percent (50%) of the total weighted voting power which must be cast by at least six of the parties to this MOU, or their authorized representatives. For the purpose of this paragraph, all of the parties to the Eleventh Amended Agreement, except the Agency, shall have weighted voting power proportional to their average during month water delivery entitlement expressed in mgd as set forth in Section 3.1 of the Eleventh Amended Agreement. The Agencyand Windsor shall have weighted voting power proportional to 1.2 mgd and 1.5 mgd respectively. Should the parties hereto that have Table 1 allocations less than the delivery entitlements provided in Sections 3.1, 3.2 and 3.3 of the Eleventh Amended Agreement or, if adopted, Sections 3.1, 3.2 and 3.3 of the Restructured Agreement require more transmission system capacity, same shall be accommodated to the extent that transmission system capacity supplied by the Agency is available.

(e) Table 1 does not address limitations in aqueduct capacity. The maximum capacity downstream of Ely Booster is limited and, consistent with the provisions of the Eleventh Amended Agreement, flows are subject to detailed operating procedures set by Petaluma, NMWD, MMWD and the Agency. It is the intent of these procedures to preserve the depth of water storage in the Agency's Kastania Tank above 15 feet for the benefit of Petaluma. Maximum capacity of the Annadel-Sonoma Aqueduct is limited and flows are subject to detailed operating procedures set by Sonoma, VOMWD and the Agency. It is the intent of these procedures to preserve storage in the Agency's Sonoma Tanks and to assure optimal flow and pressure conditions in the Sonoma Aqueduct.

(f) The parties agree that consideration of construction of the following facilities are of the highest priority; and, subject to environmental review, funding and all applicable laws and regulations, including the applicable conditions of the Eleventh Amended Agreement or, if adopted, the Restructured Agreement, the Agency agrees to use best efforts to cause these planned facilities to be completed so that the following objectives can be met at the earliest possible date:

1. To alleviate shortages in diversion capacity, construction of Collector 6.
2. To alleviate shortages south of Ely Booster Station on the Petaluma Aqueduct, construction of the South Transmission System Project.
3. To alleviate shortages south of Eldridge Tanks on the Sonoma Aqueduct, construction of the aqueduct segment between Eldridge Tanks and Madrone Road.
4. To alleviate shortages south of Oakmont, construction of a portion of the Annadel–Sonoma pipeline from Pythian Road to Henno Road pipeline.
5. To alleviate storage shortages, construction of Kawana Tank II facilities.

(g) The parties further agree that it is a high priority to achieve and maintain 20 mgd of standby pump and collector capacity as authorized by the Eleventh Amended Agreement, and the Agency agrees, subject to environmental review, funding and all applicable laws and regulations, including the applicable conditions of the Eleventh Amended Agreement or, if adopted, the Restructured Agreement, to use best efforts to achieve this objective by completing the necessary facilities at the earliest possible date.

SECTION 5 – SPECIAL OPERATIONAL RESPONSE

During the term of this MOU, the General Manager or City Manager of each party, or his or her designee, shall designate a representative for a Special Operations Group, which shall meet as frequently as necessary. The Special Operations Group shall be headed by a representative of the Agency and shall be comprised of key operations personal. The chief mission of the Special Operations Group shall be (1) to optimize coordinated operation of the Transmission System and Local Supply Production Capacity, and (2) to coordinate and implement potential voluntary water demand reductions, for the purpose of meeting the reasonable needs of the Regular Customers. The Special Operations Group shall:

1. Identify, quantify and categorize Local Supply Production Capacity facilities of each of the parties.
2. Examine prior weather conditions and other appropriate records and data, and design appropriate responses to various weather scenarios.
3. Identify significant water users whose demand could be temporarily reduced, establish communications with account operations staff, and develop a cooperative voluntary means of reducing demand. Initially this effort should target irrigation sites owned by the parties or other government agencies.
4. Work cooperatively in the event that demands on the transmission system exceed capacity to implement a suitable response based upon use of Local Supply Production Capacity and reducing demands on the transmission system.

SECTION 6 – OTHER EFFORTS

(a) The parties agree to maintain active membership in the California Urban Water Conservation Council and implement the urban water conservation Best Management Practices as established and from time to time amended by said Council.

(b) Each party hereto expresses its intent to actively pursue and implement water conservation measures designed to reduce demand on the Transmission System during the Summer Months throughout the term of this MOU. Annually, on a date to be set by the Chairperson of the Water Advisory Committee, the parties hereto shall be surveyed and report in writing and describe specific measures implemented and progress achieved in reducing demand on the Transmission System during the Summer Months.

SECTION 7 - WAIVER OF RIGHTS

By signing this MOU, the parties do not waive or relinquish any legal or equitable right that they might otherwise have with respect to any of the actions, activities or obligations contemplated by the Eleventh Amended Agreement or, if executed, the Restructured Agreement, except to the extent specifically superseded by this MOU.

SECTION 8 - AMENDMENT OF MOU

Except as expressly authorized in Sections 4(d) and 11, amendments, revisions or modifications to this MOU shall be in writing and shall be executed by all parties to this MOU.

SECTION 9 - THIRD PARTY CLAIMS

It is not the intent of the parties to this MOU to create any third party beneficiaries. Any failure to perform under the terms of this MOU shall not create any claim or right by any individual or entity not a party to this MOU.

SECTION 10 - ENTIRE AGREEMENT

This writing is intended both as the final expression of agreement between and among the parties hereto with respect to the included terms and as a complete and exclusive statement of the terms of the MOU, pursuant to Civil Code § 1856.

SECTION 11 - TERM OF MOU

The Memorandum of Understanding Regarding Water Transmission System Capacity Allocation During Periods of Temporary Impairment, dated March 1, 2001 shall terminate and this MOU shall become effective upon the signature of the parties hereto and shall remain in effect until September 30, 2008 unless terminated earlier by a vote of more than fifty percent (50%) of the total weighted voting power which must be cast by at least six of the parties to this MOU. Voting power shall be the same as defined in Section 4(d) hereof. For the purposes of this section, votes shall be cast by resolution adopted by the governing board of each voting party and shall be delivered to each of the parties hereto. Not later than July 1, 2007, the parties agree to meet, review and consider the reliable capacity of the Transmission System and Local Supply Production Capacity and other pertinent factors, and determine whether or not and under what terms this MOU should be extended. Extension of this MOU is not subject to weighted voting and shall require the approval of all the parties hereto.

SONOMA COUNTY WATER AGENCY

By: Paul L. Kelley Date: 10/16/06

ATTEST:

Irene T. Lewis

County Clerk

CITY OF COTATI

By: Janet Orchard Date: 8/20/06

Mayor

ATTEST:

Terry L. Stubblefield

City Clerk

CITY OF PETALUMA

By: David Glass Date: 8/3/06

Mayor

ATTEST:

Claire Cooper

City Clerk

CITY OF ROHNERT PARK

By: Jim Smith Date: 10-04-06

Mayor

Per Reso. No. 2006-231 adopted by the City Council on September 12, 2006

ATTEST:

Judy Hanft

City Clerk

ROHNERT PARK 19 62 CALIFORNIA

CITY OF SANTA ROSA

By: _____ Date: 8/23/06
Mayor

ATTEST:

_____
City Clerk

CITY OF SONOMA

By: _____ Date: 7-27-06
Mayor

ATTEST:

_____
City Clerk

FORESTVILLE COUNTY WATER DISTRICT

By: _____ Date: 8-7-06
President

ATTEST:

_____
Secretary

NORTH MARIN WATER DISTRICT

By: _____ Date: 8/1/06
President

ATTEST:

_____
Secretary

VALLEY OF THE MOON WATER DISTRICT

By: _____ Date: 8/1/06
President

ATTEST:

_____
Deputy Secretary

TOWN OF WINDSOR

By: _____ Date: 7-18-06
Mayor

ATTEST:

_____
Town Clerk

T.C. 4

AGREEMENT FOR THE SALE OF WATER BETWEEN THE SONOMA COUNTY WATER AGENCY AND THE WINDSOR WATER DISTRICT

This Agreement is made this 8 day of Jan, 1991, by and between the Sonoma County Water Agency, hereinafter referred to as "Agency" and the Windsor Water District, hereinafter referred to as "District".

RECITALS

A. The Coyote Valley Project was authorized by the Flood Control Act of 1950 (Public Law No. 81-516), and was completed by the U. S. Army Corps of Engineers in 1958. This project includes Lake Mendocino, which has a capacity of 122,500 acre-feet, of which 70,000 acre-feet is allocated to water storage.

B. In 1955, the Agency (then called the "Sonoma County Flood Control and Water Conservation District") sold general obligation bonds to raise $5,650,000, which it then paid to the United States for the reimbursable costs of the water storage element of this project. Parts of the ad valorem taxes paid since 1955 by the taxpayers of Sonoma County, including those within the District, have been used to make payments on these bonds.

C. After 1955, the Mendocino County Russian River Flood Control and Water Conservation Improvement District (hereinafter referred to as the "Mendocino District") paid the Agency $633,000, plus interest, for a share of the yield of the Coyote Valley Project. The Agency also supplies other entities with water from this project.

D. In its Decision D 1030, the State Water Rights Board partially approved Application 12919A of the Agency and the Mendocino District, subject to various conditions. One of these conditions, described in paragraph 8 on page 46 of that decision, was that Permit

12947, which was issued pursuant to Application 12919A and Decision D 1030, was subject to water rights within the Russian River Valley in Sonoma County to the extent that water had been beneficially used continuously since before January 28, 1949. Another condition, described in paragraph 10 on pages 46-47 of Decision D 1030, was that Permit 12947 was subject to depletion not to exceed 10,000 acre-feet per year by diversion of project water within the Russian River Valley in Sonoma County. In its Order No. WR 74-30, the State Water Resources Control Board (the "State Board") divided and revised the rights granted pursuant to Permit 12947, and directed that Permit 12947A be issued to the Agency. In paragraphs 11 and 12 on page 11 of this order, the State Board confirmed the permit conditions described in the second and third sentences of this paragraph. Subject to these and other conditions, Permit 12947A authorizes the Agency to store water in Lake Mendocino, to then release the stored water for rediversion at specified downstream locations, and also to directly divert East Fork Russian River water at these locations.

E. The State Board also issued Permits 12949 and 12950 to the Agency pursuant to Applications 15736 and 15737, which authorize the Agency to make diversions from the Russian River at specified locations under specified terms and conditions.

F. The Warm Springs Dam Project was authorized by the Flood Control Act of 1962 (Pub. L. No. 87-874), and was completed by the United States Army Corps of Engineers in 1984. This project includes Lake Sonoma, which has a capacity of 381,000 acre-feet, of which 212,000 acre-feet is allocated to storage for water supply.

G. The Agency contracted with the United States to pay a total of $99,427,000 plus interest in annual payments between 1993 and 2034 for the reimbursable costs (including interest during construction) of the water storage element of this project. Parts of the ad valorem taxes paid since 1971 by the taxpayers of Sonoma County, including those within the District, have been paid into a sinking fund that was established to fund the Agency's future payment

obligations to the United States based on this project. Parts of th ad valorem taxes that will be paid by the taxpayers of Sonoma County from now until 2034 will likewise be paid into this sinking fund.

H. In its Decisions 1416 and 1610, the State Board partially approved the Agency's Application 19351 to appropriate water from Dry Creek for storage in Lake Sonoma and rediversion at specified locations on the Russian River, and to appropriate Russian River water for direct diversion at these locations. Permit 16596, which was issued pursuant to Application 19351 and Decision 1416, and amended pursuant to Decision 1610, authorizes the Agency, subject to specified terms and conditions, to store water in Lake Sonoma, to then release the stored water for rediversion at specified downstream locations, and also to directly divert Russian River water at these specified locations.

I. The Agency's June 1990 "Report on the Adequacy of the Russian River Water Supply" concluded that the Agency's share of the Coyote Valley Project and Warm Springs Dam Project yield is sufficient to supply the District with water according to the terms set forth in this agreement.

J. On April 4, 1990, the District filed Application 29737 with the State Board.

K. Pursuant to a permit or permits that may be issued by the State Board pursuant to Application 29737 or some other application, the District may have or obtain the right to divert Russian River water, including water that is part of the 10,000 acre-foot reservation described in recital D of this agreement.

L. To minimize the utilization of the Agency's rights under Permits 12947A, 12949, 12950 and 16596 the Agency desires that the District pursue and utilize its rights described in recital K to the fullest extent possible.

NOW, THEREFORE, in consideration of these recitals and the mutual promises made herein, the Agency and the District agree as follows:

Section 1. District Appropriative Water Rights. The District shall use its best efforts to obtain, protect and utilize all available appropriative water rights to divert water from the Russian River, including the rights described in recital K of this agreement. The District shall not divert or utilize any water received from Agency pursuant to this agreement except and to the extent that water is unavailable for diversion under any of the District's appropriative water rights, as such rights currently exist or may exist in the future.

Section 2. District Diversions. Except as otherwise provided for in this agreement, and during the term of this agreement, the District may divert Russian River water, or redivert previously stored water, that is available to the District pursuant to the Agency's Permits 12947A, 12949, 12950 and 16596. The total amount of the District's diversions and rediversions of water from the Russian River, including water diverted and rediverted pursuant to this agreement and otherwise, shall not exceed either 7.2 million gallons per day or 4,725 acre feet per year.

Section 3. District Limited by Terms of Permit 12947A. Diversions and rediversions by the District pursuant to this agreement shall be subject to all of the applicable terms and conditions of Permits 12947A, 12949, 12950 and 16596, as they now exist or in the future may be modified by the State Board.

Section 4. Shortage of Water and Apportionment. In its operation of the Coyote Valley and Warm Springs Dam Projects, the Agency shall use all reasonable means to prevent a condition of shortage in the quantity of water available to its regular customers, including the

District. If by reason of drought or other cause beyond the control of the Agency, a shortage does occur, the Agency shall not be liable to the District for any damage arising therefrom.

In the event of shortage, the Agency shall determine the amounts of water that the District may divert pursuant to this agreement, and shall notify the District of those amounts of water. Upon receiving such notice, the District shall not divert water pursuant to this agreement in excess of the amounts authorized by the Agency.

In allocating water to the Agency's regular customers, including the District, in times of shortage, the Agency shall reduce the amounts of water furnished, in the stated order and to the extent that it, in its discretion, believes is necessary to respond to the shortage: first, it shall stop furnishing surplus water to other than its regular customers; second, it shall stop furnishing any surplus water; third, it shall stop furnishing water to its regular customers in excess of their entitlements; and fourth, it shall apportion the available supply of water as follows:

first, it shall furnish to each of its regular customers, including the District, the quantity of water, not in excess of its respective contractual entitlement, required by it for human consumption, sanitation and fire protection as shall be determined by the Agency after taking into consideration all other sources of potable water then available to said customer; and

second, to the extent additional water is available to the Agency, it shall furnish the same to each of its regular customers, including the District, in proportion to its respective contractual entitlement;

provided, however, that no customer shall receive under subdivisions "first" and "second" hereof a total quantity of water in excess of its reasonable requirements or its contractual entitlement, whichever is less.

Section 5. Petition for Change in Points of Diversion. The Agency shall file a petition with the State Water Resources Control Board requesting changes in the authorized points of diversion under Permits 12947A, 12949, 12950 and 16596 to allow diversions by the District of Russian River water and rediversions of water released from storage in Lake Sonoma and Lake Mendocino for beneficial uses within the place of use described in Section 6 of this agreement. The Agency shall use its best efforts to obtain the State Board's approval of this petition upon terms and conditions that are acceptable to the Agency. However, if the State Board or its staff indicates that the State Board will or may include in its order on this petition terms and conditions that are not acceptable to the Agency, or if the State Board's order contains terms or conditions that are not acceptable to the Agency, then the Agency may withdraw this petition, and, if necessary, ask the State Board to revoke, or the courts to overturn, any order that the State Board has issued on this petition. If the Agency withdraws its petition, then this agreement shall terminate, and not have any further force or effect.

Section 6. Place of Use. Water received by the District pursuant to this agreement shall only be used within the corporate boundaries of the District; all land west of Highway 101, east of the north line of Section 30, Township 8 North, Range 8 West, Mt. Diablo Meridian and Base Line, designated for "Heavy Industrial" and Industrial Park" development on Figure 5, Land Use and Open Space Map, in the Sonoma County Airport Industrial Area Specific Plan dated ~~October 30, 1984~~ July 1989; and all land within the Sonoma County Airport.

Section 7. Reporting of Water Use. On or before the 20th day of each month, the District shall submit a report to the Agency, listing separately for each day during the previous month the total amount of water diverted by the District from the Russian River. These amounts shall include all water diverted by the District, whether pursuant to this agreement, or pursuant to any of the District's rights described in recital K of this agreement, or otherwise. In addition, whenever

the District submits any report of water use to the State Water Resources Control Board, it shall at the same time submit a copy of the report to the Agency.

Section 8. Water Conservation Plan. The District shall consult with the Division of Water Rights of the State Water Resources Control Board and develop and implement a water conservation plan that includes appropriate water conservation measures. All cost-effective measures shall be implemented according to the schedule in the plan. District shall implement any water conservation measures applicable to it that may be imposed on Agency by the State Water Resources Control Board or any other governmental agency. District shall comply with all of the provisions of the Urban Water Management Planning Act, Water Code Sections 10610-10655 (as such act now exists or in the future may exist) which are applicable to District. Whenever District files any urban water management plan, or any amendment or change to such a plan, with the Department of Water Resources or any other state agency, District shall at the same time submit a copy of the plan, amendment or change to Agency.

Section 9. Lead Agency. Pursuant to Section 15051(d) of the State CEQA Guidelines, the District is designated as the lead agency under the California Environmental Quality Act.

Section 10. Payment. The District shall pay during the term of this Agreement a charge of $1.00 per year. The District shall pay the amount due to the Agency each calendar year within 60 days after the end of the calendar year.

Section 11. Term of Agreement. This Agreement shall become effective if and when the decision of the State Water Resources Control Board on the petition for a change in points of diversion to allow the diversion by District of Russian River water and rediversion of water released from storage in Lake Mendocino and Lake Sonoma under Permit 12947A, 12949, 12950 and 16596 becomes final under section 1705.5 of the Water Code. The Agency shall notify the District in writing when

the State Board's decision has become final. This agreement shall remain in effect until June 30, 2014. Agency shall enter into renewal agreements for periods not to exceed 40 years upon the request of District for such quantities of water which may be available under said permits during such renewal periods, but not to exceed the amounts stated in section 2 of this agreement.

Section 12. Merger. This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms and as a complete and exclusive statement of the terms of the agreement, pursuant to Code of Civil Procedure Section 1856. No modification of this agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

Section 13. Termination. At any time and without cause District may terminate this agreement by giving Agency 30 days written notice of such termination, stating the reason for such termination, if any.

IN WITNESS WHEREOF, the parties hereto have hereunto set their names the day and year above written.

SONOMA COUNTY WATER AGENCY

By: _____
Chair of the Board of Directors

Attest: _____
Deputy Clerk of the Board of Directors

WINDSOR WATER DISTRICT

By: _____
President of the Board of Directors

Attest: _____
Secretary of the Board of Directors

Approved As To Form: _____
R.H.E. Crawford, District Counsel

agrees/wind_wtr.90

December 18, 1990 Agenda

WINDSOR WATER DISTRICT
AGENDA ITEM SUMMARY

= 7.2 mgd = 4725 AF

AGENDA ITEM DESCRIPTION:

Consideration of an agreement for the sale of water with the Sonoma County Water Agency.

PROJECT NUMBER: Water Rights E-H-003

FACTS:

A) The District has filed an application for water rights with the State of California, Application No. 29737. Attached hereto is a draft agreement with the Sonoma County Water Agency, which would supplement any entitlement received directly from the State to achieve the water required to meet the needs as expressed under the Windsor Specific Plan and the County Airport Industrial Area Specific Plan. Under this agreement, we are on equal status with the regular customers of the agency, except that we are required to pay $1.00 per year. The term of the agreement is for 23 years with a 40 year renewal period.

STAFF RECOMMENDATION: Approve by motion and authorize the Chairman to sign.

ATTACHMENTS: Proposed agreement.

Agenda Item No. 90-31-04

SECOND AMENDMENT TO AGREEMENT REGARDING OWNERSHIP, MAINTENANCE, AND OPERATION OF CERTAIN WATER TRANSMISSION FACILITIES AT THE SONOMA COUNTY AIRPORT IN SERVICE OF PROPERTIES LOCATED WESTERLY OF HIGHWAY NO. 101 AND NORTHERLY OF MARK WEST CREEK

This Second Amendment (the "Amendment"), dated as of June 4, 19 96, is by and between the County of Sonoma ("County") and the Town of Windsor Water District, formerly known as the "Windsor Water District" ("District"). All capitalized terms used herein shall, unless otherwise defined, have the meaning ascribed to those terms in the existing agreement.

WITNESSETH:

WHEREAS, the County and District entered into that certain agreement dated as of July 16, 1985 (the "Agreement") in order to set forth the terms and conditions pursuant to which District is to provide water service to the Airport Industrial Area; and

WHEREAS, County and District entered into that certain First Amendment to Agreement, dated as of March 1, 1988 (the "First Amendment") in order to include the lands within the Sonoma County Airport in the area subject to the Agreement and to provide for District's assumption of responsibility for providing water service to such lands.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Subparagraph (e) of Section 24 of the Agreement, as amended by the First Amendment, shall be revised to read as follows:

> "County shall be responsible for the necessary replacement of approximately 1,250 linear feet of existing six-inch steel water pipe and appurtenances, hereinafter referred to as 'the work,' extending southerly from the westerly terminus of Airport Boulevard as shown on Exhibit B, attached hereto and incorporated herein by this reference. The work shall be performed by the District and completed at the earliest possible date, but in no event later than January 1, 1998. All costs for the work shall be borne by County, provided, however, that District agrees to contribute an amount not to exceed Forty-Five Thousand and No/100 Dollars ($45,000.00) from water connection fees collected from within the

Sonoma County Airport prior to January 1, 1998. The maximum amount of the District contribution shall not exceed the actual cost of construction of the work plus fifteen percent (15%) allowance for incidental and administrative expenses. District may require that County replace the subject section of water main prior to January 1, 1998, if the District determines that repairs are no longer cost effective or if repairs result in an inordinate number of service interruptions or related service problems. District shall provide County with 60-day's advance written notice should the District determine that the replacement of the subject section of water main prior to January 1, 1998, is necessary.

District shall provide County with copies of bids prior to award of contract. Within thirty (30) days of the award of the contract, County agrees to pay District the full amount of District's share of design work and construction costs based on actual bid prices for the project less water connection fees collected from the Airport prior to January 1, 1998, for the work described herein. In the event of change orders, District shall process all change orders and provide County with copies of any such approved change orders. County shall disburse the necessary funds to cover the change orders to District within thirty (30) days of the receipt of such change orders."

2. The following subparagraphs shall be added to the end of Section 24 of the Agreement as amended by the First Amendment.

"f. On or before September 1, 1996, District shall install, at County's expense, a valve in subject water main of a size, and at a location on the main between existing service connections to the airport terminal and control tower buildings as prescribed by the District."

"g. On or before September 1, 1996, District shall abandon in place, at County's expense, the six-inch steel water main running easterly of the north end of that certain steel water pipe described in subparagraph (e) above, and as shown on Exhibit 'B-1' attached hereto, by capping such pipe at a location mutually agreed upon by both parties. Abandonment of this section of main shall include removal by District, at County's expense, of the fire hydrant located under the tree at the west end of this section (E-6 on B-1)."

"h. All new or moved facilities and abandonment procedures shall be in accordance with attached Water Main Abandonment Procedures as described in Exhibit 'C' attached hereto."

"l. Any active service connections affected by the abandonment of the six-inch steel water main described in subparagraph (g) above shall be connected by District, at County's expense, to the 12" main which runs parallel to the six-inch steel water main being abandoned in Airport Boulevard. District will not charge any connection fees for services being moved, but otherwise unaltered, immediately adjacent to Airport Boulevard main location."

"j. Inspections related to work shall be performed by the Town of Windsor inspector and charged to the County."

"k. District must coordinate with County in advance of any and all construction scheduled as described in this agreement."

"l. District shall provide County with estimates for the work described in this Section 24, items (f), (g), (l) and (j). Payment by County for items (f), (g), (l), and (j) in this Section 24 shall be made within thirty (30) days of receipt of an invoice substantiating costs involved."

3. Except to the extent the Agreement is specifically amended or supplemented hereby, the Agreement, together with exhibits is, and shall continue to be, in full force and effect as originally executed, and nothing contained herein shall, or shall be construed to modify, invalidate or otherwise affect any provision of the Agreement or any right of County or District arising thereunder.

4. This Amendment shall be governed by and construed under the internal laws of the State of California, and any action to enforce the terms of this Amendment or for the breach thereof shall be brought and tried in the County of Sonoma.

COUNTY AND DISTRICT HAVE CAREFULLY READ AND REVIEWED THIS AMENDMENT AND EACH TERM AND PROVISION CONTAINED HEREIN AND, BY EXECUTION OF THIS AMENDMENT, SHOW THEIR INFORMED AND VOLUNTARY CONSENT THERETO.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment the day and year first above written.

TOWN OF WINDSOR WATER DISTRICT

By: Bert Wills
Town Manager

Dated: 5-7-96

Attest:

Teresita Collins
Deputy Town Clerk

COUNTY OF SONOMA

By:
Chairman, Board of Supervisors

Dated: 6-6-96

Attest:

Eve T. Lewis
County Clerk and Ex-officio Clerk
Of the Board of Supervisors of the
County of Sonoma, State of California

Approved as to Form for District:

Town of Windsor Counsel

Approved as to Form for County:

County Counsel

Recommended for District by:

Public Works Director

Approved as to substance for County:

Director of Transportation
and Public Works

ps: contracts\windsor.wpd

EXHIBIT "B-1"

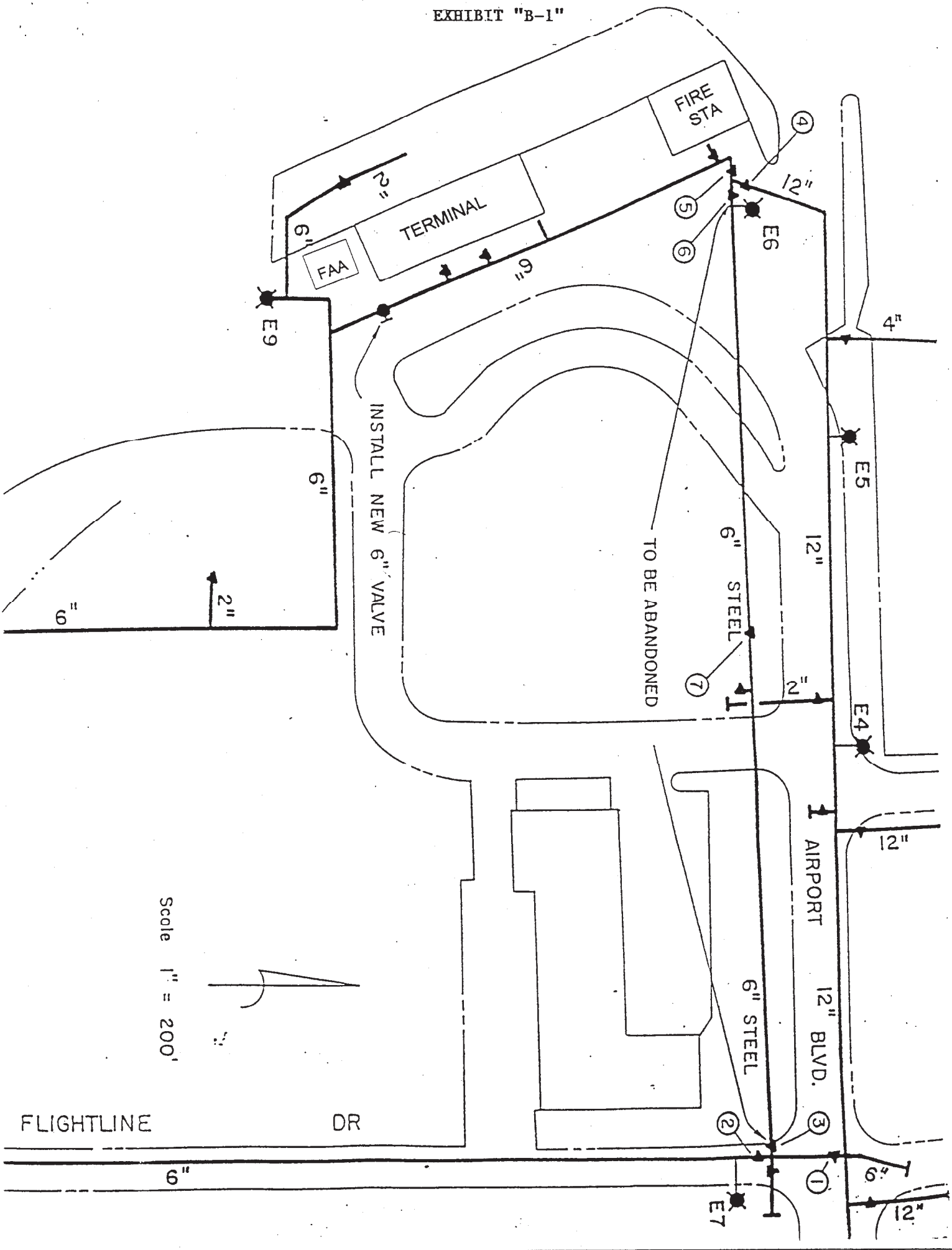

FIRE STA
TERMINAL
FAA
2"
6"
9"
E9
E6
E5
E4
E7
4"
12"
6"
2"
INSTALL NEW 6" VALVE
TO BE ABANDONED
6" STEEL
12"
2"
AIRPORT
12" BLVD.
6" STEEL
Scale 1" = 200'
FLIGHTLINE DR
6"
6"
12"
①
②
③
④
⑤
⑥
⑦

EXHIBIT C

SONOMA COUNTY AIRPORT
WATER MAIN ABANDONMENT PROCEDURES

1. Contractor shall obtain an Encroachment Permit from the Sonoma County Department of Permit and Resource Management for work within public rights-of-way.

2. All work shall be performed in accordance with Town of Windsor Design and Construction standards adopted April, 1994, and any revisions thereto.

3. Contractor shall contact Underground Service Alert (USA) at (800) 642-2444, 48 hours prior to any excavation.

4. Request District personnel close Valves 1, 2, 3, 6 and 7 (see Exhibit "B-1") and inform appropriate Fire Department of valve closures.

5. Expose Valve 3 including removal and disposal of valve box, riser and lid. Cut and remove pipe segment immediately west of the valve. Install flange or plug on valve as appropriate. If required, install concrete thrust blocking per Town Standard Drawing 114. Backfill excavation and restore street per Encroachment Permit requirements. After thrust blocking has achieved required strength, request District to open Valves 1 and 2.

6. Request District personnel close Valves 4 and 5 (see Exhibit "B-1"), and inform appropriate Fire Department of valve closures.

7. Expose Valve 6 including removal and disposal of valve box, riser and lid. Cut and remove pipe segment immediately east of valve. Install flange or plug as appropriate. If required, install concrete thrust blocking per Town Standard Drawing 114. Backfill excavation and restore paved area in accordance with the Encroachment Permit requirements. After thrust blocking has achieved required strength, request District to open Valves 4 and 5.

8. Remove valve box, riser and lid at Valve 7 (see Exhibit "B-1"), and any other service valves on abandoned main. Perform surface restoration in accordance with the Encroachment Permit if located within public right-of-way or per property owners' requirements if located outside of permit jurisdiction.

9. Remove fire hydrant (E6) and bury located westerly of Valve 6. Perform surface restoration per the owners' requirements.

10. Expose main at southerly end of terminal. Determine main size and obtain appropriate valve and materials. Coordinate main shutdown with District and Airport personnel. Install valve and riser per Town Standard Drawing 110. Backfill and restore street per Encroachment Permit requirements.

COUNTY OF SONOMA DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
575 ADMINISTRATION DRIVE, ROOM 117A
SANTA ROSA, CALIFORNIA 95403
(707) 527-2231

TO: Windsor Water District
Attn John C. Johnson
Public Works Director
PO Box 100
Windsor CA 95492-0100

DATE: June 11, 1996
SUBJECT: Amd #2 to Agmt for M & O of Water Transmission Facilities @ So Co Airport

FORWARDED ARE THE FOLLOWING ITEM(S): _____

_____ Change Order No. ____ __X__ Agreement/Amendment No. 2 _____ Claim Form

_____ Draft Board Agenda Item __X__ Resolution/Board Action No. 28 dated 6/4/96

TRANSMITTED AS CHECKED BELOW: **PLEASE RETURN BY:** _____

__X__ For Your Files _____ As Requested _____ Please sign, date, & return _____ copies.

_____ For Review/Comment/Signature _____ _____

REMARKS: _____

c: _____

SIGNED: Mary Thayer TITLE: Exec. Secty.
t:\\forms\rtngslp1\2/96:mjt

#28 6-4-96

COUNTY OF SONOMA AGENDA ITEM SUMMARY REPORT (Town of Windsor Water District)	Clerk of the Board Use Only Meeting Date ___/___/___ Held Until ___/___/___ Agenda Item No: Agenda Item No:

Department: Transportation and Public Works			( ) 4/5 Vote Required
Contact: David Andrews	**Phone:** 2231	**Board Date:** 06/04/96	**Deadline for Board Action:**

AGENDA SHORT TITLE:

Second Amendment to Airport Water Service Agreement

REQUESTED BOARD ACTION:

Approve the Second Amendment to Agreement with Windsor Water District regarding Ownership, Maintenance and Operation of Certain Water Transmission Facilities at the Sonoma County Airport in Service of Properties located westerly of Highway No. 101 and northerly of Mark West Creek.

CURRENT FISCAL YEAR FINANCIAL IMPACT

EXPENDITURES		ADD'L FUNDS REQUIRING BOARD APPROVAL	
Estimated Cost	$ - 0 -	Contingencies	$
Amount Budgeted	$ - 0 -	(Fund Name:)	
Other Avail. Approp. (Explain below)	$	Unanticipated Revenue (Source:)	$
Additional Requested	$	Other Transfer(s) (Source:)	$
Explanation (if required)		Add'l. Funds Requested	

*Funds are included in the FY 97-98 Capitol Improvement Plan

Prior Board Action(s): 03/01/88: Resolution No. 88-0376 approved the First Amendment to the Agreement; 7/16/85: Board approved Agreement with Windsor Water District for water facilities at the Airport.

Alternatives - Results of Non-Approval: Do not approve Second Amendment. Failure to approve the Second Amendment would place the County in default of the Agreement.

Background:

The County and the Windsor Water District entered into an Agreement on July 16, 1985 to set forth the terms and conditions pursuant to which the District is to provide water service to the Airport Industrial Area. On March 1, 1988, the Agreement was amended to include the lands within the Sonoma County Airport and to provide for the District's assumption of responsibility for providing water service. The First Amendment also called for the County to be responsible for replacement of a 1,250 linear foot section of an old small diameter water main by January 1, 1993. Because of pending changes and modifications to the Airport terminal and surrounding facilities, replacement of the main has not yet been accomplished. The Second Amendment will extend the deadline to January 1, 1998, in order to allow for completion of the agreed upon work. Extending the deadline will not adversely impact the County or the operation of the water system in the Airport Industrial Park.

Project cost is included in the FY 97-98 Capital Improvement Plan at an estimated $80,000. $2,500 of this amount will be funded by the Town of Windsor's water connection fees. $77,500 of appropriations will be requested in the 1996-97 Airport Industrial Park budget.

Failure to approve the Second Amendment would place the County in default of the Agreement, and, as a result, the County could be required to conduct the main replacement work immediately.

Recommendation:

Approve the Second Amendment to Agreement with Windsor Water District regarding Ownership, Maintenance and Operation of Certain Water Facilities at the Sonoma County Airport in Service of Properties Located Westerly of Highway No. 101 and Northerly of Mark West Creek.

DA/ljs/jf [36]a:\windsor

Attachments:

On File With Clerk: Second Amendment

CLERK OF THE BOARD USE ONLY

Board Action (If other than "Requested")

_____

_____

_____

Vote:

	MOTION	AYE	NO
CALE		✓	
HARBERSON		✓	
KELLEY		✓	
CARPENTER		✓	
SMITH		✓	

THE WITHIN INSTRUMENT IS A CORRECT COPY OF THE ORIGINAL ON FILE IN THIS OFFICE.

ATTEST: MAR 02 1988

ROSE T. LEWIS

County Clerk and ex-officio Clerk of the Board of Supervisors of the State of California, in & for the County of Sonoma

By D. Cattis Deputy

#6. RECEIVED
WINDSOR WATER DIST.

RESOLUTION NO. 88-0376

Dated March 1, 1988

RESOLUTION OF THE BOARD OF SUPERVISORS, COUNTY OF SONOMA, STATE OF CALIFORNIA, APPROVING THE FIRST AMENDMENT TO AGREEMENT REGARDING OWNERSHIP, MAINTENANCE, AND OPERATION OF CERTAIN WATER FACILITIES AT THE SONOMA COUNTY AIRPORT AND SERVICE OF PROPERTIES LOCATED WESTERLY OF HIGHWAY NO. 101 AND NORTHERLY OF MARK WEST CREEK AND EXCEPTING THE SONOMA COUNTY WATER AGENCY'S INTEREST IN A 12" PIPELINE NEAR THE SONOMA COUNTY AIRPORT

WHEREAS, the Windsor Water District and the County of Sonoma entered into that certain agreement entitled, "Agreement Regarding Ownership, Maintenance and Operation of Certain Water Transmission Facilities at the Sonoma County Airport and Service of Properties Located Westerly of Highway No. 101 and Northerly of Mark West Creek", dated July 16, 1985; and

WHEREAS, at the County of Sonoma's request, the lands within the Sonoma County Airport were excluded from the area subject to said agreement; and

WHEREAS, the County of Sonoma now desires to amend said agreement to include the lands within the Sonoma County Airport in the area subject to the agreement and to provide for the Windsor Water District's assumption of responsibility for providing water service to such lands; and

WHEREAS, the Sonoma County Water Agency desires to quitclaim to the County of Sonoma all of its right, title, and interest in the 12" pipeline commonly called "the Airport Pipeline";

NOW, THEREFORE, BE IT RESOLVED by the Sonoma County Board of Supervisors as follows:

1. Each of the foregoing recitals is true and correct.

2. This Board finds that the project is exempt from CEQA pursuant to Section 15301 of the State CEQA Guidelines because it consists of the operation, repair, maintenance or minor alteration of existing public facilities involving negligible or no expansion of use beyond that previously existing. The Clerk is hereby directed to file a notice of exemption pursuant to the California Environmental Quality Act.

CDH:jrj/2-23-88

3. The First Amendment to Agreement Regarding Ownership, Maintenance and Operation of Certain Water Transmission Facilities at Sonoma County Airport and Service of Properties Located Westerly of Highway No. 101 and Northerly of Mark West Creek is hereby approved and the Chairman is authorized to execute the Amendment.

4. This Board hereby accepts from the Sonoma County Water Agency all of the Agency's right, title, and interest in the 12" pipeline commonly called "the Airport Pipeline", which runs north along Laughlin Road from a station on Santa Rosa Aqueduct No. 1 at Aqueduct Station 242 + 70, excepting and excluding from such transfer the 10" reduced pressure principal backflow device attached to the pipeline and reserving unto the Agency the right to remove said device at such time as the Agency determines.

SUPERVISORS:

NICHOLAS Absent RUDEE Aye ESPOSTI Aye CARPENTER Aye HARBERSON Aye

AYES 4 NOES 0 ABSTAIN 0 ABSENT 1

SO ORDERED.

CDH:jrj/2-23-88

RECEIVED
WINDSOR WATER DISTRICT MAY 14 '88

Windsor Water

FIRST AMENDMENT TO AGREEMENT REGARDING OWNERSHIP, MAINTENANCE, AND OPERATION OF CERTAIN WATER TRANSMISSION FACILITIES AT THE SONOMA COUNTY AIRPORT IN SERVICE OF PROPERTIES LOCATED WESTERLY OF HIGHWAY NO. 101 AND NORTHERLY OF MARK WEST CREEK

This amendment is made March 1, 1988, by and between Windsor Water District, hereinafter referred to as "District", and the County of Sonoma, hereinafter referred to as "County".

WHEREAS, District and County entered into that certain agreement dated July 16, 1985, hereinafter referred to as "the agreement", a copy of which is attached hereto as Exhibit "1", setting forth the terms and conditions pursuant to which District is to provide water service to the Airport Industrial Area; and

WHEREAS, at County's request the lands within the Sonoma County Airport were excluded from the area subject to the agreement; and

WHEREAS, County now desires to include the lands within the Sonoma County Airport in the area subject to the agreement and to provide for District's assumption of responsibility for providing water service to such lands;

NOW, THEREFORE, the parties agree to amend the agreement as follows:

1. Amend paragraph 1, Purpose of Agreement, to read as follows:

1. Purpose of Agreement. The purpose of this agreement is to set forth the terms and conditions pursuant to which water service will be provided and certain water conveyance facilities will be owned, installed, and maintained within the Airport Industrial Area. For purposes of this agreement, "Airport Industrial Area" shall mean and include the following:

a. All lands west of Highway 101, east of the Sonoma County Airport, north of Mark West Creek, and south of the north line of Section 30, Township 8 North, Range 8 West, designated for "Heavy Industrial" and "Industrial Park" development on Figure 5, Land Use and Open Space Map, in the Sonoma County Airport Industrial Area Specific Plan dated October 30, 1984; and

b. All lands within the boundaries of the Sonoma County Airport.

All references herein to the Airport Industrial

Area shall include the entire area described above unless specifically noted otherwise.

2. Amend paragraph 2, Existing 12" Water Main, to read as follows:

2. Existing 12" Water Main. District shall have the right to use the existing 12" water main, hereinafter referred to as "the 12" water main", running from its connection to the Sonoma County Aqueduct, also known as the Santa Rosa Aqueduct, turnout northerly along Laughlin Road to its termination at Airport Boulevard to wheel water conveyed to it by County pursuant to this agreement from the water main's connection at the Sonoma County Water Agency's Aqueduct to users within District and within the Airport Industrial Area. A new metering station shall be constructed near the turnout from the Sonoma County Aqueduct. Upon activation of the new metering station and abandonment of the original metering station located approximately 2000 feet northerly of the turnout, the pipeline between the two metering stations shall be treated as part of the existing 12" water main for purposes of this agreement.

3. Amend paragraph 11, Installation of Water Meters by District, to read as follows:

11. Installation of Water Meters by District. District shall, at its own expense, construct a new metering station located near the turnout from the Sonoma County Aqueduct. The station shall be capable of delivering in excess of 5,000 gpm fireflow.

4. Add a new paragraph 24, Special Conditions Relative to Service at Sonoma County Airport, to read as follows:

24. Special Conditions Relative to Service to Airport.

a. District shall assume control of and responsibility for the operation and maintenance of all water facilities in place or hereafter installed at the Sonoma County Airport, including, without limitation, mains, valves, hydrants, meter services, and appurtenances, on and after the first day of the month immediately following the month in which the last of the following occurs:

(1) Approval of the First Amendment to this Agreement by County and District.

(2) Completion and activation of the new metering station at the Sonoma County Aqueduct turnout required by paragraph 2.

(3) Installation of the services, meters, and backflow prevention devices required by subparagraph d. of this paragraph 24.

County shall remain the owner of all existing and future water facilities at the Sonoma County Airport and upon written demand by County or written notice by District, given one year in advance, District shall reconvey control of all such facilities to County.

b. District shall operate and maintain all water facilities at the Sonoma County Airport in the same manner as it operates and maintains those facilities within the District which annexed to the District after January 1, 1985.

c. All future water facilities constructed at the Sonoma County Airport shall provide delivery capacities equal to or greater than those which could be achieved through the construction of the recommended improvements set forth in the Sonoma County Airport "Water System Evaluation" dated June 1986.

d. County shall, where necessary, be responsible for the installation of new services, meters, and backflow prevention devices at the Sonoma County Airport to serve existing customers in accordance with District's regulations and State Health Department requirements. A detailed description of the work to be performed is set forth in Exhibit "A", attached hereto and incorporated herein by this reference. All costs for the work, including District's costs for administration and inspection, shall be borne by County.

e. County shall be responsible for the replacement of approximately 1250 linear feet of existing 6" steel water pipe and appurtenances, hereinafter referred to as "the work", extending southerly from the westerly terminus of Airport Boulevard as shown on Exhibit "B", attached hereto and incorporated herein by this reference. The work shall be completed at the earliest possible date, but in no event later than January 1, 1993. All costs for the work shall be borne by County, provided, however, that District agrees to contribute all water connection fees generated from within the Sonoma County Airport prior to January 1, 1993, towards the cost of the work. The maximum amount of the contribution shall not exceed the actual cost of construction of the work plus a 15% allowance for incidental and administrative expenses. District's contribution shall be due upon completion of the work and shall

be paid on January 1 of each year following completion until paid in full or until January 1, 1993, whichever occurs first.

IN WITNESS WHEREOF the parties hereto have executed this agreement the day and year first above written.

"COUNTY"

COUNTY OF SONOMA

By: _____
Chairman, Board of Supervisors

ATTEST:

_____
Eeve T. Lewis, County Clerk and
Ex-officio Clerk of the Board
of Supervisors of the County
of Sonoma, State of California
California

"DISTRICT"

WINDSOR WATER DISTRICT

By: _____
Chairman

ATTEST:

_____
Secretary
Windsor Water District

EXHIBIT A

DESCRIPTION OF SERVICES, METERS AND BACKFLOW PREVENTION DEVICES TO BE INSTALLED AT SONOMA COUNTY AIRPORT.

1 - Parking Lot Irrigation Service.
1" service with 3/4" meter and double check valve assembly. Windsor Water District Standards #102 and #104.

2 - Median Landscape Service.
1" service with 3/4" meter and double check valve assembly. Windsor Water District Standards #102 and #104.

3 - Fire Station Service.
1" - Service with 3/4" meter and reduced pressure backflow device. Windsor Water District Standards #102 and #105.

4 - Combination Terminal Building and Irrigation Service.
1" service with 1" meter and double check valve assembly. Windsor Water District Standards #102 and #104.

5 - Restaurant Service.
1" service with 1" meter and 1" reduced pressure backflow device. Windsor Water District #102 and #105.

6 - Landscape Service.
1" service with 1" meter and double check valves. Windsor Water District Standards #102 and #104.

7 - Control Tower Service.
1" service with 3/4" meter and reduced pressure backflow device. Windsor Water District Standards #102 and #105.

8 - Landscape Service.
1" service with 3/4" meter and double check valve. Windsor Water District Standards #102 and #104.

9 - Redwood Aviation Service.
1" Service with 3/4" meter and reduced pressure backflow device. Windsor Water District Standards #102 and #105.

10 - Existing Redwood Aviation Service.
Replace 1 1/2" meter with 1" meter and reduced pressure backflow device. Windsor Water District Standards #103 and #105.

11 - Existing Levy Service.
Install two (2) 1" services and double check valve assemblies. A manifold must be installed to split 2" service into two (2) 1" services. Meters and check valves must be installed and then reconnected to service to buildings. Windsor Water District Standards #102 and #104.

12 - Sheriff's Service.
Install 1" meter and reduced pressure backflow device. Windsor Water District Standards #102 and #105.

12 - Airport Shop Service.
1" service with 3/4" meter and reduced pressure backflow device. Windsor Water District Standards #102 and #105. Abandon and cap old service.

13 - Mobile Home Service.
1" service with 3/4" meter and double check valve assembly. Windsor Water District Standards #102 and #104. Abandon and cap old service.

14 - South Hanger Service. No Change

15 - Proposed Public Restroom and Old Sheriff Hanger.
2" service with manifold to split into two services. Install two (2) 3/4" meters with reduced pressure backflow devices. Abandon and cap old line. Windsor Water District Standards #102 and #105.

16 - Existing Scofield Service.
1" service line with 3/4" meter and reduced pressure backflow device. Abandon and cap old line. Windsor Water District Standards #102 and #105.

17 - Existing 6" stub and 2" service. No change.

18 - Nation Flight Service.
New meter and reduced pressure backflow device. Windsor Water District Standards #102 and #105.

19 - C.A.F. Service.
Change meter register from cubic feet to gallons. Install 2" reduced pressure backflow device. Windsor Water District Standard #205.

20 - SIS-Q Service.
Change meter register from cubic feet to gallons. Install reduced pressure backflow device. Windsor Water District Standard #205.

21 - Flight Line. No change.

22 - NCI West Building.
Change register from cubic feet to gallons.

23 - On Flightline.
Change register on 1 1/2" meter to read gallons. Install 1 1/2" reduced pressure backflow device. Install double check valve assembly on irrigation line. Windsor Water District Standards #103, #104, and #105.

24 - County Yard (South Ordinance Road).
Install reduced pressure backflow device. Windsor Water District Standards #103 and #105.

25 - County Yard (North Ordinance Road). No change

26 - Honor Farm (South).
Change register on meter to read in gallons. Install reduced pressure backflow device. Windsor Water District Standard #103 and #105.

27 - No change

28 - No change

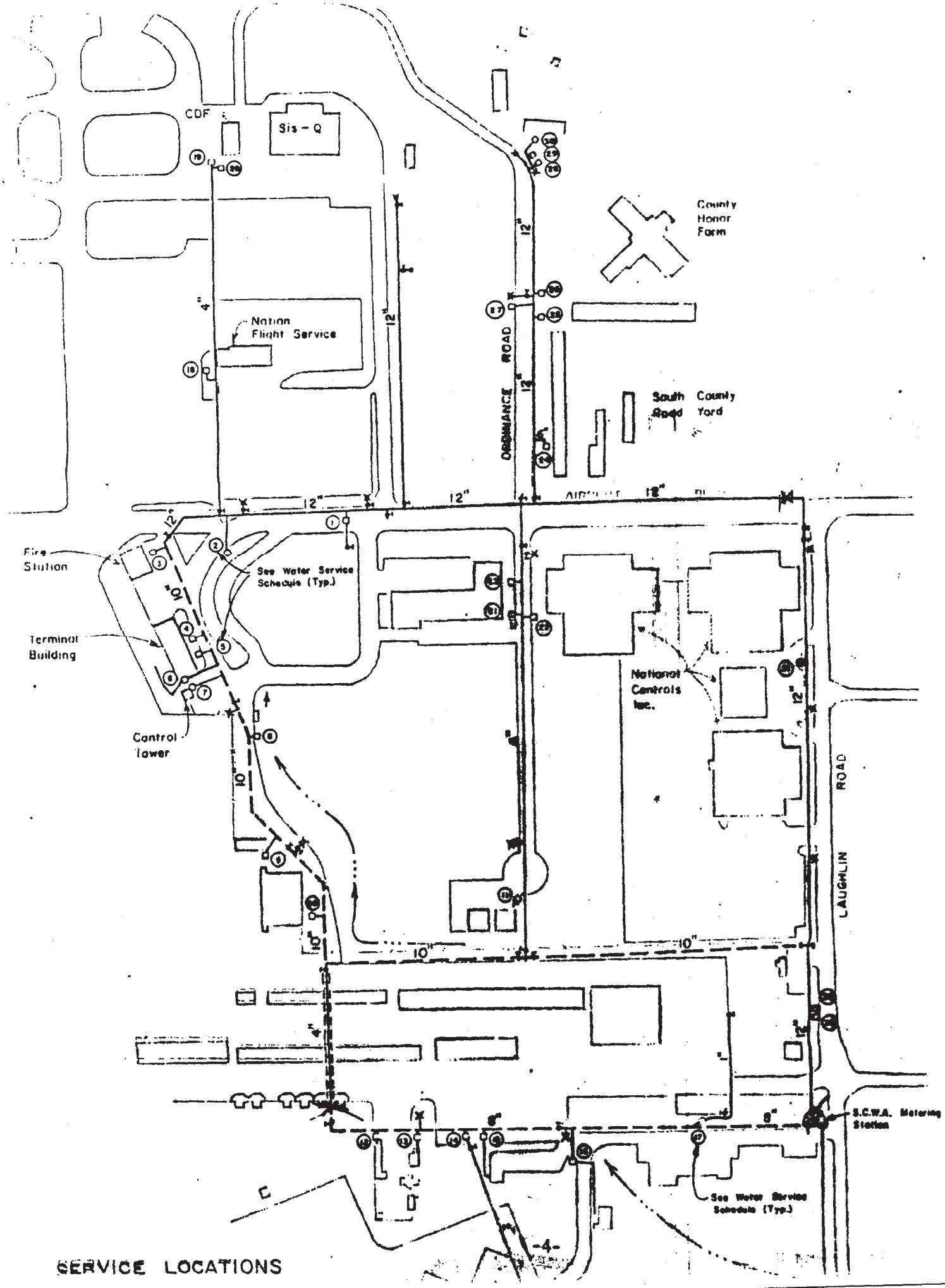
29 - No change

30 - No change

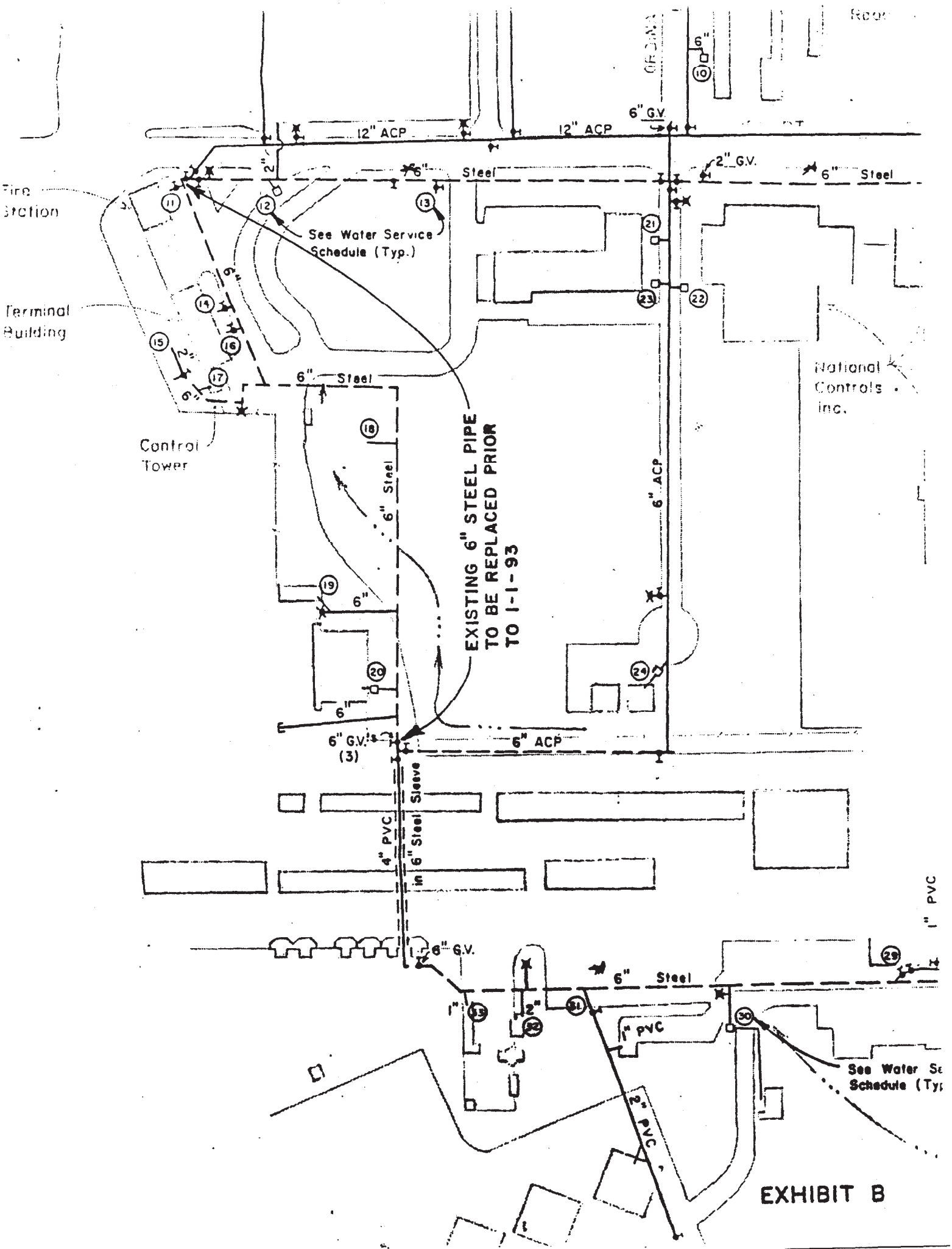
31 - NCI.
Change register on 2" meter to read in gallons.

32 - Dragon Fly.
Change register on 1" meter to read in gallons.

33 - Dragon Fly.
Install 3/4" meter and reduced pressure backflow device. Windsor Water District Standards #102 and #105.



SERVICE LOCATIONS


12" ACP
12" ACP
6" G.V.
2" G.V.
6" Steel
6" Steel
Fire Station
Terminal Building
Control Tower
See Water Service Schedule (Typ.)
6" Steel
6" Steel
National Controls Inc.
6" ACP
EXISTING 6" STEEL PIPE TO BE REPLACED PRIOR TO 1-1-93
6" G.V. (3)
6" ACP
4" PVC in 6" Steel Sleeve
1" 6" G.V.
6" Steel
1" PVC
2" PVC
See Water Schedule (Typ
EXHIBIT B

THE WITHIN INSTRUMENT IS A
CORRECT COPY OF THE ORIGINAL
ON FILE IN THIS OFFICE

ATTEST: AUG 18 1992
EEVE T. LEWIS
County Clerk & ex-officio Clerk of the
Board of Supervisors of the State of Cal-
ifornia, in & for the County of Sonoma
By _____ Deputy

AGREEMENT REGARDING OWNERSHIP, MAINTENANCE AND OPERATION OF CERTAIN WATER TRANSMISSION FACILITIES AT THE SONOMA COUNTY AIRPORT AND SERVICE OF PROPERTIES LOCATED WESTERLY OF HIGHWAY NO. 101 AND NORTHERLY OF MARK WEST CREEK

This Agreement is made and entered into this 16th day of July, 1985, by and between the Windsor Water District, hereinafter referred to as "District", and the County of Sonoma, hereinafter referred to as "County".

RECITALS

WHEREAS, District is an established operating water purveyor with an existing water supply and storage facilities; and

WHEREAS, District has prepared a Master Water Plan dated February, 1984, which provides for connection of its facilities to the Sonoma County Water Agency Aqueduct at the Sonoma County Airport and the supplying of water to projected users within the Sonoma County Airport Industrial Area hereinafter referred to as "Airport Industrial Area"; and

WHEREAS, the Sonoma County Airport Industrial Area Specific Plan adopted by Sonoma County Board of Supervisors Resolution No. 84-2213 dated October 30, 1984, recommends service be provided by an adjacent water purveyor to users within the area encompassed by the Airport Industrial Area.

NOW, THEREFORE, IT IS AGREED AS FOLLOWS:

1. Purpose of Agreement. The purpose of this agreement is to set forth the terms and conditions pursuant to which water service will be provided and certain water conveyance facilities will be owned, installed and maintained within the Airport Industrial Area which encompasses all lands west of Highway 101, east of the Sonoma County Airport, north of Mark West Creek and south of the north line of Section 30, Township 8 North, Range 8 West exclusive of the Sonoma County Airport shown for "Heavy Industrial" and "Industrial Park" development on Figure 5, "Land and Space Map" in the Sonoma County Airport Industrial Area Specific Plan dated October 30, 1984.

2. Existing 12" Water Main. District shall have the right to use the existing 12" water main hereinafter referred to as "the 12" water main" running from its connection to the Sonoma County Aqueduct turnout northerly along Laughlin Road to its termination at Airport Boulevard to wheel water conveyed to it by County pursuant to this agreement from the water main's connection at the Sonoma County Water Agency's Aqueduct to users

within the District and within the Airport Industrial Area subject to this Agreement.

3. County Right to Use 12" Main. County shall at all times have the right hereunder to take water flowing through said 12" main to supply all facilities located within the boundaries of the Sonoma County Airport.

4. Discontinuance of Service by District to Airport Industrial Area. District shall reconvey its control and right to use said water main and assign to County all contracts relative to its service of water to the Airport Industrial Area upon one year's written notice to District by County that County intends to provide the water service to users within the Airport Industrial Area through existing water transmission facilities located within the Airport Industrial Area or upon one year's written notice by District to County that District intends to discontinue service to the Airport Industrial Area.

5. Maintenance of 12" Main by District. District shall maintain said water main and be responsible for all replacements thereto at County's expense for three years from the date of the execution of this Agreement. Thereafter the expense of maintenance and replacement of said water main shall be apportioned equitably among its users.

6. Access to 12" Water Main. Upon obtaining an encroachment permit from the Sonoma County Public Works Department, District may enter upon County's land to carry out normal and necessary maintenance or construction activities authorized by this Agreement.

7. Interconnection of Airport Industrial Area Water Transmission Facilities to 12" Main. District may interconnect water transmission facilities serving Airport Industrial Area users and water transmission facilities serving District users to the 12" water main described in paragraph 2, above, in a manner consistent with the Sonoma County Airport Industrial Area Specific Plan.

8. District's Requirement to Conform to the Sonoma County Airport Industrial Area Specific Plan. District agrees that all facilities constructed shall conform to all applicable provisions of the Sonoma County Airport Industrial Area Specific Plan, including Figure 25, "Master Water Service Plan."

9. County's Rights to Airport Industrial Area Facilities. District agrees that if its right to use and control of the 12" water main is reconveyed to County, County may utilize any facilities constructed by Windsor within the Airport

Industrial Area to serve the Airport Industrial Area for service to that area. Within sixty days of the effective date of said reconveyance, District shall quitclaim to County all right, title and interest in said facilities to County.

10. County Right to Purchase Water from District. In the event service of the Airport Industrial Area by District is discontinued, County shall have the right to purchase from District water surplus to Windsor's needs for delivery and use in the Airport Industrial Area in an amount equal to that delivered by District to the Airport Industrial Area in the previous calendar year having the highest usage at the same rate charged District users.

11. Installation of Water Meters by District. District agrees to install and maintain water meters at its own expense in the 12" and 6" water mains to measure the amount of water used by the facilities at the Sonoma County Airport.

12. Installation of Water Meter by County. In the event District is required to reconvey its right to use and control of the 12" water main to County as the result of County's or District's decision for the County to provide water service to the Airport Industrial Area, a water meter shall be installed at County's expense at that point where water is delivered from the 12" water main described in paragraph 2, above and the extension thereto into water transmission facilities serving District users north of Section 30, Township 8 north, Range 8 West as described in paragraph 1 above.

13. No Third Party Beneficiaries. Nothing contained in this Agreement shall be construed to create and the parties do not intend to create any rights in third parties.

14. Revocability of Agreement. District expressly disclaims any interest which coupled with the rights accorded it under this Agreement would render the Agreement irrevocable in whole or in part.

15. District Entitlement to Delivery of Water.

a. County shall make deliveries of water through the turnout located in the 12" water main to District for use in District and in the Airport Industrial Area and charge District the cost charged to the County for the water by the Sonoma County Water Agency.

b. In the event of any curtailment in water delivery by the Sonoma County Water Agency through the turnout located in the 12" water main, the parties agree that each will be

entitled to receive a proportionate share of the water delivered through the 12" main by the Sonoma County Water Agency, such share to have the same ratio to the total supply then available to serve them as each party's use during the preceding twelve month period bears to the total water supply available during that twelve month period.

c. The parties agree that water delivered by the County through the turnout in the 12" water main is pursuant to the agreement between County and the Sonoma County Water Agency dated July 31, 1967 and amendments thereto and that no interest in said agreement between County and the Sonoma County Water Agency is conveyed herein to District. District, after reconveyance, shall be entitled to take delivery of water from County for delivery to District users at the Sonoma County Aqueduct turnout which right shall continue until relinquished in writing by District.

d. District shall pay County directly or, at County's election, the Sonoma County Water Agency the cost charged by the Sonoma County Water Agency for water delivered into the 12" water main which is used by District to serve District and Airport Industrial Area users.

16. Nondiscrimination. District shall comply with all applicable federal, state and local rules and regulations in regard to nondiscrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical condition or physical handicap.

17. Attorneys Fees. If any litigation is commenced between the parties concerning any provision of this agreement or the rights or duties of any party in relation thereto, the prevailing party shall be entitled to recover as a part of such action or proceeding, reasonable attorneys fees and court costs.

18. Merger. This writing is intended as a final expression of the agreement between the parties hereto with respect to the included terms and as a complete and exclusive statement of the terms of the agreement pursuant to Code of Civil Procedure section 1856. No modification of this agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

19. Method and Place of Giving Notice. All notices and communications shall be made in writing and shall be given by

personal delivery or by mail. Notices, bills and payments sent by mail should be addressed as follows:

COUNTY: Chief Administrative Officer
County of Sonoma
575 Administration Drive
Santa Rosa, California 95401

DISTRICT: General Manager
Windsor Water District
Post Office Box 100
Windsor, California 95492

and when so addressed, shall be deemed given upon deposit in the United States Mail, postage prepaid. In all other instances, notices or other communications shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the persons to whom notices or communications are to be given by giving notice pursuant to this paragraph.

20. Demand for Assurances: Each party to this agreement undertakes the obligation that the other's expectation of receiving due performance will not be impaired. When reasonable grounds for insecurity arises with respect to the performance of either party, the other may, in writing, demand adequate assurance of due performance and until he receives such assurance may, if commercially reasonable, suspend any performance for which the agreed return has not been received. "Commercially reasonable" includes not only the conduct of a party with respect to performance under this agreement, but also conduct with respect to other agreements with parties to this agreement or others. After receipt of a justified demand, failure to provide within a reasonable time, but not exceeding 30 days, such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of this agreement. Acceptance of any improper delivery, service, or payment does not prejudice the aggrieved party's right to demand adequate assurance of future performance.

21. Indemnification. District shall indemnify, hold harmless, defend and release County, its agents and employees from any and all liability, actions, claims, damages, costs or expenses, including attorneys' fees and costs and expenses of suit which may be asserted by any person arising out of or in connection with the action or inaction of District in the course of the performance of this Agreement where District is actively negligent and County is passively negligent. County shall indemnify, hold harmless, defend and release District, its agents and employees from any and all liability, actions, claims, damages, costs or expenses, including attorneys' fees and costs

and expenses of suit which may be asserted by any person arising out of or in connection with the action or inaction of County in the course of the performance of this Agreement where County is actively negligent and District is passively negligent.

22. Accounting. District shall maintain complete and accurate records of all transactions in compliance with generally accepted accounting principals for enterprise accounting as promulgated by the American Institute of Certified Public Accountants and the Governmental Accounting Standards Board. Such records shall be available to County Auditor or Administrator at all reasonable times for inspection and analysis. Airport and Airport Industrial Area shall be separately accounted for in said system.

23. Annual Report. District's books and accounts shall be audited annually in accordance with American Institute of Certified Public Accountants Audit Guidelines by an independent certified public accountant. A copy of the accountant's Report shall be provided to the County Administrator annually upon its completion.

COUNTY OF SONOMA

Dated July 16, 1985

By _____
Chair
Board of Supervisors

ATTEST:

_____
County Clerk and ex-officio
Clerk of the Board of Supervisors
of the County of Sonoma,
State of California

WINDSOR WATER DISTRICT

Dated 7-16-85

By _____

Title Chairman

ATTEST:

_____
Secretary, Windsor Water District

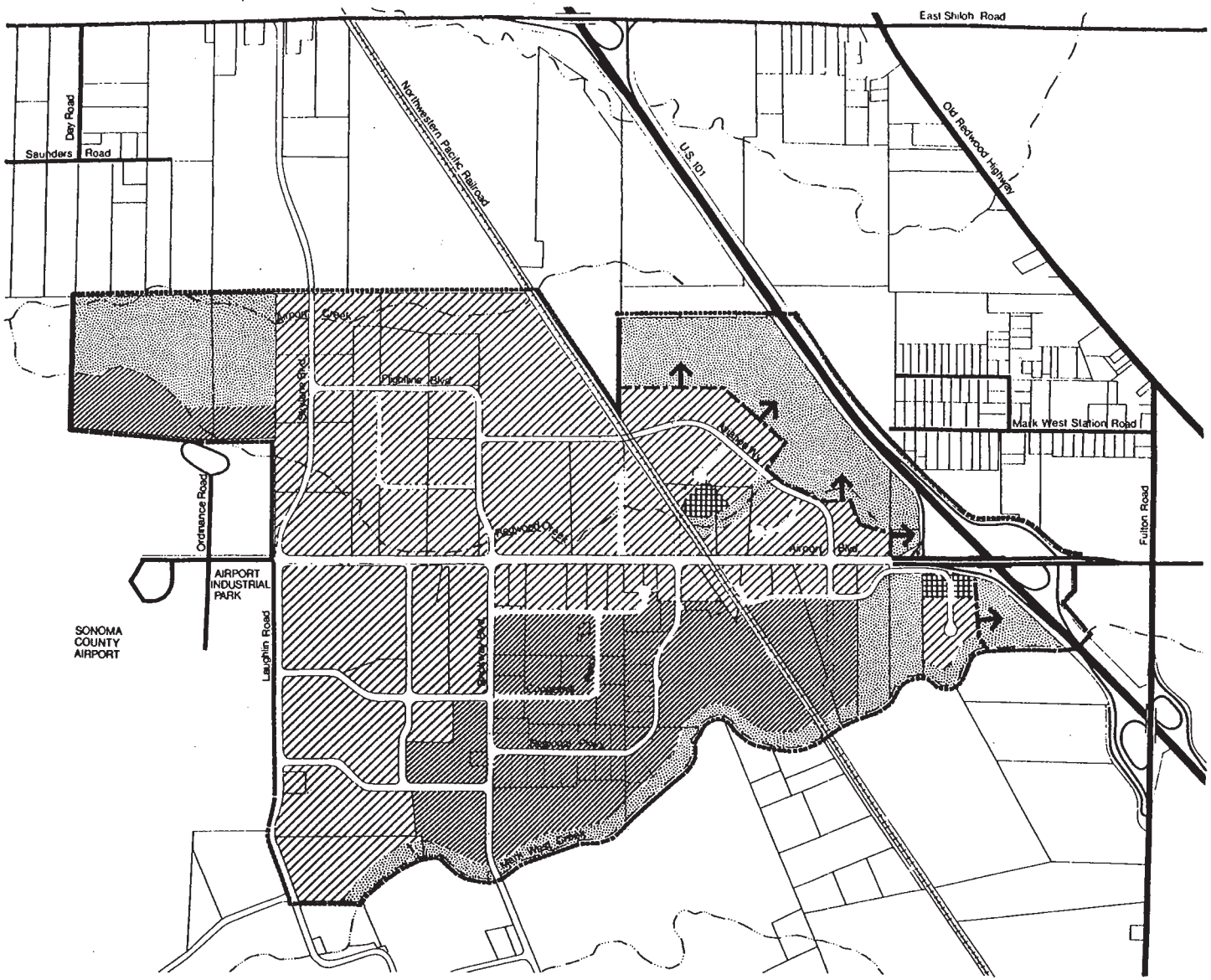


FIGURE 5

LAND USE AND OPEN SPACE PLAN

HEAVY INDUSTRY

INDUSTRIAL PARK

RETAIL COMMERCIAL

AGRICULTURE AND OPEN SPACE

CRITICAL COMMUNITY SEPARATOR AND SCENIC AREA BOUNDARY

NOTE:

Plan line indications on this map for all new collector and minor streets are preliminary. Land use configurations shown for parcels 48 through 51 and 7 are also preliminary.[1] These preliminary designations indicate the basic intent of the plan, and may be subject to changes and refinements as individual development plans are finalized. Development proposals are restricted to 45 percent of the total land area on these parcels.

SONOMA COUNTY AIRPORT INDUSTRIAL AREA SPECIFIC PLAN

SONOMA COUNTY, CALIFORNIA

WAGSTAFF AND BRADY
URBAN AND
ENVIRONMENTAL PLANNERS
BERKELEY, CALIFORNIA



APPENDIX G – LOCATIONS OF RECYCLED WATER CUSTOMERS

ENGINEERING REPORT

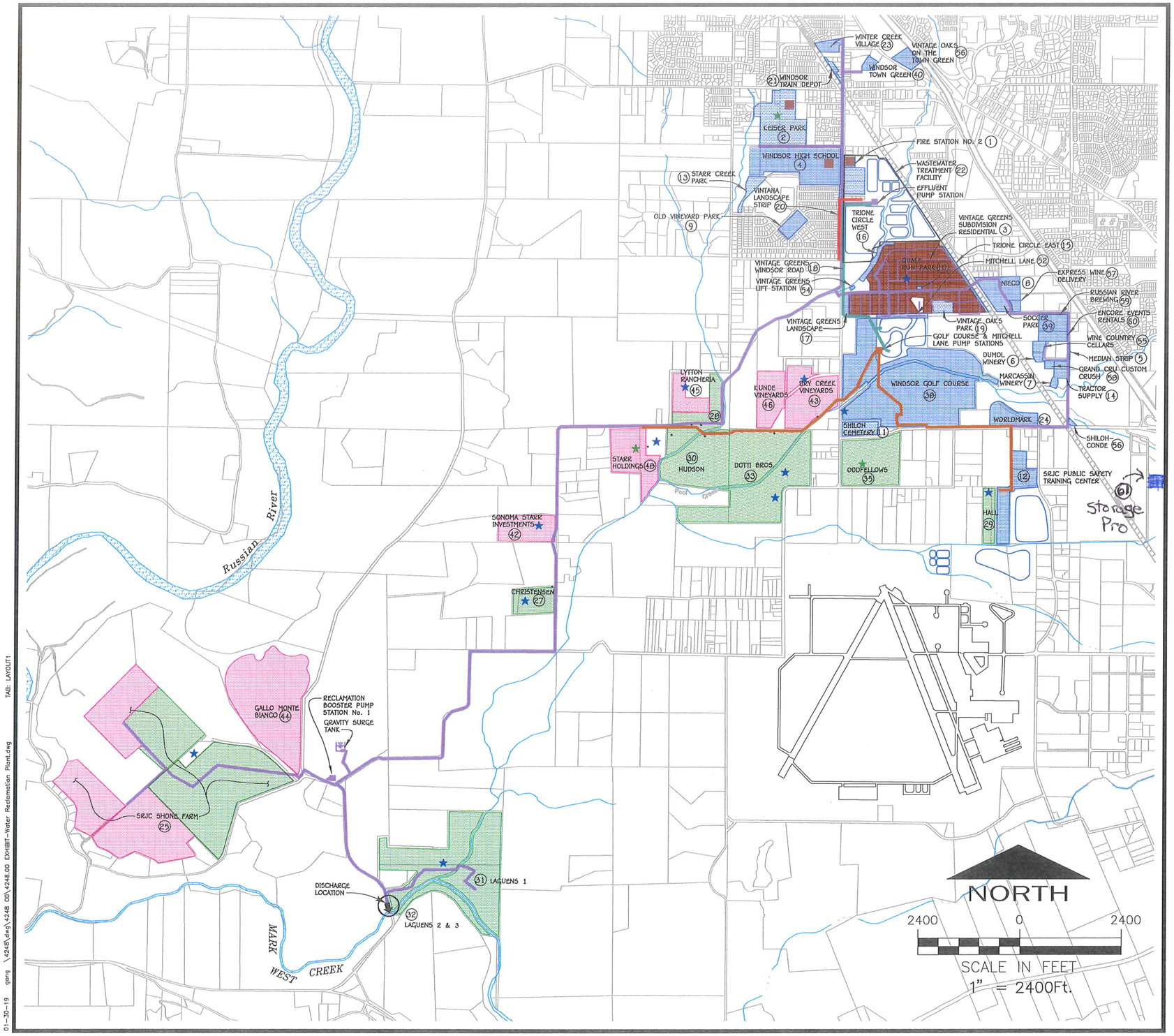
TOWN OF WINDSOR WATER RECLAMATION SYSTEM

WATER RECLAMATION USE AREAS

MARCH 2012

(REVISED JANUARY 2019)

Brelje & Race
CONSULTING CIVIL ENGINEERS



LEGEND

DISTRIBUTION SYSTEMS

- EFFLUENT PUMP STATION & MAINS
- MITCHELL LANE PUMP STATION & MAINS
- TRANSFER MAIN
- GEYSERS TRANSFER MAIN

WELLS

- ★ Domestic Well
- ★ Irrigation Well

RECYCLE WATER USE AREAS

- PASTURE, FODDER, OTHER CROPS
- VINEYARD
- COMMERCIAL AND INSTITUTIONAL LANDSCAPING AND TURF
- DUAL PLUMBED RESIDENTIAL IRRIGATION
- DUAL PLUMBED BUILDINGS
- (13) REFER TO TABLE 6 FOR DETAILS

Notes: The hatched areas of this figure represent the parcels that are irrigated with reclaimed water, not the actual irrigated areas. Setbacks from wells, creeks, trees, vernal pools, etc. are maintained as described in the report. The locations of the wells are approximate.

TOWN OF WINDSOR

Figure 3

01-30-19 gang \4248\dwg\4248 00\4248.00 EXHIBIT-Water Reclamation Plant.dwg TAB: LAYOUT1

APPENDIX H – WATER SHORTAGE CONTINGENCY PLAN

TOWN OF
WINDSOR

Windsor Water District

2020 Water Shortage Contingency Plan

FINAL

July 7, 2021



Prepared by:

MADDAUS
WATER
MANAGEMENT INC.

TABLE OF CONTENTS PAGE

LIST OF FIGURES 3

LIST OF TABLES 3

LIST OF ABBREVIATIONS AND ACRONYMS 4

1 INTRODUCTION AND WSCP OVERVIEW 5
- 1.1 Water Shortage Contingency Plan Requirements and Organization 5
- 1.2 Integration with Other Planning Efforts 6

2 BACKGROUND INFORMATION 7
- 2.1 Town Service Area 7
- 2.2 Relationship to Wholesaler 10
- 2.3 Relationship with Wholesaler Water Shortage Planning 10

3 WATER SHORTAGE CONTINGENCY PREPAREDNESS AND RESPONSE PLANNING 11
- 3.1 Water Supply Reliability Analysis 11
- 3.2 Annual Water Supply and Demand Assessment Procedures 11
- 3.3 Six Standard Water Shortage Levels 16
- 3.4 Shortage Response Actions 18
- 3.5 Communication Protocols 29
- 3.6 Compliance and Enforcement 30
- 3.7 Legal Authorities 30
- 3.8 Financial Consequences of WSCP 32
- 3.9 Monitoring and Reporting 33
- 3.10 WSCP Refinement Procedures 33
- 3.11 Special Water Feature Distinction 33
- 3.12 Plan Adoption, Submittal, and Availability 34

4 REFERENCES 35

APPENDIX A – PUBLIC NOTICES (PENDING) 36

APPENDIX B – RESOLUTION OF ADOPTION (PENDING) 37

APPENDIX C – COMMUNICATION PROCEDURES 38
- C.1 Emergency Response Plan Communication 38
- C.2 Town Water Shortage Communication Plan 38

APPENDIX D – REFERENCE TO CURRENT TOWN'S MUNICIPAL CODE SECTION 12-3-800 44

LIST OF FIGURES

Figure 2-1. Town of Windsor Jurisdictional Boundary 8
Figure 2-2. Town Service Area 9
Figure 3-1. Decision-Making Process and Reporting Timeline 12

LIST OF TABLES

Table 3-1. Water Shortage Contingency Plan Levels (DWR Submittal Table 8-1) 17
Table 3-2. Demand Reduction Actions (DWR Submittal Table 8-2) 18
Table 3-3. Supply Augmentation and Other Actions (DWR Submittal Table 8-3) 26
Table 3-4. Preparation Actions for a Catastrophe 27
Table 3-5. Monitoring for Water Shortage Demand Reductions 29
Table 3-6. Town Contacts and Coordination Protocols 31
Table 3-7. Revenue Mitigation Measures in Times of Shortage 32
Table C-1. Water Shortage Communication Plan Implementation Schedule 42

LIST OF ABBREVIATIONS AND ACRONYMS

2020 UWMP	2020 Urban Water Management Plan
AF	acre-feet
AFY	acre-feet per year
AWE	Alliance for Water Efficiency
District	Windsor Water District
DRA	Drought Risk Assessment
DWR	California Department of Water Resources
EPA	Environmental Protection Agency
EOC	Emergency Operations Center
EOP	Emergency Operation Plan
ERP	Emergency Response Plan
FEMA	Federal Emergency Management Agency
FIRO	Forecast-Informed Reservoir Operations
LHMP	Local Hazard Mitigation Plan
MGD	million gallons per day
Sonoma Water	Sonoma County Water Agency
TAC	Technical Advisory Panel
Town	Town of Windsor
USACE	U.S. Army Corps of Engineers
UWMP	Urban Water Management Plan
WAC	Water Advisory Committee
WSCP	Water Shortage Contingency Plan

1 INTRODUCTION AND WSCP OVERVIEW

The Windsor Water District (District) and Town of Windsor (Town) Water Shortage Contingency Plan (WSCP) is a planning document designed to prepare for and respond to water shortages. This WSCP complies with California Water Code Section 10632, which requires that every urban water supplier shall prepare and adopt a WSCP as part of its urban water management plan (UWMP). This level of detailed planning and preparation is intended to help maintain reliable supplies and reduce the impacts of supply interruptions.

The WSCP is the Town's operating manual that is used to prevent catastrophic service disruptions through proactive, rather than reactive, management. A water shortage occurs when water supply availability is insufficient to meet the normal, expected customer water use at a given point in time. This may occur for several reasons, such as drought, climate change or catastrophic events (e.g., earthquake). This WSCP is not intended to replace water distribution system operating rules or procedures, but rather to compliment the Town's Local Hazard Mitigation and Emergency Response Plans.

This WSCP provides a structured guide for the Town to address water shortages, incorporating prescriptive information and standardized action levels along with implementation strategies in the event of a supply interruption. Therefore, when shortage conditions arise, the Town's governing body, its staff and the public can easily identify and efficiently implement pre-determined steps to manage the shortage. A well-structured WSCP allows for efficient management of any shortage with predictability and accountability through real-time water supply availability assessment and well-defined actions aligned with different water shortage levels, which if necessary, may be modified to respond to actual conditions.

The WSCP also describes the Town's procedures for conducting an Annual Water Supply and Demand Assessment (Annual Assessment). An Annual Assessment, as required by Water Code Section 10632.1, is to be submitted to the California Department of Water Resources (DWR) on or before July 1st of each year.

The Town's WSCP is included as an appendix to its 2020 UWMP which will be submitted to DWR upon adoption. However, this WSCP is created separately from the Town's 2020 UWMP and can be amended as needed without amending the UWMP. It should be noted that the Water Code does not prohibit an urban water supplier from taking actions not specified in its WSCP, if needed, without having to formally amend its UWMP or WSCP.

1.1 Water Shortage Contingency Plan Requirements and Organization

The WSCP provides the steps and water shortage response actions to be taken in times of water shortage conditions. The WSCP has prescriptive elements, such as the following:

- An analysis of water supply reliability
- The water shortage response actions for each of the six standard water shortage levels that correspond to water shortage percentages ranging from 10% to greater than 50%
- An estimate of potential to close supply gap for each measure
- Protocols and procedures to communicate identified actions for any current or predicted water shortage conditions
- Procedures for an Annual Water Supply and Demand Assessment
- Monitoring and reporting requirements to determine customer compliance
- Reevaluation and improvement procedures for evaluating the WSCP

This WSCP is organized into three main sections with Section 3 closely aligned with the California Water Code Section 16032 requirements.

Section 1 Introduction and WSCP Overview gives an overview of the WSCP fundamentals.

Section 2 Background provides a background on the Town's water service area.

Section 3 Water Shortage Contingency Preparedness and Response Planning

Section 3.1 Water Supply Reliability Analysis provides a summary of the water supply analysis and water reliability findings from the 2020 UWMP.

Section 3.2 Annual Water Supply and Demand Assessment Procedures provides a description of procedures to conduct and approve the Annual Assessment.

Section 3.3 Six Standard Water Shortage Levels explains the WSCP's six standard water shortage levels corresponding to progressive ranges of up to 10%, 20%, 30%, 40%, 50%, and more than 50% shortages.

Section 3.4 Shortage Response Actions describes the WSCP's shortage response actions that align with the defined shortage levels.

Section 3.5 Communication Protocols addresses communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments regarding any current or predicted shortages and any resulting shortage response actions.

Section 3.6 Compliance and Enforcement describes customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions.

Section 3.7 Legal Authorities is a description of the legal authorities that enable the Town to implement and enforce its shortage response actions.

Section 3.8 Financial Consequences of the WSCP provides a description of the financial consequences of and responses to drought conditions.

Section 3.9 Monitoring and Reporting describes monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements**.**

Section 3.10 WSCP Refinement Procedures addresses reevaluation and improvement procedures for monitoring and evaluating the functionality of the WSCP.

Section 3.11 Special Water Feature Distinction is a required definition for inclusion in a WSCP per the California Water Code.

Section 3.12 Plan Adoption, Submittal, Availability, and Implementation provides a record of the process the Town followed to adopt and implement its WSCP.

1.2 Integration with Other Planning Efforts

As a retail water supplier in Sonoma County, the Town considered other key entities in the development of this WSCP, including the Sonoma County Water Agency *(*Sonoma Water) which is Windsor's regional wholesale supplier. The Town also developed this WSCP with input from the coordination efforts of Sonoma Water's water contractors.

The WSCP was developed to integrate with other key planning and reporting documents including the following:

- The Town's 2020 Urban Water Management Plan (Woodard & Curran, July 2021)
- Sonoma County Water Agency's 2020 Water Shortage Contingency Plan (Sonoma Water, June 2021b)
- Sonoma County Water Agency's 2020 Urban Water Management Plan (Sonoma Water, June 2021a)
- The Town of Windsor 2040 General Plan (Town of Windsor, April 2018)

2 BACKGROUND INFORMATION

The Town, incorporated in 1992, is located in central Sonoma County approximately seven miles northwest of the City of Santa Rosa. The Russian River flows two miles to the west in a north-south direction, and U.S. Highway 101 bisects the town in a northwest-southeast direction. Figure 2-1 presents the Town's jurisdictional (i.e., Town) boundaries as well as the Urban Growth Area.

The Windsor Water District provides water to the Town and several outside services areas that constitute the water service area. The Town Council is the governing entity of the Town while the Board of Directors serves as the governing entity of the District. While the Town Council and District Board consist of the same five members that serve four-year terms, the Town and the District are separate legal entities with different legal authority and responsibilities under the law. In this WSCP, "Town" refers to the Town of Windsor or the Windsor Water District, as appropriate.

2.1 Town Service Area

The Town's service area consists of the Town of Windsor plus "outside service areas" that include the Airport and Shiloh/Mayacama service areas as well as a few other parcels. These outside areas are serviced through outside service agreements. The Town encompasses approximately 6.7 square miles, while the outside service areas collectively cover roughly 5.8 square miles. Including the outside service areas, the Town served approximately 28,400 people in 2020. The Town's water service area, including service areas inside and outside the Town limits, is shown in Figure 2-2.

The Town's pumped water from the Russian River Well Field is treated on site; thus, there is no raw water distribution system. The service area had 9,830 municipal connections in 2020. The customer types include residential, commercial, industrial, landscape irrigation, consumers of recycled water, and other. The "other" category includes fire meters, hydrant meters, and other incidental uses. In 2020, residential customer accounts comprised over 81% of the total number of customer accounts. However, residential water demand was equivalent to approximately 69% of the total volume of water demand.

Figure 2-1. Town of Windsor Jurisdictional Boundary

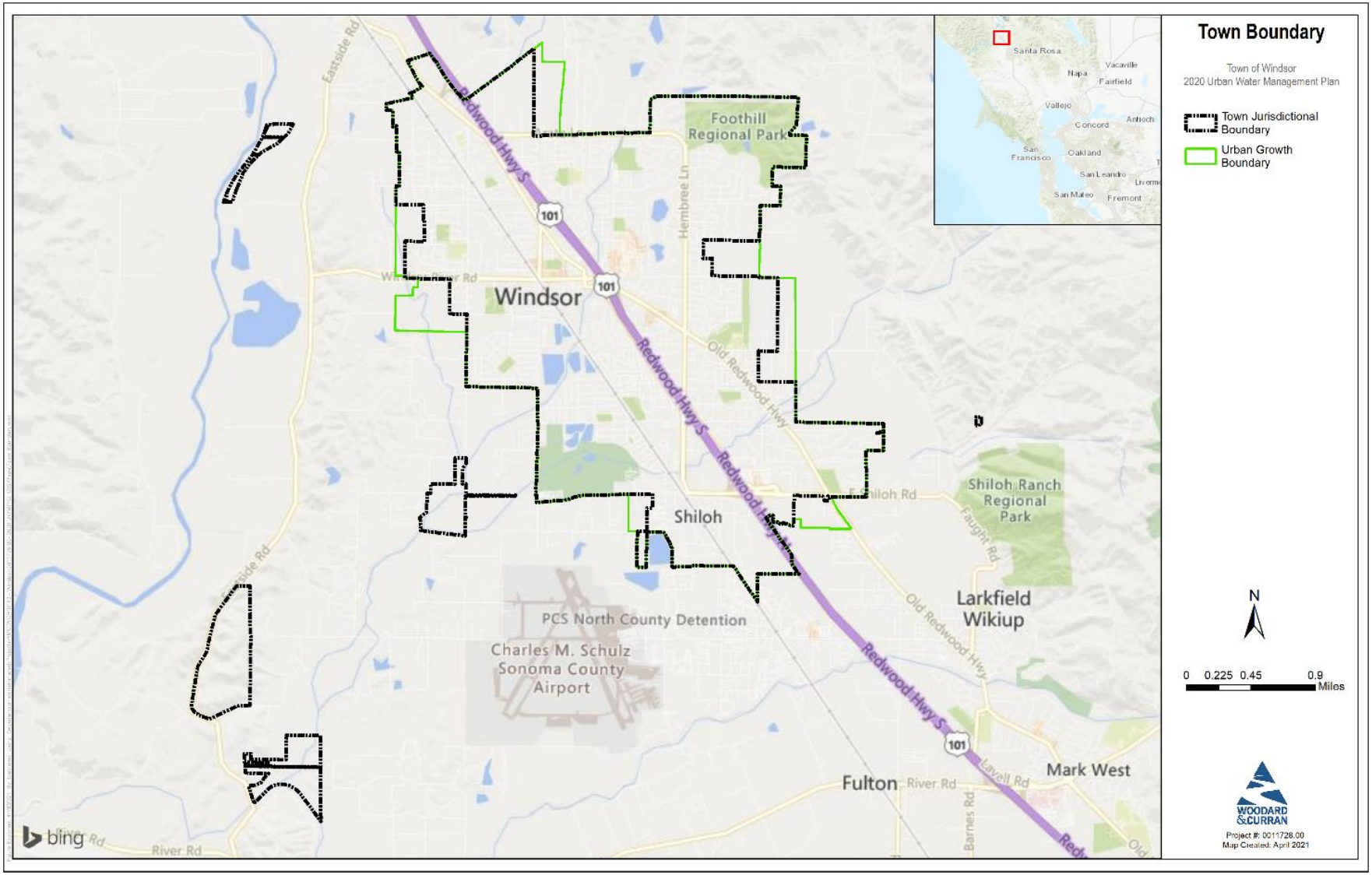
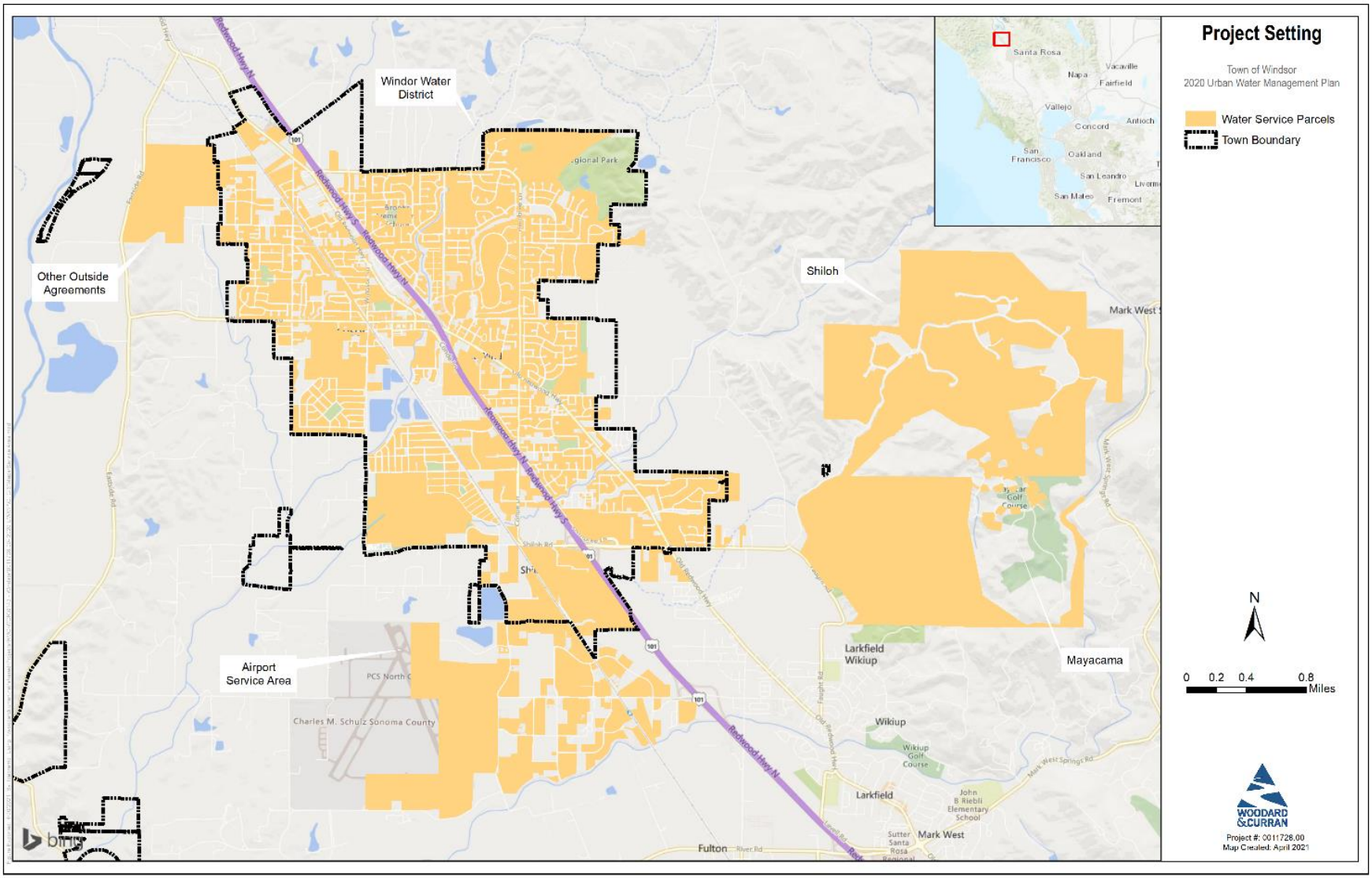


Figure 2-2. Town Service Area



2.2 Relationship to Wholesaler

Since 1984, the District has provided potable water supply primarily from water extracted at its Russian River Well Field under a Sonoma Water Russian River surface water right and purchased water from Sonoma Water's Santa Rosa aqueduct. The Town currently purchases this water directly from Sonoma Water.

The Town's access to surface water is obtained from the following two sources, both linked to Sonoma Water and the Russian River:

- Diversions through the District's Russian River Well Field (well field) under Sonoma Water's surface water rights
- Purchase of Russian River water diversions from Sonoma Water, which is brought through Sonoma Water's Santa Rosa Aqueduct to the Town's distribution system

Together, these surface water supplies constitute the majority of potable water currently available to the Town. A summary of all water supply sources for 2020 can be found in Section 6 of the Town's 2020 UWMP.

2.3 Relationship with Wholesaler Water Shortage Planning

The WSCP is designed to be consistent with the Town's 2020 UWMP and Sonoma Water's 2020 UWMP and WSCP, as well as other planning efforts as described below.

- **Sonoma Water 2021 Water Shortage Contingency Plan.** This document outlines Sonoma Water's plan for responding to a water shortage condition. The Town's WSCP is aligned with the same six levels of shortage indicated for the wholesaler response in this document. The Sonoma Water WSCP also includes demand reduction actions that will affect the Town supply during shortage. In addition, the Sonoma Water WSCP includes the procedures that will be used by Sonoma Water to conduct an Annual Assessment. Sonoma Water's assessment forecasts near-term (12 months) surface water supply conditions to ensure the Town's shortage response actions are triggered in a timely manner. The annual assessment will provide a description and quantification of each source of Sonoma Water's water supply compared to water demands for the current year and one subsequent dry year.
- **Sonoma Water 2020 Urban Water Management Plan**. This document presents the analysis of long-term water supply reliability and forecasted demand under normal, single, and multiple dry year scenarios.
- **Sonoma Water Local Hazard Mitigation Plan.** This document identifies and assesses natural hazard risks and vulnerabilities to Sonoma Water infrastructure and the public at large. A hazard could reduce water availability for the Town of Windsor, which relies on Sonoma Water for a majority of its supply.
- **Town of Windsor Local Hazard Mitigation Plan.** This document is specific to the Town's natural hazard risks and vulnerabilities to the Town's infrastructure and the public at large. This plan and any emergency actions taken by the Town will supersede any perceived conflicts with the WSCP.
- **Sonoma Water County Water Agency Restructured Agreement and Water Shortage Allocation Methodology.** This agreement, made between the Town of Windsor with the other water contractors and Sonoma Water, outlines the amount of water allocated to each contractor during normal conditions. It also describes how water is to be allocated to each contractor's customers in the event of a water supply shortage or a temporary impairment of the capacity of some or all of Sonoma Water's transmission system.

3 WATER SHORTAGE CONTINGENCY PREPAREDNESS AND RESPONSE PLANNING

The Town Water Shortage Contingency Plan is a detailed guide to Town actions in the case of an actual water shortage condition. The WSCP anticipates a water supply shortage and provides pre-planned guidance for managing and mitigating the shortage. Regardless of the reason for the shortage, the WSCP is based on having adequate details of demand reduction and supply augmentation measures that are structured to match specific degrees of shortage, and to ensure that relevant stakeholders understand what to expect during a water shortage situation.

3.1 Water Supply Reliability Analysis

Per Water Code Section 10632 (a)(1), the WSCP shall provide an analysis of water supply reliability conducted pursuant to Water Code Section 10635 and the key issues that may create a shortage condition when evaluating the Town's water asset portfolio.

Understanding water supply reliability, factors that could contribute to water supply constraints, availability of alternative supplies, and what effect these have on meeting customer demands provides the Town with a solid basis on which to develop appropriate and feasible response actions in the event of a water shortage. In the 2020 UWMP, the Town conducted a Water Reliability Assessment to compare the total water supply available with long-term projected water use over the next 20 years, in five-year increments (for a normal water year, a single dry water year, and a drought lasting five consecutive water years). The Town also conducted a Drought Risk Assessment (DRA) to evaluate a drought period that lasts five consecutive water years starting from 2020.

In average precipitation years, it is estimated that the Town will have adequate supply to fulfill its demands through 2040 if the proposed off-river wells are developed and provide an estimated 750 AF per year of potable supply.

During single dry year conditions, the Town's supply is projected to exceed demand through 2030, but the Town is estimated to experience shortages beginning in 2035 of approximately 5 percent and beginning in 2040 of approximately 11 percent. This shortage will most likely be mitigated through the implementation of conservations programming and other passive water savings from future code changes.

In the multiple-dry year scenario, the Town 's supply is projected to exceed demand in years one through four, and experience less than a 1 percent shortage in year five.

According to the DRA, under a five-year consecutive drought under current conditions (e.g., beginning in 2021), the Town does not expect to meet its total demands or its potable demands without implementing water shortage demand reduction measures. The DRA indicates that the Town would need to implement Water Shortage Level 2 demand reduction actions during the first two of the five-year drought period and Level 3 demand reduction actions during years three through five. Estimated demand reductions and surplus supply are detailed in Table 7-6 of the UWMP.

3.2 Annual Water Supply and Demand Assessment Procedures

Per California Water Code Section 10632.1, the Town will conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 by July 1st of each year, beginning in 2022. In addition, the Town will submit to DWR an annual water shortage assessment with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the Town's WSCP.

The following sections document the decision-making process required for formal approval of the Town's Annual Assessment determination of water supply reliability each year (Figure 3-1) and the key data inputs and

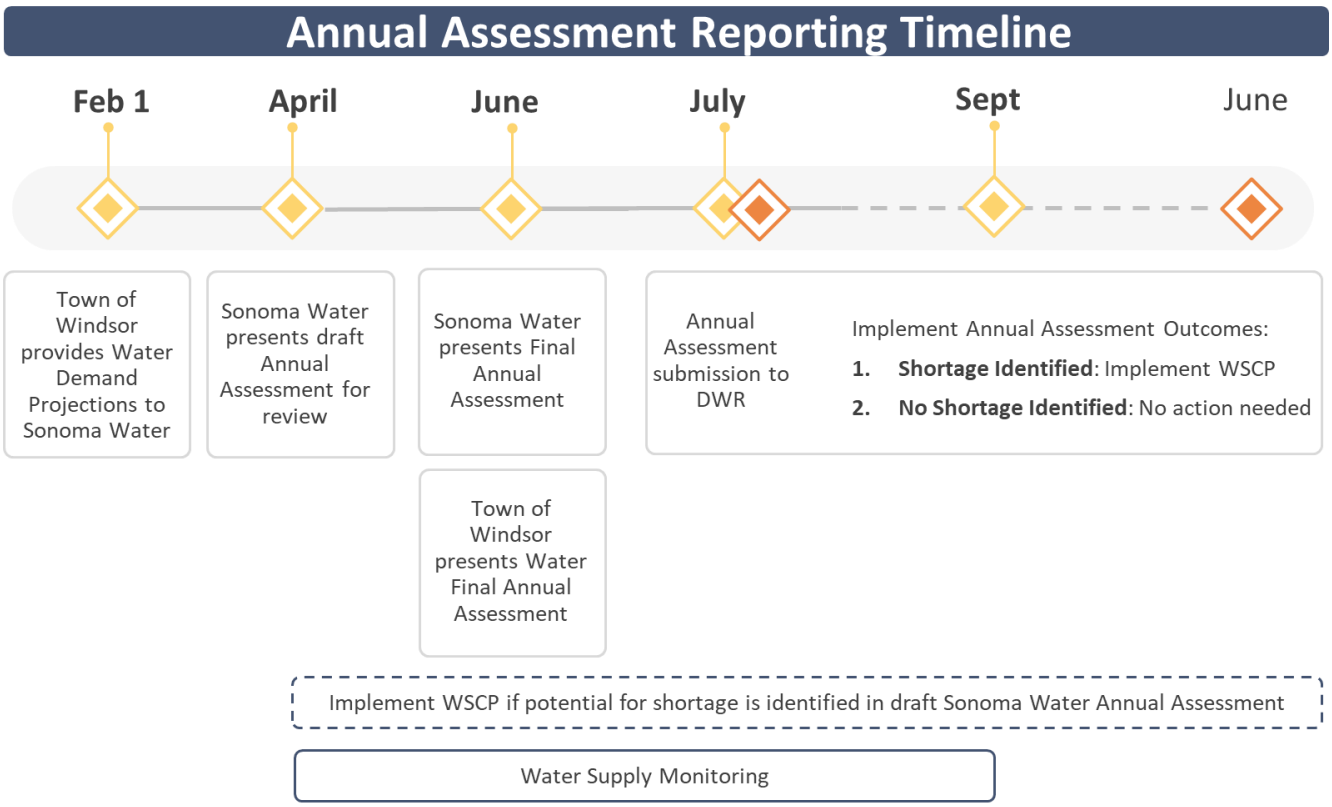
methodologies used to evaluate the water system reliability for the coming year, while considering that the year to follow would be dry.

3.2.1 Decision-Making Process

The Annual Assessment will be predicated on the Sonoma Water Annual Assessment findings. Following is the decision-making process:

1. Provide demand projections to Sonoma Water by Feb 1st of each year.
2. Review and provide comments on draft Annual Assessment presented by Sonoma Water in April. An initial evaluation will be made regarding the potential for a water shortage condition to occur. If a shortage is forecast for the current calendar year, particularly during the critical months of July to October, the Town will initiate implementation of the WSCP.
3. Finalize Town Annual Assessment based on outcomes of the final findings of the Sonoma Water Annual Assessment presented in June. The Town with coordinate with Sonoma Water to identify if any water supply gaps exist considering both Sonoma Water supplies and local supplies.
4. If a shortage is identified, the Annual Assessment will be presented to the District Board for approval and the WSCP will be implemented. If no shortage is identified, the Annual Assessment may be presented during a regularly scheduled Board meeting.
5. The Town will submit the Annual Assessment to DWR by July 1st of each year.

Figure 3-1. Decision-Making Process and Reporting Timeline



3.2.2 Data and Methodologies

The following paragraphs document the key data inputs and methodologies used to evaluate the water system reliability.

Evaluation Criteria

In the 2020 UWMP, the Town presents an assessment of the reliability of its water service to its customers during normal, single dry, and multiple dry water years. This water supply and demand assessment compares the total water supply sources available to the Town with the long-term total projected water use over the next 20 years, in five-year increments (for a normal water year, a single dry water year, and a drought lasting five consecutive water years). This UWMP Drought Risk Assessment is based on the Town service area, water sources, water supply reliability, and water use, as described in California Water Code Section 10631. The UWMP is based on available data from state, regional, or local agency population, land use development, and climate change projections within the Town's service area. The Town's applicable UWMP evaluation criteria will be relied on for completing the Annual Assessment. The Town will be conferring with both Sonoma Water and other water contractors when initially setting and updating evaluation criteria over time.

Water Supply

The majority of the Town's potable water supply is surface water obtained from the District-owned Russian River Well Field, using Sonoma Water's water rights. The well field is District-owned, however water pumped from the well field is diverted under Sonoma Water's surface water rights. In 2020, 3,190 AF of water was diverted at the well field, comprising approximately 85% of the total potable water supply. The Town also purchases surface water from Sonoma Water, which is delivered into the Town's distribution system through Sonoma Water's Santa Rosa Aqueduct. In 2020, 544 AF of water was purchased from Sonoma Water and delivered via the Santa Rosa aqueduct, comprising approximately 15% of the total potable water supply.

The District also owns groundwater wells, known as off-river wells. Currently, four of the District's five off-river groundwater wells are inactive. However, the Esposti Irrigation Well provides raw water only for the irrigation of Esposti Park and is not used for potable water. The approved Fiscal Year 2019-2024 Capital Improvement Plan (CIP) includes plans to add treatment to the Esposti Potable Well by 2023. Well testing has indicated that a reasonable available volume is estimated at 350 AFY with an approximate safe yield of 800 AFY. The actual safe yield has not been fully determined to date.

The Town also plans to construct an additional well in the northern portion of Windsor, to be referred to as the North Windsor Well. A Well Siting Study was completed that recommended several locations for new wells including in North Windsor (Winzler & Kelly, 2007). The Town has estimated that this one additional well should be constructed and activated between 2023 and 2025 in the northern portion of the Town, and that, based on testing completed on the Esposti Park wells, it would be reasonable to assume that a similar production could be obtained from this North Windsor Well. Included in the DRA analysis is a new potable well in the North Windsor area with a reasonably available volume of 350 AFY and an estimated safe yield of 800 AFY.

The order of completion for the Esposti and North Windsor Well projects are dependent on water quality test results for the North Windsor supply well. If water quality test results indicate lower overall costs for development of a municipal well at the North Windsor site as compared to the Esposti site, then North Windsor construction would begin first.

Unconstrained Customer Demand

The WSCP and Annual Assessment define unconstrained demand as expected water use prior to any projected shortage response actions that may be taken under the WSCP. Unconstrained demand is differentiated from observed demand as observed demand may be constrained by preceding, ongoing, or future actions, such as emergency supply allocations during a multi-year drought. WSCP shortage response actions to constrain demand are inherently extraordinary; routine activities such as ongoing conservation programs and regular operational adjustments are not considered as constraints on demands.

The *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update* (EKI, 2020) evaluates projected potable water use by customer category from 2020 to 2040, analyzing many possible demand reduction conditions. For this UWMP, the Town is adopting the analysis contained in the *Town of*

Windsor 2020 Water Demand Analysis and Water Conservation Measure Update for projecting water use from 2025 through 2040 but relies on billing data (as described previously) for reporting its 2020 actual demand. A summary of the analysis methodology is given below, along with the resulting projected demands, as presented in the Town's 2020 UWMP.

Methodology

Future water demands for the Town have been estimated by:

1. Applying an estimated growth rate to accounts within each water use sector based on projected population and employment growth rates,
2. Identifying known planned developments within the Town to verify that account growth projections consider all anticipated growth,
3. Evaluating and selecting water demand factors for each water use sector based on review of recent average per account water use representing three scenarios,
4. Estimating future passive savings using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (AWE Tool), and
5. Calculating estimated future water demand that incorporates the anticipated account growth, water demand factors, and estimated future passive water savings.

This methodology is consistent with California Water Code § 10631(d)(4)(A) which requires that "Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the bases for demand projections were developed in close coordination with the Town and reflect a land-use based approach consistent with the Town's community planning. Demand projections include estimated passive water savings (the natural replacement of older devices and appliances with high efficiency) but do not include savings from future active water conservation programs.

Planned Water Use for Current Year Considering Subsequent Dry Year

California Water Code Section 10632(a)(2)(B)(ii) requires the Annual Assessment to determine "current year available supply, considering hydrological and regulatory conditions in the current year and one dry year." The Annual Assessment will include two separate estimates of the Town's annual water supply and unconstrained demand using: 1) current year conditions, and 2) assumed dry year conditions.

The "single dry year" is characterized as a year in which conditions reflect the worst actual historical single dry year. The modeling conducted by Sonoma Water indicates that the year best representing average water supply conditions is 2002, single-dry year conditions is 1977, and multiple-dry year conditions is 1987-1991. The Town assumes the same base years and projections as used in the Sonoma Water 2020 UWMP and modeling efforts as presented in Section 6 of the Town's 2020 UWMP.

Infrastructure Considerations

The Annual Assessment will include consideration of any infrastructure issues that may pertain to near-term water supply reliability, including repairs, construction, and environmental mitigation measures that may temporarily constrain water supply capabilities, as well as any new projects that may add to system capacity. Expansion of recycled water use could offset future potable water demands. There are a variety of potential recycled water expansion projects under consideration, as presented in the Town's 2020 Recycled Water Storage and Use Study. These include the following:

- **Recycled Water Market Assessment.** The Town is planning to conduct a recycled water market assessment to first understand the recent reductions in recycled water use among the existing customer base and second, assess the potential to capture additional non-potable demands in its service area or through transfers to Sonoma Water and the contractor's service areas. The findings of the assessment

will determine the implementation of other potential projects depending on recycled water demand, and the assessment will be completed in 2021.

- **Joint Storage Agreement.** The Town has developed an interagency agreement with Sonoma Water regarding joint recycled water management. The agreement for joint recycled water management addresses operational, regulatory, and legal opportunities and constraints. The Town has requested that the North Coast Regional Water Quality Control Board approve the Joint Use Program.
- **Advance Plans for New Storage.** To provide additional storage of recycled water, allow for operational flexibility and increase recycled water use, new storage is planned, either at a previously evaluated site on Eastside Road or through collaboration with Sonoma Water and the City of Santa Rosa to develop a regional storage project sited elsewhere.
- **Connect Additional Customers and Discretionary Lands.** Consistent with recommendations from the recycled water market assessment, the Town should coordinate with customers to connect them to the recycled water system and secure additional District-owned irrigation lands, if needed. This is considered to be a long-term plan implemented beyond 2030.

In addition to the plans to expand recycled water use, the Town is budgeting to add two more water supplies for water supply resiliency during drought or catastrophic events. A summary of future water projects follows:

- **Esposti Potable Well Water Treatment.** The existing water supply Potable Well at Esposti Park is not available for potable use due to water quality issues. The well is currently used for irrigation of Esposti Park only. The Town has evaluated treatment options (GHD, 2017a) and, depending on the results from the North Windsor well studies, may move forward with design and construction of wellhead treatment for the Esposti Potable Well.
- **Northern Windsor Supply Well.** A second off-river production well is budgeted in the CIP for use as an additional supply of potable water. This new (potential) well is referred to as the North Windsor well. The project consists of new well siting and construction and is expected to be implemented between 2023 and 2025, depending on water quality testing.

The order of completion for the Esposti and North Windsor Well projects are dependent on water quality test results for a future well in North Windsor. If water quality test results indicate lower overall costs for development of a production well at the North Windsor site as compared to the Esposti site, then North Windsor could start in fiscal year 2021 to 2022, and Esposti would be developed thereafter.

Other Factors

For the Annual Assessment, any known issues related to water quality would be considered for their potential effects on water supply reliability (i.e., fire).

- **Water Quality**. There are no water quality constraints on the Town's Russian River Well Field. The existing Esposti Irrigation Well contains arsenic and manganese above the maximum containment levels allowed in California drinking water. The Town is pursuing treatment of groundwater from that well for arsenic and manganese removal.
- **Climate Change**. The Town currently depends almost wholly on surface water supplies obtained directly or indirectly from the Russian River. The Russian River is a rain-fed river, depending on the timing and magnitude of precipitation events for its flows (unlike snow-fed rivers that rely on Sierra snow melt for seasonal flows). As such, flows in the Russian River, and subsequently the ability to divert those flows, may be affected in the future by climate change impacts on precipitation which are generally believed to result in shorter periods of more intense flows. Sonoma Water is a partner in the management of two reservoirs on the Russian River for both flood control and water supply: Lake Mendocino and Lake Sonoma. Sonoma Water determines the amount of water to be released from each reservoir when the lake levels are in the water supply pools. The U.S. Army Corps of Engineers (USACE) determines the

amount of water to be released when the lake levels are above the water supply pools and in the flood control pools.

- To address anticipated climate and regulatory changes impacting its surface water supplies and to ensure a reliable water supply for its residents, the Town is actively participating in or planning several programs, including:
    - Participating in the development of a Groundwater Sustainability Plan to protect the long-term usability of the underlying Santa Rosa Plain Groundwater Basin.
    - Planning the construction of two off-river groundwater production wells to supplement water supplies.
    - Participating in a regional reliability study to identify ways to respond to emergencies and in other regional efforts to ensure supply reliability under a variety of conditions.
- **Regulatory Constraints** In addition to climate change, the Town can experience "regulatory droughts." A regulatory drought occurs when there is project water in the reservoir, but mandatory minimum stream inflow requirements must be met, preventing diversions off river that could cause ecological harm. The two supply reservoirs on the Russian River (Lake Mendocino and Lake Sonoma) are regulated by USACE when lake levels are above water supply and in the flood control pools. Otherwise, Sonoma Water determines the amount of water to be released from each reservoir when the lake levels are in the water supply pools. Therefore, surface water supplies to the Town can be limited by ecological regulations, reservoir operations, and rule curves. However, Forecast-Informed Reservoir Operations (FIRO) are being considered for implementation on Lake Mendocino which could increase flexibility of reservoir operations, potentially supplementing water supplies and reducing flood risk.

3.3 Six Standard Water Shortage Levels

Per California Water Code Section 10632 (a)(3)(A), the Town must include the six standard water shortage levels that represent shortages from the normal reliability as determined in the Annual Assessment. The shortage levels have been standardized to provide a consistent regional and statewide approach to conveying the relative severity of water supply shortage conditions. The Town has elected for consistency to align with the six levels of shortage presented in the Sonoma Water WSCP. This is an outgrowth of the severe statewide drought of 2012-2016, and the widely recognized public communication and state policy uncertainty associated with the many different local definitions of water shortage Levels.

The six standard Water Shortage Levels that are presented in Table 3-1 (DWR Submittal Table 8-1) correspond to progressively increasing estimated shortage conditions (up to 10%, 20%, 30%, 40%, 50%, and greater than 50% shortage compared to the normal reliability condition) and align with the response actions the Town would implement to meet the severity of the impending shortages. These six levels, with increasing water use reduction targets and water demand reduction actions, are intended to have water use restrictions that are additive. For example, when successive levels of shortage are declared, the restrictions for Level 1 remain in place and Level 2 limitations are added; restrictions for Level 1 and 2 remain in place and Level 3 actions are added; and so on. The table below provides context and a general overview of the progressive Water Shortage Levels. A comprehensive list of actions as provided for each level is presented in Table 3-2 (DWR Submittal Table 8-2) in Section 3.4.1.

Table 3-1. Water Shortage Contingency Plan Levels (DWR Submittal Table 8-1)

Shortage Level	Complete Both	
	Percent Shortage Range[1] *Numerical value as a percent*	Water Shortage Condition (*Narrative description)*
0	0% (Normal)	A Level 0 Water Supply Shortage – Condition exists when the Town notifies its water users that no supply reductions are anticipated in this year. The Town proceeds with planned water efficiency best practices to support consumer demand reduction in line with state mandated requirements and local Windsor goals for water supply reliability. Permanent water waste prohibitions are in place as stipulated in the Town's code including prohibitions of waste of water per Section 12-3-820.
1	Up to 10%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 1 water shortage, or equivalent.
2	11% to 20%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 2 water shortage, or equivalent.
3	21% to 30%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 3 water shortage, or equivalent.
4	31% to 40%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 4 water shortage, or equivalent.
5	41% to 50%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 5 water shortage, or equivalent.
6	>50%	Disruptions to the Town's water delivery system or shortages in the amount of water available for delivery by Sonoma County Water Agency has caused the Town Council to declare a Level 6 water shortage, or equivalent.
[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		
NOTES: The Town will identify Normal Conditions as Level 0. The Town can choose voluntary versus mandatory status in each shortage level.		

3.4 Shortage Response Actions

The Town has defined specific shortage response actions that align with the shortage levels in Tables 3-2 and 3-3. This approach aligns with California Water Code Section 10632 (a)(4) that requires the WSCP to specify shortage response actions that align with the defined shortage levels. These shortage response actions were developed with consideration to the Town's system infrastructure and operations changes, supply augmentation responses, customer classes and water use-specific demand reduction initiatives, and increasingly stringent water use prohibitions.

3.4.1 Demand Reduction

The demand reduction measures that would be implemented to address shortage levels are described in Table 3-2. This table indicates which actions align with specific defined shortage levels and estimates the extent to which each action will reduce the gap between supplies and demands. The estimates of demand reduction are presented as a range of savings to demonstrate an anticipated response from the Town's chosen suite of actions. These demand reductions are expected to deliver the outcomes necessary to meet the requirements of a given shortage level that will receive on-going monitoring. When successive levels of shortage are declared, the actions for Level 1 remain in place and Level 2 limitations are added; restrictions for Level 1 and 2 remain in place and Level 3 actions are added; and so on. This table also identifies the enforcement action, if any, associated with each demand reduction measure.

Table 3-2. Demand Reduction Actions (DWR Submittal Table 8-2)

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only***
0	Other - Prohibit use of potable water for washing hard surfaces	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Washing hard or paved surfaces is prohibited except to alleviate safety or sanitary hazards using a hand held container, hose with an automatic shut off device, or a low-volume high pressure cleaning machine that recycles used water.	No
0	Landscape - Restrict or prohibit runoff from landscape irrigation	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Watering vegetated areas in a manner that causes excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter, or ditch is prohibited.	No

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only***
0	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Existing Town requirements are repairs are to be completed within 72 hours.	No
0	Other	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	All new commercial car wash and laundry facilities must re-circulate the wash water.	Yes
0	Other - Require automatic shut of hoses	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	For vehicle washing	No
0	Other	On-going Long Term-Conservation Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.	Use of water prohibited for single pass evaporative cooling systems for air conditioning in all connections installed after July 18, 2007 unless required for health or safety reasons.	Yes
0	Other water feature or	On-going Long Term-Conservation	All decorative water features must re-circulate water or users must secure a waiver from the Town.	No

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only***
	swimming pool restriction	Savings Measure. Not applicable to Water Shortage Contingency Plan quantifiable savings.		
0	Other - Prohibit use of potable water for construction and dust control	0-1%	Subject to availability, contractors must use recycled water for dust control in new construction.	No
1	Landscape - Limit landscape irrigation to specific times	0-2%	Watering or irrigation of vegetated areas is prohibited between 7 a.m. and 7 p.m. except by use of a hand held device, hose equipped with an automatic shutoff device, or for adjusting or repairing an irrigation system for short periods of time.	Yes
1	Landscape - Other landscape restriction or prohibition	0-1%	Inspect irrigation systems and promptly repair leaks	Yes
1	Landscape - Limit landscape irrigation to specific days	0-10%	Irrigation shall be limited to 4 days per week for turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes
1	Expand Public Information Campaign	1-5%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 1 Shortage condition and requirements)	No
1	Provide Rebates for Turf Replacement	0-1%	Provide Rebates for Turf Replacement	No
1	Other	0-1%	Unauthorized use of hydrants is prohibited. Authorization for use must be obtained from water supplier.	Yes

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only***
2	Increase Water Waste Patrols	0-5%	Increase Water Waste Patrols	Yes
2	Other - Prohibit use of potable water for construction and dust control	0-1%	Subject to availability, contractors must use recycled water for dust control in new construction.	Yes
2	CII - Restaurants may only serve water upon request	0-2%	CII - Restaurants may only serve water upon request	Yes
2	CII - Lodging establishment must offer opt out of linen service	0-2%	Hotel and lodging establishments must message about the drought, including laundering of linens only upon request	Yes
2	Landscape - Limit landscape irrigation to specific days	5-10%	Irrigation shall be limited to 3 days per week turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes
2	Expand Public Information Campaign	5-10%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 2 Shortage condition and requirements)	No
3	Other water feature or swimming pool restriction	0-1%	No filling of new swimming pools, except public pools	No
3	Landscape - Prohibit certain types of landscape irrigation	0-2%	Watering new or newly replaced turf is prohibited	Yes
3	Landscape - Other landscape restriction or prohibition	0-3%	Prohibit watering of new landscape unless new landscape requires less water than replaced landscape	No

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only***
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	0-1%	Car washing is only permitted using a commercial carwash that recirculates water or by high pressure/low volume wash systems.	Yes
3	Other water feature or swimming pool restriction	0-1%	No use of decorative fountains	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	0-3%	Filling or refilling ornamental lakes and ponds is prohibited. Ornamental lakes and ponds that sustain aquatic life of significant value and were actively managed prior to the storage declaration are exempt.	Yes
3	Landscape - Limit landscape irrigation to specific days	5-10%	Irrigation shall be limited to 2 days per week for turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes
3	Landscape - Other landscape restriction or prohibition	0-1%	With the exception of landscapes watered with non-potable water, limit the installation of new landscaping to drought tolerant trees, shrubs and groundcover. Prohibit installation of new turf or hydroseed with the exception of hydroseeding for erosion control on slopes or bare land. Customers may apply for a waiver to irrigate during an establishment period for the installation of new turf or hydroseed.	Yes
3	Expand Public Information Campaign	0-5%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 3 Shortage condition and requirements)	No

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only***
3	Landscape - Prohibit certain types of landscape irrigation	0-1%	Plant containers, trees, shrubs and vegetable gardens shall be watered only by drip irrigation or hand watering.	Yes
4	Other	0-5%	Provide customer allocation. Town to determine appropriate customer allocation based on shortage conditions.	Yes
4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	All customers must fix leaks or faulty sprinklers promptly/within 2 days or stop water flow.	Yes
4	Landscape - Limit landscape irrigation to specific days	5-10%	Irrigation shall be limited to 1 days per week turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.	Yes
4	Landscape - Other landscape restriction or prohibition	0-1%	No new landscape installations or renovations will be permitted unless it is to remove turf and replace with lower-water using landscaping.	Yes
4	Expand Public Information Campaign	5-10%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 4 Shortage condition and requirements)	No
5	Other	0-5%	Provide customer allocation. Town to determine appropriate customer allocation based on shortage conditions.	Yes

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only***
5	Landscape - Other landscape restriction or prohibition	1-3%	Allotment for irrigation of mature trees only	Yes
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	All customers must fix leaks or faulty sprinklers promptly/within 1 day or stop the flow until the repair can be made.	Yes
5	Landscape - Prohibit certain types of landscape irrigation	1-5%	Watering of parks, school grounds, and recreation fields with potable water prohibited, except for rare plant or animal species. Watering of golf course areas with potable water is prohibited. Tree watering may be excluded if allotment is sufficient.	Yes
5	Expand Public Information Campaign	5-10%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 5 Shortage condition and requirements)	No
5	Implement or Modify Drought Rate Structure or Surcharge	0-5%	Drought Rates and Surcharges	Yes
5	Moratorium or Net Zero Demand Increase on New Connections	0-2%	Moratorium or Net Zero Demand Increase on New Connections	Yes
5	Other	0-5%	Other Prohibited Uses: The Town may implement other prohibited water uses as determined by the Town, after notice to customers.	No

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only***
6	Expand Public Information Campaign	5-10+%	Community Outreach and Messaging (Expand Public Information Campaign to communicate Level 6 Shortage condition and requirements). Note the messaging may require more Emergency Response Communication Protocols depending on the type and severity of the emergency (i.e., earthquake with pipeline breakage that requires boil water notifications).	No
6	Landscape - Prohibit all landscape irrigation	0-5%	The Town may shut off or all non-essential water services or restrict flows by reducing pressure. All irrigation with potable water is prohibited. Exceptions are watering of trees and food gardens.	Yes
6	CII - Other CII restriction or prohibition	0-7%	Water for commercial, manufacturing, or processing purposes shall be reduced in volume by 50% or more if necessary for public health and safety purposes.	Yes
6	Other water feature or swimming pool restriction	0-1%	No new permits for pools will be issued.	Yes
6	Other	0-1%	The Town may discontinue service to consumers who willfully violate any water conservation provisions	Yes
6	Other	0-70%	Water use for public health and safety purposes only. Customer rationing may be implemented.	Yes
NOTES: The Town will coordinate with the Sonoma-Marin Saving Water Partnership and Sonoma Water to the extent practical.				

3.4.2 Supply Augmentation

The Town currently has few options for supply augmentation as it is reliant on Russian River water for its potable supply. The supply augmentation actions are described in Table 3-3 (DWR Submittal Table 8-3). These augmentations represent short-term management objectives triggered by Town Plan and do not overlap with the long-term new water supply development or supply reliability enhancement projects.

Table 3-3. Supply Augmentation and Other Actions (DWR Submittal Table 8-3)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? *Include volume units used.*	Additional Explanation or Reference *(optional)*
	Other Actions (describe)	TBD	Emergency interties with other neighboring districts including Sonoma Water and City of Rohnert Park.
	Other Actions (describe)	50-250 AFY	Emergency use of non-potable well for fire. Raw water irrigation well would be redirected for public health and safety use, i.e., fire protection.
NOTES: Existing groundwater well use is subject to permit limitations and available for non-potable uses (i.e., wildfire firefighting protection). The Town and other local jurisdiction's Groundwater Sustainability Plan is under development and will be provided when available. The estimated volume for the raw water well is conditional on further well evaluation.			

3.4.3 Operational Changes

During shortage conditions, operations may be affected by supply augmentation or demand reduction responses. The Town will consider its operational procedures when it completes its Annual Assessment beginning in 2022 or as needed to identify changes that can be implemented to address water shortage on a short-term basis. The Town can alter maintenance cycles, such as system flushing, reduce leak response time, and defer planned construction activities and capital improvement projects to limit or defer planned system outages.

3.4.4 Additional Mandatory Restrictions

California Water Code Section 10632(a)(4)(D) calls for "additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions" to be included among the WSCP's shortage response actions. The Town has identified additional mandatory restrictions in Code, Section 12-3-800 (Appendix D) and may, upon District Board approval, determine additional mandatory measures to be implemented as deemed appropriate under the water shortage conditions.

3.4.5 Emergency Response Plan (Hazard Mitigation Plan)

A catastrophic water shortage would be addressed according to the appropriate water shortage level and response actions. It is likely that a catastrophic shortage would immediately trigger Shortage Level 6. Response actions have been put in place to mitigate a catastrophic shortage. In addition, there are several plans that address catastrophic failures and align with the WSCP, as described in the following sections.

Sonoma Water Emergency Response

Sonoma Water has developed an Emergency Operations Plan (EOP) to guide response to unpredicted catastrophic events that can impact water system infrastructure and delivery. The EOP serves as Sonoma Water's foundational emergency response and recovery document for all levels of emergencies, from minor accidents to major disasters. The EOP describes the situations and incidents that trigger its activation and that of the

Sonoma Water Emergency Operations Center (EOC). The EOP also provides direction and strategies for responding to a major emergency or disaster and includes the following:

- Authorities, policies, and procedures associated with emergency response activities
- EOC activities, including activation and deactivation guidelines
- Multi-agency and multi-jurisdictional coordination, particularly between Sonoma Water, its water contractors, and the Sonoma Operational Area in accordance with the Standardized Emergency Management System and National Incident Management System guidelines
- Incident Command System management and organization and emergency staffing required to assist in mitigating any significant emergency or disaster
- Mutual Aid Agreements and covenants that outline the terms and conditions under which mutual aid assistance will be provided
- Hazard specific action plans and Incident Command System position checklists

Town of Windsor Emergency Response

The Town will refer to its American Water Infrastructure Act Risk and Resilience Assessment and Emergency Response Plan in the event of a catastrophic supply interruption. The District submitted the Risk and Resilience Assessment in June 2021 and is currently preparing the Emergency Response Plan to meet the December 2021 deadline.

Table 3-4. Preparation Actions for a Catastrophe

Possible Catastrophe	Summary of Actions
Earthquake	Shut off isolation valves and above ground use of flexible piping for ruptured mains
Floods	Use of the Aqueduct, Bluebird Facility, and storage tanks while Russian River Well sites are interrupted
Toxic Spills	Use of the Aqueduct, Bluebird Facility, and storage tanks while Russian River Well sites are interrupted
Fire	Storage supplies for fire flows
Power Outage or Grid Failure	Portable and emergency generators available for Town, Russian River Well Field, and Aqueduct facilities
Severe Winter Storms	Portable and emergency generators available for Town, Russian River Well Field, and Aqueduct facilities
Hot Weather	Portable and emergency generators available for Town, Russian River Well Field, and Aqueduct facilities

3.4.6 Seismic Risk Assessment and Mitigation Plan (Earthquakes)

Per California Water Code Section 10632.5, suppliers are required to assess seismic risk to water supplies as part of their WSCP. In addition, the WSCP must include the mitigation plan for seismic risk, i.e., earthquake.

Sonoma Water LHMP

Sonoma Water updated its Local Hazard Mitigation Plan (LHMP)[1] to reduce the system's exposure to natural hazards, including seismic events, and improve reliability. The LHMP was developed in accordance with the federal Disaster Mitigation Act of 2000 (Public Law 106-390) and approved by the Federal Emergency Management Agency (FEMA). The 2018 LHMP identifies the water system facilities' vulnerability to surface fault rupture, ground shaking, liquefaction, and earthquake-induced landslides, as well as several other hazards. Key facilities evaluated in the plan include the Russian River system, dams and diversion facilities, aqueducts, storage tanks, pump stations, treatment facilities, groundwater wells, and power facilities. The LHMP also identifies specific mitigation actions to increase reliability of water supply to the public during and after a natural disaster.

The Town is also collaborating with Sonoma Water and other water contractors in a Regional Water Supply Resiliency Study. The study will assist in identifying potential opportunities to optimize the management of regional resources to mitigate system vulnerabilities, including associated seismic and drought risks, through the shared resources and coordinated operations of these regional water supply partners across Sonoma Water's service area. Supporting that effort is a separate study, also underway, that is evaluating potential service interruption durations that could occur following a major earthquake. The study will help establish reasonable goals and strategies for restoration of service should significant damage occur to the water supply facilities. The study also will provide recommendations for further enhancement of Sonoma Water's current LHMP to mitigate such risks.

Town's Participation in Sonoma County LHMP

The Sonoma County 2016 LHMP assesses the County's vulnerabilities to various hazards and presents a mitigation strategy, including goals, objectives, and actions that the County will strive to implement over the next five years. Mitigation actions are intended to reduce the disruption or loss of life, property and economy that might result from a natural disaster. The mitigation actions also aim to lower the costs that multiple disasters have begun to impose on the federal budget. It differs from an emergency response plan in that it is proactive rather than reactive. The main goal of the Sonoma County LHMP is to prevent unnecessary exposure of people and property to risks of damage or injury from earthquakes, landslides, wildland fires and floods (GHD, 2017b).

The Town was included in the 2016 Sonoma County LHMP Assessment and is participating in the update of the Assessment,[2] scheduled to be completed in August of 2022.

Town of Windsor LHMP

The Town has an LHMP, Town of Windsor Local Hazard Mitigation Plan (February 2017),[3] that establishes the Town's strategy to reduce the impacts of natural hazards, including earthquakes. Different types of hazards cause different impacts, occur in different locations, and happen with varying degrees of severity. However, all have the potential to severely harm human health and safety, private and public property, ecosystems, and services. Like many other communities, Windsor could face substantial damage, injury or loss of life,

[1] https://www.sonomawater.org/secureourwater

[2] https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Hazard-Mitigation/

[3] Town of Windsor. (2017). *Town of Windsor Local Hazard Mitigation Plan*. https://www.townofwindsor.com/DocumentCenter/View/19401/LHMP-Public-Review-draft-021617-part-1?bidId=

interruptions to critical services, and other major challenges due to natural hazard impacts. The LHMP addresses four phases of emergency management:

1. **Response:** Taking action to save lives, limit injury, and prevent further damage of infrastructure in a disaster.
2. **Recovery:** Returning the community to normal conditions directly following a disaster.
3. **Mitigation:** Establishing strategies to prevent future disasters and/or to minimize their impacts.
4. **Preparedness:** Preparing to save lives and critical infrastructure and to help response and rescue operations in and directly following a disaster.

The Town began a Risk and Resilience Assessment in 2021 as required by the America's Water Infrastructure Act of 2018. This Assessment was completed June 2021. A qualitative assessment was performed, which involved creating a list of Town water system assets and performing a criticality analysis. Critical assets were defined as those, which if lost, could result in negative health impacts or service outages. Each critical asset received a consequence score for each natural hazard (including seismic hazards) and malevolent threat scenario based on an estimate of the worst-reasonable-case scenario for an event. The scores for each asset-threat pair were classified as "critical", "mid-priority", or "low priority." The purpose of assigning these scores was to screen the list of critical assets and focus assessment resources on those assets which would be most susceptible to natural hazards, malevolent acts, and dependency/proximity threats. The Risk and Resilience Assessment summarizes the outcome of the qualitative risk assessment.

3.4.7 Shortage Response Action Effectiveness

For each specific Shortage Response Action identified in the plan, the WSCP also estimates the extent to which that action will reduce the gap between supplies and demands identified in Table 3.2 (DWR Submittal Table 8-2). To the extent feasible, the Town has estimated percentage savings for the chosen suite of shortage response actions, which are expected to deliver the necessary outcomes to meet given shortage level requirements.

All of the Town's water customers are metered and billed volumetrically. The Town uses metering data to track water usage per individual customer, per customer category, and on a gross level. The Town can track actual water use reductions by tracking metering data.

Table 3-5. Monitoring for Water Shortage Demand Reductions

Mechanisms for Determining Actual Reductions	Data Used for Analysis of Actual Reductions
Continuous system data collection	Normal water usage
Review of water use data	Percent reduction based on projected demand normalized for weather and growth
Review of production data	Percent reduction based on historical usage normalized for growth and weather
Increased meter reading	Regular water usage information during shortage
Agency supply meters	Volume of delivered water

3.5 Communication Protocols

Timely and effective communication is a key element of the WSCP implementation. In the context of water shortage response, the purpose may be an immediate emergency water shortage situation, such as may result from an earthquake, or a longer-term emergency shortage condition, such as a drought. In an immediate emergency, the Town will activate the communication protocol detailed in the Emergency Response Plan. In a

longer-term emergency water shortage situation, the Town will implement the communication protocols described in Appendix C.

Per California Water Code Section 10632 (a)(5), the Town has established communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments regarding any current or predicted shortages as determined by the Annual Assessment described pursuant to Section 10632.1; any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1; and any other relevant communications.

Communication protocols for longer-term water shortage conditions are focused on communicating the water shortage contingency planning actions that can be derived from the results of the Annual Assessment, and it would likely trigger based upon the decision-making process in Section 3.2.1. Prior to water shortage level declaration, the Town will pursue outreach to inform customers of water shortage levels and definitions, targeted water savings for each shortage level, guidelines that customers are to follow during each shortage level, and sources of current information on the Town's supply and demand response status.

The type and degree of communication will vary with each shortage level in order to inform stakeholders of the current water shortage level status and associated shortage response actions, as defined in Section 3.4.1 and Table 3.2 (DWR Submittal Table 8-2). Predefined communication objectives and tools will ensure the Town's ability to message necessary events and information for compliance with shortage response actions. These communication objectives and tools are summarized in Appendix C.

The Environmental Program Manager for Water Conservation will lead public information and outreach efforts in close coordination with Sonoma Water. The Town will share information and provide guidance to its customers as well as monitor the customer response and attitude toward both voluntary and mandatory customer response guidelines. The Town's customer outreach is required to successfully achieve targeted water savings during each shortage level.

3.6 Compliance and Enforcement

Per California Water Code Section 10632 (a)(6), the Town has defined customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions. Communication procedures to ensure customer compliance are described in Section 3.5 and customer enforcement, appeal, and exemption procedures are defined in the Town's Municipal Code, Section 12-3-800 (see Appendix D of this WSCP).

3.7 Legal Authorities

Per California Water Code Section 10632 (a)(7)(A), the District has provided a description of the legal authorities that empower the District to implement and enforce its shortage response in the Town's Municipal Code, Section 12-3-800.

Per California Water Code Section 10632 (a)(7) (B), the Town Council shall declare a water shortage emergency condition to prevail within the area served by Sonoma Water, as the Town's wholesale water supplier, whenever the Town finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection, as defined in Water Code Section 350.

Per California Water Code Section 10632 (a)(7)(C), the District shall coordinate with the Town and Sonoma County for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558). Table 3-6 identifies the contacts for all developed coordination protocols; these agency contacts are expected to facilitate compliance with this section of the California Water Code in the event of a local emergency as defined in subpart (c) of Government Code Section 8558.

Table 3-6. Town Contacts and Coordination Protocols

Agency	Contact
Sonoma Water	Jay Jasperse, Chief Engineer Jay.Jasperse@scwa.ca.gov 404 Aviation Blvd. Santa Rosa, CA 95403
City of Healdsburg	David Mickaelian, City Manager dmickaelian@ci.healdsburg.ca.us 401 Grove Street Healdsburg, CA 95448
Windsor Chamber of Commerce	Christine Tevini 9001 Windsor Road Windsor, CA 95492
North Coast Water Quality Control Board	Matt St. John, Executive Director matt.stjohn@waterboards.ca.gov 5550 Skyland Blvd, Suite A Santa Rosa, CA 95403
Lytton Rancheria of California	Marjorie Mejia, Chairperson margiemejia@aol.com 437 Aviation Blvd. Santa Rosa, CA 95403
Lytton Rancheria of California	Brenda Tomaras btomaras@mtowlaw.com 10755-F Scripps Poway Pkwy, #281 San Diego, CA 92131
Santa Rosa Subregional Reclamation System	Jennifer Burke Director, Santa Rosa Water dguhin@srcity.org 69 Stony Circle Santa Rosa, CA 95401
Public	Public Hearing Notification, see Appendix A
Windsor Times	http://www.windsortimes.com 707-433-4451
Airport Area	Cecile Condon Sonoma County PRMD Cecily.Condon@sonoma-county.org
Town of Windsor Council	Ken MacNab Town of Windsor
Sonoma-Marin Saving Water Partnership	Drew McIntyre North Marin Water District dmacintyre@nmwd.com

3.8 Financial Consequences of WSCP

The water demand reduction actions, designed to address a range of water shortage conditions, have the potential to impact the Town's revenues and expenditures. Per California Water Code Section 10632(a)(8), the Town must include a description of the overall anticipated financial consequences to the Town of implementing the WSCP. This description must include potential reductions in revenue and increased expenses associated with implementation of the shortage response actions. This should be coupled with an identification of the anticipated mitigation actions needed to address these financial impacts.

The Town previously determined there is a financial impact to reductions in water sales in response to a water shortage. Water shortage mitigation actions will impact revenues and require additional costs for water shortage response activities, especially in cases of long-term drought conditions, such as increased staff costs for tracking, reporting, enforcement and communications. In order to address these revenue impacts, the Town commissioned a rate study by The Reed Group, Inc. and Hildebrand Consulting that recommended implementation of a three-part approach to minimize revenue shortfalls during a shortage (Reed Group and Hildebrand Consulting, 2020). The Town's fund and reserve structure for each utility has three primary elements: an Operating Fund, a Rate Stabilization Fund, and a Capital Fund.

The Operating Fund is the primary fund for each utility. Most utility revenues, including user rates and other service revenues, flow into this fund. All operating and maintenance expenditures, including administrative costs and debt service payment obligations, are paid out of the Operating Fund. Embedded within the water and water reclamation Operating Funds is an ***Operating Reserve***. The Town's financial management policies state that "[t]he Town's enterprise funds will strive to maintain a minimum balance of retained earnings of at least 25% of operating expenses. The primary purpose of this balance is to set aside funds to maintain cash balances sufficient to pay expenses as needed and to provide for unanticipated or emergency expenditures that could not be reasonably foreseen during the preparation of the budget." The financial plan model maintains the minimum Operating Reserves throughout the planning period and treats it as a "minimum" reserve that is never planned to be expended so that it is always available in the event of unforeseen circumstances such as water shortage.

This Town action included the establishment of and reliance on a Water Rate Stabilization Fund, combined with the use of temporary water shortage rate surcharges to generate additional revenue during the mandatory reduction levels of the WSCP, and lastly, a curtailment of contributions to the Replacement and Rehabilitation Fund during the most severe shortages. Although the use of water shortage surcharges would not be expected to generate sufficient revenue to completely offset the use of Rate Stabilization Funds, it would, nonetheless, create an additional conservation incentive for water customers to meet the reduction goals of this WSCP.

The Capital Fund is used to track capacity fee revenues and expenditures related to the expansion projects of the capital improvement program. Funds are used to meet statutory requirements for accounting for capacity fee revenues and to help ensure that costs associated with accommodating new growth are paid for by new development.

Table 3-7. Revenue Mitigation Measures in Times of Shortage

Impact	Mitigation Measure	Summary of Effects
Revenue Impact	Rate Adjustment	Offset loss in revenue
Revenue Impact	Use of financial reserves	Offset loss in revenue
Expenditure Impacts	Reconnection fees	Support Water Conservation Programs
Expenditure Impacts	Excessive use charges	Support Water Conservation Programs
Expenditure Impacts	Construction offset programs	Support Water Conservation Programs

During a shortage emergency, retail suppliers, including the Town are required to prohibit or discourage excessive water use and to report the financial consequences of these actions. Per California Water Code Section

10632(a)(8)(C), the Town must describe and report on the cost of compliance with California Water Code Chapter 3.3: Excessive Residential Water Use During Drought.

3.9 Monitoring and Reporting

Monitoring and reporting key water use metrics is fundamental to water supply planning and management. Monitoring is also essential in times of water shortage to ensure that the response actions are achieving their intended water use reduction purposes, or if improvements or new actions need to be considered (see Section 3.10). Monitoring for customer compliance tracking is also useful in enforcement actions.

Per California Water Code Section 10632(a)(9), the Town is required to provide a description of the monitoring and reporting requirements and procedures that have been implemented to ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

Under normal water supply conditions, potable water production figures are recorded daily. Weekly and/or monthly reports for production and consumption are prepared and monitored. This data will be used to measure the effectiveness of any water shortage contingency level that may be implemented.

In addition, the Town participates in monthly water contractor Water Advisory Committee/Technical Advisory Panel (WAC/TAC) meetings with Sonoma Water and other contractors to monitor and discuss monthly water allocation charts. This enables the Town to be aware of imported water use on a timely basis as a result of specific actions taken responding to the Town's Water Shortage Contingency Plan. As necessary, the Town will adhere to the Sonoma Water WSCP required actions of its retail urban water suppliers (Sonoma Water, 2021b).

3.10 WSCP Refinement Procedures

Per California Water Code Section 10632 (a)(10), the Town must provide reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.

The Town's WSCP is prepared and implemented as an adaptive management plan. The Town will use the monitoring and reporting process defined in Section 3.9 to refine the WSCP. In addition, if certain procedural refinements or new actions are identified, the Town will evaluate their effectiveness, incorporate them into the WSCP, and implement them quickly at the appropriate water shortage level.

The WSCP will be periodically re-evaluated to ensure that its shortage risk tolerance is adequate and that the shortage response actions are effective and up-to-date based on lessons learned from implementing the WSCP. The WSCP will be revised and updated during the UWMP update cycle to incorporate new information. For example, new supply augmentation actions will be added to Table 3.3 (DWR Submittal Table 8.3) and/or demand reduction actions will be removed from Table 3.2 (DWR Submittal Table 8.2) that are no longer applicable (i.e., due to program expiration, etc.). In addition, as the Town's policies for land use and permitting approval updates occur, the WSCP will be reviewed for consistency as needed.

In the course of preparing the Annual Assessment each year, Town staff will routinely consider the functionality of the overall WSCP and will recommend modifications as needed. If revisions to the WSCP are warranted before the next UWMP is updated, the WSCP will be updated outside of the UWMP update cycle.

3.11 Special Water Feature Distinction

Per California Water Code Section 10632 (b), the Town has defined water features as those that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, and are separate from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code, in the Town's Municipal Code, Section 12-3-800.

3.12 Plan Adoption, Submittal, and Availability

Per California Water Code Section 10632 (a)(c), the Town provided notice of the availability of the Draft 2020 UWMP and Draft 2020 WSCP and Notice of the Public Hearing to consider adoption of the WSCP. The public review drafts of the 2020 UWMP and the 2020 WSCP were posted prominently on the Town website[4] on July 6, 2021, more than 14 days in advance of the public hearing on July 21, 2021. Public hearing notifications were published in local newspapers on July 1 and 8, 2021. A copy of the published Notice of Public Hearing is included in Appendix A.

The Town held the public hearing for the Draft 2020 UWMP and Draft 2020 WSCP on July 21, 2021, at the Town Council/District Board meeting. At this meeting, the Town Council/Board reviewed and approved the 2020 UWMP and the 2020 WSCP after the public hearing. See Appendix B for the adoption resolution approving the WSCP.

By July 31, 2021, the Town's adopted 2020 UWMP and 2020 WSCP were filed with DWR, the California State Library, the Town Hall office, and the Public Works office. The Town made the WSCP available for public review on its website no later than 30 days after filing with DWR.

Based on DWR's review of the WSCP, the Town will make any amendments in its adopted 2020 WSCP as required and directed by DWR. If the Town revises its 2020 WSCP after the 2020 UWMP is approved by DWR, then an electronic copy of the revised WSCP will be submitted to DWR within 30 days of its adoption.

[4] https://www.townofwindsor.com/

4 REFERENCES

All links below were accessed in June 2021.

California State Legislature. (1983). Water Code Section 10632.1. http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=10632.1&lawCode=WAT

Ibid. (1983). Water Code Section 10632.5. http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=10632.5&lawCode=WAT

County of Sonoma. Hazard Mitigation Plan web page. https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Hazard-Mitigation/

EKI. (2020). *Town of Windsor 2020 Water Demand Analysis and Water Conservation Measure Update*.

GHD. (2017a). *Town of Windsor and Windsor Water District Esposti Well Supply, Redevelopment, Pumping Test, and Treatment Feasibility Study.*

Ibid. (2017b). *Sonoma County Operational Area Hazard Mitigation Plan*. https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Hazard-Mitigation/

The Reed Group, Inc. and Hildebrand Consulting. (2020). *Town of Windsor and Windsor Water District Water and Wastewater Financial Plans and Rate Update Study*, Final Report. https://www.townofwindsor.com/DocumentCenter/View/24617/2020-Water-and-Water-Reclamation-Financial-Plans--Rate-Update-Study-

Winzler & Kelly. (2007). *Draft Technical Memorandum No. 1 Town of Windsor – Groundwater Well Siting*.

Sonoma Water. (2021a). *2020 Urban Water Management Plan*. https://www.sonomawater.org/uwmp

Ibid. (2021b). *2020 Water Shortage Contingency Plan*.

Ibid. (2018). *Sonoma Water Local Hazard Mitigation Plan*. https://www.sonomawater.org/secureourwater

Town of Windsor. (2021) American Water Infrastructure Act Risk and Resilience Assessment and Emergency Response Plan

Ibid. (2018). *2040 General Plan.*

Ibid. Town of Windsor. (2017). *Town of Windsor Local Hazard Mitigation Plan*. https://www.townofwindsor.com/DocumentCenter/View/19401/LHMP-Public-Review-draft-021617-part-1?bidId=

Woodard & Curran. (2021). *2020 Urban Water Management Plan*, pending completion July 2021.

Ibid. (2019). *Water Master Plan 2019 Update.* Town of Windsor. https://windsor-ca.granicus.com/MetaViewer.php?view_id=2&event_id=1425&meta_id=66374

APPENDIX A – PUBLIC NOTICES (PENDING)

APPENDIX B – RESOLUTION OF ADOPTION (PENDING)

APPENDIX C – COMMUNICATION PROCEDURES

Public communication is an ongoing activity where the purpose, audience, message, tools, and channels may change at any given moment. In the context of water shortage response, the purpose may be an immediate water shortage situation, such as may result from an earthquake or a longer-term condition like a drought. In an immediate water shortage emergency, the Town will activate the communication protocol detailed in the Town's American Water Infrastructure Act Risk and Resilience Assessment and Emergency Response Plan (ERP). In a longer-term water shortage situation, the Town will implement the procedures identified in this Communication Plan.

Timely and effective communication is a key element of the WSCP implementation. Per Water Code Section 10632 (a)(5), the Town has established communication protocols and procedures to inform stakeholders. Regarding any current or predicted shortages as determined by the annual water supply and demand assessment pursuant to Section 10632.1, Town is beholden to communicate any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment pursuant to Section 10632.1, and any other relevant communications with Town customers, Sonoma Water, neighboring contractors and affected partner organizations as appropriate to the Town's declared Water Shortage Level (as defined in Section 3.3 and Table 3-1). To the extent practical, the Town will closely collaborate with the Sonoma-Marin Saving Water Partnership[5].

C.1 Emergency Response Plan Communication

The ERP defines the actions to be taken by Town staff to reduce the loss of water and wastewater infrastructure, to respond effectively to a disaster, and to coordinate recovery operations in the aftermath of any emergency involving extensive damage to local and regional water and wastewater utilities. The ERP includes activation notification protocols that will be used to contact partner agencies to inform them of the situation, activation status of the ERP, known damage or impacts, or resource needs. The ERP is a standalone document that is reviewed annually and updated every five years. Refer to the ERP for full details.

C.2 Town Water Shortage Communication Plan

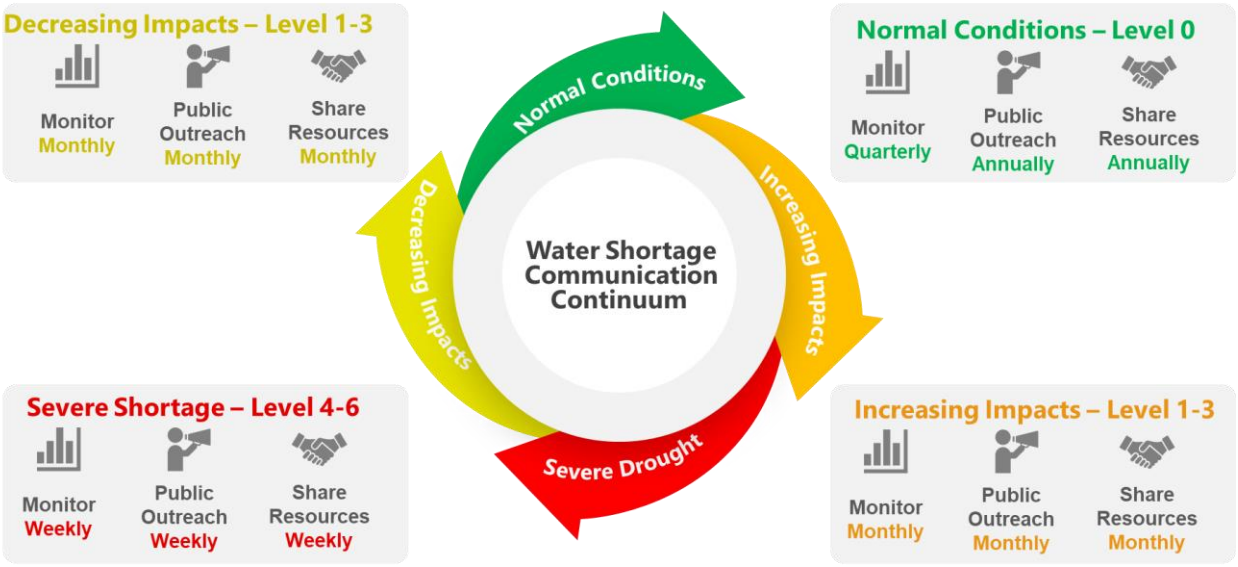
The Town's Communication Plan serves as the baseline understanding for how the Town will provide information and the overall value of water and need for water efficiency to its various stakeholders, partners, and employees during normal conditions, given water efficiency is an everyday goal for water supply reliability. In times of water shortage, this baseline Communications Plan can be enhanced and adapted for the purposes of becoming a Water Shortage Communication Plan. The Town's Water Division continuously works to elevate public awareness and participation in water efficiency so that in the event of a water shortage, the community is aware of the importance of response actions and can be an active participant in Town goals. The Water Shortage Communications Plan will provide transparent, reliable, and accurate information to the public and collaborating partner organizations by identifying goals and objectives for each declared shortage level and outlining the appropriate interface tools and implementation schedule for enhanced communications due to the shortage conditions.

C.2.1 Goals & Objectives

The goal of the Town's Water Shortage Communication Plan is to create a local awareness of water shortage conditions and to encourage water efficiency from all water customers. The Water Shortage Communication Plan objectives further refine the focus of the program goal to achieve a desired outcome at the declared shortage level (Table 3-1). As a water shortage condition escalates, the objectives of the Communication Plan

[5] More information on the Sonoma-Marin Saving Water Partnership activities is available online at: https://www.savingwaterpartnership.org/ (last accessed June 2021).

also escalate to ensure progress toward water supply reliability. The defined objectives for each Water Shortage level will determine the information that is communicated at each level.



C.2.2 Target Audiences

The Town reviewed its water demand and customer class profile to develop a communication plan that will be the most effective within these parameters. Based on 2020 demands, single-family residential customers used 60% of potable water volume, multi-family residential customers used 4%, commercial customers used 12%, industrial customers used 3%, irrigation accounts used 13%, and water system operations used 8%.

By understanding the local customer and water use profile, the Town can implement a Water Shortage Communication Plan that leverages the appropriate communications tools to reach the target audience most effectively during a water shortage.

Internal and External Stakeholders

The Town has further refined its stakeholders and customer categories to identify the following target audiences for communication:

- Town staff
- Business owners
- Local Industries
- Elected officials and staff
- Environmental/public interest groups
- General public

Communications Interfaces and Tools

To engage water customers, the Town will utilize a comprehensive set of communication interface options and tools that include the following:

- Website information
- Social media outreach
- Publications and handouts
- Water bill pay portal communication (WaterSmart)
- Presence at local events
- Public service announcements during Council meetings

- Lawn signs in parks and public spaces
- Electronic board messaging
- Bill inserts

C.2.3 Communication Tactics and Implementation Schedule

The Town understands its responsibility to be transparent, accountable, have a positive impact on the community, and provide actionable guidance in times of water shortage. Below is a description of the Water Shortage Communication Plan tactics. These tactics will be implemented according to the schedule and objectives defined in Table C-1.

This Water Shortage Communication Plan is designed to have a standard set of tactics that systematically align to the current Water Shortage Level. For example, information that may be educational during Shortage Level 0 will shift to specific status information and shortage level response action requirements, as defined in Section 3.4.1 of this WSCP and Table 3-2 (DWR Submittal Table 8-2), as water shortage levels increase from 1 to 6. In Shortage Level 0, shortage communication will include a general overview of water efficiency and water shortage levels so that, in the event of a water shortage, the understanding and response requirements will be familiar. As the Water Shortage Levels increase, messaging will align with specific shortage level response requirements and objectives.

Website

- Town Website: Provide water efficiency information and resources including water shortage level status which is regularly updated.

Social Media

- Facebook/Nextdoor/Instagram: Post water efficiency information and shortage level status on the Town's Facebook page. This may include unique content or reposting of regional messages and images.

Digital and Print Media

- Flyers/Signage/Brochures: Provide informational materials on water efficiency actions, local/regional water resource awareness, and programs offered.

Media Relations

- Coordinate with Sonoma Water and Sonoma-Marin Saving Water Partnership on media outreach.

Community Outreach

- Public Events: Promote water efficiency and awareness at local events such as parades, festivals, farmers market, community organizations, and other events, or at events targeted specifically toward drought awareness.
- Promotional giveaways (i.e., efficiency showerheads, shower timers, etc.) promoting water efficiency and response.

Educational Outreach

- Residential Water Efficiency Educational Classes: As an individual agency or as a regional partner, provide educational classes to community on topics such as finding and fixing leaks, irrigation program scheduling, waterwise vegetation, etc.
- Non-residential Water Efficiency Training Classes/Programs: Provide training programs to local irrigation and cooling tower service technicians on water efficient practices and water shortage level requirements.

Town Water Efficiency Programs

- Rebate/Incentive Programs: Promote regional rebate and incentive programs for local water users. Messaging frequency increases as the shortage levels increase.

Direct Customer Communication

- Billing Inserts: Include billing inserts in water utility bills that contain water shortage level status and response actions.
- Water Use Notifications: Include a comparison of actual water use and information regarding penalties.
- Neighborhood Canvasing: Town staff and/or representatives to canvas neighborhoods to educate residents of water shortage status and response action requirements.

Partnerships/Regional Initiatives

- Department of Water Resources and EPA WaterSense: Utilize state messaging programs and resources to communicate with local water users.
- Utilize regional messaging programs and resources to communicate with local water users.
- Coordinate messaging with other water contractors and public partnerships.

C.2.4 Monitor, Evaluate, and Amend

The effectiveness of the Town's Water Shortage Communication Plan depends on a large variety of factors including technological advancements or changes, the rise and fall of audience engagement, current news or media concentration, political changes in leadership and focus, and the weather. The Water Shortage Communication Plan will be evaluated for effectiveness and updated accordingly based on available metrics and stakeholder feedback and adjusted as necessary to assist with meeting the Town's declared Water Shortage Level.

Table C-1. Water Shortage Communication Plan Implementation Schedule

Water Shortage Level	0	1	2	3	4	5	6
Goal	Create an awareness of water shortage level status and encourage water efficiency from all citizens.						
Objective	Permanent water waste prohibitions, water awareness	Compliance with response actions, 10% reduction in water use	Compliance with response actions, 20% reduction in water use	Compliance with response actions, 30% reduction in water use	Compliance with response actions, 40% reduction in water use	Compliance with response actions, 50% reduction in water use	Compliance with response actions, essential water use only
Outreach Strategies	1) City Website 2) Written and Print Media 3) Social Media 4) Community Outreach 5) Educational Outreach		6) Direct Communication with High Water Users 7) Communication with Commercial/Industrial Water Users 8) City Water Efficiency Programs 9) Water Use Communications 10) Partnerships/Regional Initiatives				
Tactics							
Website							
City Website	x	x	x	x	x	x	X
Water Shortage Indicator		x	x	x	x	x	x
Social Media							
Facebook	x	x	x	x	x	x	X
Nextdoor		x	x	x	x	x	x
Digital and Print Media							
Flyers/Signage/Brochures	x	x	x	x	x	x	x
Media Relations							
News Stories/News Releases/Newsletters							

Water Shortage Level	0	1	2	3	4	5	6
Community Outreach							
Public Events	x	x	x	x	x	x	X
Promotional Giveaways	x	x	x	x	x	x	X
Educational Outreach							
School Programs					x	x	X
Residential Water Efficiency Educational Classes	x	x	x	x	x	x	X
Town Water Efficiency Programs							
Rebate/Incentive Programs	x	x	x	x	x	x	X
Turf Removal	x	x	x	x	x	x	X
Water Surveys	x	x	x	x	x	x	X
California Friendly Landscaping Classes	x	x	x	x	x	x	X
Direct Customer Communication							
Billing Inserts			x	x	x	x	X
Water Use Notifications	x	x	x	x	x	x	X
Neighborhood Canvasing			x	x	x	X	X
Partnerships/Regional Initiatives	x	x	x	x	x	x	X
Message Frequency	Ongoing, regular messaging	Frequency escalates depending on water shortage level and/or financial budget.					

APPENDIX D – REFERENCE TO CURRENT TOWN'S MUNICIPAL CODE SECTION 12-3-800

Below is the weblink to the current ordinance (last accessed July 2021):

Town's Municipal Code, Section 12-3-800, Article 8.

https://library.municode.com/ca/windsor/codes/code_of_ordinances?nodeId=TITXIIWIWADI_CH3WA_ART8COWASU

APPENDIX I – WATER WASTE ORDINANCE

ORDINANCE NO. 2000-129

AN ORDINANCE OF THE TOWN OF WINDSOR REVISING REGULATIONS AND RESTRICTIONS ON WATER USE

The Town Council of the Town of Windsor does hereby ordain as follows:

SECTION I. The Municipal Code of the Town of Windsor is hereby amended by adding Section 12-3-361 to Title XII, Chapter 3, Article 3, to read as follows:

"Section 12-3-361 - Regulations and Restrictions on Water Use:

A. Purpose. The purpose of this Section is to promote water conservation and the efficient use of potable water furnished by the Town of Windsor by eliminating all intentional or unintentional water waste when a reasonable alternative solution is available, and by prohibiting use of equipment which is wasteful. Customers of the Town of Windsor shall comply with the following regulations and restrictions on water use:

B. Nonessential Uses. No customer of the Town of Windsor shall engage in or permit the following nonessential uses of potable water from Town, regardless of whether the purpose is residential, commercial, institutional, industrial, agricultural or other:

1. The washing of sidewalks, walkways, driveways, parking lots and other hard-surfaced areas by direct hosing, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, to wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety.

2. The escape of water through breaks or leaks within the customers plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the Town, is a reasonable time within which to correct such break or leak or, as a minimum, to stop the flow of water from such break or leak.

3. Irrigation in a manner or to an extent which allows excessive run off of water or unreasonable over spray of the areas being watered. Every customer is deemed to have his water system under control at all times, to know the manner and extent of his water use and any run off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner.

4. Washing car, boats, trailers or other vehicles and machinery directly with a hose not equipped with a shutoff nozzle.

5. Water for non-recycling decorative water fountains.

6. Water for single pass evaporative cooling systems for air conditioning in all new installations unless required for health or safety reasons.

7. Water for new non-recirculating conveyor car wash systems.

8. Water for new non-recirculating industrial clothes wash systems.

C. Exempt Water Use. All water use associated with the operation and maintenance of fire suppression equipment or employed by the Town for water quality flushing and sanitation purposes shall be exempt from the provisions of this section. Use of water supplied by private well or from a reclaimed water, grey water or rainwater utilization system is also exempt.

D. Variances. Any customer of the Town may make written application for a variance. Said application shall describe in detail why applicant believes a variance is justified.

1. The Town Manager or his/her designee may grant variances for the use of water otherwise prohibited by this section upon finding and determining that failure to do so would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or public, or that denial would cause an unnecessary and undue hardship on applicant or public, including but not limited to, adverse economic impacts, such as loss of production or jobs.

2. The decision of the Town Manager may be appealed to the Town Council by submitting a written appeal to the Town Clerk within fifteen (15) calendar days of the date of the Town Manager's decision. Upon granting any variance on appeal, the Town Council may impose any conditions it determines to be just and proper. Variances granted by the Town Council shall be prepared in writing and the Town Council may require the variance be recorded at applicant's expense.

E. Enforcement and Fees. Depending on the extent of the water waste the Town may, after written notification to customer and a reasonable time to correct the violation, as solely determined by the Town, take some or all of the following actions. Penalties, fees and charges noted below shall be established by resolution of the Town.

1. Written notice to the customer of the waste water violation including a specified period of time from notification to correct the violation.

2. Personal contact with the customer at the address of the water service. If personal contact is unsuccessful, written notice of the violation including a date by which the violation is to be corrected may be left on the premises and a copy of the notice sent by certified mail to the customer.

3. The Town may install a flow-restricting device on the customer's service line

4. The Town may levy a water waste fee on the customer, which after service of written notice of the fee, as provided for above shall become a special assessment against the property on which the waste occurred and be collected at the same time and in the same manner as ordinary Town taxes. The procedure for such assessment shall be as provided for Title 3, Chapter 8, Article 3 of this Code.

5. The Town may cause termination of water service and the charge for same shall be billed to the customer. Except in some cases of extreme emergency as solely determined by the Town Manager, service shall not be restored until the Town verifies that the violation has been corrected and all charges and fees have been paid.

SECTION II. SEVERABILITY

If any section, subsection, sentence, clause, phrase, or word of this ordinance is for any reason held to be invalid, the validity of the remaining portion of this ordinance shall not be affected.

SECTION III. ENVIRONMENTAL DETERMINATION

The Town Council determines that this ordinance is a Class 7 categorical exemption under section 15307 of the California Environmental Quality Act, which exempts actions by regulatory agencies for protection of nature resources.

SECTION IV. EFFECTIVE DATE

This ordinance shall become effective (30) days after the date of adoption.

PASSED, APPROVED AND ADOPTED this 7th day of June, 2000 by vote as follows:

AYES:	**MOREHOUSE/M, SALMON/2, SCOTT and MAYOR FUDGE**
NOES:	**NONE**
ABSTAIN:	**NONE**
ABSENT:	**ALLEN**

Debra Fudge

MAYOR

ATTEST:

TOWN CLERK

I:\WP51\DOC\TMO\Ords\ASSIGNED\2000-129.wpd

TOWN OF
WINDSOR
Windsor Water District

Windsor Water District 8400 Windsor Road P.O. Box 100
Windsor, CA 95492
707.838.5357







WOODARD
&CURRAN