

FINAL DRAFT

URBAN WATER MANAGEMENT PLAN

2025 UPDATE



ATASCADERO MUTUAL WATER COMPANY

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July 2026



ATASCADERO MUTUAL WATER COMPANY

2025 Urban Water Management Plan

July 2026

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Acronyms and Abbreviations

AB	Assembly Bill
Act	Urban Water Management Planning Act
AF	Acre-Feet
AFY	Acre-Feet per Year
AMWC	Atascadero Mutual Water Company
APW	Advanced Purified Water
ATF	Advanced Treatment Facility
AWWA	American Water Works Association
BMP	Best Management Practice
BOS	Board of Supervisors
CASGEM	California Statewide Groundwater Elevation Monitoring Program
CCR	California Code of Regulations
CCWA	Central Coast Water Authority
CII	Commercial, Industrial, Institutional, water use sectors
CIMIS	California Irrigation Management Information System
CSA	County Service Area
CSD	Community Services District
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DDW	Division of Drinking Water
DMM	Demand Management Measure
DOF	Department of Finance
DRA	Drought Risk Assessment
DU	Dwelling Unit
DWR	Department of Water Resources
eARDWP	Electronic Annual Reports to the Drinking Water Program (SWRCB)
EIR	Environmental Impact Report
ERP	Emergency Response Plan
ET or ETo	Evapotranspiration
GAC	Granular Activated Carbon
GHG	Greenhouse Gas
GIS	Geographic Information System
GPCD	Gallons per Capita per Day
GSA	Groundwater Sustainability Agency

GSP	Groundwater Sustainability Plan
Guidebook	Urban Water Management Plan Guidebook (January 2026 Version)
HECW	High-Efficiency Clothes Washer
HET/DFT	High-Efficiency Toilet/ Dual-Flush Toilet
IRWM	Integrated Regional Water Management
ITP	Independent Technical Panel
IX	Ion Exchange
kWh	kilowatt-hours
LAFCO	Local Agency Formation Commission
Legislature	State of California Legislature
MCL	Maximum Contaminant Level
MG	Million Gallons
MGD	Million Gallons per Day
MGY	Million Gallons per Year
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NWP	Nacimiento Water Project
PFOA	Perfluorooctanoic Acid
PFOS	Perfluoroalkyl Substances
PG&E	Pacific Gas and Electric Company
PIWC	Partners in Water Conservation
PRV	Pressure Reducing Valve
PSA	Public Service Announcement
RCD	Resource Conservation District
RRA	Risk and Assessment
RRWSP	Regional Recycled Water Strategic Plan
RUWMP	Regional Urban Water Management Plan
RWQCB	Regional Water Quality Control Board
SB X7-7	Senate Bill 7 of Special Extended Session 7
SCADA	Supervisory Control and Data Acquisition
SGMA	Sustainable Groundwater Management Act
SLOCOG	San Luis Obispo Council of Governments
SQ FT	Square Feet
SWP	State Water Project
SWRCB	State Water Resources Control Board

SWRP	Stormwater Resources Plan
TCSD	Templeton Community Services District
UWMP	Urban Water Management Plan
WARN	Water/Wastewater Agency Response Network
WBIC	Weather-Based Irrigation Controllers
WDR	Waste Discharge Requirements
WRF	Water Reclamation Facility
WRR	Water Recycling Requirement
WSCP	Water Shortage Contingency Plan
WSS	WaterSense Specification
WTP	Water Treatment Plant
WUE	Water Use Efficiency
WWTP	Wastewater Treatment Plant

Chapter 1: Introduction

The majority of the information contained in this chapter was taken from the State of California, Department of Water Resources Urban Water Management Plan Guidebook Final January 2026 (Guidebook) to provide a general overview of the purpose of the Urban Water Management Plan (UWMP) update.

This report comprises the 2025 UWMP update for the Atascadero Mutual Water Company (AMWC). AMWC is a mutual water company that provides water within and around Atascadero, California, a city located in northern San Luis Obispo County with approximately 30,279 residents as of 2024.¹ The water system, as shown in Figure 1-1, is comprised of approximately 240 miles of pipeline ranging in size from 4 inches to 48 inches, with nine storage tanks that range in size from 120,000 gallons to 4.8 million gallons. There are 15 active wells, nine booster stations, and six treatment buildings. There are 11 pressure zones, and 25 sub-zones regulated by pressure reducing stations. In addition, there are over 11,200 customer service connections, 4,500 valves, and 1,840 fire hydrants. Elevations in the system vary from 800 feet, at the well fields along the Salinas River, to 2,310 feet in the Summit Hills Boosted Zone.

1.1 The California Water Code

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Act). The law required an urban water supplier (Supplier), providing water for municipal purposes to more than 3,000 customers or serving more than 3,000 acre-feet annually, to adopt an UWMP every five years (in years ending in 0 and 5) demonstrating water supply reliability in normal, single dry, and multiple dry years. The original Act also required the California Department of Water Resources (DWR) to provide a report to the California Legislature on the status of water supply planning in California.

Since the Act was passed, it has undergone significant expansion and revisions over the years. Minor revisions were made since the last UWMP Guidebook was prepared in 2020. Prolonged droughts, groundwater overdraft, regulatory revisions, and changing climatic conditions not only affect each Supplier's water reliability determinations, but also the broad picture of statewide water reliability overseen by DWR, the State Water Resources Control Board (SWRCB), and the State of California Legislature (Legislature). Accordingly,

¹ SLOCOG Population by Jurisdiction, 2000 – 2024, <https://data-drive-slocog.hub.arcgis.com/pages/population>.

the Act has grown to address changing conditions and it guides California’s water resource management.

New Requirements for 2025 Update

There have been minor changes to the California Water Code (CWC) since 2020 UWMPs were submitted; none of these changes significantly impact the UWMP requirements for the 2025 UWMP updates.

1.2 UWMP Organization

The UWMP has been prepared for AMWC in accordance with the DWR Guidebook. The UWMP includes references to the CWC. Below is a summary of the information included in the various chapters of the 2025 UWMP:

Chapter 1 — Introduction

This chapter provides discussion of requirement changes since the 2020 UWMP, fundamentals of the 2025 UWMP, and the required lay description of AMWC and its service area. Some subsequent chapters also include an initial lay description.

Chapter 2 — Plan Preparation

This chapter provides information on processes used to develop the UWMP, including efforts in coordination and outreach.

Chapter 3 — System Description

This chapter includes maps of the service area, an explanation of the service area and climate, and details on the public water system.

Chapter 4 — Water Use Characterization

This chapter provides a description and quantification of the current and projected water uses within the service area.

Chapter 5 — Senate Bill X7-7 Baseline, 2020 Targets, and 2025 Reporting

This chapter describes AMWC’s compliance with the 2020 per capita water conservation mandate. This chapter describes AMWC’s 2020 per-capita target value that was adopted in the 2015 UWMP, and reports on progress towards meeting the target based on actual 2025 customer water use.

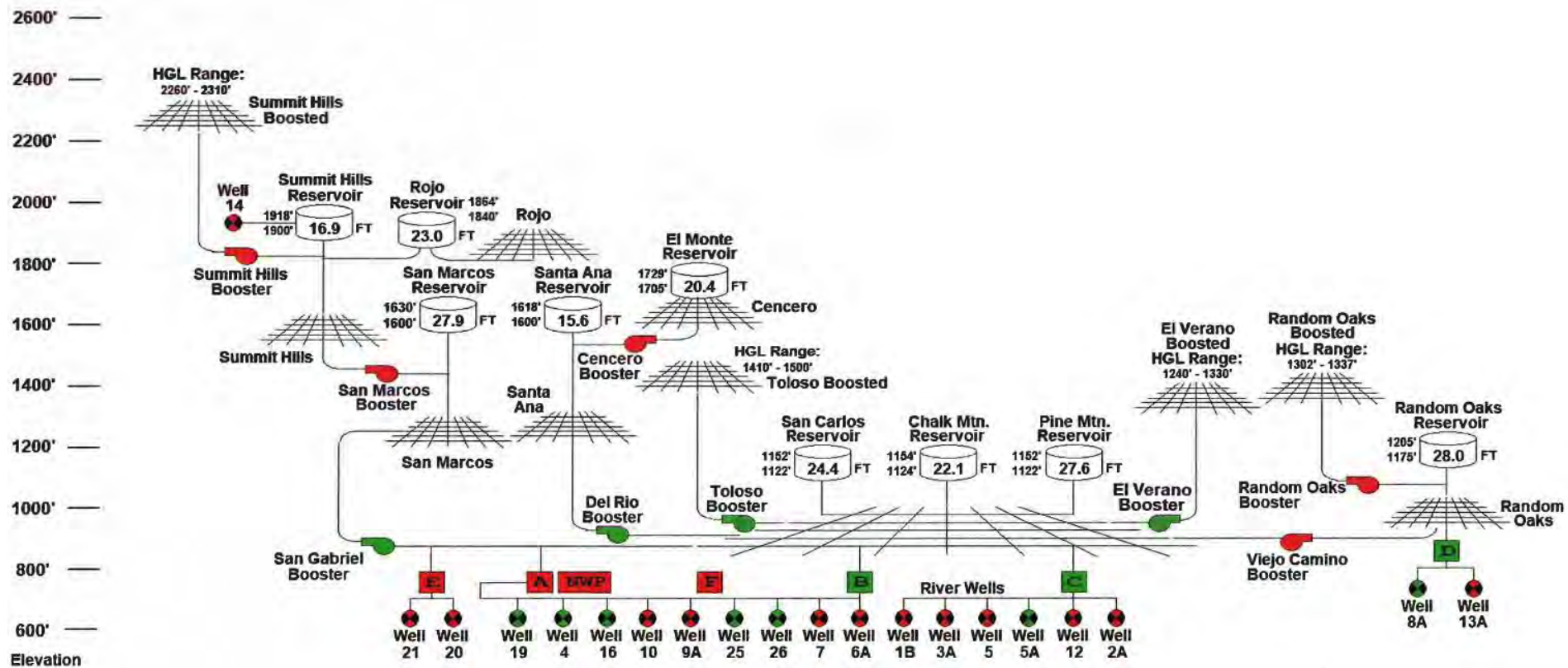


Figure 1-1. AMWC System Hydraulic Grade Schematic
 Note: Wells 2A, 13A, 14, 20, and 21 are inactive and no longer in production.

Chapter 6 — Water Supply Characterization

This chapter provides a description and quantification of current and projected potable and non-potable water (if applicable) supplies. A narrative description of each supply source and quantification of the supply availability for each supply source was identified.

Chapter 7 — Water Service Reliability and Drought Risk Assessment

This chapter describes AMWC's water system reliability through at least a 20-year planning horizon. This description includes normal, single dry year, and five consecutive dry years. This chapter also includes the Drought Risk Assessment (DRA). The water system reliability differs from the DRA by allowing a different basis for characterizing the five consecutive dry years.

Chapter 8 — Water Shortage Contingency Plan

This chapter provides a structured plan for dealing with water shortages, incorporating prescriptive information and standardized action levels, along with implementation actions in the event of a catastrophic supply interruption.

Chapter 9 — Demand Management Measures

This chapter identifies AMWC's efforts to promote conservation and to reduce demand on the water supply; specifically including a narrative describing efforts to implement demand management measures (DMMs).

Chapter 10 — Plan Adoption, Submittal, and Implementation

This chapter describes and documents the steps taken to make the UWMP publicly available, as well as the steps taken to adopt and submit the UWMP in accordance with the Water Code. This chapter also describes AMWC's plan to implement the UWMP.

Appendices

To support and further clarify information included in the main chapters of the UWMP, relevant information has been included in the appendices of this UWMP.

1.3 UWMPs in Relation to Other Efforts

An UWMP is prepared by local Suppliers that have the in-depth and practical knowledge of their water systems. The information contained in each Supplier's UWMP reflects the operations of its system in the context of the Supplier's customers, supplies, and service area. This local planning and preparation remains the fundamental focus of the UWMP.

In addition to the local Supplier focus, the UWMP requires coordination with other planning agencies and is most effective when integrated with other planning efforts. Land-use planning agencies, such as cities and counties, prepare General Plans and Specific Plans that affect a Supplier's analysis provided in its UWMP, and vice versa. Moreover, Water Master Plans, facilities' plans, Recycled Water Master Plans, Integrated Regional Water Management Plans, Regional Climate Action Plans, Groundwater Sustainability Plans, AB 3030 Groundwater Management Plans, local or regional Hazard Mitigation Plans, and others need to be integrated with a Supplier's UWMP to ensure a holistic planning process.

For this UWMP, elements of the following reports and documents were utilized to develop the required sections of the plan (a brief description is provided for the relevant information contained in each document):

- 2020 Urban Water Management Plan: Served as the basis for the 2025 update.
- AMWC Demand Study (1971-2025): Contains historical and future projection information for the following number of dwelling units and customers served; population projections, per capita usage, water supply and production costs.
- Draft 2060 Regional Growth Forecast for San Luis Obispo County Population, Housing, and Employment Projections for San Luis Obispo Council of Governments dated August 2025 and prepared by Population Reference Bureau: Used to estimate future population projections throughout 2060.
- San Luis Obispo County Multi-Jurisdictional Hazard Mitigation Plan, dated 2025: Contained information to address the seismic risk assessment and mitigation requirement of the UWMP update.
- Draft Atascadero Basin Groundwater Sustainability Plan: Contained information to address climate change within the service area.

AMWC's latest water master plan was developed in March 2010 and was not used to inform this UWMP update since it does not contain current information related to existing water usage, future demand projections, and water supply availability. However, this report was used as a reference in describing AMWC's existing water system, particularly as it relates to water system reliability.

1.4 UWMPs and Grant/Loan Eligibility

For a water supplier to be eligible for DWR grants or loans, it must have a current UWMP on file that meets the requirements set forth by the CWC. A current UWMP must also be maintained by the Supplier throughout the term of any grant or loan administered by DWR. A UWMP may also be required to be eligible for other state funding, depending on the

conditions that are specified in the funding guidelines. Suppliers are encouraged to seek guidance on the specifics of any state funding source from the respective funding agencies.

Chapter 2: UWMP Preparation

This chapter provides information on the process for developing the UWMP, including coordination and outreach efforts.

2.1 Plan Preparation

AMWC prepared this 2025 UWMP in accordance with the CWC based on the DWR UWMP 2025 Guidebook and will submit it to DWR.

2.2 Basis for Preparing a Plan

The basis for preparing an UWMP is found within Sections 10617, 10620, and 10621 of the CWC. In accordance with the CWC, suppliers with 3,000 or more service connections, or those supplying 3,000 AFY or more, are required to prepare an UWMP every five years, in years ending in zero and five. The Guidebook prepared by DWR summarizes the information required in the 2025 UWMPs.

This UWMP reports solely on the AMWC service area. AMWC has prepared this UWMP as an individual retail supplier, as indicated in Table 2-1 and Table 2-2.

Water volume is represented in units of MG, unless otherwise noted, and data is presented on a calendar year basis. DWR tables presenting this information are provided in Table 2-1, Table 2-2, and Table 2-3 below. Table titles are consistent with DWR recommended tables and the Guidebook for ease of reference.

Table 2-1. DWR 2-1 Retail Only: Public Water Systems

Submittal Table 2-1 Retail: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (MG)
Add additional rows as needed			
CA4010002	Atascadero Mutual Water Company	11,279	1,425
Total		11,279	1,425
DWR NOTES:			
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			

2.3 Individual or Regional Plans

AMWC has developed an UWMP that reports solely on its service area and will not be participating in a regional UWMP update. This plan addresses all requirements of the CWC including water use targets and baselines for Senate Bill Extraordinary Session 7-7 (SB X7-7) Water Conservation Act of 2009 reporting.

Table 2-2. DWR 2-2 Plan Identification

Submittal Table 2-2: Plan Identification		
Select One	Type of Plan	Name of Regional Alliance or RUWMP (Drop Down List)
☒	Individual UWMP	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	
☐	Regional Urban Water Management Plan (RUWMP)	
	If Supplier selected RUWMP, select name from the drop-down.	

2.3.1 Regional Planning

AMWC currently participates in the Atascadero Groundwater Basin Groundwater Sustainability Agency (GSA) in conjunction with Templeton Community Services District, City of Atascadero, County of San Luis Obispo, City of Paso Robles, and a collection of other small water districts and mutual water companies to coordinate on regional water resource planning efforts.

2.4 Fiscal or Calendar Year and Units of Measure

AMWC has reported water-related information included in this UWMP based on calendar basis and all units are measured in million gallons (MG) as identified in Table 2-3.

Table 2-3. DWR 2-3 Supplier Identification

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesale supplier
☒	Supplier is a retail supplier
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 the drop down list).	
Unit	MG
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	

2.5 Coordination and Outreach

2.5.1 Wholesale and Retail Coordination

AMWC has provided the San Luis Obispo County Flood Control and Water Conservation District, a regional wholesale supplier, with projected water demand in five-year increments for the next 20 years, as shown in Table 2-4, which lists the wholesale supplier of Nacimientto Project water.

Table 2-4. DWR 2-4 Water Supplier Information Exchange

Submittal Table 2-4 Retail: Water Supplier Information Exchange Water Code Section 10631(h)
The retail Supplier has informed the following wholesale supplier(s) of projected water use.
Wholesale Water Supplier Name
Add additional rows as needed
San Luis Obispo County Flood Control and Water Conservation District via the Nacimientto Water Project

2.5.2 Coordination with Other Agencies and the Community

AMWC coordinated with multiple neighboring and stakeholder agencies in the preparation of this UWMP. The coordination efforts were conducted to 1) inform the agencies of the activities of AMWC; 2) gather high quality data for use in developing this UWMP; and 3) coordinate planning activities with other related regional plans and initiatives. The coordination activities conducted by AMWC in preparation of this plan are summarized in Table 2-5.

Table 2-5. Agency Coordination

Agency	Sent a notice of public hearing for draft UWMP	Commented on the draft	Attended public meetings	Contacted for Assistance	Sent a copy of the draft plan	Sent a notice of intention to adopt	Notice of Plan Availability
Atascadero Basin Groundwater Sustainability Agency	X			X	X	X	X
California Department of Water Resources							X
California Water Efficiency Partnership (CALWEP), formerly CUWCC							X
City of Atascadero	X				X	X	X
City of Paso Robles	X				X	X	X
County of San Luis Obispo	X				X	X	X
Templeton Community Services District	X				X	X	X
Atascadero State Hospital	X				X	X	X

2.5.3 Notice to Cities and Counties

AMWC has notified the Atascadero Basin GSA, the City of Atascadero, the City of Paso Robles, Templeton Community Services District (TCSD), Atascadero State Hospital, and the County of San Luis Obispo of the public hearing. This notification has been reported in **Chapter 10**.

Chapter 3: System Description

This chapter provides a description of the AMWC water system, including descriptions of the service area, climate, projected population, and other factors that may influence water management planning, as well as maps of the AMWC service area.

3.1 General Description

AMWC provides water service to the City of Atascadero (15,350 land acres) and approximately 7,622 acres of unincorporated land within the County of San Luis Obispo. Of the unincorporated land, approximately 2,000 acres is composed of suburban estate parcels. In 2025, AMWC served an overall population of 30,184 (Department of Finance) within its service area. The water system is comprised of approximately 240 miles of pipeline ranging in size from 4 inches to 48 inches, with nine storage tanks that range in size from 120,000 gallons to 4.8 million gallons. There are 15 active wells, nine booster stations, and six water treatment buildings. There are 11 pressure zones, and 25 sub-zones regulated by pressure reducing stations. In addition, there are over 11,200 customer service connections, 4,500 valves, and 1,840 fire hydrants. Elevations in the system vary from 800 feet at the well fields along the Salinas River, to 2,310 feet in the Summit Hills Boosted Zone.

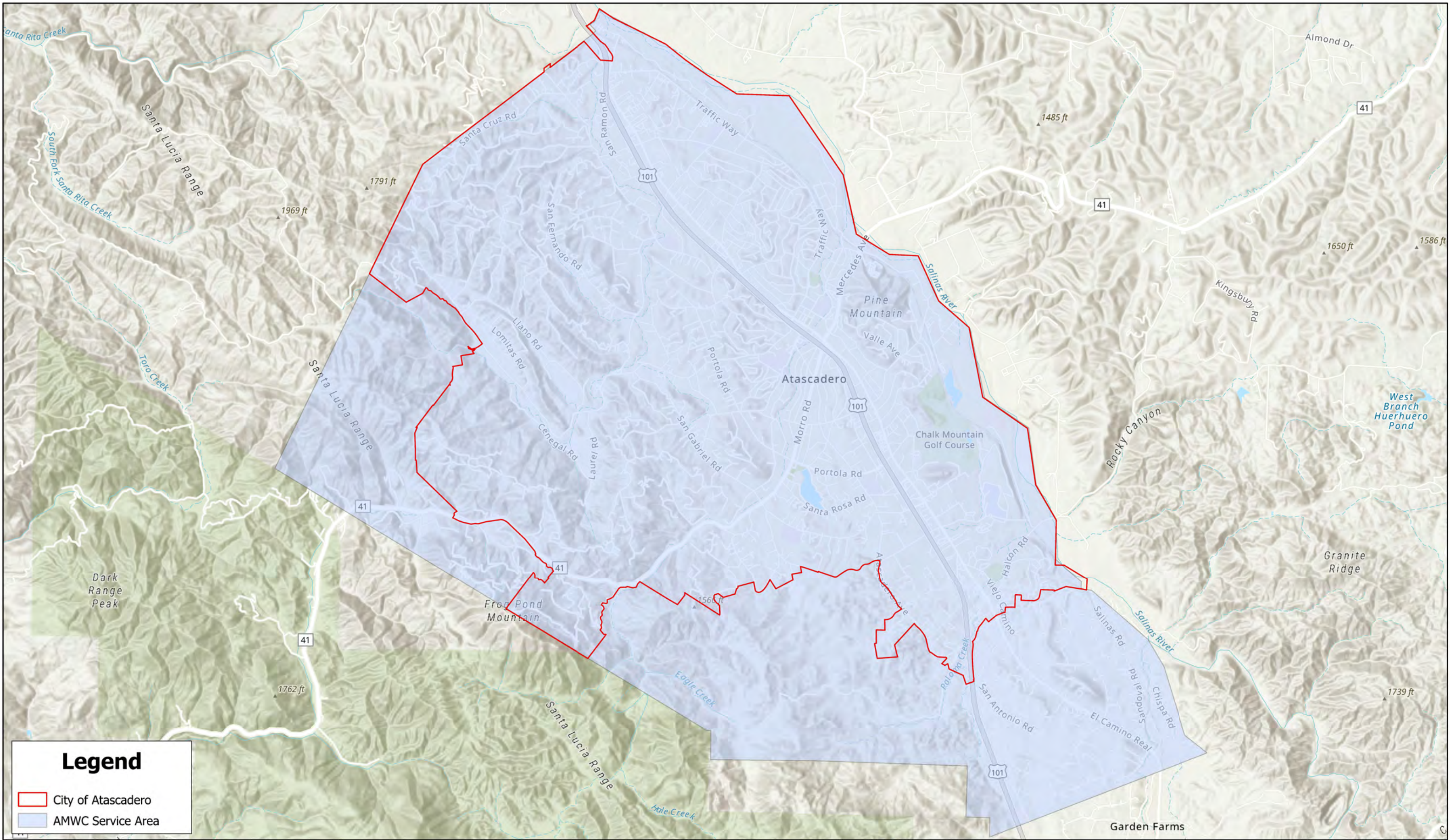
3.2 Service Area Boundary Map

Figure 3-1 illustrates the location of AMWC within the state of California and Figure 3-2 shows the extents of the current AMWC service area and the City of Atascadero city limits.



Atascadero Mutual Water Company 2025 Urban Water Management Plan

Figure 3-1: AMWC Location Map



Atascadero Mutual Water Company 2025 Urban Water Management Plan

Figure 3-2: AMWC Service Area Map

3.3 Service Area Climate

Monthly water consumption in a summer month is typically three to four times the use in a winter month. Due to the large amount of summer irrigation in the City of Atascadero, the maximum summer use exceeds the maximum winter use by a factor of 3.1 to 3.9 times. There is a significant disparity in the “shoulder” months of spring and fall that can be explained by the great differences in weather patterns in the spring months of March through June and the fall month of October. Daily weather variations can range from an afternoon high of 95-100°F in summer, down to late night temperatures of as low as 31°F in winter.

Table 3-0. AMWC Service Area Average Monthly Climate Data

Month	Average Precipitation (inches)	Average Temperature (°F)	Average ETo (inches)
January	2.96	46.7	1.77
February	2.68	48.3	2.55
March	3.24	50.2	3.35
April	0.48	55.4	4.95
May	0.27	60.4	6.45
June	0.08	66.6	7.16
July	0.28	70.0	7.45
August	0.61	70.7	6.82
September	0.60	67.0	4.93
October	0.80	60.2	3.98
November	0.82	50.8	2.29
December	4.67	47.5	1.54
Monthly Average	1.5	57.8	4.4
Annual Total	17.5	--	53.2
Note: Data were averaged from CIMIS Station #163 (Atascadero) Monthly Average Report between January 1, 2020 and December 31, 2025.			

With respect to climate change, AMWC has not conducted an official climate change vulnerability or risk assessment for the existing water service area. However, climate change considerations for AMWC’s groundwater supply were incorporated into the Atascadero Basin Groundwater Sustainability Plan (GSP), and Chapter 6 of the Atascadero Basin GSP (Water Budgets) has been included with this report as **Appendix A**.

3.4 Service Area Population and Demographics

AMWC provides water service to the City of Atascadero and a portion of unincorporated County area located outside of the City limits. AMWC does not have land use planning

authority and relies on the City and County to identify potential new developments and overall population growth within the service area. The City and County coordinate with AMWC during the review process for new developments within the service area.

3.4.1 Service Area Population

With respect to population growth within the service area, several planning documents were reviewed to determine the appropriate population and growth rate to use for the 2025 update. The following planning documents included proposed population estimates for the City of Atascadero only and did not include estimates for the County portion of the AMWC service area:

- Draft 2060 Regional Growth Forecast for San Luis Obispo County Population, Housing, and Employment Projections for San Luis Obispo Council of Governments (August 2025) with one available growth scenario through 2060:
 - 2060 population of 32,728 with an annual average growth rate 0.24% (2020 to 2060)
- 2050 Regional Growth Forecast for San Luis Obispo County Population, Housing, and Employment Projections for San Luis Obispo Council of Governments (June 2017) with three growth scenarios through 2050 including:
 - Low growth 2050 population of 32,907 with an annual average growth rate 0.23% (2020 to 2050)
 - Medium growth 2050 population of 34,538 with an annual average growth rate 0.37% (2020 to 2050)
 - High growth 2050 population of 39,768 with an annual average growth rate 0.77% (2020 to 2050)
- City of Atascadero Draft General Plan 2045 (Draft published Fall 2025, anticipated adoption Spring 2026):
 - Estimated buildout year of 2045 with a population of 38,112 with an annual average growth rate 1.09%

Since 2005, population growth rates within the AMWC service area have fluctuated between -1.3% and 3.0%, with an average growth rate from 2020 to 2025 of -0.5%. Historical service area population and growth rates are shown for 2005 to 2025 in Figure 3-3. Although significantly higher than the average of the previous five years, a projected growth rate of 0.77% (High Growth scenario from 2050 Regional Growth Forecast, SLOCOG) was used to estimate future population growth and water demand.

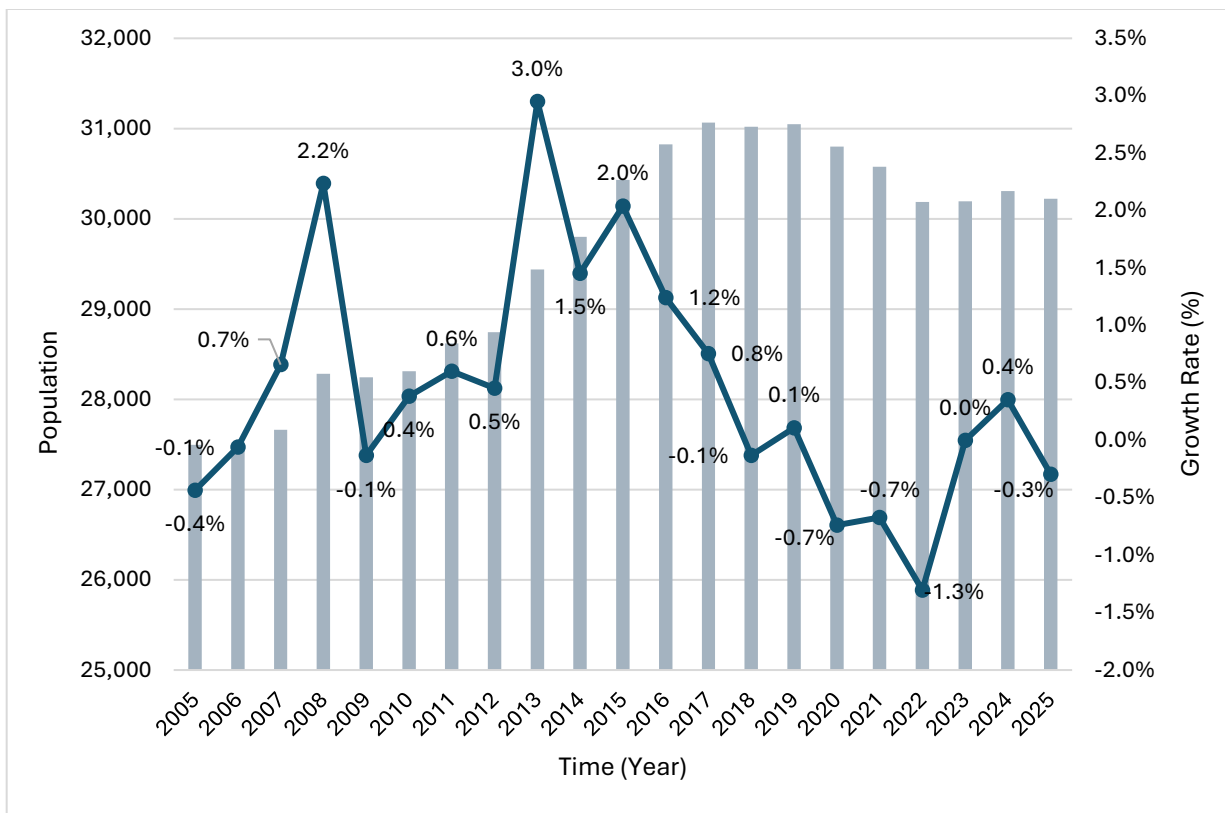


Figure 3-3. Service Area 20-Year Population and Growth Rate Chart

The 2025 population estimate within the AMWC service area was based on the Department of Finance 2025 population data for the City of Atascadero, which makes up 92% of the service area, and an estimated 2.88 persons per service connection for the 594 services located within the County portion of the service area.

To estimate the future population through 2050, a growth rate of 0.77%, which is consistent with the high growth rate scenarios for the 2050 San Luis Obispo Council of Governments plan described above, was selected. Table 3-1 provides a summary of 2025 and future population projections within the AMWC service area through 2050.

Table 3-1. DWR 3-1R: Current and Projected Population

	2025	2030	2035	2040	2045	2050
Population Served	31,940	32,888	34,174	35,510	36,899	38,341

Note: 2025 population based on Department of Finance data plus estimated population within the County portion of the service area.

3.4.2 Other Social, Economic, and Demographic Factors

Atascadero was founded in 1913 as a large-lot, self-sustaining, agrarian community. Much of that character is still maintained to this day; with the minimum lot size for single-family residential areas ranging from 0.5 acres up to 1.5 acres. Residential agriculture included within the measurement of landscape area as many parcels contain orchards, vineyards,

gardens, irrigated pastures, and livestock. Total water use fluctuates from year to year due to population changes within the service area. Historically, low water rates and large residential lot sizes allowed for the irrigation of landscaping, orchards, vineyards, and irrigated pastures for livestock at reasonable cost to the residents. Water use patterns are influenced by the tiered rate structure, rate increases, conservation outreach, the City of Atascadero's Landscape Ordinance, and its "Smart Growth" policy that encourages infill of existing City land with higher density development.

The following information was obtained from the US Census Bureau to describe the demographics of the customer base within the AMWC service area (City of Atascadero specifically):

- The population includes 52% male and 48% female with 61% of the population between the ages of 18 and 65
- Approximately 69% of the population is White with 20% Hispanic or Latino
- The median household income was identified to be \$91,429 with 11.4% of the population within the poverty level

3.5 Land Uses within the Service Area

The AMWC service area (22,972 land acres) includes approximately 12,459 parcels with 11,398 parcels within the City of Atascadero (92%) and 1,061 parcels within the County of San Luis Obispo (8%). Table 3-2 shows a summary of the currently developed land uses throughout the existing service area.

Table 3-2. Developed Land Use Summary within Service Area

Land Use Category	Designation	Gross Acres	Percent of Total
Agriculture	A	44	0.3%
Commercial Park	CPK	201	1.%
Commercial Recreation	CREC	7	0.05%
Downtown	D	64	0.4%
General Commercial	GC	290	2%
High Density Residential (16 units /ac)	HDR	292	2%
Industrial	I	77	0.5%
Medium Density Residential (10 units /ac)	MDR	231	2%
Open Space	OS	611	4%
Public Facilities	P	950	6%
Public Recreation	REC	473	3%
Right-of-Way	ROW	130	0.8%
Rural Estates (2.5 - 10 acre lot min)	RE	9,266	60%
Rural Residential	RR	68	0.4%
Service Commercial	SC	42	0.3%
Single Family Residential (0.5 acre min)	SFR-X	436	3%
Single Family Residential (1.0 acre min)	SFR-Y	1,537	10%
Single Family Residential (1.5 - 2.5 acre min)	SFR-Z	627	4%
Total		15,346	100%

The majority of the land use categories described above include some vacant parcels located within the City and/or County. AMWC regularly reviews development plans provided by these agencies to evaluate the feasibility of serving future development based on available water supplies and existing infrastructure capacity.

Chapter 4: Water Use Characterization

The water use characterization describes and quantifies the current and projected water uses within the AMWC service area. The analysis was completed with considerations of anticipated growth, regulatory requirements, and climate conditions. For purposes of the UWMP, the terms “water use” and “water demand” will be used interchangeably.

4.1 Non-Potable Versus Potable Water Use

There are currently no existing or future recycled water supply sources within the AMWC service area. The City of Atascadero’s (City) Water Reclamation Facility (WRF) discharges treated wastewater via percolation ponds. Tertiary recycled water from a future upgraded WRF may become available in future years; however, AMWC does not have specific plans to implement a direct recycled water program at this time. The Chalk Mountain Golf Course currently extracts percolated effluent via an irrigation well, but this process is not considered a reportable use of recycled water per DWR. However, flows from the City’s WRF percolate through the Salinas River alluvium and Paso Robles formation and act as a source of recharge for the Atascadero Basin.

4.2 Past, Current, and Projected Water Use by Sector

This section addresses past, current, and projected water usage. Table 4-0 displays historical water use by use type for 2020 through 2024. Table 4-1 displays water use in 2025 by use type, and Table 4-2 displays projected water use by use type, in five-year increments from 2030 to 2050.

4.2.1 Water Use Sectors Listed in Water Code

AMWC’s service area includes the following water demand sectors listed in the California Water Code:

- Single Family: Single family detached dwellings
- Multi-Family: Apartments, condominiums, town houses, duplexes and trailer parks
- Commercial: Retail establishments, office buildings, laundries, schools, prisons, hospitals, dormitories, nursing homes, hotels, churches, campgrounds
- Industrial: All manufacturing
- Institutional and governmental: Tracked under Commercial customer class
- Landscape: Parks, play fields, cemeteries, median strips, golf courses

- Distribution system water loss

The following sectors are not applicable to the AMWC UWMP:

- Sales to other agencies
- Saline water intrusion barriers, groundwater recharge, or conjunctive use
- Agricultural

4.2.2 Water Use Sectors in Addition to those listed in Water Code

To provide clarity, acknowledgment of these additional sectors is being addressed. However, the following sectors are not applicable to the AMWC UWMP:

- Exchanges
- Surface Water Augmentation
- Transfers
- Wetlands or Wildlife Habitat

4.2.3 Past Water Use

Table 4-0 provides historical water usage by customer type from 2020 through 2024.

Table 4-0. Historical Water Usage

Use Type	Water Use (MG)					% of Total
	2020	2021	2022	2023	2024	
Single Family	1,169	1,204	1,140	1,051	1,029	65%
Multi-Family	142	143	135	135	132	8%
Commercial	128	136	129	127	119	7%
Industrial	1	1	1	1	1	0%
Landscape	121	130	127	109	121	7%
Losses	133	109	204	364	272	13%
Total (MG)	1,694	1,723	1,736	1,787	1,674	100%
NOTES: Values represent metered use as reported to DWR for 2025. Percentage of total based on average of the last five years. Water losses are based on total production minus metered use and do not reflect detailed loss values from the AWWA water loss worksheets.						

4.2.4 Current Water Use

Table 4-1 provides an overview of the existing water demands by use type within AMWCs service area for calendar year 2025.

Table 4-1. DWR 4-1 Total Uses for Potable and Non-Potable Water

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual (Water Code Section 10631(d)(1))		
Use Type	2025 Actual Water Use	
	Potable or Non-Potable	Volume (MG)
Single Family	Potable	1,046
Multi-Family	Potable	131
Commercial	Potable	125
Industrial	Potable	1
Landscape	Potable	121
Distribution System Water Loss	Potable	209
Subtotal Potable		1,633
Subtotal Non-Potable		0
Total		1,633

4.2.5 Projected Water Use

Per the 2015 UWMP, AMWC was required to comply with an urban water use target of 158 gallons per capita per day (gpcd) by 2020. Table 4-1a provides a summary of historical water demand (in gpcd) within the service area and years of mandatory conservation with requested conservation level (% reduction). This table demonstrates that AMWC achieved compliance with their 2020 urban water use target.

Table 4-1a. Historical Use Rates (GPCD)

Year	Service Area Population	Water Production (MG)	Gross Water Use (gpcd)	Meter Residential Use (MG)	Residential Water Use (gpcd)	Mandatory Conservation
2015	31,270	1,439	126	1,120	98	28%
2016	31,375	1,472	129	1,142	100	28%
2017	31,469	1,642	143	1,220	106	-
2018	31,544	1,652	143	1,279	111	-
2019	31,648	1,603	139	1,191	103	-
2020	31,781	1,694	146	1,306	113	-
2021	31,866	1,723	148	1,347	116	-

Year	Service Area Population	Water Production (MG)	Gross Water Use (gpcd)	Meter Residential Use (MG)	Residential Water Use (gpcd)	Mandatory Conservation
2022	31,921	1,736	149	1,275	109	-
2023	31,922	1,787	153	1,186	102	-
2024	32,035	1,674	143	1,161	99	-
2025	31,940	1,634	140	1,178	101	-
5-Year Average			147	-	107	-
10-Year Average			142	-	105	-
2015 UWMP 2020 Target			158	-		-
NOTES: Potable demand based on historical production values provided by AMWC. 5-year average includes 2020-2025 and 10-year average includes 2015-2025.						

4.2.5.1 25-Year Planning Horizon

Annual water demand within the service area was assumed to increase in proportion to the population projected by SLOCOG for the City of Atascadero and surrounding area. The demand projections in Table 4-2 are based on historical gpcd trends (Table 4-1a) and include mandatory water use prohibitions as requested by the State. Future water demand projections were based on AMWC's Demand Study spreadsheet, which estimates future demands by multiplying annual equivalent dwelling unit (EDUs) growth by the historical 10-year running average. It should be noted that AMWC's annual water demand from 1997 through 2008 was over 2,000 MG, peaking in 2007 at 2,208 MG. Annual water demands since 2007 have steadily declined to current levels due to AMWC's conservation efforts. The future water demands shown should be considered conservative.

Table 4-2. DWR 4-2R Total Uses for Potable and Non-Potable Water - Projected

Submittal Table 4-2 Retail: Total Uses for Potable, and Non-Potable Water — Projected Water Code Section 10631(d)(1)						
Use Type	Projected Water Use (Report To the Extent that Records are Available)					
	Potable or Non-Potable (OPTIONAL) Drop down list	2030 (MG)	2035 (MG)	2040 (MG)	2045 (MG)	2050 (MG)
Add additional rows as needed.						
Single Family	Potable	1,163	1,208	1,255	1,305	1,356
Multi-Family	Potable	146	151	157	163	170
Industrial	Potable	139	144	150	156	162
Industrial	Potable	1	1	1	1	1
Landscape	Potable	135	140	145	151	157
Distribution System Water Loss	Potable	232	241	251	261	271
	Potable					
	Potable					
Subtotal Potable		1,815	1,886	1,960	2,037	2,116
Subtotal Non-Potable		0	0	0	0	0
Total		1,815	1,886	1,960	2,037	2,116
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.						

4.2.6 Characteristic Five-Year Water Use

AMWC does not currently have any water usage restrictions in place since the AMWC Board rescinded the water shortage condition on March 8, 2017. However, AMWC does enforce the following permanent prohibitions as mandated by the State. The following prohibitions on the use of water are permanently in effect under this resolution, the Governor’s Executive Order No. B-37-16, and subsequent regulations adopted by the State Water Resources Control Board:

- **Wasteful Use of Water:** No water user shall waste any water supplied through the distribution facilities of AMWC or through any well under agreement with AMWC.
- **Plumbing leaks:** The escape of water through breaks or leaks within the water user’s plumbing or 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 24 hours after the water user discovers such leak or break, whichever occurs first, is a reasonable time within which to correct such leak or break.

- Run-off from landscaped surfaces: Watering of grass, lawns, ground-cover, shrubbery, open ground, crops and trees, including agricultural irrigation, in a manner or to an extent which allows substantial amounts of excess water to run off onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
- Outdoor Watering Hours: Overhead watering of grass, lawns, ground-cover, shrubbery, open ground, crops, and trees, including agricultural irrigation, between the hours of 10 a.m. and 5 p.m. Overhead watering is any method of irrigation in which water is sprayed under pressure through the air to the ground surface, including but not limited to the use of devices such as sprinklers.
- Outdoor Watering Days: The overhead watering of grass, lawns, ground-cover, shrubbery, open ground, crops, and trees, including agricultural irrigation, shall be limited to Tuesdays, Thursdays, and Saturdays for properties with even-numbered street addresses, and Wednesdays, Fridays, and Sundays for properties with odd-numbered street addresses. The overhead watering of grass, lawns, ground-cover, shrubbery, open ground, crops, and trees, including agricultural irrigation, on Mondays on any property within the service area of AMWC is prohibited.
- Irrigation After Rain Event: Watering of outdoor landscapes during and up to 48 hours after measurable rainfall.
- Washing of hard-surfaced areas: Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, except under the following conditions: 1) to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device; or 2) if a low- volume, high-pressure cleaning machine or a low-volume high-pressure water broom is used.
- Washing of Vehicles: Using a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.
- Decorative Water Features: The use of potable water in decorative water features that do not recirculate the water.

- Irrigation of Median Turf: Irrigation with potable water of ornamental turf on public street medians.
- New Construction Irrigation: Irrigation with potable water outside of newly constructed homes and buildings that is not delivered by drip or micro-spray systems.

The permanent water use prohibitions described above are mandatory reduction measures associated with AMWC’s 2025 Water Shortage Contingency Plan (WSCP) mandated shortage levels 1 and 2. Since AMWC is currently implementing actions to reduce water use, future demands presented in this UWMP update (Table 4-2) assume that the characteristic use represents constrained demands.

4.2.7 Water Use for Lower Income Households

AMWC does not account for water savings from codes, standards, ordinances, or transportation and land use plans that are also known as “passive savings”. However, for new development within the City of Atascadero builders are required to implement water efficient landscape and irrigation per the City’s building code. These various factors generally decrease the water use for new and future customers, compared to historical customers.

Lower income residential demands are included in AMWC’s future demand projections via housing projections by the City of Atascadero, who is required to plan for lower income residential units within City limits.

Table 4-3. DWR 4-3R Inclusion in Water Use Projections

Submittal Table 4-3 Retail: Inclusion in Water Use Projections Water Code Section 10631 (a), 10631 (d)(4)(A), and 10631 (d)(4)(B)	
Are Future Water Savings Included in Projections?	No
Are Lower Income Residential Demands Included in Projections?	Yes
DWR NOTES: Additional guidance is provided in Appendix K.	

4.3 Distribution System Water Loss

Table 4-4 summarizes the distribution system water losses for each of the five years preceding the plan update.

Table 4-4. DWR 4-5R Last 5 Years of Water Loss Audit Reporting

Submittal Table 4-5 Retail: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)		
Reporting Period	Submitted to DWR Water Loss Audit Program?	Volume of Water Loss (MG)
2020	Yes	212
2021	Yes	209
2022	Yes	157
2023	Yes	330
2024	Yes	234
NOTES: Water loss based on AWWA water audit worksheet completed by AMWC.		

The individual audit reports from 2020 to 2024 are included in Appendix B.

The State Water Board 2028 Real and Apparent Water Loss Calculations were accessed as part of this UWMP Update Report, and included in Table 4-5 (DWR Table 4-6). The State Board Real Water Loss Standard for AMWC is 32.2 gallons per service connection per day. The Real Loss volume for AMWC (Year 2024 audit), was reported at 181.9 million gallons, or 45.2 gpd per service connection. The State Board Apparent Water Loss Standard for AMWC is 4.1 gpd per service connection. The Apparent Water Loss volume for AMWC was reported at 52.2 million gallons, or 13.0 gpd per service connection.

Table 4-5. DWR 4-6 Retail: Progress Towards 2028 Water Loss Standard

Submittal Table 4-6 Retail: Progress Towards 2028 Water Loss Standard Water Code Section 10631(d)(3)(C)											
Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System? (y/n) If no, Supplier will not complete this row.	Real Water Loss					Apparent Water Loss				
		State Water Board Standard	Most Recent AWWA Water Loss Audit				State Water Board Standard	Most Recent AWWA Water Loss Audit			
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss Drop down list	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (MG)	Real Water Loss Per Unit per Day	2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (MG)	Apparent Water Loss Per Unit per Day
Add additional rows as needed.											
CA4010002	Yes	32.2	Gallons per Service Connection per Day (GPSCD)	11037	181.917	45.2	4.1	Gallons per Service Connection per Day (GPSCD)	11037	52.189	13.0
Water Board's Calculated Water Loss Standards											
DWR NOTES: Units of measure (AF, CCF, MG) for Water Loss MUST remain consistent with units reported in Submittal Table 2-3. The units reported in Submittal Table 2-3 are used in this table's calculations.											
NOTES:											

4.4 Climate Change Considerations

With respect to climate change, AMWC has not participated in or conducted an official climate change vulnerability or risk assessment for the existing water service area. However, climate change considerations for AMWC's groundwater supply were incorporated into the Atascadero Basin Groundwater Sustainability Plan (GSP), and Chapter 6 of the Atascadero Basin GSP (Water Budgets) has been included in Appendix A.

Chapter 5: Senate Bill X7-7 Baseline, 2020 Targets, and 2025 Reporting

With the adoption of the Water Conservation Act of 2009, also known as SB X7-7, the State is required to set a goal of reducing urban water use by 20 percent by the year 2020. In the 2025 UWMP, each retail urban water supplier must report their progress toward meeting their SB X7-7 targets using the information submitted in the 2020 UWMP. Per the Water Code there are no new requirements for this chapter of the UWMP 2025 update.

5.1 Requirements for Wholesale Suppliers

AMWC is a retail water supplier, and this section does not apply.

5.2 Requirements for Retail Suppliers

5.2.1 Submittal Table 5-1R

As shown in Table 5-1, AMWC met it's SB X7-7 Demand target of 158 gallons per capita per day (GPCD) in 2020. Actual water demand in 2020 for AMWC was 146 GPCD.

Table 5-1. DWR 5-1R SB X7-7 2020 Target Progress

Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	Only for suppliers that did not meet the Target in 2020 See DWR NOTES below.	
					Actual 2025 GPCD (From SB X7-7 Compliance Form)	Did Supplier meet the 2020 Target in 2025?
No	Individual Target	158	146	Yes		NA
DWR NOTES: Suppliers calculating a 2025 GPCD will need to complete and submit SB X 7-7 Compliance Tables to verify the use of SB X7-7 Methodologies. Suppliers that were part of a merger or consolidation since 2020 see Chapter 5 and Appendix P for guidance.						

5.3 Methods for Calculating Population and Gross Water Use

5.3.1 Service Area Population

Since the City of Atascadero makes up 92% of the AMWC service area, the Department of Finance 2025 population data was used for the City and an estimated density of 2.88 persons-per-service connection was used for the services located within the County portion of the service area.

5.3.2 Gross Water Use

Historical gross water use for this UWMP was obtained from AMWC's Demand Study for years 1971-2025.

Chapter 6: Water Supply Characterization

The water supply characterization is an assessment of AMWC's water supply during a normal year, a single-dry year, a drought period lasting five consecutive years, and future projections through 2050. As part of the water supply analysis, this chapter includes a water service reliability and risk assessment to understand the effects of short- and long-term water management decisions.

6.1 Water Supply Analysis Overview

California Water Code Section 10631(b) requires suppliers to identify and quantify the existing and planned sources of water available in five-years increments. A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years is also required in the analysis. Suppliers must also describe the management of each supply in correlation with other identified supplies and must consider and include any other supporting information pertinent to the reliability analysis.

6.2 Water Supply Characterization

6.2.1 Purchased or Imported Water

The Nacimiento Water Project (NWP) regional raw water transmission facility delivers water from Lake Nacimiento to communities in San Luis Obispo County. The NWP includes 45 miles of pipeline ranging from 12 inches to 36 inches in diameter, an intake structure at Nacimiento Lake, three pump stations ranging from 1,200 horsepower (hp) to 3,500 hp, and three water storage tanks ranging from 300,000 gallons to 850,000 gallons. The NWP is designed to deliver 15,750 acre-feet of water per year (AFY) to participating agencies. AMWC has contracted for 3,244 AFY, which significantly improves its ability to meet the current and future water needs of its customers. Currently, AMWC receives 2,000 AFY from the NWP to recharge the Atascadero Basin on an as-needed basis. AMWC contracted to allow peaking off of the NWP pipeline and can obtain its full contract volume over a 4- to 6-month period to allow maximum deliveries in the peak summer use season.

The San Luis Obispo County Flood Control and Water Conservation District (District) was the lead agency for the \$190 million NWP. In 2004, AMWC entered into a Delivery Entitlement Contract with the County for participation in the project, which is included in Appendix E of this UWMP. Other agencies currently participating in the project are the City of Paso Robles, Templeton Community Services District, and the City of San Luis Obispo. AMWC began taking deliveries of water in the summer of 2012. AMWC's allocation of up to 3,244 AFY is

delivered to AMWC for discharge into a 1.6 acre recharge basin over a 4- to 6-month period in summer/fall. Existing downstream wells draw a blend of recharged surface water and groundwater for AMWC customers.

For the purpose of this UWMP, the NWP supply is assumed to be 100% reliable based on the findings from "Nacimiento Reservoir Reliability as a Water Source for San Luis Obispo County" dated October 2002 and prepared by Boyle Engineering Corporation. The findings from this report are included in the final Nacimiento Water Project Environmental Impact Report dated December 2003 and prepared by Marine Research Specialists, which states that the Nacimiento Water Project can be considered 100% reliable based on evaluation of historical usage and drought conditions impacting the Nacimiento Reservoir over the past 40 years. As a result of this analysis, AMWC plans on 100% of its supplemental water supply (from the NWP) to be available in single dry and multiple dry years. A website link to the final EIR for Nacimiento Water Project is provided below:

- https://www.slocounty.ca.gov/departments/public-works/forms-documents/projects/nacimiento-water-project/documentation/environmental-review/2003-dec_nwp-final-eir

However, if temporary and/or permanent water shortage conditions exist, the San Luis Obispo County Flood Control and Water Conservation District could impose the following requirements as stated in the agreement for Nacimiento deliveries:

"The District may temporarily discontinue or reduce the amount of Nacimiento Project Water to be furnished to the Participant during such time as the District is maintaining, repairing, replacing, investigating, or inspecting any of the portions of the Nacimiento Facilities necessary for the furnishing of water to the Participant. Insofar as it is feasible, the District shall give the Participant notice in advance of any such temporary discontinuance or reduction, except in the case of emergency, in which case no notice need be given. In the event of such discontinuance or reduction, the District will upon resumption of service, deliver, as nearly as may be feasible, the quantity of Nacimiento Project Water which would have been furnished to the Participant in the absence of such discontinuance or reduction. Notwithstanding the foregoing, under no circumstances shall the Participant be relieved of any obligation to make Contract Payments as a result of such temporary discontinuance or reduction of Nacimiento Project Water.

(A) Temporary Shortages. In any Water Year in which there may occur a shortage or interruption due to drought or other temporary cause in the supply of the Nacimiento Reservoir Water available for delivery by the District to the Participant, to the Other

Participants and/or to the Reserve Water Customers, with the result that the amount of such supply is less than the total of: (i) the Delivery Entitlement and (ii) the Other Delivery Entitlements, plus (iii) the amount of the District's obligations to the Reserve Water Customers for that Water Year, the District shall calculate the amount of said reduced supply of water available to the District for use as Nacimientto Project Water and shall apportion the reduced supply.

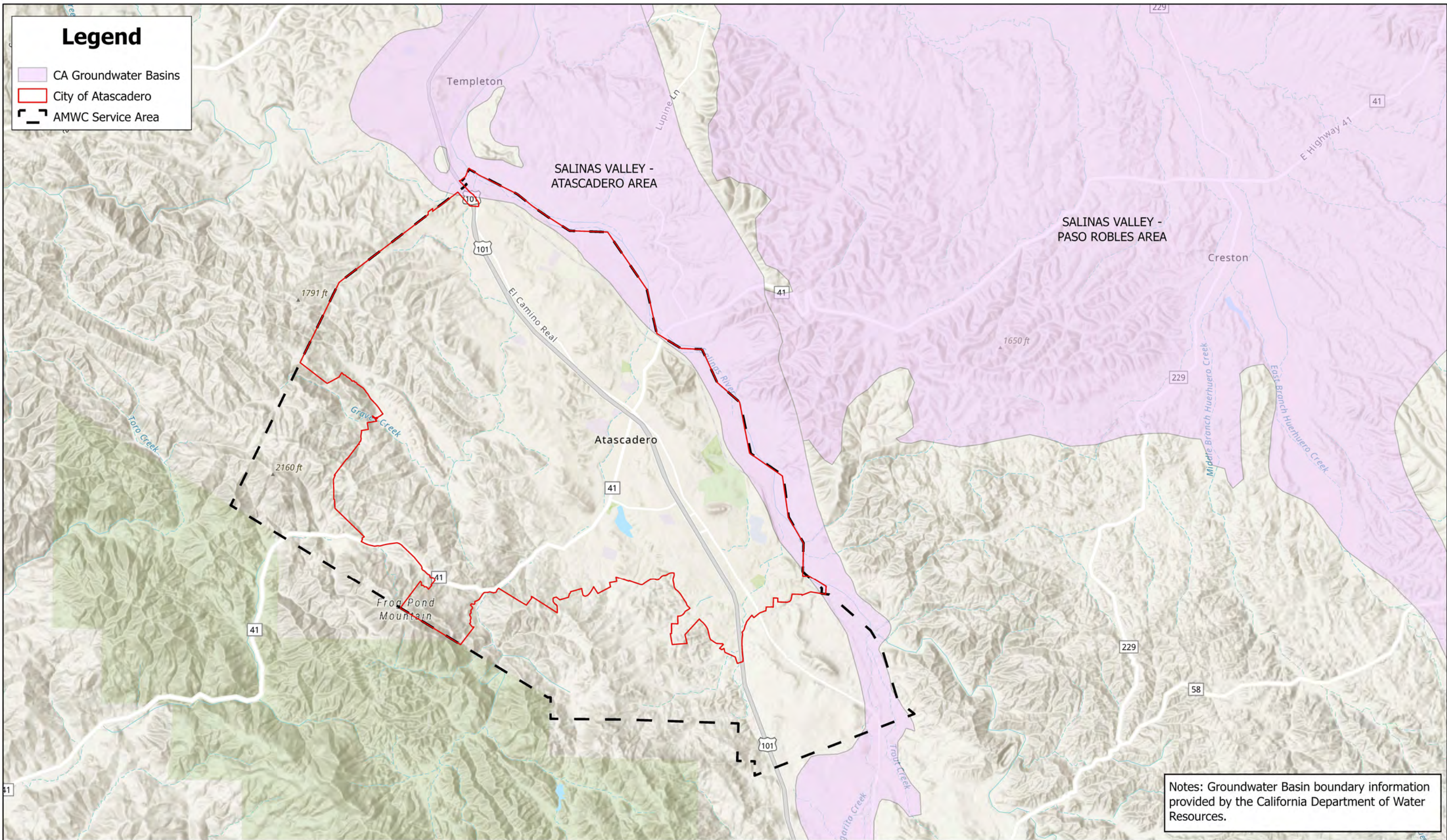
(B) Permanent Shortages. In the event that there is a reduction in the supply of Nacimientto Reservoir Water provided to the District under the Master Water Contract, which notwithstanding the preventative or remedial measures taken by the Monterey Water Agency, threatens or causes a permanent shortage in the amount of Nacimientto Reservoir Water available to the District under the Master Water Contract, with the result that the District concludes such supply will, for an indefinite period extending beyond the current Water Year, be less than Seventeen Thousand Five Hundred (17,500) Acre-Feet, the District shall calculate and apportion the permanently reduced supply of water.”²

Through this supply source, AMWC has a maximum supply capacity of 1,058 MGY (3,244 AFY) with a typical annual delivery of 652 MGY (2,000 AFY) to serve demands. Based on the existing infrastructure of the NWP and contractual obligations, between AMWC and the County, this water supply source is considered 100% reliable and available during normal, single dry year, and multiple dry year conditions.

6.2.2 Groundwater

AMWC pumps groundwater from two distinct yet interrelated groundwater sources, the Salinas River Underflow and the Salinas Valley Groundwater Basin - Atascadero Area No. 3-004.11 (DWR Bulletin 118) also known as the Atascadero Basin. AMWC operates seven active wells (including wells 1B, 3A, 4, 5, 5A, 16, and 19) pumping from Salinas River Underflow with a total pumping capacity of 3,360 gpm (1,766 MGY). In addition, AMWC operates eight active wells (including wells 6A, 7, 8A, 9A, 10, 12, 25, and 26) pumping from the Atascadero Basin with a total pumping capacity of 4,675 gpm (2,457 MGY). The AMWC service area, City of Atascadero, and the Atascadero Basin are shown in Figure 6-1.

² Nacimientto Project Water Delivery Entitlement Contact with Atascadero Mutual Water Company



6.2.2.1 Basin Description

The January 2022 Atascadero Groundwater Sustainability Plan (GSP) included the following discussion of the Atascadero Basin:

The Basin is a narrow structural northwest-trending trough that extends from the Santa Margarita area at its southern end to the city of Paso Robles in the north. The Basin is bounded by the Santa Lucia Range on the west. The ground surface elevation of the Basin ranges from approximately 1,300 ft/msl in the highlands at the northern tip of the Basin to approximately 700 ft/msl where the Salinas River exits the Basin to the north. The southern tip of the Basin is approximately 1,000 ft/msl. The middle part of the Basin forms an elongate narrow valley along the Salinas River, flanked by areas of variable topographic relief. The Basin encompasses an area of approximately 19,800 acres.

The Basin boundary is defined in DWR Bulletin 118 (DWR 2016). It is generally bounded by geologic units with low permeability, sediments with poor groundwater quality, rock, and structural faults. Along a portion of the northeast boundary, sediments of the Basin are continuous with the adjacent Paso Robles Area Groundwater Sub-basin of the Salinas Valley Basin (Paso Robles Basin). Specific Basin lateral boundaries include the following:

The northwestern, western, and southern boundaries of the Basin are defined by the contact of Basin sediments with older, relatively impermeable geologic units, including Tertiary-age consolidated sedimentary beds, Cretaceous-age metamorphic rocks, and granitic rock.

Along the northern portion of the eastern boundary, north of Templeton, the Rinconada Fault defines the eastern boundary of the Basin and is assumed to form a leaky hydraulic barrier between the Paso Robles Basin and the Basin.

Along the southern portion of the eastern boundary, south of Templeton, between Atascadero and Creston, the Rinconada Fault juxtaposes Monterey Formation rocks and other bedrock units with the Paso Robles Formation basin sediments.

The bottom of the Basin is generally defined as the base of the Paso Robles Formation, which is an irregular surface formed as the result of folding, faulting, and erosion (Fugro and Cleath, 2002). The exception to this is the Santa Margarita area at the southern end of the Basin. In this area, the bottom of the Basin is defined as the base of the Alluvium. The Basin boundary and bottom are not considered absolute barriers to flow because some of the geologic units underlying the Paso Robles Formation produce sufficient quantities of water, but the water is generally of poor quality and it is therefore not considered part of the Basin.

6.2.2.2 Multiple Groundwater Basins

AMWC pumps water from the Atascadero Basin and the Salinas River Underflow. The Salinas River Underflow alluvial pumping is considered a surface water source by the SWRCB. AMWC has riparian rights, pre-appropriative rights, and appropriative rights via license to the Salinas River alluvial waters.

6.2.2.3 Other Considerations

Per the Atascadero Groundwater Basin website, the following provides background information for the groundwater sustainability agency (GSA) for the Atascadero Basin:

In 2014, the State legislature approved a new groundwater management law known as the Sustainable Groundwater Management Act (SGMA). SGMA requires that high and medium priority basins comply with the new law. At that time, the Atascadero Basin was still part of the Paso Robles Area Subbasin which was a high priority basin. In 2016, the Atascadero Basin was divided from the Paso Robles Area Subbasin based on information that shows the Rinconada Fault is a significant barrier to groundwater flow.

The County of San Luis Obispo, Templeton Community Service District, City of Atascadero, City of Paso Robles, Atascadero Mutual Water Company, and others have entered into a memorandum of agreement creating a groundwater sustainability agency (GSA) for the Atascadero Basin in accordance with SGMA to prepare a groundwater sustainability plan (GSP).

The property owners overlying the Atascadero Basin, in collaboration with the Templeton Community Services District (TCSD), City of Atascadero (City), and Atascadero Mutual Water Company (AMWC), are working together to develop a groundwater sustainability agency (GSA) that will develop and implement a groundwater sustainability plan (GSP) for the Atascadero Basin (separate from the Paso Basin) in compliance with the new Sustainable Groundwater Management Act (SGMA). SGMA is made up of three separate pieces of legislation — AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley). Several recent studies have confirmed, the Atascadero Basin is hydrologically distinct from the Paso Basin. The San Luis Obispo County Board of Supervisors has distinguished the Atascadero Basin in its Resource Capacity Study and excluded the Atascadero Basin from the urgency ordinance it adopted in August 2013. The ability to manage demand in the Atascadero Basin is distinctly different from the Paso Basin. In 2009, urban use accounted for approximately 75% of the groundwater being pumped from the Atascadero Basin. The urban pumpers have greater flexibility in managing demand than pumpers that are irrigating permanent crops. In addition, water from the Nacimiento Water Project (NWP)

has a greater influence on groundwater levels in the Atascadero Basin than it does on water levels in the Paso Basin. Even before the urban pumpers began discharging water from the NWP into the Atascadero Basin, groundwater levels were stable and only showed seasonal variations. Both AMWC and the TCSD are currently seeking to increase their use of water from the NWP in the Atascadero Basin to over 3,500 acre-feet/year from 2,250 acre-feet/year, which will ensure the long-term sustainability of groundwater for all users in the basin.

The Atascadero Basin Groundwater Sustainability Plan (GSP) was adopted by the GSA Executive Committee on January 19, 2022 and a link to the plan is included at the following website: <http://atascaderobasin.com/>

In May 2018, DWR designated the Atascadero Basin as a very low priority basin and therefore no longer required to comply with SGMA. However, the GSA decided on October 3, 2018, that it will continue to proactively manage the groundwater resources in the Atascadero Basin.

6.2.2.4 Groundwater Pumped in Last Five Years

Table 6-1 provides an overview of the groundwater sources and the annual quantity pumped to meet the demands of the AMWC customers from 2021 to 2025.

Table 6-1. DWR 6-1R Groundwater Volume Pumped

☐	Check the box if the Supplier does not pump groundwater. Proceed to the next table.						
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)						
Groundwater Type Drop Down List May use each category multiple times	Potable or Non-Potable (OPTIONAL) Drop down list	Location or Basin Name	2021 (MG)	2022 (MG)	2023 (MG)	2024 (MG)	2025 (MG)
Add additional rows as needed							
Alluvial Basin		Atascadero Basin	960	792	744	647	530
Alluvial Basin		Salinas River Underflow (Groundwater under the influence of surface water)	812	944	1043	1026	1104
Total			1,772	1,736	1,787	1,673	1,634
DWR NOTES:							
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.							
NOTES: Groundwater pumped from the Atascadero Basin includes imported water from the NWP that is used to recharge the basin.							

Based on Table 6-1, AMWC pumped approximately 32% of the required supply from the Atascadero Basin and 68% from the Salinas River Underflow in 2025. However, AMWC has the operational flexibility to modify groundwater pumping from the two groundwater sources as necessary to serve demands.

AMWC completed a drought supply redundancy evaluation as part of the 2010 Water System Master Plan Update, in which the total AMWC supply was identified as 8,225 gpm or 4,323 MGY. The supply is equal to the total available supply under drought conditions with the largest well out of service. Based on redundancy within AMWC's existing well field and groundwater management practices under the Atascadero Groundwater Basin GSA, this water supply source is considered 100% reliable and available during normal, single and multiple dry year conditions.

6.2.3 Surface Water

The Salinas River Underflow alluvial pumping is considered a surface water source by the SWRCB. AMWC has riparian rights, pre-appropriative rights, and appropriative rights via license to the Salinas River alluvial waters.

In addition, AMWC receives imported surface water from the County of San Luis Obispo as part of the Nacimiento Water Project (a surface water supply source) as described in **Section 6.2.1**. NWP water is used by AMWC to recharge the Atascadero Basin.

6.2.4 Stormwater

AMWC does not currently or intend to supplement water supply demands through the capture and reuse of stormwater.

6.2.5 Wastewater and Recycled Water

AMWC does not provide recycled water to customers within its service area. The City of Atascadero collects, treats, and discharges wastewater for the City at the Water Reclamation Facility (WRF). Treated effluent (secondary, undisinfected) is percolated in onsite earthen basins for final polishing treatment through the soil. An irrigation well was installed downstream of the percolation basins in the late 1990's to draw mixed treated effluent and groundwater, which is pumped to a holding pond at the Chalk Mountain Golf Course for reuse as irrigation water. However, according to the Water Code, this process is not considered a reportable use of recycled water.

6.2.5.1 *Recycled Water Coordination*

Tertiary recycled water may become available in future years, as the City upgrades their WRF to meet RWQCB General Order waste discharge requirements; however, there are no current plans between the City and AMWC for implementing a formal recycled water program.

6.2.5.2 *Wastewater Collection, Treatment and Disposal*

AMWC does not provide wastewater collection, treatment, or disposal services for its customers. Wastewater collection, treatment, and disposal within the AMWC water service area is provided by the City of Atascadero or private onsite septic disposal systems. Tables 6-2 and 6-3 provide a summary of the volume of wastewater collected for calendar year 2025 by the City of Atascadero. Flows from the City's WRF percolate through the Salinas River alluvium and Paso Robles formation and act as a source of recharge for the Atascadero Basin.

Table 6-2. DWR 6-2R Wastewater Collected within Service Area in 2025

Wastewater Collection			Recipient of Collected Wastewater	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? OPTIONAL Drop Down List	Volume of Wastewater Collected from UWMP Service Area 2025 (MG)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number Drop down list	Is WWTP Located Within UWMP Area? Drop Down List
City of Atascadero	Metered	482	Atascadero WWTP, Place ID 206653	Yes
Total Wastewater Received from UWMP Service Area in 2025:		482		
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.				
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.				

Table 6-3. DWR 6-3R Wastewater Treatment and Outcomes Within UWMP Service Area

Wastewater Treatment Plant Name and Place ID Number Drop down list	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (OPTIONAL) Drop down list	2025 Volume of Wastewater Received from UWMP Service Area (As Reported in Submittal Table 6-2 R) (MG)	Total 2025 Volume of Water Treated (MG)	2025 Outcomes of Treated Wastewater					
				Water Recycled Within UWMP Service Area (enter data as applicable)		Water Recycled Outside of UWMP Service Area (enter data as applicable)		Effluent Discharge that is not a Permitted Recycled Water Use (enter data as applicable)	
				Treatment Level Drop down list	Volume (MG)	Treatment Level Drop down list	Volume (MG)	Treatment Level Drop down list	Volume (MG)
Atascadero WWTP, Place ID 206653	No							Secondary, Undisinfected	482
Total		0	-		0		0		482
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. IPR: Indirect Potable Reuse would have the treatment level of its end use requirement in the Level of Treatment drop-down.									

6.2.5.3 Recycled Water System Description

Recycled water is not currently being used in AMWC's service area; however, flows from the City's WRF percolate through the Salinas River alluvium and Paso Robles formation and act as a source of recharge for the Atascadero Basin.

6.2.5.4 Potential, Current, and Projected Recycled Water Use

AMWC does not currently provide recycled water service to customers within the service area. Refer to **Section 6.2.5.1**.

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

☒	Check box if recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.							
Use Type Drop down list	2025 (MG)	2030 (MG)	2035 (MG)	2040 (MG)	2045 (MG)	2050 (MG)	Potential Recycled Water Use	
							Volume	Narrative page number (OPTIONAL)
							0	
Subtotal Potable	0	0	0	0	0	0	0	
Subtotal Non-Potable	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table. Potential recycled water use: a description of the feasibility of these uses must be included in the narrative. Multiple Producers: If you have multiple recycled water producers, submit a separate table for each.								

Table 6-5. DWR 6-5R Recycled Water Use Projection Compared to 2025 Actual

☒	Check the box if recycled water was not used in 2025 nor previously projected for use in 2020. Proceed to the next table.	
Use Type Drop Down list	2020 Projection for 2025 (MG)	2025 Actual Use (MG)
	N/A	N/A
Total	0	0

6.2.5.5 Actions to Encourage and Optimize Future Recycled Water Use

AMWC does not currently provide recycled water service to customers within the service area. The City does not currently produce recycled water that could be used by customers within the existing AMWC service area. No infrastructure exists to allow the distribution of recycled water for beneficial use. However, as indicated in Paragraph 6.2.5.1, tertiary recycled water may become available from the City's upgraded WRF in future years.

Table 6-6. DWR 6-6R Methods to Encourage Future Recycled Water Use

☒	Check the box if the 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	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (MG)
N/A	N/A	N/A	N/A
Total (MG)			0
Unit Conversion to AF			0

6.2.6 Desalinated Water Opportunities

The AMWC service area is roughly 15 miles east of the Pacific Ocean and due to this separation, desalinated water projects are not feasible.

6.2.7 Water Exchanges and Transfers

AMWC does not anticipate any planned or potential future water exchanges or transfers. However, AMWC has an Emergency Water Supply Agreement with the County of San Luis Obispo to provide water from the AMWC system to County Service Area 23 and the Garden Farms Community Water District during emergency water shortage conditions. As of 2016, the County of San Luis Obispo completed construction of an emergency intertie pipe between AMWC and Garden Farms Community Water District.

6.2.8 Supply From Storage

AMWC does not retrieve water from a water bank or long-term storage recharge project.

6.2.9 Future Water Projects

AMWC does not anticipate being involved in any planned or potential future water projects or programs to increase its water supply over existing sources. AMWC will continue to participate in the Atascadero Basin GSA with other stakeholders in the Atascadero Basin.

Table 6-7. DWR6-7R Expected Future Water Supply Projects or Programs

☒	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Proceed to the next table.					
☐	Check the box if 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.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop Down list	Planned Implementation Year	Planned for Use in Year Type Drop Down List	Expected Increase in Water Supply to Supplier (This may be a range) (MG)
	Drop Down List (yes/no)	If Yes, Supplier Name				
N/A		N/A		N/A		N/A

6.2.10 Summary of Existing and Planned Sources of Water

6.2.10.1 Description of Supplies

AMWC's production strategy to serve customer demands is to pump from the Salinas River Underflow (alluvial wells) to the fullest extent possible, and supplement demands from the Atascadero Basin (deep wells) if demands exceed the alluvial pumping capabilities. Deliveries of water from the NWP are based on well levels in the deep well field (Atascadero Basin). When the static water level in monitoring well No. 11 reaches 50'± below ground surface, AMWC will begin deliveries of NWP water to the Atascadero Basin. Essentially, the groundwater supply reported for the Atascadero Basin would also include the imported water received from the NWP.

As discussed previously, AMWC's existing water supply sources include local groundwater and imported surface water supplies. Based on historical production information provided by AMWC, the Atascadero Groundwater Basin GSP, and ongoing water resource planning efforts it was assumed that AMWC's water supplies are considered reliable and 100% available during normal, single and multiple drought conditions.

6.2.10.2 Quantification of Supplies

Table 6-8 provides an overview of the sources and volume of water that were available to AMWC for 2025. It should be noted that AMWC receives imported surface water from the San Luis Obispo County Flood Control and Water Conservation District as a participant in the Nacimiento Water Project, which is used by AMWC to recharge the Atascadero Basin. The total available groundwater supply under drought conditions, assuming the largest well is out of service, is estimated at 4,323 MG. The total groundwater supply was allocated

among the basins based on the average percentage of total supply contributed by each source over the past five years.

Table 6-8. DWR 6-8R Water Supplies- Actual

Submittal Table 6-8 Retail: Water Supplies — Actual Water Code Section 10631(b)			
Water Supply	Additional Description (as needed)	2025	
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		Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (MG)
Groundwater (not desalinated)	Atascadero Basin	Potable	1,989
Surface water (not desalinated)	Salinas River Underflow (Groundwater under the influence of surface water)	Potable	2,334
Purchased or Imported Water	Nacimiento Water Project	Non-Potable	1,058
Subtotal Potable			4,323
Subtotal Non-Potable			1,058
Total			5,381
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount. NOTES: The Salinas River Underflow alluvial pumping is considered a surface water source by the SWRCB. AMWC has riparian rights, pre-appropriative rights, and appropriative rights via license to the Salinas River alluvial waters.			

Table 6-9. DWR 6-9R Water Supplies – Projected

Submittal Table 6-9 Retail: Water Supplies — Projected Water Code Section 10631 (b)							
Water Supply	Additional Detail on Water Supply	Potable or Non-Potable (after treatment if treated)	Projected Water Supply (Report to the Extent Practicable)				
			2030	2035	2040	2045	2050
			Reasonably Available Volume (MG)	Reasonably Available Volume (MG)	Reasonably Available Volume (MG)	Reasonably Available Volume (MG)	Reasonably Available Volume (MG)
Groundwater (not desalinated)	Atascadero Basin	Potable	1,989	1,989	1,989	1,989	1,989
Surface water (not desalinated)	Salinas River Underflow	Potable	2,334	2,334	2,334	2,334	2,334
Purchased or Imported Water	Nacimiento Water Project	Non-Potable	1,058	1,058	1,058	1,058	1,058
Subtotal Potable			4,323	4,323	4,323	4,323	4,323
Subtotal Non-Potable			1,058	1,058	1,058	1,058	1,058
Total			5,381	5,381	5,381	5,381	5,381
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.							

For the UWMP it is assumed that AMWC will receive an annual allocation of 652 MGY (2,000 AFY) as needed from the NWP to supplement/offset future groundwater pumping from the Atascadero Basin, however as stated previously, AMWC has contracted for 1,058 MGY (3,244 AFY) of water from the project, which could be fully utilized as needed.

Climate Change Effects

With respect to climate change, AMWC has not participated in or conducted an official climate change vulnerability or risk assessment for the existing water service area. However, climate change considerations for AMWC's groundwater supply were incorporated into the Atascadero Basin Groundwater Sustainability Plan (GSP), and Chapter 6 of the Atascadero Basin GSP (Water Budgets) has been included as Appendix A.

Regulatory Conditions and Project Development

There are no known regulatory changes that would impact future water characterization within the AMWC service area.

6.3 Energy Use

There are three reporting options included in the guidebook based on available data which include the following:

- Option 1: Energy Intensity – Water Supply Process Approach by the individual Water Management Processes

- Option 2: Energy Intensity – Total Utility Approach using the sum of all Water Management Processes and total energy for the system
- Option 3: Energy Intensity – Multiple Water Delivery Products by breaking down percentages for retail potable, retail non-potable, agricultural, etc.

Table 6-10 summarizes the AMWC’s supply facilities energy intensity using Option 2: Energy Intensity – Total Utility Approach. Refer to **Section 3.1** for a description of AMWC’s system.

Table 6-10. DWR O-1B Energy Intensity – Total Utility Approach

Water Delivery Product	Retail Potable Deliveries	Only for Water Delivery Products Under the Urban Water Supplier's Operational Control		
		Sum of All Water Management Processes	Non-Consequential Hydropower	
Start Date of Reporting Period	1/1/2025			
End Date of Reporting Period	12/31/2025			
Is upstream embedded energy in the values reported?	No			
Units of Measure for Water	MG	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process		1,634		1,634
Energy Consumed (kWh)		3,360,487		3,360,487
Energy Intensity (kWh/vol. converted to MG)		2,057	-	2,057

Chapter 7: Water Service Reliability and Drought Risk Assessment

Assessing water service reliability is the fundamental purpose for an urban water supplier to prepare and update their UWMP. Water service reliability reflects the Supplier's ability to reliably meet the water needs of its customers with water supplies under varying conditions. AMWC's UWMP considers the reliability of meeting customer water use by analyzing plausible hydrological variability, regulatory variability, climate conditions, and other factors that could affect AMWC's water supply and its customers' water uses. This chapter synthesizes the details embedded in the other chapters (including 4, 6, 8, and 9) and it provides a rational basis for future decision-making related to supply management, demand management, and project development.

7.1 Water Service Reliability Assessment

AMWC has never had a single year or multiple dry years in which it did not meet 100% of its demand, regardless of regional hydrology and prolonged drought conditions. Therefore, there is no basis in the hydrologic record for reducing supply reliability based upon single and/or multiple dry year conditions when imported water supply is available in addition to historical groundwater production. Thus, AMWC's water supply is considered as 100% reliable for single and multiple dry year periods as summarized in the following sections.

AMWC developed Table 7-0, which involved a preliminary climate change vulnerability screening (including impacts from extreme heat, water quality, sea level rise, flooding, and wildfire) for its water supplies.

The water service reliability assessment summarizes AMWC's expected water service reliability for a normal year, single dry year, and five consecutive dry year projections for 2030, 2035, 2040, and through 2045.

Table 7-0: Preliminary Climate Change Vulnerability Screening for Water Supplies

Item	Assessment	Imported Water - Nacimiento Water Project		Groundwater - Atascadero Basin		Groundwater - Salinas River Underflow	
		Response	Level of Risk	Response	Level of Risk	Response	Level of Risk
I. Water Supply and Demand							
1	Are the water supply diversions sensitive to climate change?	Yes	2	Yes	2	Yes	3
2	Is the water supply source affected by urban or agricultural water demand that might be climate sensitive?	Yes	2	Yes	2	Yes	2
3	Is groundwater a major supply source?	No	Not applicable	Yes	3	Yes	3
4	Does the water supply source rely on or could it be affected by snowmelt?	No	Not applicable	No	Not applicable	No	Not applicable
5	Does the water supply source come from or could it be affected by coastal aquifers? Has saltwater intrusion been a problem in the past?	No	Not applicable	No	Not applicable	No	Not applicable
6	Does the water supply source rely on or could it be affected by changes in stored water supplies?	Yes	Not applicable	No	Not applicable	Yes	Not applicable
II. Extreme Heat							
1	Could extreme heat impact operations of the water supply project or diversions?	No	Not applicable	No	Not applicable	No	Not applicable
2	Does the supply source rely on equipment or infrastructure that could be impacted by extreme or prolonged heat?	No	Not applicable	No	Not applicable	No	Not applicable
III. Water Quality							
1	Could water quality issues, such as low dissolved oxygen, algal blooms, disinfectant biproducts affect the water supply source?	Yes	1	No	Not applicable	No	Not applicable
2	Could reduction in assimilative capacity of a receiving water body affect the water supply source?	Yes	1	Yes	3	Yes	3
3	Could the water supply source be affected by water quality shifts during rainfall/runoff events?	Yes	1	Yes	1	Yes	3
IV. Sea Level Rise							
1	Is any of the water supply source infrastructure located in area that could be exposed to rising tides?	No	Not applicable	No	Not applicable	No	Not applicable
2	Could coastal erosion affect the water supply source?	No	Not applicable	No	Not applicable	No	Not applicable
3	Is the water supply source dependent on coastal structures, such as levees or breakwaters, for protection from flooding?	No	Not applicable	No	Not applicable	No	Not applicable
V. Flooding							
1	Is the water supply source or any of its associated infrastructure located within the 200-year floodplain? Does the water supply source rely on flood protection infrastructure such as levees or dams?	Yes	2	Yes	2	Yes	2
VI. Wildfire							
1	Is the water supply source located in an area that is expected to experience an increase in wildfire activity or severity? Would a wildfire result in damage to the water supply source infrastructure or interruption of its ability to perform as designed? Could the water supply source be affected by an increase in wildfire activity or severity in an upstream watershed or other adjacent area?	Yes	1	No	Not applicable	No	Not applicable

Notes: Level of Risk: 1 - low, 3 -medium, 5 - high

7.1.1 Constraints on Water Sources

As described in **Chapter 6**, AMWC's water supply portfolio consists of imported water from the Nacimiento Water Project that is used to recharge the Atascadero Basin with a maximum current allocation of 1,058 MGY, and groundwater pumping from the Salinas River Underflow and the Atascadero Basin with a maximum supply capacity of 4,323 MGY to serve demands. Based on redundancy within AMWC's existing well field and groundwater management practices under the Atascadero Groundwater Basin GSA, AMWC's water supply sources are considered 100% reliable and available during normal, single and multiple dry year conditions. AMWC has never had a single year or multiple dry years in which it did not pump 100% of its demand, regardless of regional hydrology.

As described in **Section 6.2.2.1**, AMWC is part of the Atascadero Basin GSA and will continue to proactively manage the groundwater resources in the Atascadero Basin to serve existing and future demands within the service area.

In April 2024, the EPA established legally enforceable levels, known as Maximum Contaminant Levels (MCLs), for six per- and poly-fluoroalkyl substances (PFAS). Public water systems must monitor for these PFAS and have three years to complete initial monitoring (by 2027). Public water systems have five years (by 2029) to implement treatment if monitoring shows that drinking water PFAS levels exceed the MCLs.³ AMWC has been completing quarterly sampling for perfluorooctanoic acid (PFOA) and perfluoroalkyl substances (PFOS) under a State Water Regional Control Board (SWRCB) order. The sampling results showed that 11 of AMWC's water supply wells (1B, 3A, 4, 5A, 6A, 7, 10, 16, 19, 25, and 26) had levels of PFOA between 0.7 and 11.5 parts per trillion (ppt) and PFOS between 0.5 and 25.5 ppt. The highest combined level of these contaminants detected in one well was 37 ppt.

To address PFOA in the groundwater supply, AMWC has completed several studies to determine system impacts (both water quality and hydraulics) from blending of high PFOA well water with existing diluent well water. Based on the results of the studies and approval from the State, AMWC is currently blending groundwater to reduce PFOA and PFOS levels below the Response Level. AMWC has performed a pilot study and determined that granular activated carbon (GAC) media is effective at removing PFAS compounds. It is anticipated that AMWC will be in compliance with the EPA MCLs by the 2029 deadline. There are no anticipated impacts to water supply availability.

³ Per- and Polyfluoroalkyl Substances (PFAS) Final PFAS National Primary Drinking Water Regulation, U.S. EPA, <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>.

With respect to water quality, AMWC’s Consumer Confidence Report (2024) in **Appendix F** describes existing water quality. As shown AMWC’s water supply meets all United States Environmental Protection Agency (US EPA) and SWRCB water quality standards.

7.1.2 Year Type Characterization

To determine the typical normal, single dry year, and five consecutive dry years within the service area, AMWC reviewed historical rainfall data from the precipitation gauge station at 6575 Sycamore Road located at the AMWC corporation yard. The results of the historical rainfall data review are presented in Figure 7-1. This figure shows historical precipitation versus groundwater elevations with the use of NWP water to recharge the Atascadero Basin when needed. Well #11 is a monitoring well at the northerly end of AMWC’s main well field, which is located within the Paso Robles Formation and is representative of water level in the aquifer.

Table 7-1 identifies the basis of water year data as required by the UWMP and identifies the volume of AMWC’s water supply that was available to serve demands during those years. The “Volume Available” shown in Table 7-1 represents AMWC’s imported water allocation from the Nacimiento Water Project (1,058 MGY) and maximum groundwater pumping capacity (4,323 MGY) that was available during historical normal, single, and multiple dry year conditions.

Table 7-1. DWR 7-1R Basis of Water Year Data

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
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 2024-2025, use 2025	Available Supplies if Year Type Repeats	
		☐	Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location: [insert location from UWMP]
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (MG)	% of Average Supply
Average Year	2000	4,323	100%
Single-Dry Year	2012	5,381	124%
Consecutive Dry Years 1st Year	2012	5,381	124%
Consecutive Dry Years 2nd Year	2013	5,381	124%
Consecutive Dry Years 3rd Year	2014	5,381	124%
Consecutive Dry Years 4th Year	2015	5,381	124%
Consecutive Dry Years 5th Year	2016	5,381	124%
NOTES: The NWP was not available until 2011 and therefore not available for calendar year 2000.			

Table 7-1a supplements information in the Table 7-1 above, in that it summarizes the actual water supply produced during historical normal, single, and multiple dry year conditions to serve customer demands. Because of AMWC’s forward thinking, regional water resource planning efforts, and groundwater management, they have developed a robust water supply portfolio for serving existing and future customer demands. In addition, as seen in calendar years 2014 – 2016, AMWC’s existing water shortage contingency plan policies and demand management measures (DMMs) were effective in implementing consumer conservation efforts to reduce overall system demand during state-wide drought conditions.

Table 1a. Historical Production

Year Type	Year	Actual Production (MGY)	% of Average Production
Average Year	2000	2,082	100
Single Dry Year	2012	1,875	90
Multiple Dry Years – 1 st Year	2012	1,875	90
Multiple Dry Years – 2 nd Year	2013	1,977	95
Multiple Dry Years – 3 rd Year	2014	1,690	81
Multiple Dry Years – 4 th Year	2015	1,439	69
Multiple Dry Years – 5 th Year	2016	1,472	71

NOTES: % of Average Production in the table represents AMWC’s ability to work with customers to reduce water demands during drought years and does not reflect supply limitations.

7.1.3 Water Service Reliability – Supply and Demand Characterization

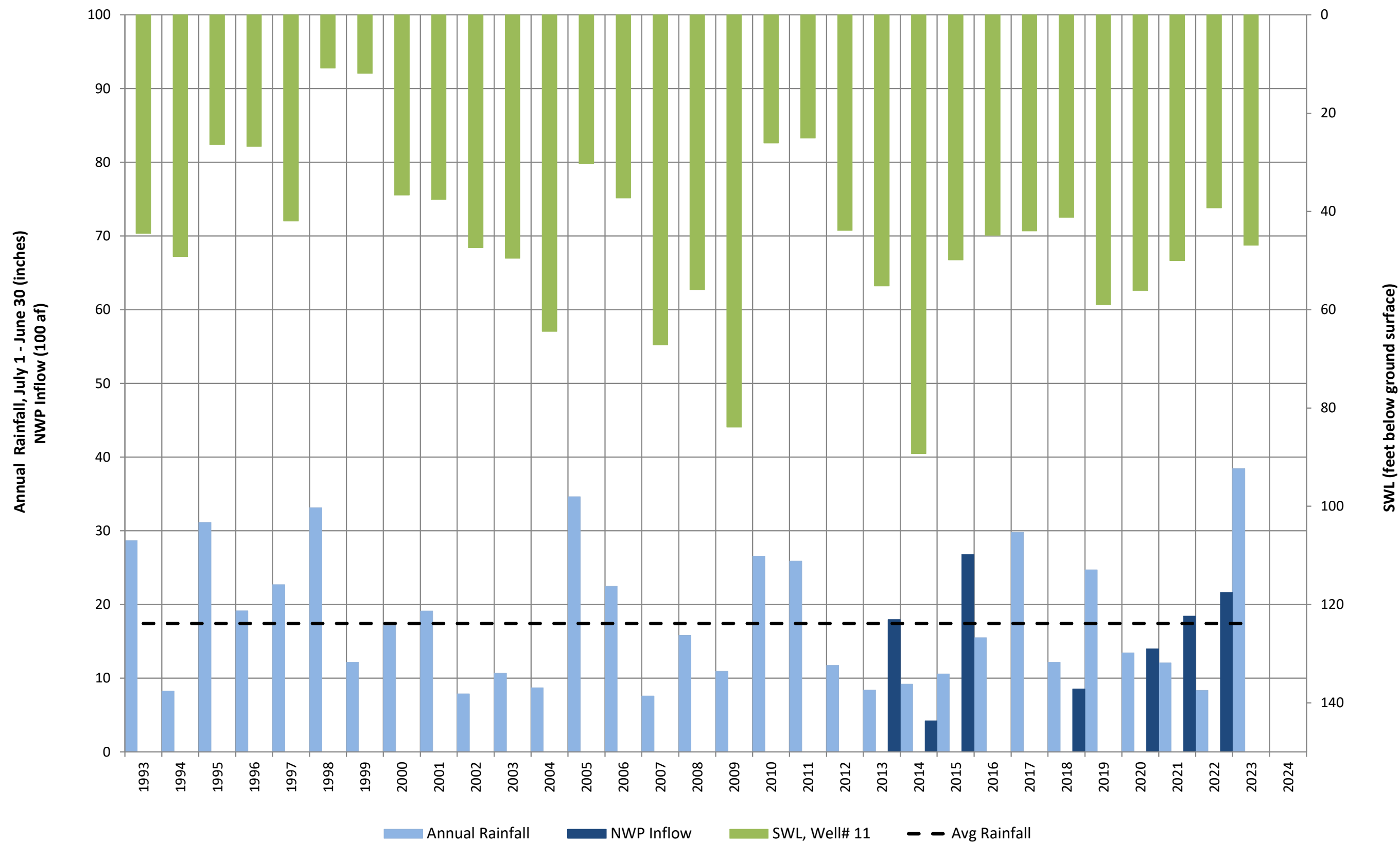
7.1.3.1 Water Service Reliability – Normal Year

Table 7-2 provides a summary of AMWC’s projected supply and water demands through 2050. The future demand projections are based on future population projections as described in **Section 3.4.1** and historical per capita demands including the implementation of the required SBX7-7 as described in **Chapter 5**. The future supply projections are based on the reasonably available groundwater and imported water volumes as described in **Section 6.2.9**. Based on the analysis of AMWC’s current/projected water supply sources AMWC has sufficient resources to serve existing and future demands.

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

	2030	2035	2040	2045	2050
Supply totals (MGY)	5,381	5,381	5,381	5,381	5,381
Use totals (MGY)	1,815	1,886	1,960	2,037	2,116
Surplus/(shortfall) (MGY)	3,566	3,495	3,421	3,344	3,265

Figure 7-1: Rainfall versus Groundwater Static Water Level



7.1.3.2 Water Service Reliability – Single Dry Year

Table 7-3 provides a summary of AMWC’s projected supply and demand through 2050 for a single dry year.

Table 7-3. DWR 7-3R Single Dry Year Supply and Demand Comparison

	2030	2035	2040	2045	2050
Supply totals (MGY)	5,381	5,381	5,381	5,381	5,381
Use totals (MGY)	1,815	1,886	1,960	2,037	2,116
Surplus/(shortfall) (MGY)	3,566	3,495	3,421	3,344	3,265

7.1.3.3 Water Service Reliability – Five Consecutive Dry Years

Table 7-4 provides a summary of AMWC’s projected supply and demand through 2050 for multiple dry years.

Table 7-4. DWR 7-4R Multiple Dry Years Supply and Demand (MGY) Comparison

		2030	2035	2040	2045	2050
First Year	Supply Totals	5,381	5,381	5,381	5,381	5,381
	Demand Totals	1,815	1,886	1,960	2,037	2,116
	Difference	3,566	3,495	3,421	3,344	3,265
Second Year	Supply Totals	5,381	5,381	5,381	5,381	5,381
	Demand Totals	1,815	1,886	1,960	2,037	2,116
	Difference	3,566	3,495	3,421	3,344	3,265
Third Year	Supply Totals	5,381	5,381	5,381	5,381	5,381
	Demand Totals	1,815	1,886	1,960	2,037	2,116
	Difference	3,566	3,495	3,421	3,344	3,265
Fourth Year	Supply Totals	5,381	5,381	5,381	5,381	5,381
	Demand Totals	1,815	1,886	1,960	2,037	2,116
	Difference	3,566	3,495	3,421	3,344	3,265
Five Year	Supply Totals	5,381	5,381	5,381	5,381	5,381
	Demand Totals	1,815	1,886	1,960	2,037	2,116
	Difference	3,566	3,495	3,421	3,344	3,265

7.1.4 Descriptions of Management Tools and Options

AMWC coordinates closely with the Templeton Community Services District, City of Atascadero and the San Luis Obispo County Flood Control and Water Conservation District with respect to regional water resource management. AMWC has and will continue to participate in the following regional water resource planning efforts:

- Atascadero Basin GSA
- California Statewide Groundwater Elevation Monitoring Program (CASGEM)

- Member of the San Luis Obispo County Water Resource Advisory Committee
- Member of San Luis Obispo County Water Action Team
- San Luis Obispo County 2012 Master Water Report – Master planning of regional water resources throughout the County of San Luis Obispo
- 2003 Projected Water Supply and Demand Update – Based upon present studies, pumping records, land use designations and other information available to the public, this analysis is an update of a similar supply and demand study completed in 1997. The update was necessary at this time because of a change in the City of Atascadero’s General Plan, possible changes in water use patterns, additional information concerning AMWC’s water supply and pending decisions concerning supplemental water supplies, most notably the Nacimiento Water Project. The Water Supply and Demand Update provided the reasoning for AMWC participation in the Nacimiento Water Project to meet future peak water demand.

7.2 Drought Risk Assessment

CWC Section 10635(b) requires every urban water supplier to include, as part of its UWMP, a Drought Risk Assessment (DRA) for its water service area to incorporate in the development of the DMMs and water supply projects and programs. The DRA allows suppliers to consider how to manage their water supplies under stressed hydrologic conditions in relation to variations in demand, and it supports the evaluation of the supplier’s WSCP.

7.2.1 Data, Methods, and Basis for Water Shortage Conditions

The following information was used to support AMWC’s DRA to identify water production and consumption to its customers and determine restrictions to supply sources:

- Large Water System Annual Report to The Drinking Water Program
- Annual AWWA Water Loss Audit Worksheet
- Atascadero Basin GSP
- AMWC 1971 – 2025 Demand Study
- Historical rainfall data from the precipitation gauge station at 6575 Sycamore Road located at the AMWC Corporation Yard
- Groundwater elevations using Well #11, which is a monitoring well at the northerly end of AMWC’s main well field located within the Paso Robles Formation and is representative of water level in the aquifer

7.2.2 DRA Individual Water Source Reliability

As identified in **Section 7.1.2**, AMWC has never had a single year or multiple dry years in which it did not meet 100% of its demand, regardless of regional hydrology. Therefore, there is no basis in the hydrologic record for reducing supply reliability based upon single and/or multiple dry year conditions when imported water supply is available in addition to groundwater production. Thus, AMWC's supply is considered as 100% reliable for single and multiple dry year periods, as discussed in previous sections.

7.2.3 Total Water Supply and Use Comparison

Sustainable management of its existing groundwater resources through water-use efficiency measures and use of NWP supplemental water will allow AMWC to serve existing and future water demands during normal years, single dry years, or multiple dry years.

Table 7-5. DWR 7-5R Five-Year Drought Risk Assessment (per Water Code §10635(b))

2026 (YEAR 1)	Gross Water Use	1,760
	Total Supplies	5,381
	Surplus/Shortfall without WSCP Action	3,621
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	3,621
	Resulting Percent Use Reduction from WSCP Action	0
2027 (YEAR 2)	Gross Water Use	1,774
	Total Supplies	5,381
	Surplus/Shortfall without WSCP Action	3,607
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	3,607
	Resulting Percent Use Reduction from WSCP Action	0
2028 (YEAR 3)	Gross Water Use	1,788
	Total Supplies	5,381
	Surplus/Shortfall without WSCP Action	3,593
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	3,593
	Resulting Percent Use Reduction from WSCP Action	0
2029 (YEAR 4)	Gross Water Use	1,801
	Total Supplies	5,381
	Surplus/Shortfall without WSCP Action	3,580
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	3,580
	Resulting Percent Use Reduction from WSCP Action	0
2030 (YEAR 5)	Gross Water Use	1,815
	Total Supplies	5,381
	Surplus/Shortfall without WSCP Action	3,566
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	3,566
	Resulting Percent Use Reduction from WSCP Action	0

Chapter 8: Water Shortage Contingency Plan

This chapter provides a summary of the Atascadero Mutual Water Company (AMWC) Water Shortage Contingency Plan (WSCP), including shortage stages and shortage response actions. The WSCP is a proposed strategic plan that has been developed by AMWC to prepare for and respond to water shortages. A water shortage is when the available water supply is insufficient to meet the normally expected customer water use (demand) at a given point in time, which may occur for several reasons, such as water supply quality changes, climate change, drought, and catastrophic events (e.g., earthquake). The WSCP provides an updated water supply availability assessment and structured steps that AMWC can employ 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 complete WSCP is attached as **Appendix G**. This version of the WSCP was completed and approved in May 2021 and did not need to be revised prior to the 2025 UWMP submittal.

California Water Code (CWC) Section 10632 requires that every urban water supplier that serves more than 3,000 acre-feet per year or has more than 3,000 connections prepare and adopt a stand-alone WSCP as part of its Urban Water Management Plan (UWMP). This WSCP is a proposed plan for a range of water shortage situations, including supply shortages of greater than 50%. The WSCP will be updated based on new requirements every five years and will be adopted as a current update for submission to the California Department of Water Resources (DWR).

AMWC's WSCP is organized into the following main sections to align with the CWC Section 16032 requirements:

Water Supply Reliability Analysis

Summarizes the AMWC water supply reliability analysis and identifies key issues that may trigger a shortage condition.

Annual Water Supply and Demand Assessment Procedures

Describes the key data inputs, evaluation criteria, and methodology for assessing the system's reliability for the coming year and the steps to formally declare water shortage levels and response actions.

Standard Shortage Stages

Establishes water shortage levels to clearly identify and trigger shortage response actions.

Shortage Response Actions

Describes the response actions that may be implemented or considered for each stage to reduce gaps between supply and demand as well as to minimize social and economic impacts on the community.

Communication Protocols

Describes communication protocols at each stage to ensure that customers, the public, and government agencies are informed of shortage conditions and requirements.

Compliance and Enforcement

Describes how AMWC will ensure compliance with and enforce provisions of the WSCP.

Legal Authority

Lists the legal ordinance that grants AMWC the authority to declare a water shortage and implement and enforce response actions.

Financial Consequences of WSCP Implementation

Describes the anticipated financial impact of implementing water shortage stage measures and identifies mitigation strategies to offset financial burdens.

Monitoring and Reporting

Describes how AMWC will monitor and report on implementation of their WSCP for water supply planning and management.

WSCP Refinement Procedures

Describes the factors that may trigger updates to the WSCP and outlines how to complete an update.

Special Water Feature Distinctions

Summarizes the different considerations applicable to non-pool or non-spa water features, which are analyzed and defined separately in the WSCP.

Plan Adoption, Submittal, and Availability

Describes the process for the adoption, submittal, and availability of the WSCP after each revision.

8.1 Water Supply Reliability Analysis

As described in **Chapter 7** of this UWMP, AMWC's water supply has been determined to be reliable even during prolonged periods of drought. More detail about this section can be found in AMWC's WSCP in **Appendix G**.

8.2 Annual Water Supply and Demand Assessment

In accordance with CWC Section 10632, AMWC conducts an annual water supply and demand assessment, or annual assessment by July 1st of each year. AMWC prepares a written report that discusses the results of the annual water supply and demand assessment. Descriptions of the methodology, key data inputs, and a timeline for the annual assessment can be found in the WSCP. The annual assessment is available online at the following link: https://wuedata.water.ca.gov/wsda_tool.asp?wuedata_plan_id=20702.

8.2.1 Decision-Making Process

The written decision-making process can be found in the WSCP.

8.2.2 Data and Methodologies

The data and methodologies can be found in the WSCP.

8.3 Six Standard Water Shortage Levels

The WSCP establishes six stages of drought response actions, consistent with the six standard water shortage levels established in the UWMP Guidebook, to be implemented in times of shortage, with increasing restrictions on water use in response to decreasing supplies. The WSCP includes both voluntary and mandatory rationing depending on the causes, severity, and anticipated duration of the water supply shortage. A summary of the response actions taken for each shortage level are described in Table 8-1 shown below.

Table 8-1. Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions (Narrative Description)
1	Up to 10%	Reserve production capability of 20% above the maximum daily demand representing “Normal” water supply conditions with “Voluntary” (always in place) compliance with water savings measures.
2	Up to 20%	Reserve production capability of 10% above the maximum daily demand representing “Slightly Restricted” water supply conditions with “Mandatory” compliance with water savings measures.
3	Up to 30%	No reserve production capability representing “Moderately Restricted” water supply conditions with “Mandatory” compliance with water savings measures.
4	Up to 40%	Less than 0% reserve production capability representing “Restricted” water supply conditions with “Mandatory” compliance with water savings measures.
5	Up to 50%	Less than 0% reserve production capability representing “Severely Restricted” water supply conditions with “Mandatory” compliance with water savings measures.
6	> 50%	Less than 0% reserve production capability representing “Extremely Restricted” water supply conditions with “Mandatory” compliance with water savings measures.

Figure 8-1 provides a crosswalk that shows AMWC’s water shortage levels to those mandated by statute.

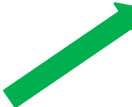
Stages from 2025 UWMP			Crosswalk	2025 WSCP Mandated Shortage Levels			
Stage	Percent Supply Reduction	Water Supply Condition		Stage	Percent Supply Reduction	Water Supply Condition	Mandatory compliance with water savings measures
0	0%	Reserve production capability of 20% above the maximum daily demand		1	0% to 10%	Normal	Voluntary, always in place
1	0%-15%	Reserve production capability of 10% above the maximum daily demand		2	10% to 20%	Slightly Restricted	Mandatory compliance
2	15%-35%	No reserve production capability		3	20% to 30%	Moderately Restricted	Mandatory compliance
3	35%-50%	Less than 0% reserve production capability		4	30% to 40%	Restricted	Mandatory compliance
				5	40% to 50%	Severely Restricted	Mandatory compliance
				6	50% and above	Extremely Restricted	Mandatory compliance

Figure 8-1. Crosswalk for AMWC 2025 Shortage Levels and 2025 WSCP Mandated Shortage Levels

8.4 Shortage Response Actions

8.4.1 Supply Augmentation

Table 8-2 summarizes the restrictions and prohibitions on end users during each stage of water shortage responses implemented by AMWC in accordance with CWC §10632(a)(4)(A).

Table 8-2. DWR 8-2R Supply Augmentation and Other Actions

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	Estimated Extent of Reducing the Water Shortage Gap
All Stages	Expand Public Information Campaign	Medium
1 and 2	Other – Voluntary Water Use Reductions	Medium
	Implement or Modify Drought Rate Structure or Surcharge	High
5 and 6	Stored Emergency Supply	Low
5 and 6	Other – Interrupt Irrigation Services	High

A complete description of operational and mandatory restrictions issued by AMWC can be found in the WSCP.

8.4.2 Demand Reduction

Table 8-3 summarizes the restrictions and prohibitions on end users during each stage of water shortage response implemented by AMWC in accordance with CWC §10632(a)(4)(B). The shortage response actions are aligned to the six water shortage levels with the goal of reducing the gap between supply and demand by the required amount per level.

Table 8-3. DWR 8-3R Demand Reduction Actions

Shortage Level	Demand Reduction Action	Estimated Extent of Reducing the Water Shortage Gap	Penalty, Charge, or Other Enforcement?
1	Education for water conservation methods.	Low	No
1	Public outreach for voluntary reduction in water use by 15%	Medium	No
2	Landscape - Restrict or prohibit runoff from landscape irrigation	Medium	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	High	Yes
2	Other - Shareholders must repair leaks, breaks, and malfunctions in a timely manner	Medium	Yes
3	Landscape - Limit landscape irrigation to specific times	High	Yes

Shortage Level	Demand Reduction Action	Estimated Extent of Reducing the Water Shortage Gap	Penalty, Charge, or Other Enforcement?
3	Water Features - Restrict water use for decorative water features, such as fountains	Low	Yes
3	Landscape - Prohibit certain types of landscape irrigation	Medium	Yes
4	CII - Other CII restriction or prohibition	Low	Yes
4	CII - Lodging establishment must offer opt out of linen service	Low	Yes
4	Landscape - Restrict or prohibit runoff from landscape irrigation	Medium	Yes
5	Other - Prohibit use of potable water for washing hard surfaces	High	Yes
5	Other – prohibit vehicle washing except for at facilities using recycled or recirculating water	Medium	Yes
5	Landscape - Limit landscape irrigation to specific days	High	Yes
5	CII - Lodging establishment must offer opt out of linen service	Low	Yes
6	Landscape - Prohibit all landscape irrigation	High	Yes
6	Other – Prohibit use of potable water for construction and dust control	Medium	Yes

8.4.3 Operational Changes

In the event of an extreme water shortage AMWC will implement some or all of the following operational changes in accordance with CWC §10632(a)(4)(C) and §10632.5(a):

- AMWC shall provide prompt notice to customer whenever AMWC obtains information that indicates a leak may exist within the end-user's exclusive control. The customer must repair all leaks within twenty-four (24) hours of notification by AMWC.
- Evaluate maintenance procedures and alter if needed to improve system efficiency.
- Evaluate infrastructure repairs, and complete if possible, to improve system efficiency.

8.4.4 Additional Mandatory Restrictions

AMWC customers shall comply to the mandatory water shortage response actions listed in **Table 8-3** associated with a level 3 or higher water shortage event in accordance with

§10632(a)(4)(D). In the event of a water shortage emergency or severe drought AMWC may enact additional mandatory restrictions:

- Implement drought water rates.
- Restrict or prohibit the issuance of new water services.

8.4.5 Emergency Response Plan

In the event of an emergency AMWC will declare a water shortage and enact the appropriate water savings actions until service is restored to pre-emergency conditions. A more detailed description of AMWC's emergency response plan and water shortage actions can be found in the WSCP.

8.4.6 Seismic Risk Assessment and Mitigation Plan

AMWC completed the America's Water Infrastructure Act (AWIA) Risk and Assessment (RRA) which assessed seismic risk and the County of San Luis Obispo in partnership with the City of Atascadero developed a Multi-Jurisdictional Hazard Mitigation plan. A summary of the seismic risk assessment can be found in the RRA. The seismic risk evaluation considered likely events and damage to critical water infrastructure that may occur during earthquakes of magnitudes expected in the central coast seismic region. Vulnerable facilities include water supply wells/pumping systems, water treatment/chemical feed buildings, reservoirs, and transmission and distribution mains.

8.4.7 Shortage Response Action Effectiveness

AMWC will monitor and evaluate the effectiveness of the shortage response actions. In the event that the shortage response actions are not effective, AMWC will have the power to amend the WSCP. A more detailed description of AMWC's plan to monitor effectiveness can be found in the WSCP.

8.5 Communication Protocols

AMWC will inform customers, the public, and the necessary local, regional, and state government entities in regard to any current or predicted water shortages based on the results of the Annual Water Supply and Demand Assessment or in the event of an emergency. AMWC will also notify all necessary entities of any shortage response actions mandated in response to the Annual Assessment. A detailed communication plan can be found in the WSCP.

8.6 Compliance and Enforcement

AMWC's enforcement policies can be found in the WSCP.

8.7 Legal Authorities

AMWC has the power to declare a water shortage. See the WSCP for AMWC's declaration of a water shortage.

8.8 Financial Consequences of WSCP

CWC Section 10632(a)(8) requires a discussion of the financial consequences of, and responses to, drought conditions, including potential revenue reductions and expense increases resulting from the activated shortage response actions and associated mitigation actions.

AMWC has established drought water rates to be implemented in the event of a water shortage, see the WSCP for drought rates.

8.9 Monitoring and Reporting

Monitoring and reporting procedures can be found in the WSCP.

8.10 WSCP Refinement Procedures

Refinement procedures can be found in the WSCP.

8.11 Special Water Feature Distinction

A description of special water features can be found in the WSCP.

8.12 Plan Adoption, Submittal, and Availability

The procedures that were used to adopt the WSCP are detailed in the WSCP.

Chapter 9: Demand Management Measures

9.1 Demand Management Measures for Retail Suppliers

AMWC is not a wholesale agency and is not required by DWR to complete **Section 9.1**.

9.1.1 Implementation Over the Past Five Years

AMWC has implemented the required Demand Management Measures (DMMs) per CWC 10631 to achieve its water use targets pursuant to Section 10608.20 and described in **Chapters 5** and **8**. In the past 5 years, AMWC has maintained its High-Efficiency Toilet (HET/DFT) and High-Efficiency Clothes Washer (HECW) rebate programs. Additionally, AMWC has been operating four additional rebate programs: the Weather-Based Irrigation Program, Pressure Reducing Valve Program, Rainwater Harvesting Rebate Program, and Lawn to Garden Rebate Program.

AMWC's Public Education and Outreach events mentioned in the 2020 UWMP have continued to take place over the last 5 years. School education programs and water audit programs have continued taking place in the community, as well. AMWC will continue to carry out programs mentioned and implement new programs as seen fit.

9.1.2 Implementation to Achieve Water Use Targets

AMWC has implemented the required DMMs per CWC 10631 to achieve its water use targets pursuant to Section 10608.20. Baseline and target 2020 GPCD are described in **Chapter 5** of the UWMP. AMWC adopted its WSCP (see **Chapter 8**) at its September 2026 Board meeting which outlines measures AMWC will take to achieve water use targets.

9.1.3 Required Demand Management Measures

The UWMP Act requires a discussion of DMMs, including a description of each of the DMMs currently being implemented/scheduled for implementation, the schedule of implementation for all DMMs, and the methods, if any, AMWC will use to evaluate the effectiveness of DMMs.

9.1.3.1 *Water-Waste Prevention Ordinances*

Water waste prevention measures are detailed in AMWC's WSCP. The measures included in the WSCP are summarized below:

1. Work with local government to prohibit frequent gutter flooding, single-pass cooling systems for new connections, non-recirculating systems in all new conveyor or car

wash systems, non-recirculating systems in all new commercial laundry systems, non-recirculating systems in all new decorative fountains.

2. Work with local government to instate a landscape water ordinance as least as effective as the AB 325 Model Landscape Ordinance.

Declaration of a Stage 1 water shortage condition: the following Wise and Beneficial Use of Water policy is enacted, and the public water-awareness program is escalated.

When the Board of Directors makes a Stage 2 declaration the Wise and Beneficial Use of Water policy is enacted and prohibitions and restrictions on the use of water are enforced.

Wasteful Use of Water - No water user shall waste any water supplied through the distribution facilities of AMWC or through any well under agreement with AMWC. The following uses of water constitute "waste" as used in this resolution:

- The watering of grass, lawns, ground-cover, shrubbery, open ground, crops and trees, including agricultural irrigation, in a manner or to an extent which allows substantial amounts of excess water to run off the area being watered. Every water user is deemed to have under his control at all times his water distribution lines and facilities and to know the manner and extent of his water use and excess runoff.
- The washing of sidewalks, walkways, driveways, parking lots and all other hard-surfaced areas by direct hosing, except as directed by governmental entities or agencies to eliminate matters and substances dangerous to the public health and safety.
- The escape of water through breaks or leaks within the water users plumbing or 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 24 hours after the water user discovers such leak or break, whichever occurs first, is a reasonable time within which to correct such leak or break.
- The use of water by governmental entities or agencies for (1) routine water system flushing for normal maintenance, (2) routine sewer system flushing for normal maintenance, and (3) fire personnel training; except as approved in advance in writing by the AMWC Board of Directors.
- The washing of vehicles and other activities involving the use of a hose without a shutoff nozzle.

Remedies - In the event any person, firm, partnership, association, corporation, or political entity is found by the Board of Directors to be in violation of any restriction or prohibition of this Resolution, the Board of Directors may impose a special water waste surcharge against such person's account and may temporarily or permanently discontinue or restrict, with a

flow regulating device, water service to the affected property. Before taking such action, the Board of Directors shall give any such person reasonable notice and an opportunity to be heard and protest against the finding of such violation and the imposition of such measures. The Board may determine the terms and conditions of the discontinuance or restriction of service any may establish by Resolution, a schedule of the amount of such surcharges as in its sole discretion will reasonably compensate AMWC and its customers for all loss of water and other damages incurred and as will foster water conservation within the service area of AMWC.

Notices and Surcharges - The Board authorizes AMWC staff to issue notices and assess the surcharges listed below to customers in violation of any restriction or prohibition of this Resolution. The Board has determined that the surcharges listed below reasonably compensate AMWC and its customers for all loss of water and other damages incurred and will foster water conservation within the service area of AMWC.

- 1st Violation - Written & oral notice (door hanger & follow-up call) identifying nature of violation
- 2nd Violation within one year of first violation - Written notice including notification of possible surcharge & installation of flow restrictor
- 3rd Violation within one year of first violation - 50% surcharge based on current month's water usage added to current month's water bill
- 4th & Subsequent Violations within one year of first violation - 100% surcharge based on current month's water usage added to current month's water bill plus installation of flow restrictor

Emergency Staff Action - In unusual emergency circumstances where AMWC personnel observe substantial amounts of water being wasted in violation of this Resolution and where after reasonable efforts have been made to persuade the shareholder to terminate such waste, but have failed, the General Manager may authorize the immediate restriction of water service by installation of a flow regulating device or temporary discontinuation of service to the affected property. A written notice of such action and the reasons therefore shall be delivered to the shareholder and any adult person present at the premises, or if none can be found, left in a conspicuous place on the property within twenty-four hours of restriction or discontinuance of service. Any such person whose service has been discontinued may have water service promptly reinstated by applying at the AMWC office upon payment of a reconnection fee equal to the delinquent shut-off fee established by the Board. Notwithstanding any reinstatement, such person may still be cited for and subject to all other penalties for water wastage provide elsewhere in this Resolution.

Appeals - Any water user may appeal any decision or application of the provisions of this Resolution to the Board of Directors by filing a written appeal with the General Manager within ten days from the date of the decision or application of the provisions is made, and the Board of Directors will set the matter for a hearing at the next regular meeting, and may in its discretion thereafter affirm, reverse, or modify the General Manager's decision, and impose any conditions it deems just and proper.

9.1.3.2 Metering

AMWC requires meters for all service connections and billing by volume of use. Metering of all water has been instituted since 1914. Dedicated irrigation meters are encouraged for commercial, industrial, institutional and multi-family common landscapes greater than 5,000 square feet. AMWC customers are billed with a commodity, a base, and an increasing tiered rate structure. The base rate is charged based on the meter size, and the tiered rate structure is based on water usage. Tiers include a price per thousand gallons used for ranges of 1 to 10 thousand gallons, 11 to 25 thousand gallons, 26 to 50 thousand gallons, 51 to 75 thousand gallons, and over 76 thousand gallons per month.

9.1.3.3 Conservation Pricing

Table 9-1 and 9-2 summarizes AMWC's current water rate structure.

Table 9-1. Minimum Rate per Meter Size

Meter Size	Water Rate
5/8	\$36
3/4	\$36
1	\$46
1 1/2	\$53
2	\$88
3	\$271
4	\$342
6 or 8	\$532
Hydrant Meter	\$116

Table 9-2. Charges for Water Consumed

Tier	Usage (1,000 gal)	Rate (per 1,000 gal)
1	1-10	\$3.80
2	11-25	\$5.60
3	26-50	\$7.70
4	51-75	\$8.60
5	>75	\$11.50 (residential) \$8.60 (non-residential)

In addition to the standard billing rates shown above, properties in pumping-surcharge areas pay an additional 15% for water consumed.

9.1.3.4 Public Education and Outreach

AMWC organizes the following public education and outreach events:

1. Annual conservation newsletter to customers.
2. Annual Water-Wise Strategies workshops.
3. Providing information on customers' bills showing use in thousand gallons per month compared to previous year.
4. Providing conservation information on monthly water bill.
5. Participating in local Partners In Water Conservation activities and PSAs.
6. Providing seasonal information at local nurseries.
7. Conducting annual Water-Conserving Landscape Awards Contest.
8. Sponsoring community calendar with monthly water conservation information.
9. Sponsoring and participating in community Conservation Celebration.
10. Participating in Colony Days Tent City to share role and history of the water company in the community.
11. Water-conserving demonstration gardens on and off-site of AMWC property.
12. Sponsoring annual Salinas River and Atascadero Creek Clean-up.
13. Participating in landscape industry events to showcase water-wise landscaping to the community.
14. Hosting watershed walks and well-field tours.

AMWC has had a strong public outreach program since the drought in the early 1990s. Many articles on water conservation have been written by AMWC in the local news. AMWC's articles can be found dating back to as early as 1916.

9.1.3.5 Programs to Assess and Manage Distribution System Real Loss

AMWC's programs to assess and manage distribution systems' losses include the following:

1. Complete a monthly water audit for leak detection and repairs.
 - a. Determine metered sales;
 - b. Determine other system verifiable uses;
 - c. Determine total supply into system;

- d. Divide metered sales plus other verifiable uses by total supply into the system.
If this quantity is less than 0.9, a full-scale system audit is warranted.
2. When necessary, the AMWC will complete a water audit of its distribution system using methodology consistent with that described in AWWA's Water Audit and Leak Detection Guidebook.
3. AMWC also advises customers whenever it appears possible that leaks exist on the customer's side of the meter; performs distribution system leak detection when warranted and cost-effective; and repairs leaks promptly when found.
4. Quantification of all produced and sold water in the system and by zone, testing meters, verifying records and maps, field checking distribution controls and operating procedures.
5. "Leak Prevention" programs including corrosion control, quality control on materials and installations, and backflow device testing.

AMWC has a leak detection and repair program that surveys roughly 250 miles of service area pipe mains throughout the 38 square miles of service area. Although a yearly target of less than 7% losses is maintained, should system losses exceed 9%, a more detailed audit would be triggered. AMWC estimates half an acre-foot of losses annually for known causes including main and hydrant flushing.

9.1.3.6 Water Conservation Program Coordination and Staffing Support

AMWC has one part-time Conservation Manager responsible for overseeing the conservation program, including home water surveys, rebates, and outreach programs. AMWC utilizes a consultant for its school education programs.

9.1.3.7 Other Demand Management Measures

Other demand management measures that AMWC has implemented include the following:

School Education Programs:

1. Provide "The Story of Our Water" class presentations. This free 45-minute class presentation helps 3rd – 6th grade students understand the importance of water resources in Atascadero. The presentation is correlated to the Next Generation Science Standards. Interactive three-dimensional storyboards, called the water puzzle, are used to keep students focused and involved.
2. Provide a 90-minute Water Exploration. This field trip provides students with a terrific first-hand investigation of the Salinas River, and how this water source is managed to provide a safe, reliable water supply to residents of the Atascadero area. Students will see how water is produced and treated before being sent to homes. They will also

learn about groundwater and how it is being managed. Students will also learn about the Nacimiento Water Project, and observe the water recharge basin that provides 2,000 acre feet of water each year to local residents. Participate in local Children's Day in the Park with water conservation and water cycle activities.

Water Survey Programs for Single- Family Residential and Multi-Family Residential Customers:

AMWC's implementation of this BMP includes the following:

1. Contact via letter or telephone single-family and multi-family residential customers.
2. Provide surveys to single-family and multi-family residential customers.
3. Check water pressure and identify presence of water pressure regulator.
4. Check for leaks, including toilets, faucets and showerheads.
5. Check showerhead and aerator flow rates, replacement included in bathroom retrofit incentive.
6. Check toilet flow rate and, when appropriate qualify customer for bathroom retrofit incentive.
7. Check irrigation system for efficiency and determine timer functioning and current schedule.
8. Develop revised irrigation schedule.
9. Provide customer with evaluation results, water saving recommendations and other information.
10. Recommend rebate programs to customers including:
 - a. Lawn to Garden turf conversion program
 - b. WaterSense Irrigation Controllers
 - c. Installation of Pressure Reducing Valve
 - d. Rainwater Harvesting rebate

Conservation staff solicits information on current water use practices and works with customers to increase water efficiency. Trained auditors execute interior audits for leaks in toilets, showerheads, and faucets and conduct an exterior landscape and irrigation audit when applicable. Customers are provided with information packets that include evaluation results and water saving recommendations. The landscape survey program began in 1994. Residential survey programs are marketed through direct mailing, bill inserts, AMWC's Water Watch newsletter, the local newspaper, and flyers distributed at local events.

Pressure Reducing Valve Rebate Program:

AMWC began its Pressure Reducing Valve Program in 2020 as an incentive for customers whose residential properties have static pressure of 80 pounds per square in (psi) or higher.

Reducing high water pressure saves water by reducing leaks, and helps prevent damage to pipes, appliances, and water fixtures. Customers can receive up to a \$100 rebate credit for materials and labor if their application is approved and meets all criteria.

Smart Irrigation Controller Program:

AMWC's Smart Irrigation Controller Program is meant to encourage customers to reduce the amount of landscape water used and improve landscape irrigation efficiency by utilizing weather-based irrigation controllers (WBIC) as a tool to improve irrigation management and water efficiency. The Weather-Based Irrigation Program and Rainwater Harvesting Rebate Program fall under this program. Upon installation of a qualified Smart Irrigation Controller, customers will receive a rebate up to 50% of the actual price of the controller.

High-Efficiency Clothes Washing Machine Rebate Programs:

AMWC's High-Efficiency Clothes Washer (HECWT) program is meant to encourage the use of water efficient appliances, with added benefits of energy efficiencies. A qualifying product list is available on the AMWC website.

High Efficiency Toilet Rebate Program for WaterSense Specification (WSS) Toilets:

AMWC's implementation of this BMP includes the following:

1. Maintain an aggressive single family and multi-family ultra-low flow toilet rebate program.
2. Report HET program data to CUWCC's reporting database.

Commercial, Industrial, and Institutional:

AMWC's implementation of this BMP includes the following:

1. Provide interior water surveys to commercial and industrial accounts.
2. Provide unique rebate opportunities when appropriate not limited to, but including commercial washers, cooling tower conductive meters, water brooms and commercial toilets.
3. AMWC categorizes institutional customers into commercial and industrial accounts.

Landscape:

AMWC's implementation of this BMP includes the following:

1. Provide non-residential customers with support, education, and incentives to improve their landscape water use efficiency.

2. Provide new large landscape customers with guidance on appropriate landscaping for the conservation of the community's finite resources while ensuring the aesthetic, environmental and societal benefits of sustainable landscaped projects.
3. AMWC offers a rebate for upgrading to Water Sense Specification Irrigation Controllers, similar to the rebate program for residential customers.
4. AMWC offers a turf conversion rebate through the "Lawn-to-Garden" rebate program.

Irrigation water metered through designated landscape meters is currently 8.5% of AMWC's total annual water use.

9.2 Demand Management Measures for Wholesale Suppliers

AMWC is not a wholesale agency and is not required by DWR to complete **Section 9.2**.

Chapter 10: Plan Adoption, Submittal, and Implementation

10.1 Inclusion of All 2025 Data

This 2025 UWMP update includes water use and planning data for the entire 2025 calendar year.

10.2 Notice of Plan Preparation

AMWC notified the agencies listed in **Table 10-1** at least sixty (60) days prior to the public hearing of the preparation of the 2025 Plan and invited them to participate in the development of the Plan. A copy of the notification letters sent to these agencies is provided in **Appendix H**.

10.3 Notice of Public Hearing

10.3.1 Notice to Cities and Counties

The notice of the public hearing, held at the September 2026 Board meeting at the AMWC office, was sent to the Cities of Paso Robles and Atascadero, as well as the County of San Luis Obispo on **August X, 2026**. A copy of the letters from AMWC to the Cities and County are included in **Appendix H** of this UWMP.

Table 10-1. Notification to Cities and Counties

City	60-Day Notice	Notice of Public Hearing	Other
City of Paso Robles	Yes	Yes	
City of Atascadero	Yes	Yes	

County	60-Day Notice	Notice of Public Hearing	Other
County of San Luis Obispo	Yes	Yes	

10.3.2 Notice to the Public

The public hearing was noticed in the local newspaper as prescribed in Government Code 6066. This notice included time and place of hearing, as well as the location where the UWMP and WSCP is available for public inspection. A copy of the newspaper notice is included in Appendix I.

10.4 Public Hearing and Adoption

10.4.1 Public Hearing

Prior to adopting the 2025 UWMP and WSCP, AMWC held a public hearing at the September 2026 Board meeting, which included input from the community regarding the AMWC's draft 2025 UWMP and WSCP. As part of the public hearing, AMWC provided information on determination of its water use targets and action plan in case of severe water shortage conditions.

10.4.2 Adoption

The 2025 UWMP and WSCP was adopted in September 2026 during a regularly scheduled Board meeting. A copy of the resulting adoption and meeting minutes is included in **Appendix J** of this UWMP.

10.5 Plan Submittal

10.5.1 Submitting a UWMP and Water Shortage Contingency Plan to DWR

Within 30 days of adoption of the 2025 UWMP by the Board of Directors, AMWC will submit the adopted 2025 UWMP to DWR, as required by CWC 10621 and 10644. The 2025 UWMP will be submitted through DWR's "Water Use Efficiency (WUE) Data Online Submittal Tool" website.

DWR previously provided a checklist to determine if an Urban Water Management Plan has addressed the requirements of the California Water Code. AMWC has completed the DWR checklist by indicating where the required CWC elements can be found within the AMWC's 2025 UWMP (See **Appendix K**).

10.5.2 Electronic Data Submittal

Within 30 days of adoption of the 2025 Plan, AMWC will also submit all data tables associated with the 2025 Plan through DWR's "Water Use Efficiency (WUE) Data Online Submittal Tool" website.

10.5.3 Submitting a UWMP, including WSCP, to the California State Library

Within 30 days of adoption of the 2025 UWMP by the Board, a copy (CD or hardcopy) of the 2025 Plan will be submitted to the State of California Library. A copy of the letter to the State Library will be maintained in AMWC's files. The 2025 Plan will be mailed to the following address if sent by regular mail:

California State Library
Government Publications Section
P.O. Box 942837
Sacramento, CA 94237-0001
Attention: Coordinator, Urban Water Management Plans

The 2025 Plan will be delivered to the following address if sent by courier or overnight carrier:

California State Library
Government Publications Section
914 Capitol Mall
Sacramento, CA 95814

10.5.4 Submitting a UWMP to Cities and Counties

Within 30 days of adoption of the 2025 UWMP by the Board of Directors, a copy of the 2025 UWMP will be submitted to the County of San Luis Obispo Registrar / Records office and the Atascadero City Clerk's office. A copy of the letter to the County of San Luis Obispo and City of Atascadero will be maintained in AMWC's files.

10.6 Public Availability

The adopted 2025 UWMP is available on AMWC's website at www.amwc.us and at AMWC's office at 5005 El Camino Real, Atascadero between the hours of 9 AM and 4 PM Monday through Friday.

10.7 Notification to Public Utilities Commission

The section is not applicable to AMWC.

10.8 Plan Implementation

Per Water Code §10643, an urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10.9 Amending an Adopted Urban Water Management Plan or Water Shortage Contingency Plan

10.9.1 Amending a UWMP

If AMWC amends the adopted 2025 UWMP, the amended UWMP will undergo adoption by the AMWC's governing board. Within 30 days of adoption, the amended UWMP will then be

submitted to DWR, the State of California Library, the County of San Luis Obispo / Records office, and the AMWC office.

10.9.2 Amending a Water Shortage Contingency Plan

If AMWC amends the adopted 2025 WSCP, the amended WSCP will undergo adoption by the City's governing board. Within 30 days of adoption, the amended WSCP will then be submitted to DWR, the State of California Library, the County of San Luis Obispo / Records office, and the AMWC office.

Appendix A: Atascadero Basin Groundwater Sustainability Plan

Chapter 6 – Water Budgets

6. Water Budgets (§ 354.18)

This chapter summarizes the estimated water budgets for the Atascadero Area Groundwater Sub-basin of the Salinas Valley Basin (Basin), including information required by the SGMA Regulations and information that is important for developing an effective GSP to achieve sustainability. In accordance with the SGMA Regulations §354.18, the GSP should include a water budget for the Basin that provides an accounting and assessment of the total annual volume of surface water and groundwater entering and leaving the Basin, including historical, current, and projected water budget conditions, and the change in the volume of water stored. The regulations require that the water budgets be reported in graphical and tabular formats, where applicable.

6.1 Overview of Water Budget Development

This section is subdivided into three sections: historical, current, future water budgets. Within each section, a surface water budget and groundwater budget are presented. Water budgets were developed using computer models of the Basin hydrogeologic conditions. Before presenting the water budgets, a brief overview of the models is presented. Appendix 6A provides additional information about the models and compares previously reported water budgets to the water budgets developed for this GSP.

The water budgets reported herein are for the Basin defined in Section 1.2 – Description of Atascadero Basin and depicted on Figure 1-1.

The safe yield of a groundwater basin is the volume of pumping that can be extracted from the basin on a long-term basis without creating a chronic and continued lowering of groundwater levels and groundwater in storage volumes. The safe yield is not a fixed constant value but is a dynamic value that fluctuates over time as the balance of the groundwater inputs and outputs change; thus, the calculated safe yield of the Basin will be estimated and likely modified with each future update of the GSP.

Safe yield is not the same as sustainable yield. Sustainable yield is defined in SGMA as “the maximum quantity of water, calculated over a base period representative of long-term conditions in the Basin and including any temporary surplus that can be withdrawn annually from a groundwater supply without causing an undesirable result.” An undesirable result is one or more of the following effects on the six sustainability indicators:

1. Chronic lowering of groundwater levels in the aquifer(s)
2. Significant and unreasonable reduction of groundwater in storage
3. Significant and unreasonable degradation of water quality
4. Sea water intrusion

5. Significant and unreasonable land subsidence that interferes with surface land uses
6. Depletion of interconnected surface water that has significant and unreasonable adverse impacts on beneficial uses of surface water

Defining the safe yield of a groundwater basin provides a starting point for later establishing sustainable yield by considering each of the six sustainability indicators listed above.

Section 354.18 of the SGMA Regulations requires development of water budgets for both groundwater and surface water that provide an accounting of the total volume of water entering and leaving the basin. To satisfy the requirements of the regulations, a surface water budget was prepared for the Atascadero Basin and an integrated groundwater budget was developed for each water budget period for the combined inflows and outflows for the two principal aquifers – Alluvial Aquifer (including the Salinas River alluvial aquifer and associated tributaries; Section 4 – Basin Setting) and Paso Robles Formation Aquifer. Groundwater is pumped from both aquifers for beneficial use.

Figure 8-1. Groundwater Level Minimum Thresholds and Measurable Objectives

presents a general schematic diagram of the hydrologic cycle. The water budgets include the components of the hydrologic cycle.

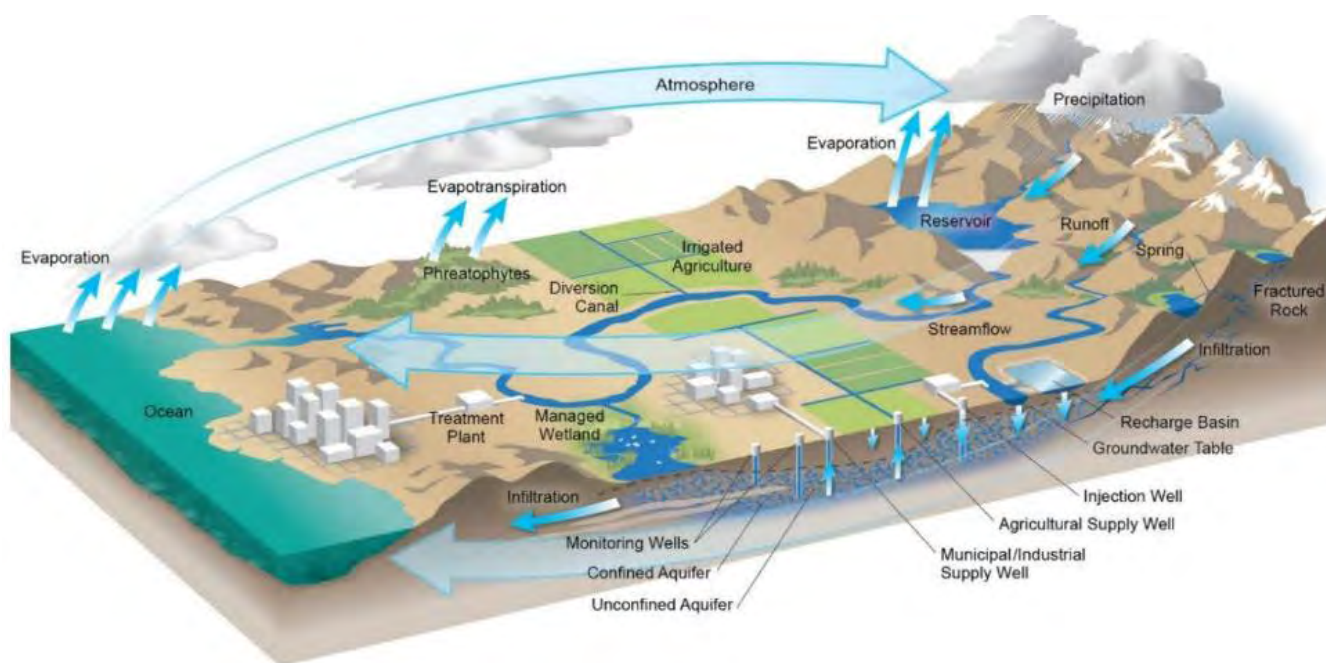


Figure 6-1. Hydrologic Cycle (Source: DWR 2016a)

A few components of the water budget can be measured, like streamflow at a gaging station or groundwater pumping from a metered well. Other components of the water budget are estimated, like recharge from precipitation or unmetered groundwater pumping. The water budget is an inventory and accounting of total surface water and groundwater inflows (recharge) and outflows (discharge) from the Basin, including:

Surface Water Inflows:

- Runoff of precipitation and reservoir releases into streams and rivers that enter the Basin from the surrounding watershed
- Imported surface water (e.g., NWP)

Surface Water Outflows:

- Streamflow exiting the Basin
- Percolation of streamflow to the groundwater system
- Evaporation

Groundwater Inflows:

- Recharge from precipitation
- Subsurface groundwater inflow
- Irrigation return flow (water not consumed by crops/landscaping)
- Percolation of surface water from streams
- Percolation of treated wastewater from disposal ponds
- Percolation of imported surface water (e.g., NWP)

Groundwater Outflows:

- Evapotranspiration
- Groundwater pumping
- Subsurface outflows to the adjoining, downgradient groundwater basins
- Groundwater discharge to surface water

The difference between inflows and outflows is equal to the change in storage.

6.2 Water Budget Data Sources and Basin Model

Water budgets for the Basin were estimated using an integrated system of three hydrologic models (collectively designated herein as the “basin model”), including:

1. A watershed model
2. A soil water balance model
3. A groundwater flow model

The groundwater model was originally developed by Fugro et. al. (2005). The watershed and soil water balance models were developed and integrated with an updated version of the groundwater model by Geoscience Support Services, Inc. (GSSI 2014; 2016). These models were developed for SLOFCWCD. The domain of these models encompasses an area that includes both the Paso Robles Subbasin and the Basin as well as a portion of the Salinas Valley – Upper Valley Aquifer Subbasin north of the Monterey County line.²⁹ The original models are documented in the following reports:

- Final Report, Paso Robles Groundwater Basin Study Phase II, Numerical Model Development, Calibration, and Application: (Fugro et. al. 2005)
- Paso Robles Groundwater Basin Model Update (GSSI 2014)
- Refinement of the Paso Robles Groundwater Basin Model and Results of Supplemental Water Supply Options Predictive Analysis (GSSI 2016)

The GSSI 2016 version of the basin model was updated by Montgomery & Associates (M&A; 2020) for the Paso Robles Subbasin GSP. Because the model domain of the basin model encompasses the entirety of the original Paso Robles Basin (Fugro and Cleath;2002), the basin model simulates groundwater flow conditions and water budgets for both the Paso Robles and the Atascadero subbasins.

The M&A (2020) basin model update included updating the GSSI 2016 basin model by incorporating hydrologic data for the period 2012 through 2016 into the models. Appendix 6A includes a brief summary of the model update process, including:

- A summary of data sources used for the update (Table 6A-1 in Appendix 6A)
- A summary of modifications made to the basin model to address computational refinements, data processing issues, and conceptual application of the model codes

²⁹ The domain of the Fugro 2005 model and subsequent model updates completed by GSSI (2014 and 2016) were designed to encompass the area defined as the Paso Robles Groundwater Basin by Fugro in 2002. The 2002 Fugro study defined the lateral and vertical extent of the Paso Robles Groundwater Basin, which included a portion north of the Monterey County line and identification of the Atascadero Subbasin (Basin) as a hydrogeologically distinct portion of the basin. The basin extents defined by Fugro (2002) varies slightly from the basin extents defined in the current DWR Bulletin 118 (DWR 2016b).

The updated versions of the basin models are referred to herein collectively as the “GSP model.” The GSP model has been utilized for both the Atascadero Basin GSP and the Paso Robles Subbasin GSP as the model domain covers large portions of both basins.

Numerous sources of raw data were used to update the basin models for the GSP. Examples of raw data include metered pumping and deliveries from the Atascadero MWC, Templeton CSD, and the city of Paso Robles, precipitation data obtained from weather stations in the Basin, and crop acreage from the office of the San Luis Obispo County Agricultural Commissioner, among many others. Data sources are listed in Appendix 6A, Table 6A-1. Raw data were compiled, processed, and used to develop model input files. Model results were used to develop estimates of the individual inflow and outflow components of the surface water and groundwater budgets. Thus, all the estimated flow components herein were extracted from the GSP model.

6.2.1 *Model Assumptions and Uncertainty*

The GSP model is based on available hydrogeologic and land use data from the past several decades, previous studies of Basin hydrogeologic conditions, and earlier versions of the basin models. The GSP model gives insight into how the complex hydrologic processes are operating in the Basin. During previous studies, available data and a peer-review process were used to calibrate the basin model to Basin hydrogeologic conditions. Results of the previous calibration process demonstrated that the model-simulated groundwater and surface water flow conditions were similar to observed conditions. The GSP model was not recalibrated. However, after updating it for this GSP, calibration of the model was reviewed and found to be similar to the previous model. The groundwater flow model module of the GSP model does not cover the northwestern upland portion of the Atascadero Basin (as defined by DWR Bulletin 118, DWR 2016) so groundwater processes have not been modeled in this area, yet the watershed model does include this area so contributing surface and subsurface flows from this upland area have been incorporated into the GSP model; therefore, use of the GSP model was considered appropriate for development of the Atascadero Basin GSP.

Projections made with the GSP model have uncertainty due to limitations in available data and assumptions made to develop the models. Model uncertainty has been considered when developing and using the reported GSP water budgets for developing sustainability management actions and projects (Section 9 – Projects and Management Actions).

New data will be collected and/or refined throughout the early implementation of this GSP (after adoption by the GSA). The information will be used to recalibrate and potentially expand the domain of the GSP model, and perhaps develop a stand-alone, Atascadero Basin-specific groundwater flow model rather than continued utilization of the coupled Paso Robles Subbasin/Atascadero Basin model. New hydrologic data and a calibrated model will be used to simulate impacts from proposed sustainability management actions, and possible water resource improvement projects, to monitor that progress toward the sustainability goal is being achieved.

6.3 Historical Water Budget

The SGMA Regulations require that the historical surface water and groundwater budget be based on at least the most recent 10 years of data. The period 1981 to 2011 was selected as the time period for the historical water budget (referred to as the historical base period) because it is long enough to capture typical climate variations, it corresponds to the period simulated in the basin model, and it ends at about the time the latest drought period began. Estimates and assumptions of the surface water and groundwater inflows and outflows, and changes in storage for the historical base period are provided below.

6.3.1 *Historical Surface Water Budget*

The SGMA Regulations (§354.18) require development of a surface water budget for the GSP. The surface water budget quantifies important sources of surface water and evaluates their historical and future reliability. The water budget Best Management Practice (BMP) document states that surface water sources should be identified as one of the following (DWR 2016a):

- Central Valley Project
- State Water Project
- Colorado River Project
- Local imported supplies
- Local supplies

The Basin relies on two of these surface water source types: local imported supplies and local supplies.

6.3.1.1 Historical Local Imported Supplies

As described in Section 4.7.1 – Groundwater Recharge Areas, the NWP regional raw water transmission facility delivers water from Lake Nacimiento to communities in San Luis Obispo County, including Atascadero MWC, Templeton CSD, and the city of Paso Robles. Templeton CSD has an allocation of 406 AFY of NWP water and began taking deliveries in 2011. A total of 74 AF was taken by Templeton CSD in 2011 and constitutes the only NWP deliveries in the historical period. Atascadero MWC and the city of Paso Robles began taking deliveries in 2012 and 2013, respectively (these deliveries will be discussed further in Section 6.4 – Current Water Budget). Within the Basin, all three municipal purveyors utilize their imported NWP water to recharge the Basin *via* percolation ponds or direct discharge located in the Alluvium adjacent to

the Salinas River.³⁰ Table 6-1 summarizes the annual average, minimum, and maximum values for the imported NWP water during the historical base period.

A reliability study on the Nacimiento reservoir, and subsequently the NWP, by Boyle Engineering (Boyle, 2002) found the Nacimiento Reservoir to be a reliable water supply. This study evaluated historic reservoir operations against delivery requirements for the NWP. With the exception of infrastructure failures (power outage, delivery facility failure) Nacimiento Reservoir could always meet NWP demands, even during short term drought. It is anticipated that the historical imported surface water deliveries from the NWP are a reliable water supply source moving into the future.

6.3.1.2 Historical Local Supplies

Local surface water supplies include surface water flows that enter the Basin from precipitation runoff within the watershed and Salinas River inflow to the Basin (including releases from the Salinas Reservoir). Table 6-1 summarizes the annual average, minimum, and maximum values for these inflows.

Table 6-1. Estimated Historical (1981-2011) Annual Surface Water Inflows to Basin

Surface Water Inflow Component	Average	Minimum ²	Maximum ²
Inflow to Basin including the Salinas River and Tributaries ¹	90,600	1,400	407,800
Imported (NWP)	2	0	74
Total	90,600		

Notes:

All values in acre-feet

¹ Tributaries include Santa Margarita, Paloma, Atascadero, Graves, and Paso Robles creeks.

² Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

The estimated average annual total inflow from these sources over the historical base period is about 90,600 AF. The largest component of this average inflow is releases and flow in the Salinas River. The large difference between the minimum and maximum inflows reflects the difference between dry and wet years in the Basin.

6.3.1.3 Historical Surface Water Outflows

The estimated annual average total surface water outflow leaving the Basin as flow in the Salinas River, and percolation into the groundwater system over the historical base period is summarized in Table 6-2.

³⁰ The city of Paso Robles utilizes their NWP allocation in two ways: treatment in a package water treatment plant and applying directly to the ground surface on the alluvial gravels of the Salinas River floodplain in the north end of the Basin. The treated portion of NWP water is used outside of the Basin and is therefore not considered.

Table 6-2. Estimated Historical (1981-2011) Annual Surface Water Outflows from Basin

Surface Water Outflow Component	Average	Minimum ¹	Maximum ¹
Salinas River Outflow from Basin	83,500	300	380,600
Streamflow Percolation	7,100	1,100	27,200
NWP Percolation	2	0	74
Total	90,600		

Notes:

All values in acre-feet

¹ Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

The estimated average annual total outflow from these sources over the historical base period is about 90,600 AF. The largest component of this average outflow is the Salinas River. The large difference between the minimum and maximum outflows reflects the difference between dry and wet years in the Basin.

6.3.1.4 Historical Surface Water Budget

Figure 6-2 summarizes the historical surface water budget for the Basin. Figure 6-2 shows the strong correlation between precipitation and streamflow in the Basin. In wet periods, shown with a blue background, surface water inflows and outflows are large. In contrast, in dry periods, shown with an orange background, surface water inflows and outflows are small.

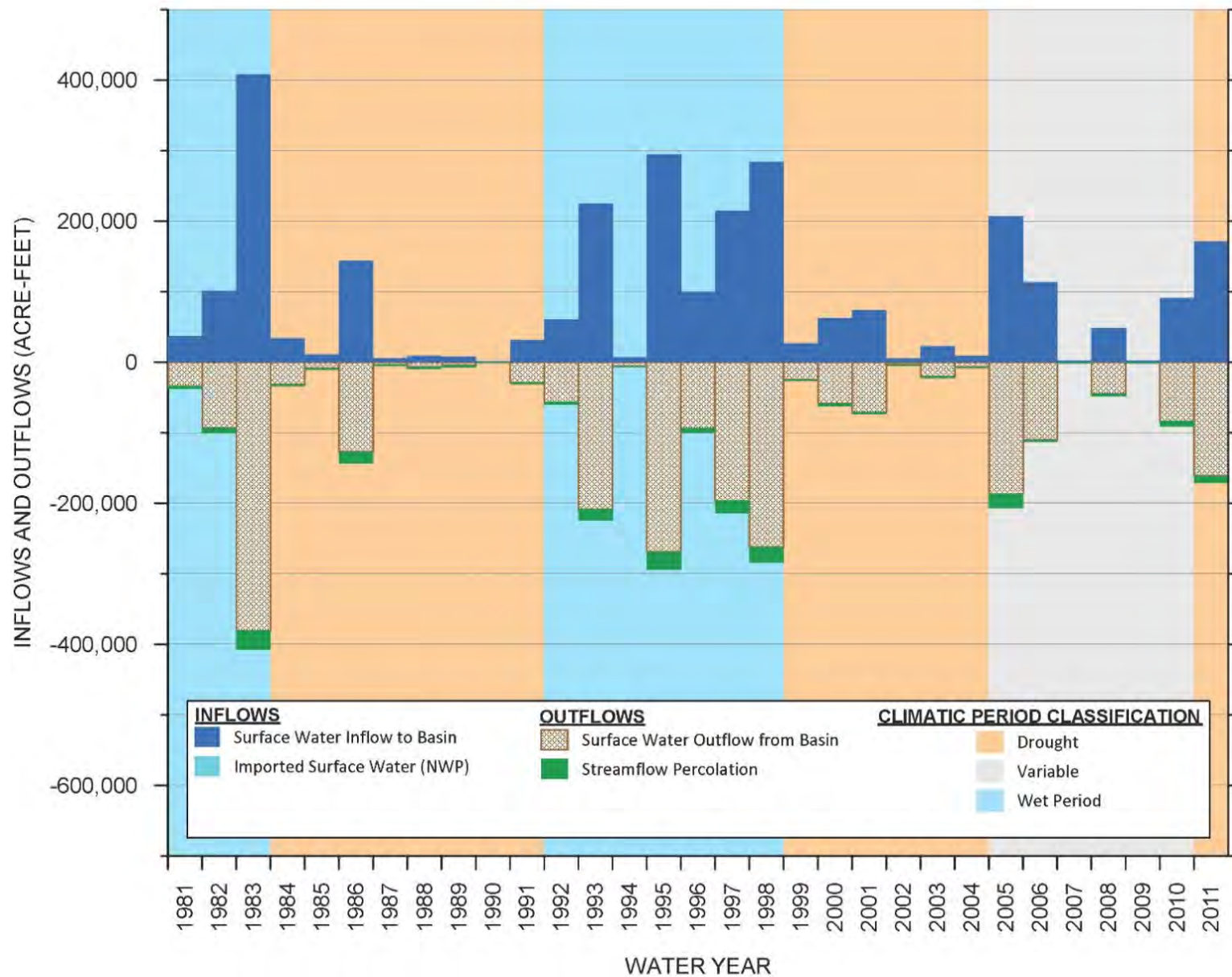


Figure 6-2. Historical (1981-2011) Surface Water Inflows and Outflows

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6.3.2 Historical Groundwater Budget

Groundwater, including production from both the Alluvial Aquifer (Salinas River underflow) and the Paso Robles Formation Aquifer, supplied virtually all of the water used in the Basin over the historical base period. The historical groundwater budget includes a summary of the estimated groundwater inflows, groundwater outflows, and change in groundwater in storage.

6.3.2.1 Historical Groundwater Inflows

Groundwater inflow components include streamflow percolation, agricultural irrigation return flow, deep percolation of direct precipitation, subsurface inflow into the Basin, imported surface water percolation, wastewater treatment plant pond percolation, and urban irrigation return flow. Estimated annual groundwater inflows for the historical base period are summarized in Table 6-3. Values reported in the table were estimated or derived from the GSP model using data sources reported in Table 6A-1 in Appendix 6A.

Table 6-3. Estimated Historical (1981-2011) Annual Groundwater Inflows to Basin

Groundwater Inflow Component ¹	Average	Minimum ²	Maximum ²
Streamflow Percolation	7,100	1,100	27,200
Agricultural Irrigation Return Flow	1,200	500	2,700
Deep Percolation of Direct Precipitation	3,700	100	13,000
Subsurface Inflow into Basin	2,300	0	5,400
Wastewater Pond Percolation	2,000	1,570	2,540
NWP Percolation	2	0	74
Urban Irrigation Return Flow	1,200	100	2,800
Total	17,500		

Notes:

All values in acre-feet

¹ Percolation from septic systems is not directly accounted for because it is subtracted from the total estimated rural-domestic pumping to simulate a net rural-domestic pumping amount

² Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

For the historical base period, estimated total average groundwater inflow ranged from 5,700 to 49,800 AFY, with an average annual inflow of 17,500 AF. The largest groundwater inflow component is streamflow percolation, which accounts for approximately 41 percent of the total annual average inflow. The large difference between the minimum and maximum inflows from streamflow percolation and direct precipitation reflect the variations in precipitation over the historical base period.

6.3.2.2 Historical Groundwater Outflows

Groundwater outflow components include total groundwater pumping from all water use sectors, subsurface flow out of the Basin, and riparian evapotranspiration. On occasion, the minimum subsurface outflows were negative during the historical base period. Estimated annual groundwater outflows for the historical base period are summarized in Table 6-4.

Table 6-4 Estimated Historical (1981-2011) Annual Groundwater Outflow from Basin

Groundwater Outflow Component	Average	Minimum ¹	Maximum ¹
Total Groundwater Pumping	15,300	11,900	20,400
Subsurface Flow Out of Basin	300	-500	1,400
Riparian Evapotranspiration	500	500	500
Total	16,100		

Notes:

All values in acre-feet

¹ Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

The largest groundwater outflow component from the Basin is groundwater pumping. Estimated annual groundwater pumping by water use sector for the historical base period is summarized in Table 6-5.

Table 6-5 Estimated Historical (1981-2011) Annual Groundwater Pumping by Water Use Sector from Basin

Water Use Sector	Average	Minimum ¹	Maximum ¹
Agricultural	5,500	2,100	12,900
Municipal	8,900	4,900	12,000
Rural Domestic	300	200	500
Small Public Water Systems	600	600	700
Total	15,300		

Notes:

All values in acre-feet

¹ Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

Municipal and agricultural pumping were the largest components of total groundwater pumping, accounting for about 58 and 36 percent of total pumping over the historical base period, respectively. In general, agricultural pumping decreased and municipal pumping increased over the historical base period. Rural-domestic, and small commercial pumping account for 2 and 4 percent, respectively, of total average annual pumping over the historical base period.

6.3.2.3 Historical Groundwater Budget and Changes in Groundwater Storage

Groundwater inflows and outflows for the historical base period are summarized on Figure 6-3 and tabulated in Appendix 6B. Figure 6-3 shows groundwater inflow and outflow components for every year of the historical period. Inflow components are graphed above the zero line and outflow components are graphed below the zero line. Groundwater outflow by pumping (green bars) includes pumping from all water use sectors (Table 6-5).

Figure 6-4 shows annual and cumulative change in groundwater storage during the historical base period. Annual increases in groundwater storage are graphed above the zero line and annual decreases in groundwater storage are graphed below the zero line. The red line shows the cumulative change in groundwater storage over the historical base period.

The historical groundwater budget is strongly influenced by the amount of precipitation. During the historical base period, dry conditions prevailed from 1984 through 1991 and 1999 through 2004, as depicted by the orange areas on Figure 6-3 and Figure 6-4. During these dry periods, the amount of recharge and streamflow percolation was relatively low. The net result was a loss of groundwater from storage. In contrast, wet conditions prevailed in the early 1980s and 1992 through 1998, as shown by blue areas on Figure 6-3 and Figure 6-4, and one wet year in 2005. During these wet periods, the amount of recharge and streamflow percolation was relatively high. The net result was a gain of groundwater in storage. The period from 2006 through 2010 had generally alternating years of average precipitation. During this period, the amount of recharge and streamflow percolation was average, and the amount of groundwater pumping was relatively high, compared to the prior 15 years. The net result was a loss of groundwater from storage.

The historical groundwater budget is also influenced by the amount of groundwater pumping. Over the historical base period, the total amount of groundwater pumping decreased in the early 1990s, corresponding with a period when irrigation of alfalfa and pasture acreage declined, and irrigated vineyard acreage increased (Fugro and Cleath 2002). The transition from alfalfa and pasture to vineyard resulted in a net decrease in groundwater pumping because the irrigation demand per acre of vineyards is significantly less than the per-acre demand for alfalfa and pasture. This decrease in pumping contributed to the increase in groundwater in storage during the 1990s.

Over the 31-year historical base period, a net gain of groundwater storage of about 42,300 AF occurred. The average annual groundwater storage gain was approximately 1,400 AFY.

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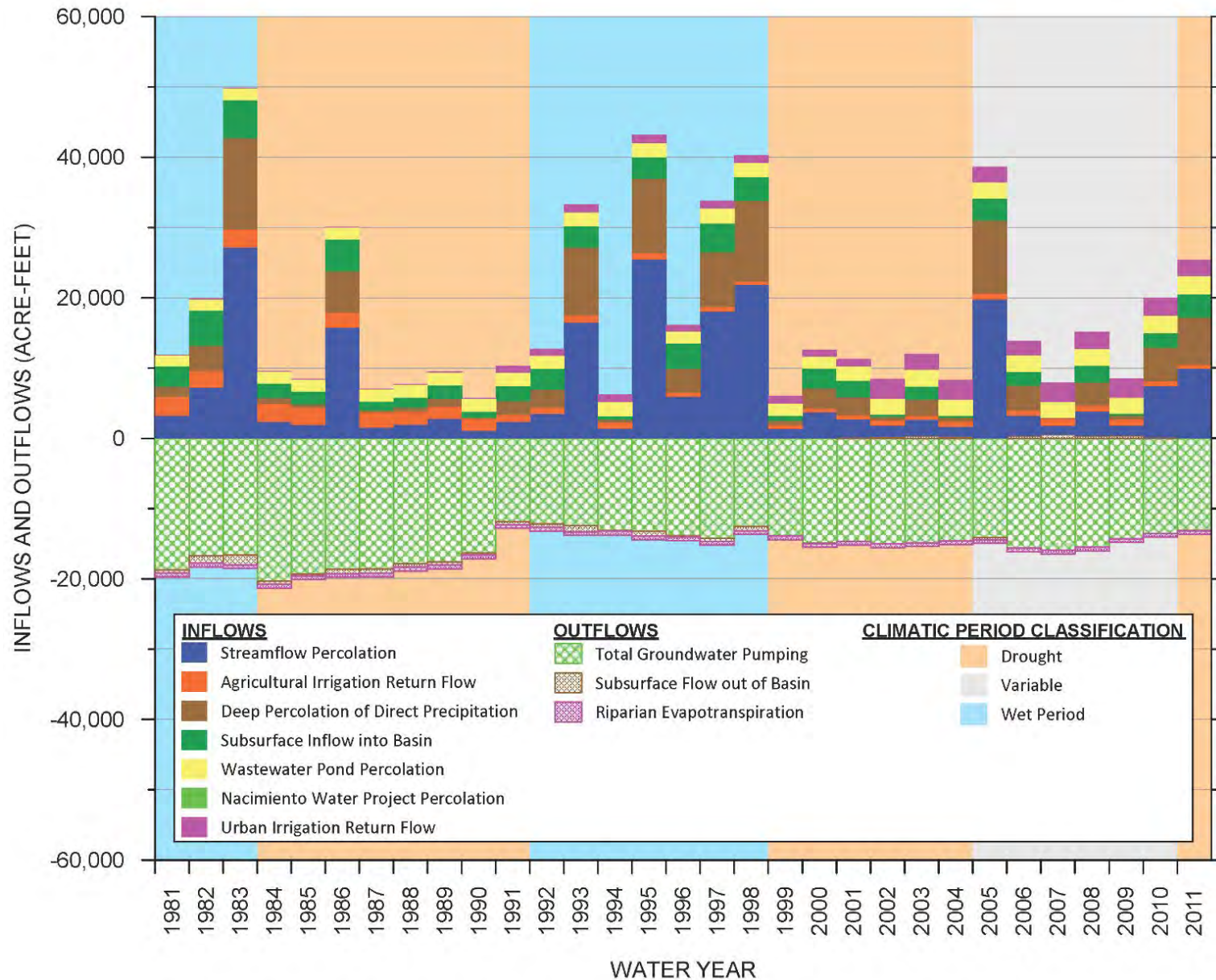
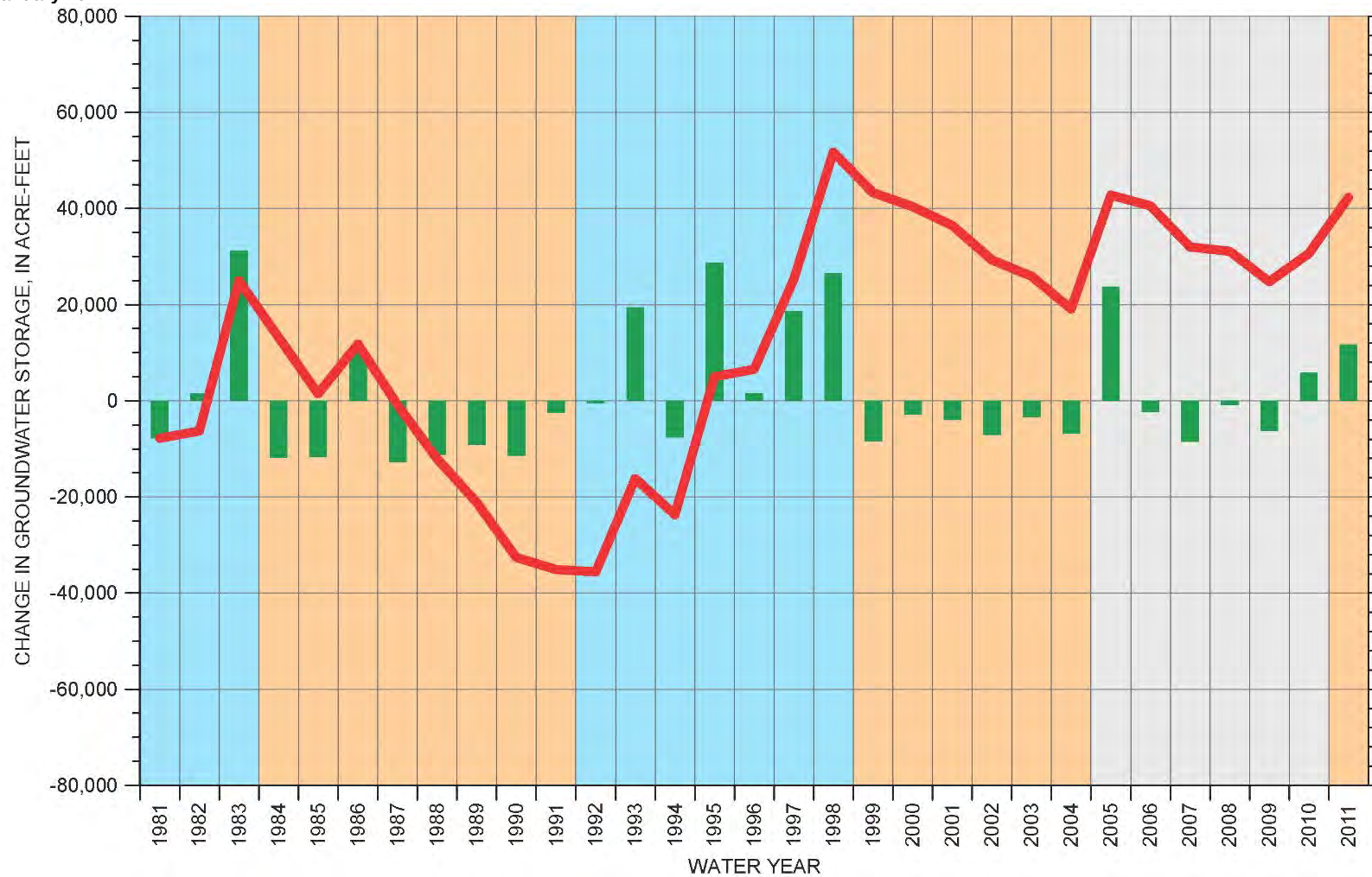


Figure 6-3. Historical (1981-2011) Groundwater Inflows and Outflows

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EXPLANATION

— Cumulative Change in Groundwater Storage ■ Annual Change in Groundwater Storage

CLIMATE PERIOD CLASSIFICATION

Drought Variable Wet Period

Figure 6-4. Historical (1981-2011) Annual and Cumulative Change in Groundwater Storage

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6.3.2.4 Historical Water Balance of the Basin

The computed long-term increase of groundwater in storage indicates that total groundwater inflow exceeded the total outflow in the Basin from 1981 through 2011. As summarized in Table 6-5, total groundwater pumping averaged approximately 15,300 AFY during the historical base period.

Section 354.18(b)(7) of the SGMA Regulations requires a quantification of sustainable yield for the Basin for the historical base period. Sustainable yield is the maximum quantity of groundwater, calculated over a base period representative of long-term conditions in the Basin and including any temporary surplus that can be withdrawn annually from a groundwater supply without causing an undesirable result. The historical safe yield was estimated by summing the estimated average groundwater storage increase of 1,400 AFY with the estimated total average amount of groundwater pumping of 15,300 AFY for the historical base period. This results in a historical safe yield of about 16,700 AFY. This estimated value reflects historical climate, hydrologic and water resource conditions and provides insight into the amount of groundwater pumping that could be sustained in the Basin to maintain a balance between groundwater inflows and outflows.

6.4 Current Water Budget

The SGMA Regulations require that the current surface water and groundwater budget be based on the most recent hydrology, water supply, water demand, and land use information. For the GSP, the period 2012 to 2016 was selected as the time period for the current water budget. In part, the 2012 to 2016 time period was selected because it corresponds with the current water budget period utilized in the Paso Robles Subbasin GSP and it is believed that not only is this time period representative of basin conditions, but the use of the Paso Robles Subbasin GSP model is the best available information and tool for groundwater sustainability planning purposes in the Atascadero Basin.

The current water budget period corresponds to a drought period when annual precipitation averaged about 60 percent of the historical average and streamflow percolation averaged about 19 percent of the historical average. As a result, the current water budget period represents an extreme drought condition in the Basin and is not representative of long-term Basin conditions needed for sustainability planning purposes. Estimates of the surface water and groundwater inflow and outflow, and changes in storage for the current water budget period are provided below.

6.4.1 Current Surface Water Budget

The current surface water budget quantifies important sources of surface water. Similar to the historical surface water budget, the current surface water budget includes two surface water source types: local imported supplies and local supplies.

6.4.1.1 Current Local Imported Supplies

Imported surface water from the NWP was utilized by Atascadero MWC, Templeton CSD, and the city of Paso Robles to recharge the Basin *via* percolation in the Alluvium adjacent to the Salinas River during the current water budget period. In addition to Templeton CSD, which began taking NWP water during the historical based period (Section 6.3.1.1 – Historical Local Imported Supplies), Atascadero MWC and the city of Paso Robles began taking deliveries of NWP water in 2012 and 2013, respectively. Utilization of NWP water peaked in 2015 at 4,792 AF during the height of the latest drought, providing recharge to the Basin. Table 6-6 summarizes the annual average, minimum, and maximum values for the imported NWP water during the current water budget period.

A reliability study on the Nacimiento reservoir, and subsequently the NWP, by Boyle Engineering (Boyle, 2002) found the Nacimiento Reservoir to be a reliable water supply. This study evaluated historic reservoir operations against delivery requirements for the NWP. With the exception of infrastructure failures (power outage, delivery facility failure) Nacimiento Reservoir could always meet NWP demands, even during short term drought. It is anticipated that the current imported surface water deliveries from the NWP are a reliable water supply source moving into the future.

6.4.1.2 Current Local Supplies

Local surface water supplies include surface water flows that enter the Basin from precipitation runoff within the watershed and Salinas River inflow to the Basin (including releases from the Salinas Reservoir), Table 6-6 summarizes the annual average, minimum, and maximum values for these inflows.

Table 6-6. Estimated Current (2012-2016) Annual Surface Water Inflows to Basin

Surface Water Inflow Component	Average	Minimum ²	Maximum ²
Inflow to Basin including the Salinas River and Tributaries ¹	5,600	1,300	9,000
Imported (NWP)	2,158	731	4,792
Total	7,800		

Notes:

All values in acre-feet

¹ Tributaries include Santa Margarita, Paloma, Atascadero, Graves, and Paso Robles creeks

² Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

The estimated average total inflow from both precipitation runoff and reservoir releases over the current water budget period was approximately 7,800 AFY, or about 9 percent of the average annual 90,600 AFY inflow during the historical base period. The substantial reduction in surface water inflows reflects the drought conditions that prevailed during the current water budget period.

6.4.1.3 Current Surface Water Outflows

The estimated annual average, minimum, and maximum surface water outflow leaving the Basin as flow in the Salinas River and percolation into the groundwater system over the current base period is summarized in Table 6-7. Reductions in surface water outflow for the current water budget period were similar to those reported above for the surface water inflows.

Table 6-7. Estimated Current (2012-2016) Annual Surface Water Outflows from Basin

Surface Water Outflow Component	Average	Minimum ¹	Maximum ¹
Salinas River Outflow from Basin	4,200	100	7,600
Streamflow Percolation	1,400	1,200	1,500
NWP Percolation	2,158	731	4,792
Total	7,800		

Notes:

All values in acre-feet

¹ Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

6.4.1.4 Current Surface Water Budget

Figure 6-5 summarizes the current surface water budget for the Basin. Figure 6-5 shows the effects of the drought conditions that prevailed during the period 2012 through 2016. During this period, precipitation was well below average, which resulted in very little surface water flow.

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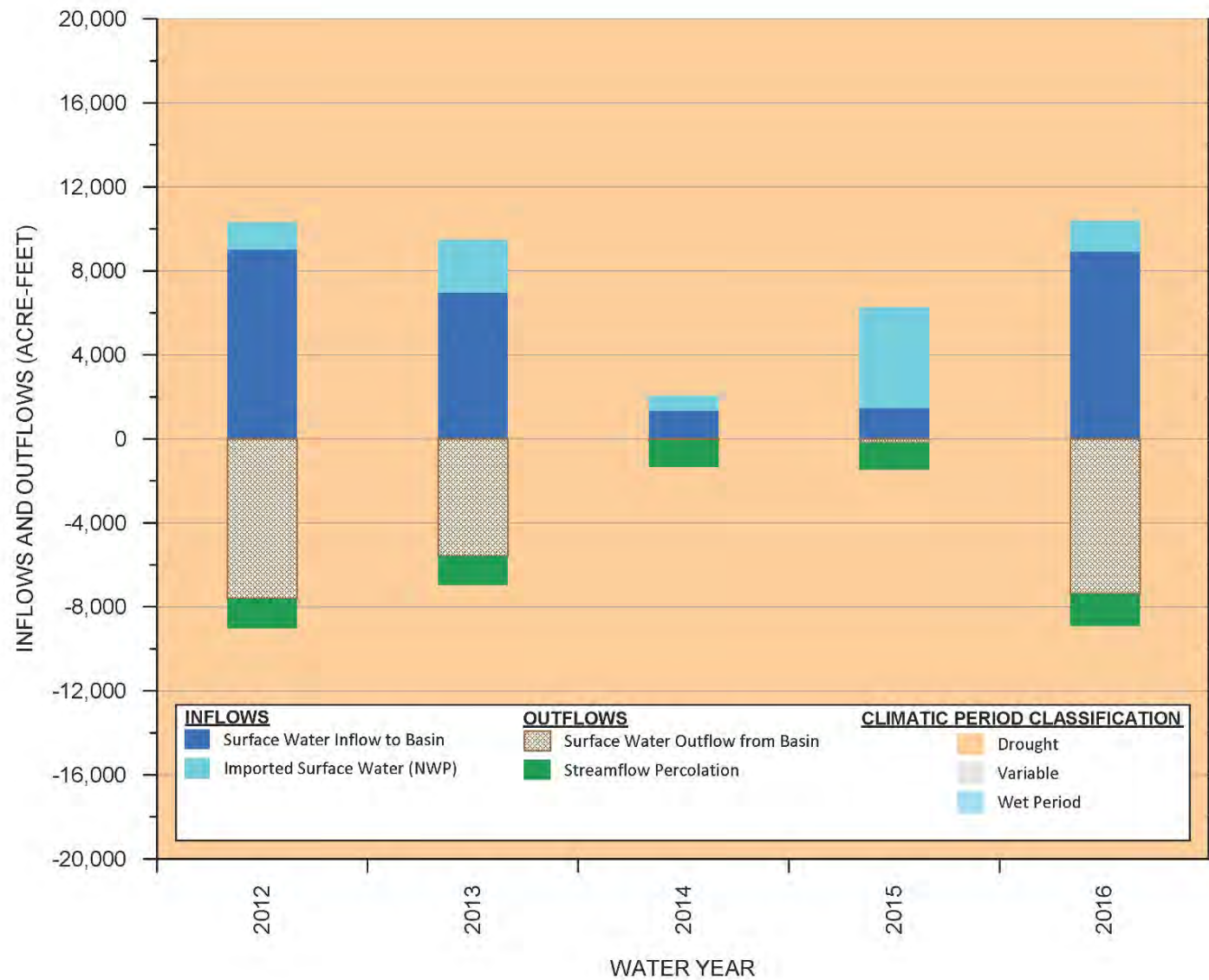


Figure 6-5. Current (2012 – 2016) Surface Water Inflows and Outflows

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6.4.2 Current Groundwater Budget

Groundwater supplied most of the water used in the basin during the current water budget period. The current water budget includes a summary of the estimated groundwater inflows, groundwater outflows, and change in groundwater in storage.

6.4.2.1 Current Groundwater Inflows

Groundwater inflow components include streamflow percolation, agricultural irrigation return flows, deep percolation of direct precipitation, subsurface inflow into the Basin, imported surface water percolation, wastewater pond percolation, and urban irrigation return flow. Estimated annual groundwater inflows for the current water budget period are summarized in Table 6-8.

Table 6-8. Estimated Current (2012-2016) Annual Groundwater Inflows to Basin

Groundwater Inflow Component ¹	Average	Minimum ²	Maximum ²
Streamflow Percolation	1,400	1,200	1,500
Agricultural Irrigation Return Flow	1,000	700	1,200
Deep Percolation of Direct Precipitation	600	300	1,400
Subsurface Inflow into Basin	400	0	1,200
Wastewater Pond Percolation	2,520	2,460	2,570
NWP Percolation	2,158	731	4,792
Urban Irrigation Return Flow	2,700	2,400	2,900
Total	10,800		

Notes:

All values in acre-feet

¹ Percolation from septic systems is not directly accounted for because it is subtracted from the total estimated rural-domestic pumping to simulate a net rural-domestic pumping amount

² Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

For the current water budget period, estimated total average groundwater inflow ranged from 8,900 to 13,000 AFY, with an average inflow of 10,800 AFY. Notable observations from the summary of groundwater inflows for the current water budget period included:

- Average total inflow during the current water budget period was about 62% of the historical base period.
- Unlike the historical base period, when the largest inflow component was streamflow percolation, the largest groundwater inflow component for the current water budget is agricultural and urban irrigation return flows, which together account for approximately 34% of the total average inflow.
- The relatively small difference between the minimum and maximum inflows reflects the drought condition that prevailed during the current water budget period, when precipitation and runoff were continuously low.

- Total annual average streamflow percolation in the current water budget period was approximately 20% of the streamflow percolation in the historical base period. This reflects the very low streamflows during the drought. The low streamflows had a significant impact on the groundwater basin because streamflow percolation was the most significant source of groundwater recharge during the historical period.
- Total annual average recharge from direct precipitation for the current water budget period was about 16% of the recharge from direct precipitation for the historical base period.

6.4.2.2 Current Groundwater Outflows

Groundwater outflow components include total groundwater pumping from all water use sectors and riparian evapotranspiration. Estimated annual groundwater outflows for the current water budget period are summarized in Table 6-9.

Table 6-9. Estimated Current (2012-2016) Annual Groundwater Outflow from Basin

Groundwater Outflow Component	Average	Minimum ¹	Maximum ¹
Total Groundwater Pumping	12,900	11,400	14,500
Subsurface Flow Out of Basin	-200	-300	-100
Riparian Evapotranspiration	500	500	500
Total	13,200		

Notes:

All values in acre-feet

¹ Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

For the current water budget period, estimated total average groundwater outflows ranged from 11,800 to 14,700 AFY, with an average annual outflow of 13,200 AF. A notable observation from a comparison of the historical (Table 6-4) and current groundwater outflows is:

- Total annual average groundwater pumping was about 16% lower during the current water budget period.

The largest groundwater outflow component from the Basin in the current water budget period is pumping. Estimated annual groundwater pumping by water use sector for the current water budget period is summarized in Table 6-10.

Table 6-10. Estimated Current (2012-2016) Annual Groundwater Pumping by Water Use Sector from Basin

Water Use Sector	Average	Minimum ¹	Maximum ¹
Agricultural	2,600	2,200	3,100
Municipal	9,200	7,800	10,800
Rural Domestic	500	500	500
Small Public Water Systems	600	600	600
Total	12,900		

Notes:

All values in acre-feet

¹ Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

For the current water budget period, estimated total average groundwater pumping ranged from 11,400 to 14,500 AFY, with an average pumping of 12,900 AFY. Municipal pumping was the largest component of total groundwater pumping and accounts for about 72 percent of total pumping during the current water budget period. Agricultural, rural-domestic, and small commercial pumping account for 20, 4, and 5 percent, respectively, of total average pumping during the current water budget period.

Notable observations from a comparison of the historical (Table 6-5) and current total annual average groundwater pumping include:

- Total annual average agricultural groundwater pumping was about 53% less during the current water budget period when compared to the historical period (decrease of 2,900 AFY).
- Total annual average municipal groundwater pumping was about 4% higher during the current water budget period when compared to the historical period (increase of 340 AFY).

6.4.2.3 Current Groundwater Budget and Change in Groundwater Storage

Groundwater inflows and outflows for the current base period are summarized on Figure 6-6. This graph shows inflow and outflow components for every year of the current water budget period. Inflow components are graphed above the zero line and outflow components are graphed below the zero line. Groundwater outflow by pumping (green crosshatched bars) includes pumping from all water use sectors (Table 6-10).

Figure 6-7 shows annual and cumulative change in groundwater storage during the current water budget period. Annual decreases in groundwater storage are graphed below the zero line. The red line shows the cumulative change in groundwater storage over the historical base period.

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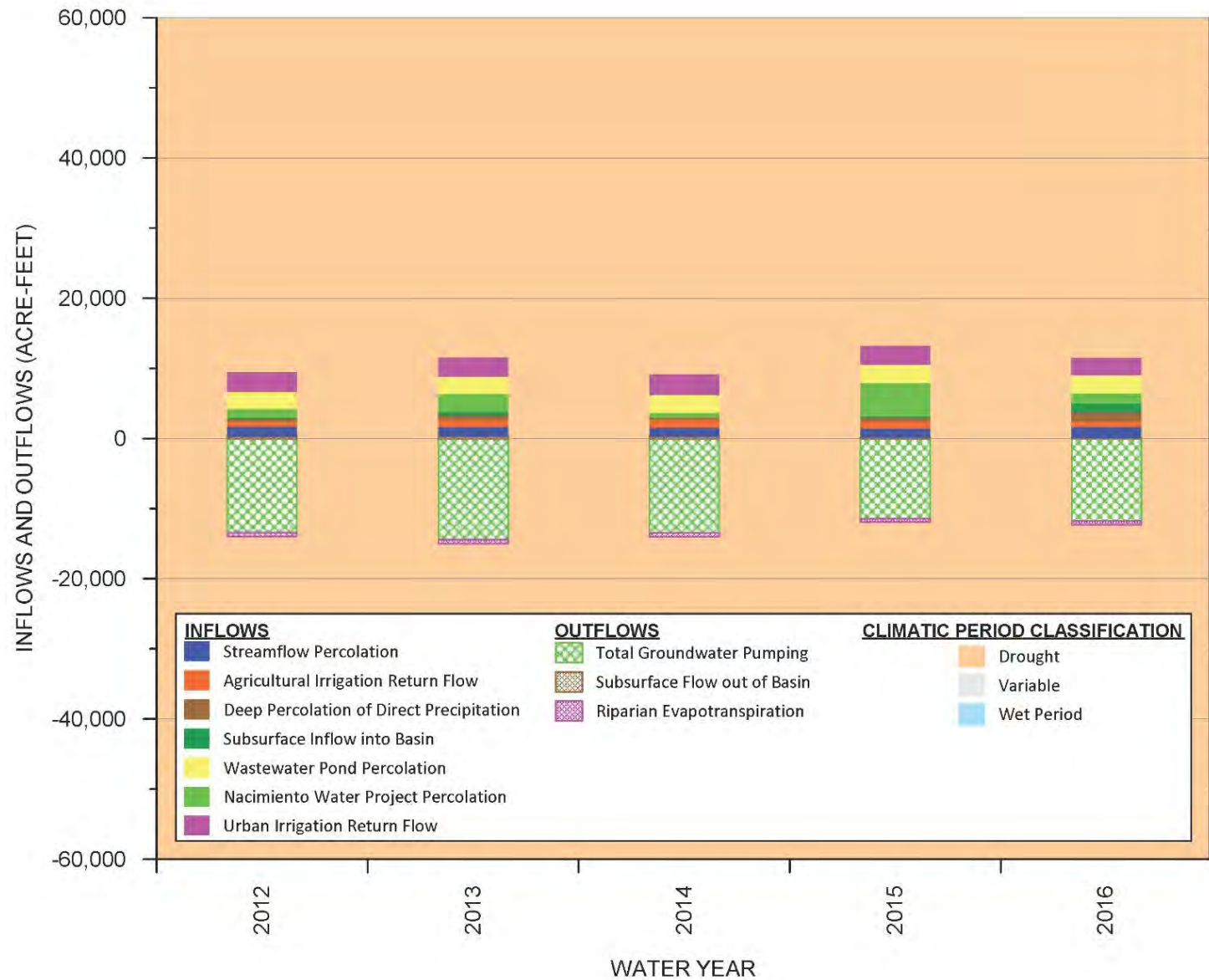
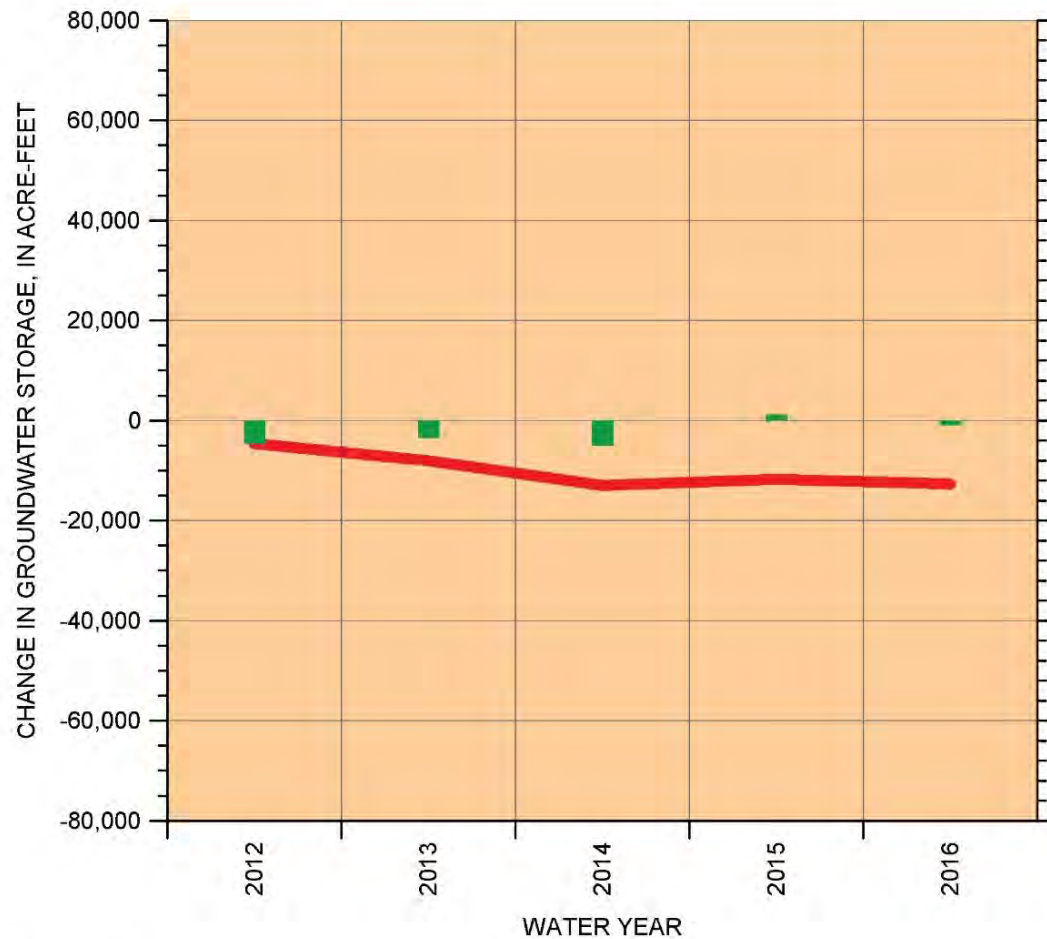


Figure 6-6. Current (2012-2016) Groundwater Inflows and Outflows

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EXPLANATION

— Cumulative Change in Groundwater Storage ■ Annual Change in Groundwater Storage

CLIMATE PERIOD CLASSIFICATION

Dry Average/Alternating Wet

Figure 6-7. Current (2012-2016) Annual and Cumulative Change in Groundwater Storage

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The current groundwater budget is strongly influenced by the drought. During the current water budget period, the amounts of streamflow percolation and percolation of direct precipitation were very low, and the average amount of total pumping was only slightly less than the historical water budget period. Percolation of imported surface water from the NWP, which had barely come online in the final year of the historical water budget period, played a significant role in mitigating the effects of the recent drought. Over the 5-year current water budget period, an estimated net loss of groundwater in storage of about 12,600 AF occurred (Figure 6-7). The annual average groundwater storage loss, or the difference between outflow and inflow to the Basin, was approximately 2,500 AFY.

6.4.2.4 Current Water Balance

The short-term depletion of groundwater in storage indicates that total groundwater outflows exceeded the total inflows over the current water budget period. As summarized in Table 6-9, total groundwater pumping averaged approximately 12,900 AFY during the current period. A quantification of the safe yield for the Basin during the current time period is estimated by subtracting the average groundwater storage deficit (2,500 AFY) from the total average amount of groundwater pumping (12,900 AFY) to yield about 10,400 AFY. Due to the drought conditions, the current water budget period is not appropriate for long-term sustainability planning.

6.5 Future Water Budget

SGMA Regulations require the development of a future surface water and groundwater budget to estimate future baseline conditions of supply, demand, and aquifer response to GSP implementation. The future water budget provides a baseline against which management actions will be evaluated over the GSP implementation period from 2022 to 2042. Future water budgets were developed using the GSP model.

In accordance with Section 354.18 (c)(3)(A) of the SGMA Regulations, the future water budget should be based on 50 years of historical precipitation, evapotranspiration, and streamflow information. The GSP model includes only 36 years of historical precipitation, evapotranspiration, and streamflow data. Therefore, the future water budget is based on 36 years of historical data rather than 50 years of historical data. It is believed that this time period is representative and is the best available information for groundwater sustainability planning purposes.

6.5.1 Assumptions Used in Future Water Budget Development

Assumptions about future groundwater supplies and demands are described in the following subsections.

Future water budgets were developed using the GSP model. During the update process for the GSP model, all model components (e.g., groundwater pumping) of the entire original 2016 GSSI model area were updated, including components within Monterey County and the Paso Robles Subbasin.

However, information provided for the future water budget only pertains to the Atascadero Basin (Figure 1-1), thus do not include areas within Monterey County or the Paso Robles Subbasin.

6.5.1.1 Future Municipal Water Demand and Wastewater Discharge Assumptions

Future municipal water demands, and wastewater discharge were estimated for Atascadero MWC, Templeton CSD, and the city of Paso Robles based on the following available planning documents:

- Atascadero MWC 2015 UWMP (MKN & Associates 2016)
- Templeton CSD Water Supply Buffer Model 2019 Update (Templeton CSD 2019)
- Paso Robles 2015 UWMP (Todd Groundwater 2016)

Portions of Atascadero MWC's, Templeton CSD's, and the city of Paso Robles' future groundwater demand³¹ will be offset by imported NWP water. Total municipal demand in the Basin is projected to increase from about 10,500 AFY in 2020 to about 12,900 AFY in 2042.

Discharge of treated wastewater to the Salinas River provides a source of recharge to the Alluvial Aquifer. Rates of future wastewater discharge were estimated as a percentage of total water demand based on the planning documents listed above for Atascadero MWC and Templeton CSD.³² Wastewater discharge as a percentage of water demand was calculated separately for each water provider. Total wastewater discharge in the Basin is projected to increase from about 2,300 AFY in 2020 to about 3,100 AFY in 2042.

Future municipal water demands and/or wastewater discharge volumes will be adjusted during the implementation of the GSP should they be found to differ from the volumes used in the GSP model.

6.5.1.2 Future Agricultural and other Non-Municipal Water Demand Assumptions

In accordance with Section 354.18 (c)(3)(B) of the SGMA Regulations, the most recently available land use (in this case, crop acreage) and crop coefficient information should be used as the baseline condition for estimating future agricultural irrigation water demand. For the GSP, the most recent crop acreage data was obtained from the office of the San Luis Obispo County Agricultural Commissioner. To account for irrigation efficiency in the future water budget, the reported crop coefficient information from GSSI (GSSI 2016) was used.

Projections for agricultural irrigation water demand are not available. Agricultural water demand was assumed to increase at a 1 percent annual growth rate. This assumed growth rate is considered

³¹ Note that the city of Paso Robles operates production wells in both the Basin and the Paso Robles Subbasin. Only the portion produced from the Basin is included here.

³² The city of Paso Robles wastewater discharge occurs outside the Basin (within the Paso Robles Subbasin) and is therefore not included.

a conservative estimate. Total agricultural groundwater demand in the Basin is projected to increase from about 2,800 AFY in 2020 to about 3,400 AFY in 2042.

Projections for rural domestic wells and smaller commercial groundwater users, were also not available. Water demand for these users was assumed to increase at a 1 percent annual growth rate. Total rural domestic and smaller commercial user's groundwater demand in the Basin is projected to increase from about 1,300 AFY in 2020 to about 1,600 AFY in 2042.

Future agricultural and/or other non-municipal water demands will be adjusted during the implementation of the GSP should they be found to differ from the volumes used in the GSP model.

6.5.1.3 Future Climate Assumptions

The SGMA Regulations require incorporating future climate estimates into the future water budget. To meet this requirement, DWR developed an approach for incorporating reasonably expected, spatially gridded changes to monthly precipitation and reference ETo (DWR 2018). The approach for addressing future climate change developed by DWR was used in the future water budget modeling for the Basin. The changes are presented as separate monthly change factors for both precipitation and ETo and are intended to be applied to historical time series within the climatological base period through 2011. Specifically, precipitation and ETo change factors were applied to historical climate data for the period 1981 to 2011 for modeling the future water budget.

DWR provides several sets of change factors representing potential climate conditions in 2030 and 2070. DWR recommends using the 2030 change factors to evaluate conditions over the GSP implementation period (DWR 2018). Consistent with DWR recommendations, datasets of monthly 2030 change factors for the Atascadero area were applied to precipitation and ETo data from the historical base period to develop monthly time series of precipitation and ETo, which were then used to simulate future hydrology conditions.

6.5.2 Modifications to Modeling Platform to Simulate Future Conditions

The existing modeling platform was modified to simulate future conditions, and the results of these simulations are used to develop the future water budget.

6.5.2.1 Modification to Soil Water Balance Model

The soil water balance model operates on a daily time scale and tracks daily variations in soil water storage for different agricultural areas in the model domain. For consistency with the monthly climate change factors provided by DWR, the daily model was used to develop monthly soil water balance calculations. These calculations compute irrigation demand as the residual crop evapotranspiration demand unsatisfied by effective precipitation.

These calculations use monthly precipitation and evapotranspiration, rescaled by the monthly climate change factors provided by DWR, and the same monthly crop coefficients used in the

historical water budget analysis. Empirical relationships were developed to account for soil moisture carryover from the winter into the spring based on results from the daily soil water balance model.

Monthly applied irrigation water was determined over the future base period from computed monthly crop demand and the crop-specific irrigation efficiencies. The future agricultural irrigation water demand assumptions (Section 6.5.1.2 – Future Agricultural and other Non-Municipal Water Demand Assumptions) were incorporated into this analysis. Agricultural irrigation return flow is then computed as the difference between the applied irrigation water and the crop demand. Results were then averaged to provide average monthly rates of applied irrigation water and irrigation return flow that would be expected under future climate conditions.

6.5.2.2 Modifications to the Watershed Model

The watershed model operates on a daily time scale and simulates streamflow and infiltration of direct precipitation. The watershed model was modified to account for climate change by rescaling daily precipitation and ETo with the monthly climate change factors provided by DWR. The watershed model was then re-run using the modified precipitation and ETo values.

Results from the modified historical base period simulation were then averaged to provide average monthly rates of infiltration of direct precipitation and streamflow under future climate conditions.

6.5.2.3 Modifications to the Groundwater Model

The groundwater model operates at a semi-annual time scale, with stress periods representing 6-month periods. The groundwater model was extended and modified to simulate the period 2020 to 2042. Starting groundwater levels for the future simulation were set to groundwater levels at the end of Water Year 2016, extracted from the updated groundwater model.

Future groundwater recharge components were computed using the modified soil water balance model and watershed model, as described above. Future streamflow generated both inside and outside the Basin was computed using the modified watershed model.

Future groundwater recharge and streamflow are specified in the groundwater model as repeating average time-series, based on average monthly calculation of excess irrigation water, recharge of direct precipitation, and streamflow. This approach was adopted to simplify the future water budget and allow reporting of average future conditions accounting for climate change. Future pumping and wastewater return flows are the only inputs to the groundwater model that exhibit a long-term trend over the implementation period.

6.5.3 Projected Future Water Budget

Future surface water and groundwater budgets were projected.

6.5.3.1 Future Surface Water Budget

The future surface water budget includes average inflows from local imported supplies, average inflows from local supplies, average stream outflows, and average stream percolation to groundwater. Table 6-11 summarizes the average components of the projected surface water budget.

Table 6-11. Projected Future Annual Surface Water Inflows to Basin

Surface Water Inflow Component	Average
Inflow to Basin including the Salinas River and Tributaries ¹	96,400
Imported (NWP)	2,600
Total	99,000

Notes:

All values in acre-feet

¹ Tributaries include Santa Margarita, Paloma, Atascadero, Graves, and Paso Robles creeks

As shown previously on Table 3-2, the Nacimiento Water Project Allocations for the NWP participants total 10,218 acre-feet per year. To date, the maximum deliver of NWP water totaled 4,792 acre-feet in 2015 during the height of the recent drought. There is still significant supply available for the NWP partners to increase their use of the NWP. The NWP partners expect to rely on this water as needed to maintain groundwater levels in the Basin.

Table 6-12. Projected Future Annual Surface Water Outflows from Basin

Surface Water Outflow Component	Average
Salinas River Outflow from Basin	92,000
Streamflow Percolation	4,400
NWP Percolation	2,600
Total	99,000

Notes:

All values in acre-feet

6.5.3.2 Future Groundwater Budget

Projected groundwater budget components are computed using the modified groundwater flow model to simulate average conditions over the implementation period. Table 6-13 summarizes projected annual groundwater inflows. In contrast to the historical groundwater budget, which accounted for month-to-month variability, the projected groundwater budget is based on average monthly inflows. Therefore, variability in simulated groundwater budget components is minor, and minimum and maximum values are not included in Table 6-13.

Table 6-13. Projected Future Annual Groundwater Inflows to Basin

Groundwater Inflow Component ¹	Average
Streamflow Percolation	4,400
Agricultural Irrigation Return Flow	900
Deep Percolation of Direct Precipitation	3,700
Subsurface Inflow into Basin	1,600
Wastewater Pond Percolation	2,800
NWP Percolation	2,600
Urban Irrigation Return Flow	1,900
Total	18,000

Notes:

All values in acre-feet

¹ Percolation from septic systems is not directly accounted for because it is subtracted from the total estimated rural-domestic pumping to simulate a net rural-domestic pumping amount

The total average annual groundwater inflow is 500 AF greater during the future period than during the historical base period. Although, annual stream percolation is projected to be 2,700 AF less during the future period than during the historical base period, the increased imported surface water percolation nearly makes up for it. Lesser increases in urban irrigation return flow and wastewater percolation offset minor reductions in agricultural irrigation return flow and subsurface inflow between the historical base period and the projected future period. Reduction in agricultural irrigation return flow is due partly to changes in historical cropping patterns and partly to improvements in vineyard irrigation efficiency. Table 6-14 summarizes projected annual groundwater outflows.

Table 6-14. Projected Future Annual Groundwater Outflow from Basin

Groundwater Outflow Component	Average
Total Groundwater Pumping	16,400
Subsurface Flow Out of Basin	200
Riparian Evapotranspiration	600
Total	17,200

Note:

All values in acre-feet

The total average annual groundwater outflow is estimated to be 1,100 AF greater during the future period than during the historical base period. Future total annual groundwater pumping is projected to increase by about 1,100 AF compared to the historical base period.

6.5.3.3 Future Safe Yield

The projected future groundwater budget shows the Basin to be generally in balance, with projected groundwater inflows of about 18,000 AFY and projected groundwater outflows of about 17,200 AFY. The projected future surplus indicates an average annual increase in groundwater in storage of 800 AFY. A calculated annual volume for the projected future safe yield of the Basin was estimated by adding the average groundwater storage surplus of 800 AFY to the total projected future average amount of groundwater pumping of 16,400 AFY, therefore the future safe yield for the Basin is estimated to be approximately 17,200 AFY.

The estimated future safe yield of 17,200 AFY is 500 AFY greater than the estimated safe yield for the historic base period. This close comparison of safe yield values between the two periods indicates that projected future climate change is not expected to have a substantial impact on the safe yield.

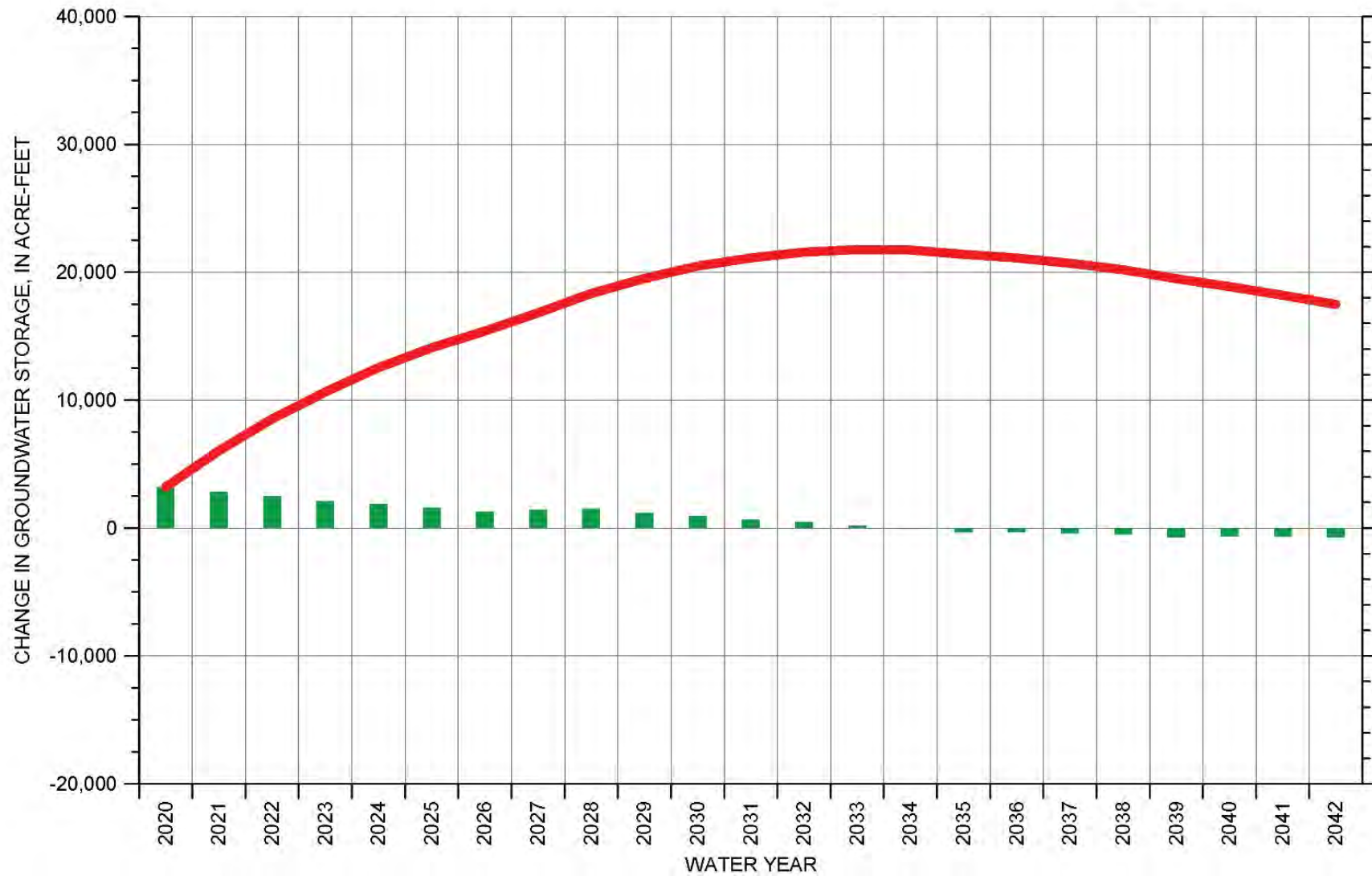
The primary reason that the average safe yield increases in the future compared to the historical period, even coupled with the assumed climate change modifiers and increased projected pumping from all users, is the added beneficial component of increased future use of the NWP water. However, as demonstrated by the projected cumulative change in storage curve presented on Figure 6-8, the benefits of increased NWP utilization are expected to be overtaken by the assumed 1 percent annually increasing pumping demands by the year 2034.

The cumulative change of groundwater in storage is projected to remain well above zero by the year 2042, however its downward trend in later years suggests the possibility of a groundwater storage deficit in the distant future (well beyond 2042) without further mitigation measures.

It is likely that the 1 percent annual growth rate assumption for non-municipal pumping is overly conservative. Adjusting this to a lower or a flat growth rate at some future date would be one such potential mitigation measure. Regardless, the imported NWP supply augments the natural basin recharge components and provides the municipal purveyors a water resource management tool that allows for effective management of the Basin for the foreseeable future.

The calculated safe yield of the Basin is a reasonable estimate of the long-term pumping that can be maintained without a long-term lowering of groundwater levels. The sustainable yield of the Basin, which will be estimated after an assessment of the SMC and identification of potential undesirable results, will be estimated later. Sustainable yield looks to the presence or absence of undesirable results, not strictly inflows and outflows. The definitive sustainable yield can only be determined once undesirable results have been shown to have not occurred. The sustainable yield estimate may be revised in the future as new data become available during GSP implementation.

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EXPLANATION

— Cumulative Change in Groundwater Storage ■ Annual Change in Groundwater Storage

Figure 6-8. Projected Future Cumulative Change in Groundwater Storage

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Appendix B: AWWA Water Audit Results

AWWA Free Water Audit Software v5.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:	John B Neil		
Email Address:	jneil@amwc.us		
Telephone (incl Ext.):	(805) 466-2428		
Name of City / Utility:	Atascadero Mutual Water Co		
City/Town/Municipality:	Atascadero		
State / Province:	California (CA)		
Country:	USA		
Year:	2020	Calendar Year	
Audit Preparation Date:	9/1/2021		
Volume Reporting Units:	Million gallons (US)		
PWSID / Other ID:	CA4010002		

The following guidance will help you complete the Audit

All audit data are entered on the [Reporting Worksheet](#)

	Value can be entered by user
	Value calculated based on input data
	These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: 0.25% Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

Instructions

The current sheet.
Enter contact information and basic audit details (year, units etc)

Reporting Worksheet

Enter the required data on this worksheet to calculate the water balance and data grading

Comments

Enter comments to explain how values were calculated or to document data sources

Performance Indicators

Review the performance indicators to evaluate the results of the audit

Water Balance

The values entered in the Reporting Worksheet are used to populate the Water Balance

Dashboard

A graphical summary of the water balance and Non-Revenue Water components

Grading Matrix

Presents the possible grading options for each input component of the audit

Service Connection Diagram

Diagrams depicting possible customer service connection line configurations

Definitions

Use this sheet to understand the terms used in the audit process

Loss Control Planning

Use this sheet to interpret the results of the audit validity score and performance indicators

Example Audits

Reporting Worksheet and Performance Indicators examples are shown for two validated audits

Acknowledgements

Acknowledgements for the AWWA Free Water Audit Software v5.0

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org



AWWA Free Water Audit Software: Reporting Worksheet

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? Click to access definition
+ Click to add a comment

Water Audit Report for: **Atascadero Mutual Water Co (CA4010002)**
Reporting Year: **2020** **1/2020 - 12/2020**

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: MILLION GALLONS (US) 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.

WATER SUPPLIED

Volume from own sources: + ? 6 1,726.394 MG/Yr
Water imported: + ? n/a 0.000 MG/Yr
Water exported: + ? n/a 0.000 MG/Yr

Master Meter and Supply Error Adjustments

Pcnt: Value: MG/Yr
+ ? 4 -3.40% 0.000 MG/Yr
+ ? 0.000 MG/Yr
+ ? 0.000 MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 1,787.157 MG/Yr

AUTHORIZED CONSUMPTION

Billed metered: + ? 8 1,571.942 MG/Yr
Billed unmetered: + ? n/a 0.000 MG/Yr
Unbilled metered: + ? n/a 0.000 MG/Yr
Unbilled unmetered: + ? 7 2.800 MG/Yr

AUTHORIZED CONSUMPTION: 1,574.742 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 4.468 MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: + ? 6 3.466 MG/Yr
Systematic data handling errors: + ? 5 3.930 MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 11.864 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 200.552 MG/Yr

WATER LOSSES: 212.415 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 215.215 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: + ? 8 246.0 miles
Number of active AND inactive service connections: + ? 8 10,807
Service connection density: ? 44 conn./mile main

Are customer meters typically located at the curbside 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: + ? 6 103.0 psi

COST DATA

Total annual cost of operating water system: + ? 10 \$8,491,327 \$/Year
Customer retail unit cost (applied to Apparent Losses): + ? 8 \$5.40 \$/1000 gallons (US)
Variable production cost (applied to Real Losses): + ? 5 \$533.50 \$/Million gallons ☐ 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: Variable production cost (applied to Real Losses)

3: Customer metering inaccuracies



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association.
Copyright © 2014, All Rights Reserved.Water Audit Report for: **Atascadero Mutual Water Co (CA4010002)**Reporting Year: **2020** **1/2020 - 12/2020******* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 67 out of 100 *****

System Attributes:

Apparent Losses:	11.864	MG/Yr
+	Real Losses:	200.552 MG/Yr
=	Water Losses:	212.415 MG/Yr

? Unavoidable Annual Real Losses (UARL): **110.98** MG/YrAnnual cost of Apparent Losses: **\$64,064**Annual cost of Real Losses: **\$106,994** Valued at Variable Production Cost
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	12.0%	
		Non-revenue water as percent by cost of operating system:	2.0%	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	3.01	gallons/connection/day
		Real Losses per service connection per day:	50.84	gallons/connection/day
		Real Losses per length of main per day*:	N/A	
		Real Losses per service connection per day per psi pressure:	0.49	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): **200.55** million gallons/year**? Infrastructure Leakage Index (ILI) [CARL/UARL]:** **1.81**

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: User Comments

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American Water Works Association.
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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
-------------------------	--

Audit Item	Comment
Volume from own sources:	VOS represents cumulative volume from January 1, 2020 to December 31, 2020. Change in tank storage from January 1, 2020 and December 31, 2020 included in VOS.
Vol. from own sources: Master meter error adjustment:	Meter error adjustment included based on tested data from AMWC staff.
Water imported:	Not applicable.
Water imported: master meter error adjustment:	Not applicable.
Water exported:	Not applicable.
Water exported: master meter error adjustment:	Not applicable.
Billed metered:	Meter reading period is mid-month to mid-month
Billed unmetered:	Not applicable.
Unbilled metered:	Not applicable.
Unbilled unmetered:	Water losses from main breaks, well flushing, dead-end line flushing as reported per NPDES permit

Audit Item	Comment
Unauthorized consumption:	Default selected.
Customer metering inaccuracies:	255 meters tested representing 2.4% of the meter population. 99 of the meters tested were not working. The remaining 156 meters tested that were working were providing accurate readings. The average accuracy of all working meters after a 5 gal test was 99.72% and after a 10 gal flow test was 99.85%, with a combined average of 99.78%.
Systematic data handling errors:	Default selected.
Length of mains:	Does not currently include length of hydrant laterals. Will be addressed for next audit cycle.
Number of active AND inactive service connections:	Results based on customer database with meter status indicated.
Average length of customer service line:	Customer service lines generally end at curb stop.
Average operating pressure:	Operating pressures based on continuous pressure recording at production and pumping facilities. With previous pressure testing completed for all hydrants within water system.
Total annual cost of operating water system:	2020/21 fiscal year operating expenses, including depreciation.
Customer retail unit cost (applied to Apparent Losses):	2020 total expenses divided by adjusted meter volume
Variable production cost (applied to Real Losses):	2020 variable energy and chemical costs divided by metered production



AWWA Free Water Audit Software: Water Balance

WAS v5.0

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Copyright © 2014, All Rights Reserved.Water Audit Report for: **Atascadero Mutual Water Co (CA4010002)**Reporting Year: **2020****1/2020 - 12/2020**Data Validity Score: **67**

Own Sources (Adjusted for known errors) 1,787.157	Water Exported 0.000	Billed Water Exported			
	Water Supplied 1,787.157	Authorized Consumption 1,574.742	Billed Authorized Consumption 1,571.942	Billed Metered Consumption (water exported is removed) 1,571.942	Revenue Water 1,571.942
				Billed Unmetered Consumption 0.000	
			Unbilled Authorized Consumption 2.800	Unbilled Metered Consumption 0.000	Non-Revenue Water (NRW) 215.215
				Unbilled Unmetered Consumption 2.800	
		Water Losses 212.415	Apparent Losses 11.864	Unauthorized Consumption 4.468	
				Customer Metering Inaccuracies 3.466	
				Systematic Data Handling Errors 3.930	
		Water Imported 0.000		Real Losses 200.552	Leakage on Transmission and/or Distribution Mains Not broken down
	Leakage and Overflows at Utility's Storage Tanks Not broken down				
Leakage on Service Connections Not broken down					



AWWA Free Water Audit Software: Dashboard

WAS v5.0

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The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

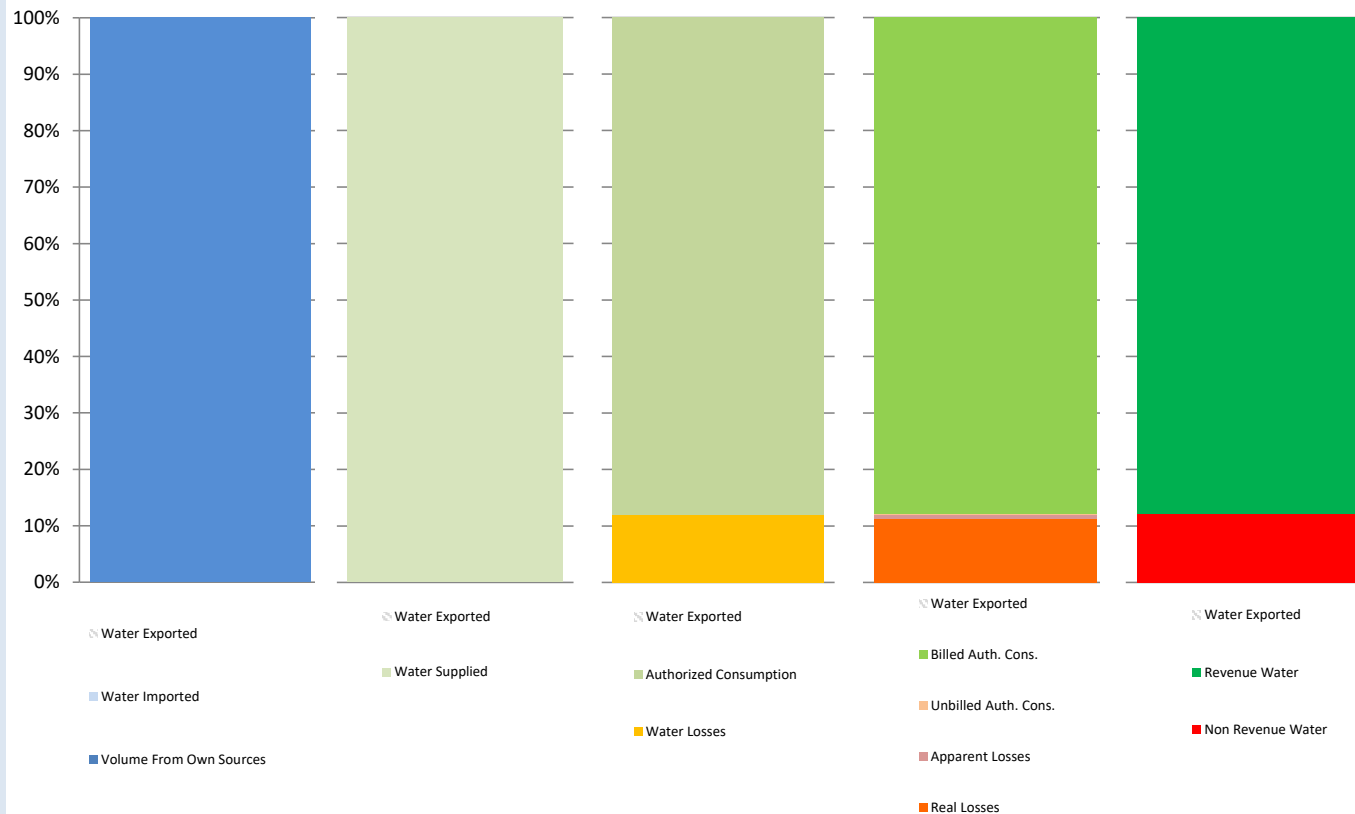
Water Audit Report for: **Atascadero Mutual Water Co (CA4010002)**

Reporting Year: **2020** **1/2020 - 12/2020**

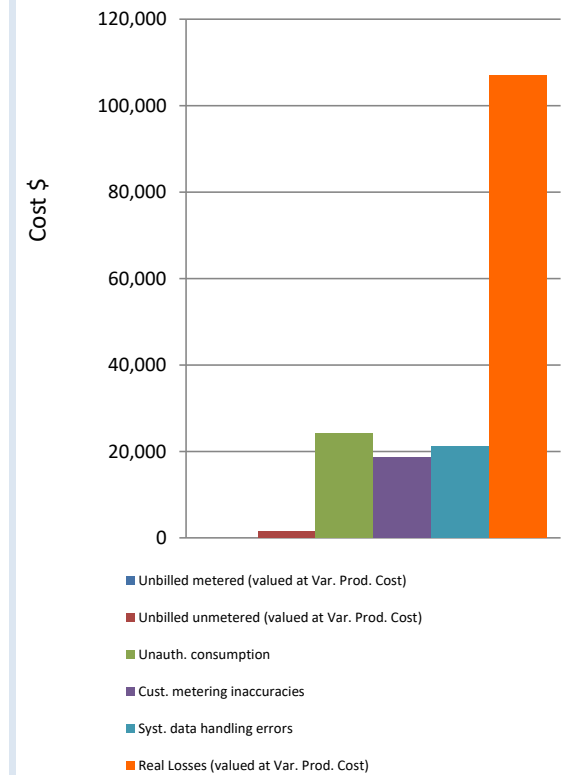
Data Validity Score: **67**

☐ Show me the VOLUME of Non-Revenue Water

☒ Show me the COST of Non-Revenue Water



Total Cost of NRW = \$172,552



AWWA Free Water Audit Software v5.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:	John B Neil		
Email Address:	jneil@amwc.us		
Telephone (incl Ext.):	(805) 466-2428		
Name of City / Utility:	Atascadero Mutual Water Co		
City/Town/Municipality:	Atascadero		
State / Province:	California (CA)		
Country:	USA		
Year:	2021	Calendar Year	
Audit Preparation Date:	9/8/2022		
Volume Reporting Units:	Million gallons (US)		
PWSID / Other ID:	CA4010002		

The following guidance will help you complete the Audit

All audit data are entered on the [Reporting Worksheet](#)

	Value can be entered by user
	Value calculated based on input data
	These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: 0.25% Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

Instructions

The current sheet.
Enter contact information and basic audit details (year, units etc)

Reporting Worksheet

Enter the required data on this worksheet to calculate the water balance and data grading

Comments

Enter comments to explain how values were calculated or to document data sources

Performance Indicators

Review the performance indicators to evaluate the results of the audit

Water Balance

The values entered in the Reporting Worksheet are used to populate the Water Balance

Dashboard

A graphical summary of the water balance and Non-Revenue Water components

Grading Matrix

Presents the possible grading options for each input component of the audit

Service Connection Diagram

Diagrams depicting possible customer service connection line configurations

Definitions

Use this sheet to understand the terms used in the audit process

Loss Control Planning

Use this sheet to interpret the results of the audit validity score and performance indicators

Example Audits

Reporting Worksheet and Performance Indicators examples are shown for two validated audits

Acknowledgements

Acknowledgements for the AWWA Free Water Audit Software v5.0

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org



AWWA Free Water Audit Software: Reporting Worksheet

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? Click to access definition
+ Click to add a comment

Water Audit Report for: **Atascadero Mutual Water Co (CA4010002)**
Reporting Year: **2021** **1/2021 - 12/2021**

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: MILLION GALLONS (US) 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.

WATER SUPPLIED

Volume from own sources: + ? 6 1,781.000 MG/Yr
Water imported: + ? n/a 0.000 MG/Yr
Water exported: + ? n/a 0.000 MG/Yr

Master Meter and Supply Error Adjustments

Pcnt: Value: MG/Yr
-3.40% 0 0 MG/Yr
0 0 MG/Yr
0 0 MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 1,843.685 MG/Yr

AUTHORIZED CONSUMPTION

Billed metered: + ? 8 1,609.000 MG/Yr
Billed unmetered: + ? n/a 0.000 MG/Yr
Unbilled metered: + ? 7 2.300 MG/Yr
Unbilled unmetered: + ? 5 23.046 MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 1,634.346 MG/Yr

Click here: ?
for help using option
buttons below

Pcnt: Value: MG/Yr
1.25% 0 0 MG/Yr

Use buttons to select
percentage of water
supplied
OR
value

Pcnt: Value: MG/Yr
0.25% 0 0 MG/Yr

1.90% 0 0 MG/Yr
0.25% 0 0 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 4.609 MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: + ? 6 31.208 MG/Yr
Systematic data handling errors: + ? 5 4.023 MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 39.839 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 169.500 MG/Yr

WATER LOSSES: 209.339 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 234.685 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: + ? 8 244.0 miles
Number of active AND inactive service connections: + ? 8 10,931
Service connection density: ? 45 conn./mile main

Are customer meters typically located at the curbside 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: + ? 6 103.0 psi

COST DATA

Total annual cost of operating water system: + ? 10 \$8,491,000 \$/Year
Customer retail unit cost (applied to Apparent Losses): + ? 8 \$3.62 \$/1000 gallons (US)
Variable production cost (applied to Real Losses): + ? 5 \$592.07 \$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 66 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: Variable production cost (applied to Real Losses)

3: Customer metering inaccuracies



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

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Copyright © 2014, All Rights Reserved.Water Audit Report for: **Atascadero Mutual Water Co (CA4010002)**Reporting Year: **2021** **1/2021 - 12/2021******* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 66 out of 100 *****

System Attributes:

Apparent Losses:	39.839	MG/Yr
+ Real Losses:	169.500	MG/Yr
= Water Losses:	209.339	MG/Yr

? Unavoidable Annual Real Losses (UARL): **111.27** MG/YrAnnual cost of Apparent Losses: **\$144,218**Annual cost of Real Losses: **\$100,356** Valued at Variable Production Cost
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	12.7%	
		Non-revenue water as percent by cost of operating system:	3.1%	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	9.99	gallons/connection/day
		Real Losses per service connection per day:	42.48	gallons/connection/day
		Real Losses per length of main per day*:	N/A	
		Real Losses per service connection per day per psi pressure:	0.41	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): **169.50** million gallons/year**? Infrastructure Leakage Index (ILI) [CARL/UARL]:** **1.52**

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: User Comments

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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
-------------------------	--

Audit Item	Comment
Volume from own sources:	VOS represents cumulative volume from January 1, 2020 to December 31, 2020. Change in tank storage from January 1, 2020 and December 31, 2020 included in VOS.
Vol. from own sources: Master meter error adjustment:	Meter error adjustment included based on tested data from AMWC staff.
Water imported:	Not applicable.
Water imported: master meter error adjustment:	Not applicable.
Water exported:	Not applicable.
Water exported: master meter error adjustment:	Not applicable.
Billed metered:	Meter reading period is mid-month to mid-month
Billed unmetered:	Not applicable.
Unbilled metered:	Not applicable.
Unbilled unmetered:	Water losses from main breaks, well flushing, dead-end line flushing, as reported per NPDES permit and fire suppression. Atascadero Mutual Water Company does not have access to records of water use by the Atascadero Fire Department, which is part of the City of Atascadero.

Audit Item	Comment
Unauthorized consumption:	Default selected.
Customer metering inaccuracies:	147 meters tested: 115 @ 5/8", 21 @ 3/4", 9 @ 1", 1 @ 1.5", 1 @ 2"
Systematic data handling errors:	
Length of mains:	
Number of active AND inactive service connections:	Results based on customer database with meter status indicated.
Average length of customer service line:	Customer service lines generally end at curb stop.
Average operating pressure:	Operating pressures based on continuous pressure recording at production and pumping facilities. With previous pressure testing completed for all hydrants within water system.
Total annual cost of operating water system:	2020/21 fiscal year operating expenses, including depreciation.
Customer retail unit cost (applied to Apparent Losses):	2021 total expenses divided by adjusted meter volume
Variable production cost (applied to Real Losses):	2021 variable energy and chemical costs divided by metered production



AWWA Free Water Audit Software: Water Balance

WAS v5.0

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Water Audit Report for: **Atascadero Mutual Water Co (CA4010002)**

Reporting Year: **2021** 1/2021 - 12/2021

Data Validity Score: **66**

Own Sources (Adjusted for known errors) <



AWWA Free Water Audit Software: Dashboard

WAS v5.0

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The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

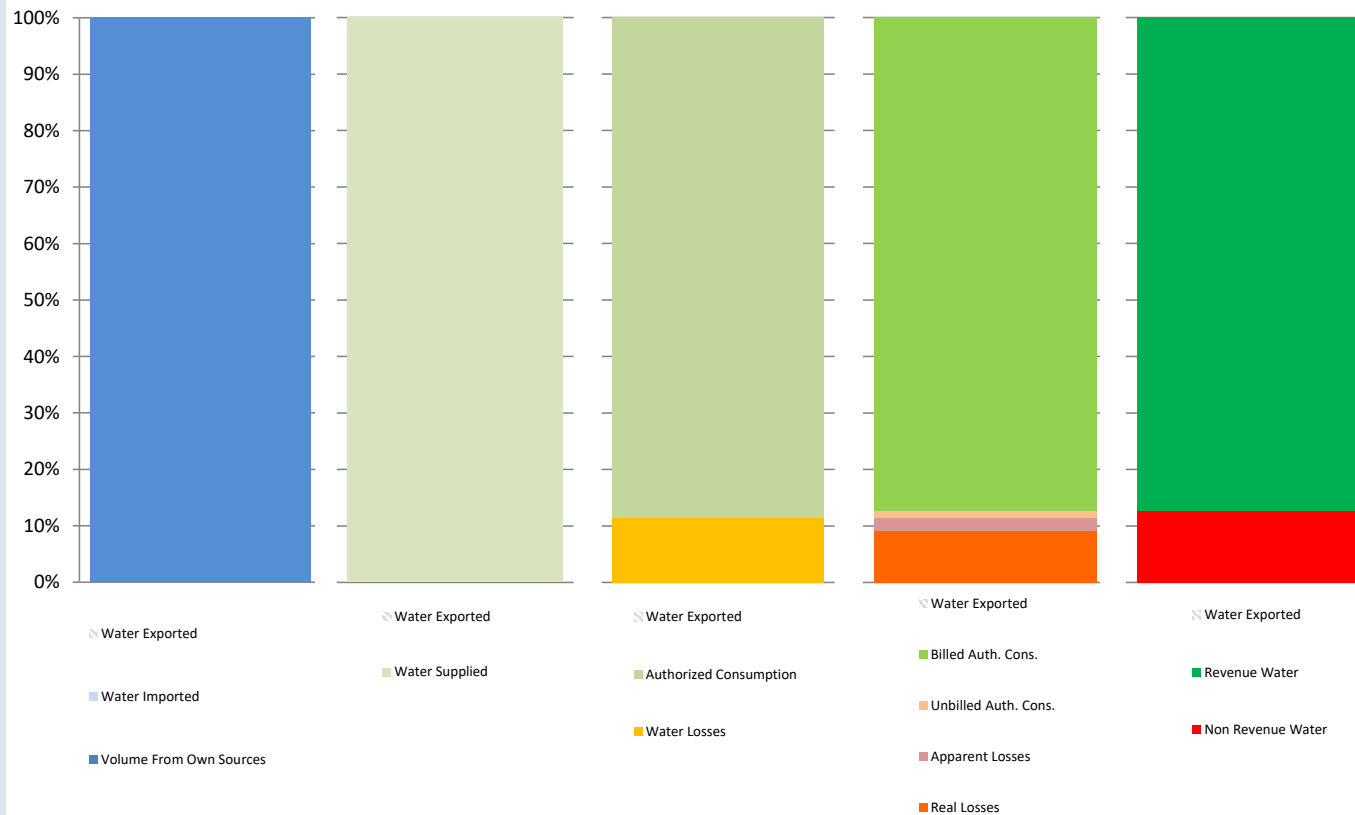
Water Audit Report for: **Atascadero Mutual Water Co (CA4010002)**

Reporting Year: **2021** **1/2021 - 12/2021**

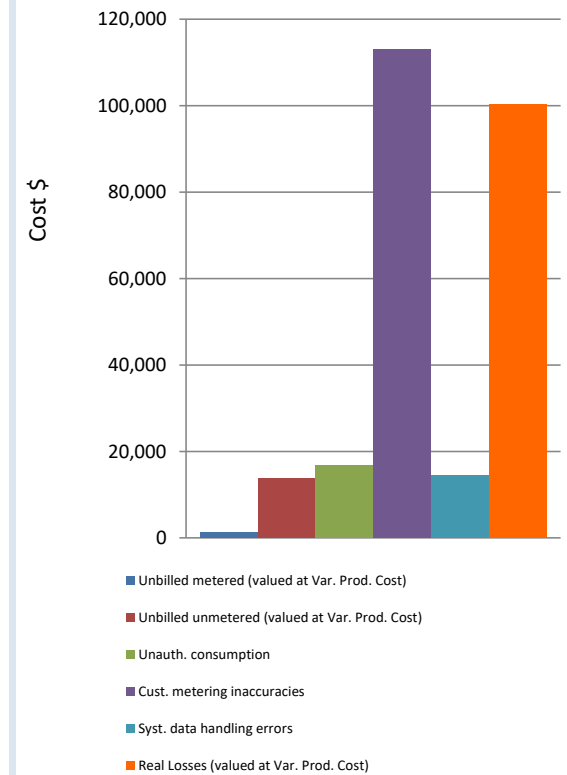
Data Validity Score: **66**

☐ Show me the VOLUME of Non-Revenue Water

☒ Show me the COST of Non-Revenue Water



Total Cost of NRW = \$259,581





AWWA Free Water Audit Software v6.0

FWAS v6.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format and is not meant to take the place of a full-scale, comprehensive water audit format. Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targeting loss reduction levels. This tool contains several separate worksheets. Sheets can be accessed using the tabs at the bottom of the screen, or by clicking the TOC links below.

Table of Contents (TOC)

Start Page	The current sheet. Enter contact information and basic audit details.
Worksheet	Enter the required data on this worksheet to calculate the water balance and data grading.
Interactive Data Grading	Answer questions about operational practices for each audit input, and the data validity grades will automatically populate.
Dashboard	Review NRW components, performance indicators and graphical outputs to evaluate the results of the audit.
Notes	Enter notes to explain how values were calculated, document data sources, and related information about data management practices.
Blank Sheet	By popular demand! A blank sheet. The world is your canvas.
Water Balance	The values entered in the Worksheet automatically populate the Water Balance.
Loss Control Planning	Use this sheet to interpret the results of the audit validity score and performance indicators.
Definitions	Use this sheet to understand the terms used in the audit process.
Service Connection Diagram	Diagrams depicting possible customer service connection line configurations.
Acknowledgements	Acknowledgements for development of the AWWA Free Water Audit Software v6.0.

AWWA Web Resources for Water Loss Control

<https://www.awwa.org/Resources-Tools/Resource-Topics/Water-Loss-Control>

Items referenced in the Free Water Audit Software v6.0 on the web:

Data Grading Matrix v6.0
Example Water Audit v6.0
Water Audit Compiler v6.0
AWWA Reports on Performance Indicators
M36 Manual

Enter Basic Information

Name of Utility:	Atascadero Mutual Water Company
Name of Contact Person:	John B Neil
Email:	jneil@amwc.us
Telephone Ext.:	805.466.2428
City/Town/Municipality:	Atascadero
State / Province:	California (CA)
Country:	USA
Audit Preparation Date:	Nov 15 2023
Audit Year:	2022
Audit Year Label:	Calendar (Fiscal, Calendar, etc)
Audit Period Start Date:	Jan 01 2022
Audit Period End Date:	Dec 31 2022
Volume Reporting Units:	Million gallons (US)
Water System Structure:	Retail Mutual Water Company
Water Type:	Potable Water
System ID Number:	CA4010002
Validator Name/ID:	Robert Lepore
Validator Email:	rlepore@mkassociates.us
Estimated Total Population Served by Water Utility:	31,500

Key of Input Acronyms

In order of appearance in the Worksheet

VOS	Volume from Own Sources
VOSEA	VOS Error Adjustment
WI	Water Imported
WIEA	WI Error Adjustment
WE	Water Exported
WEEA	WE Error Adjustment
BMAC	Billed Metered Authorized Consumption
BUAC	Billed Unmetered Authorized Consumption
UMAC	Unbilled Metered Authorized Consumption
UUAC	Unbilled Unmetered Authorized Consumption
SDHE	Systematic Data Handling Errors
CMi	Customer Metering Inaccuracies
UC	Unauthorized Consumption
Lm	Length of mains
Nc	Number of service connections
Lp	Average length of (private) customer service line
AOP	Average Operating Pressure
CRUC	Customer Retail Unit Charge
VPC	Variable Production Cost

Color Key

User input

Calculated

Optional default

Guidance for the Worksheet

Choosing to enter unit of **percent** or **volume**
(applies to VOSEA, WIEA, WEEA, CMi)

choose entry option:

1.00%	percent	or
	volume	25.000

Choosing to enter **default** or **custom input**
(applies to UUAC, SDHE, UC)

choose entry option:

0.25%	default	or
	custom	75.000

Guidance for the Interactive Data Grading

Use acronym buttons in IDG header to navigate among inputs. Acronym Key above.
White = needs answers, orange = complete, clear = not required. Example below.

VOS	VOSEA	WI	WIEA	WE	WEEA	BMAC	BUAC	UMAC	UUAC
SDHE	CMi	UC	Lm	Nc	Lp	AOP	CRUC	VPC	

After clicking an acronym button, answer all visible questions in the order they're presented, choosing best-fit answer

Grade will populate when all visible questions are complete for an input

7

The limiting criteria will be labeled along the right. If only 1 limiting criterion is shown, improving on that criterion will achieve a higher data grade. If multiple limiting criteria are shown, improving on *each* limiting criterion is necessary to achieve a higher data grade. A complete inventory of data grading criteria is available in the Data Grading Matrix v6.0 (see web resources)

Limiting

If you have questions or comments regarding this software please contact us at: wlc@awwa.org



AWWA Free Water Audit Software: Worksheet

FWAS v6.0
American Water Works Association.
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Water Audit Report for: **Atascadero Mutual Water Company**
Audit Year: **2022** **Jan 01 2022 - Dec 31 2022** **Calendar**

Click 'n' to add notes

Click 'g' to determine data validity grade

To edit water system info: [go to start page](#)

To access definitions, click the [input name](#)

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

choose entry option:

WATER SUPPLIED

VOS	Volume from Own Sources:	n g 7	1,736.267	MG/Yr	n g 4	2.65%	percent	over-registration	VOSEA
WI	Water Imported:	n g n/a	0.000	MG/Yr					WIEA
WE	Water Exported:	n g n/a	0.000	MG/Yr					WEEA

WATER SUPPLIED: MG/Yr

AUTHORIZED CONSUMPTION

BMAC	Billed Metered:	n g 8	1,531.773	MG/Yr					
BUAC	Billed Unmetered:	n g n/a	0.000	MG/Yr					
UMAC	Unbilled Metered:	n g n/a	0.000	MG/Yr					
UUAC	Unbilled Unmetered:	n g 10	2.608	MG/Yr					

choose entry option: MG/Yr

AUTHORIZED CONSUMPTION: MG/Yr

WATER LOSSES MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

SDHE	Systematic Data Handling Errors:	n g 3	3.829	MG/Yr					
CMI	Customer Metering Inaccuracies:	n g 3	17.959	MG/Yr					
UC	Unauthorized Consumption:	n g 3	3.829	MG/Yr					

choose entry option:

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: MG/Yr

Real Losses

Real Losses: MG/Yr

WATER LOSSES: MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: MG/Yr

SYSTEM DATA

Lm	Length of mains:	n g 10	244.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n g 8	10,998		(active and inactive)
	Service connection density:		45	conn./mile main	

Are customer meters typically located at the curbstop/property line?

Lp

Average length of customer service line has been set to zero and a data grading of 10 has been applied

AOP **Average Operating Pressure:** psi

COST DATA

CRUC	Customer Retail Unit Charge:	n g 10	\$7.76	\$/1000 gallons (US)	Total Annual Operating Cost
VPC	Variable Production Cost:	n g 8	\$818.49	\$/Million gallons	\$11,880,650 \$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

*** The Water Audit Data Validity Score is in Tier IV (71-90). See Dashboard tab for additional outputs. ***

[go to dashboard](#)

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

- 1: Volume from Own Sources (VOS)
- 2: Customer Metering Inaccuracies (CMI)
- 3: Billed Metered (BMAC)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses ¹ :		gal/conn/day
Unit Real Losses ² :		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

2022

VOS

VOSEA

WI

WIEA

WE

WEEA

BMAC

BUAC

UMAC

UUAC

White = incomplete

Orange = complete

Use acronyms for navigation

SDHE

CMI

UC

Lm

Nc

Lp

AOP

CRUC

VPC

FWAS v6.0

American Water Works Association.

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Limiting
criteria
(see Start
Page for
details)

go to input

Volume from Own Sources (VOS) - Data Grading Criteria

go to notes

vos	Criteria Question	Select Best-Fit Answers to All Visible Questions
vos.0	Did the water utility supply any water from its own sources during the audit year?	Yes
vos.1	What percent of own supply volume is metered?	>95 - 99%
	For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the finished water volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.	
vos.2	What is the frequency of electronic calibration?	Annually
vos.3	What level of data transfer errors are checked as part of the electronic calibration process?	Data transfer errors are checked at secondary device(s) AND tertiary device(s)
vos.4	Is the most recent electronic calibration documentation available for review?	Yes
vos.5	What is the frequency of in-situ flow accuracy testing?	Less than annual but within last 5 years
vos.6	Is the most recent in-situ flow accuracy testing documentation available for review?	No
vos.7		
vos.8	Have testing and calibration procedures been closely scrutinized for compliance with procedures described in the AWWA M36 and/or M33 Manual(s)?	Yes
vos.9	Which best describes the frequency of finished water meter readings?	Daily
vos.10	Which best describes the frequency of data review for anomalies/errors? These can include numbers that are outside of typical patterns, and zero or 'null' values that may reflect a gap in data recording.	Daily
FINAL DATA GRADE FOR THIS AUDIT INPUT:		7

[go to input](#)

Volume from Own Sources Error Adjustment (VOSEA) - Data Grading Criteria

[go to notes](#)

vosea	Criteria Question	Select Best-Fit Answers to All Visible Questions	
vosea.1	Are tank levels monitored automatically & recorded daily?	Yes	
vosea.2	Are daily changes of stored water volumes in distribution system tanks included in the tabulation of the daily "Volume from Own Sources" quantity?	Yes	
vosea.3	Is the annual net distribution storage change included in either the VOS input or the VOSEA input?	Yes	
vosea.4	Are the flow accuracy test and/or electronic calibration results included in the VOSEA input in the water audit?	Results are available but not analyzed	Limiting
FINAL DATA GRADE FOR THIS AUDIT INPUT:		4	

[go to input](#)

Water Imported (WI) - Data Grading Criteria

[go to notes](#)

wi	Criteria Question	Select Best-Fit Answers to All Visible Questions
wi.0	Did the water utility import any water during the audit year?	No
wi.1		
	For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the water imported volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.	
wi.2		
wi.3		
wi.4		
wi.5		
wi.6		
wi.7		
wi.8		
wi.9		
wi.10		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

go to input

Water Imported Error Adjustment (WIEA) - Data Grading Criteria

go to notes

wiea	Criteria Question	Select Best-Fit Answers to All Visible Questions
wiea.1		
wiea.2		
wiea.3		
wiea.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)

Water Exported (WE) - Data Grading Criteria

[go to notes](#)

we	Criteria Question	Select Best-Fit Answers to All Visible Questions
we.0	Did the water utility export any water during the audit year?	No
we.1		
	For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the water exported volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.	
we.2		
we.3		
we.4		
we.5		
we.6		
we.7		
we.8		
we.9		
we.10		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

go to input

Water Exported Error Adjustment (WEEA) - Data Grading Criteria

go to notes

weea	Criteria Question	Select Best-Fit Answers to All Visible Questions
weea.1		
weea.2		
weea.3		
weea.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)**Billed Metered Authorized Consumption (BMAC) - Data Grading Criteria**[go to notes](#)

bmac	Criteria Question	Select Best-Fit Answers to All Visible Questions
bmac.0	Were any customers metered in the audit year?	Yes
bmac.1	For billed metered accounts, what % of bills are estimated in a typical billing cycle?	5% or less
bmac.2	How often does the utility read its customer meters? For systems with multiple read frequencies, select the reading frequency that describes the majority of your customers.	Monthly
bmac.3	Is the BMAC volume pro-rated to represent consumption occurring exactly during the audit period?	Yes
bmac.4	How frequently does internal review by utility staff of the BMAC volumes occur?	Every billing cycle
bmac.5	What level of detail is examined in the internal review of BMAC volumes?	Totals grouped by use type or customer class and specific accounts flagged for anomalous consumption
bmac.6	When was the most recent billing data review by someone who is independent of the utility billing process?	More than 5 years ago, or not sure
bmac.7		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8

Limiting

[go to input](#)**Billed Unmetered Authorized Consumption (BUAC) - Data Grading Criteria**[go to notes](#)

buac	Criteria Question	Select Best-Fit Answers to All Visible Questions
buac.0	Was there any billed consumption on unmetered accounts in the audit year?	No
buac.1		
buac.2		
buac.3		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)**Unbilled Metered Authorized Consumption (UMAC) - Data Grading Criteria**[go to notes](#)

umac	Criteria Question	Select Best-Fit Answers to All Visible Questions
umac.0	Did the water utility have any unbilled-metered consumption in the audit year?	No
umac.1		
umac.2		
umac.3		
umac.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)

Unbilled Unmetered Authorized Consumption (UUAC) - Data Grading Criteria

[go to notes](#)

uuac	Criteria Question	Select Best-Fit Answers to All Visible Questions
uuac.0	On the Worksheet, the status of the default option is:	A system specific volume has been entered
uuac.1	How well-understood is the extent of unbilled unmetered use?	Complete inventory exists
uuac.2	Which best describes the records that are kept for events of unbilled unmetered use?	Each event is documented
uuac.3	How is the majority of unbilled unmetered use estimated?	Entirely from event-specific estimates
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

[go to input](#)

Systematic Data Handling Error (SDHE) - Data Grading Criteria

This Data Grading Criteria is hidden when the 'default' input is used on the Worksheet

[go to notes](#)

FINAL DATA GRADE FOR THIS AUDIT INPUT:

3

go to input

Customer Metering Inaccuracies (CMI) - Data Grading Criteria

go to notes

cmi	Criteria Question	Select Best-Fit Answers to All Visible Questions	
cmi.0	Was there any metered customer usage during the audit period?	Yes	
cmi.1	Do you test meters reactively (when triggered by customer complaint or billing/consumption flag)?	Reactive testing conducted	
cmi.2	For small size customer meters, which best describes the frequency of proactive testing (effort beyond when triggered by customer complaint or billing/consumption flags)?	No proactive small meter testing activity to date	Limiting
cmi.3			
cmi.4	For mid and large size customer meters, which best describes the frequency of the proactive testing program?	No proactive large meter testing activity to date	Limiting
cmi.5			
cmi.6	Which best describes how the input was derived?	Calculated based on most recent meter accuracy tests, but not comprehensive of all meter performance	
cmi.7	Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	No	
cmi.8	To what extent does meter replacement occur and for which meters?	Replacement upon complete failure or special circumstance (as needed)	
cmi.9	Which best describes the reliability of meter installation records?	Records are kept for meter installations, and they include data on installation date, type, size, and manufacturer	
FINAL DATA GRADE FOR THIS AUDIT INPUT:		3	

[go to input](#)

Unauthorized Consumption (UC) - Data Grading Criteria

This Data Grading Criteria is hidden when the 'default' input is used on the Worksheet

[go to notes](#)

FINAL DATA GRADE FOR THIS AUDIT INPUT:

3

[go to input](#)**Length of Mains (Lm) - Data Grading Criteria**[go to notes](#)

Lm	Criteria Question	Select Best-Fit Answers to All Visible Questions
Lm.1	How was the input derived?	Derived directly from Mains inventory (GIS, ledger, etc)
Lm.2	Are hydrant laterals included in the input derivation?	Yes
Lm.3	Which best describes how the Mains inventory (GIS, ledger, etc) is kept up to date?	Additions or subtractions are updated in the mains inventory (GIS, ledger, etc), at least annually
Lm.4	Which best describes how the Mains inventory (GIS, ledger, etc) is field validated to confirm field conditions match the inventory?	Field validation is accomplished (i.e. in daily operations or specific validation projects)
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

[go to input](#)

Number of Service Connections (Nc) - Data Grading Criteria

[go to notes](#)

Nc	Criteria Question	Select Best-Fit Answers to All Visible Questions	
Nc.1	How was the input derived?	Extracted from Services inventory (GIS, billing system, etc)	
Nc.2	What is the count of services based on?	Premise based, i.e. service connection count, location ID count	
Nc.3	Are inactive (but still pressurized) service lines included in the input? These may be metered or unmetered.	Yes	
Nc.4	Which best describes how the inventory of service connections (GIS, billing system, etc) is kept up to date?	Additions or subtractions are updated in the service line inventory (GIS, billing system, etc), at least annually	
Nc.5	Which best describes how the inventory of service connections (GIS, billing system, etc) is field validated to confirm field conditions match the inventory?	Field validation is accomplished for a portion of the system (i.e. in daily operations or specific validation projects)	Limiting
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8	

[go to input](#)**Average Length of (Private) Customer Service Line (Lp) - Data Grading Criteria**[go to notes](#)

Lp	Criteria Question	Select Best-Fit Answers to All Visible Questions
Lp.0	Are customer meters typically located at the curbstop or property line?	Yes
Lp.1		
Lp.2		
Lp.3		
Lp.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

go to input

Average Operating Pressure (AOP) - Data Grading Criteria

go to notes

aop	Criteria Question	Select Best-Fit Answers to All Visible Questions	
aop.1	Which best describes checks on the boundary integrity for the system's pressure zone(s)?	Normally-closed boundary valves between zones have been confirmed within the past 3 years to be fully closed	Limiting
aop.2	Which best describes how one-time pressure readings (i.e. from hydrants) are collected?	Collected annually during routine system flushing and/or hydrant testing	
aop.3	Which best describes where continuous pressure data (via temporary data loggers or permanent telemetry) is collected?	At zone boundary conditions only (i.e. supply entry points, PRVs, booster stations)	
aop.4	Which best describes how continuous pressure data is collected?	Year-round data collection via permanent monitoring	
aop.5	How was the input derived?	Calculated from field data as a weighted average, compliant with methods described in the M36 Manual	
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8	

[go to input](#)**Customer Retail Unit Charge (CRUC) - Data Grading Criteria**[go to notes](#)

cruc	Criteria Question	Select Best-Fit Answers to All Visible Questions
cruc.0	Was any metered consumption billed on a volumetric basis in the audit period?	Yes
cruc.1	Which best describes the use and reliability of the current rate structure?	Customer bill calculations have been checked to confirm the rate structure is correctly implemented
cruc.2	Choose the option that best describes how the input was derived	A volume-weighted average of all rates was calculated
cruc.3	Is there any additional volumetric revenue the utility receives that depends on water meter readings, such as sewer?	Yes, and this has been incorporated into the volume-weighted average calculation
cruc.4	Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	Yes
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

go to input		Variable Production Cost (VPC) - Data Grading Criteria		go to notes	
vpc		Criteria Question	Select Best-Fit Answers to All Visible Questions		
vpc.1		Choose the option that best describes how the input was derived	Multiple sources of water exist, and a volume-weighted average was calculated for all sources		
vpc.2		Choose the option that best describes which short-run marginal costs have been included in the input, using the definitions below for reference. Short-run marginal costs can include the following: - chemicals + power for treatment, typically applicable if the utility is producing/treating water - power for distribution, typically applicable if pumps exist in the distribution network - water acquisition costs, typically applicable if the utility is purchasing water or incurs any extraction costs for withdrawing from a source Some short-run marginal costs may not be applicable. The auditor should analyze the system characteristics to determine which costs are applicable for inclusion in the VPC input derivation. See also the latest AWWA M36 Manual for further guidance.	All applicable short-run marginal costs are included		
vpc.3		Choose the option that best describes which long-run marginal costs have been included in the input, using the definitions below for reference. Long-run marginal costs can include the following: - water treatment residuals management, typically applicable if solids are produced from water treatment process - accelerated wear & tear on dynamic equipment, typically applicable if pumps exist for treatment and/or distribution, or any other equipment exists that wears out as a function of use instead of time (i.e. filter media, chemical dosing pumps, uv disinfection bulbs, etc) - payouts for damage claims from main and service line breaks, typically applicable if damage claims are paid by the utility - accelerated expansion of supply capacity, typically applicable if the utility is at or nearing supply capacity, or scarcity costs in water scarce areas - full cost pricing that includes all lifecycle costs and externalities (internalized or not) Some long-run marginal costs may not be applicable. The auditor should analyze the system characteristics to determine which costs are applicable for inclusion in the VPC input derivation. See also the latest AWWA M36 Manual for further guidance.	Long-run marginal costs have not been evaluated for applicability, and are not included		
vpc.4		Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	Yes		
FINAL DATA GRADE FOR THIS AUDIT INPUT:			8		

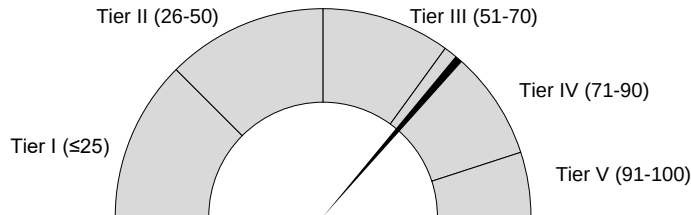
Limiting



Data Validity

Data Validity Score: **72** Data Validity Tier: **Tier IV (71-90)**

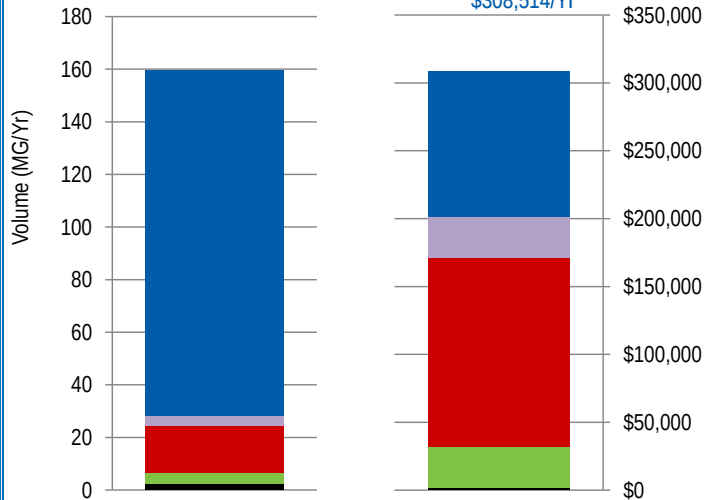
See [Loss Control Planning](#) for Tier Details



NRW Components Summary

Total Volume of NRW = 160 MG/Yr

Total Cost of NRW =
\$308,514/Yr



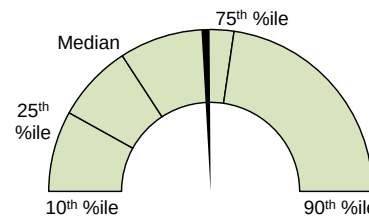
	Volume MG/Yr	Value \$/Yr	Basis of Valuation
Apparent Losses	25.6	\$198,792	CRUC
Real Losses	131.4	\$107,587	VPC
Unbilled Authorized Cons	2.6	\$2,135	VPC
Non-Revenue Water	159.7	\$308,514	Blended

Actual KPI result

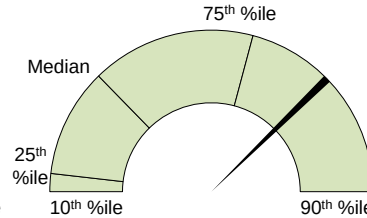
Key Performance Indicators

gauge %iles per validated industry ranges²

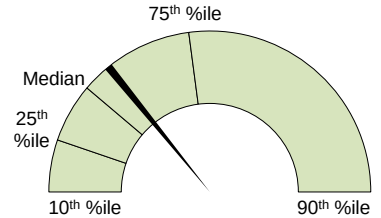
Target (see Worksheet)



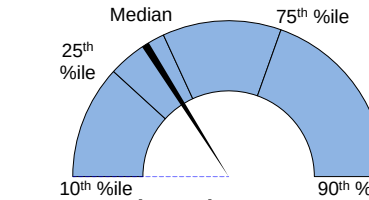
Total Loss Cost Rate
27.86 \$/conn/year



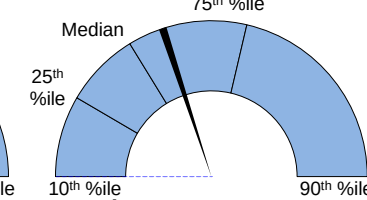
Apparent Loss Cost Rate
18.08 \$/conn/year



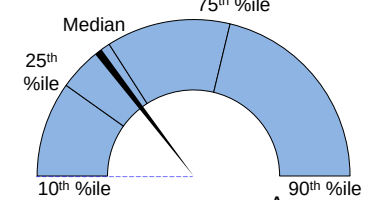
Real Loss Cost Rate
9.78 \$/conn/year



Unit Total Losses
39.1 gal/conn/day

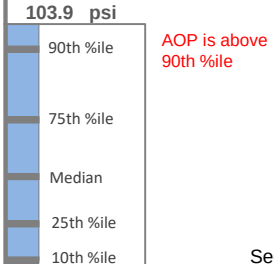


Unit Apparent Losses
6.4 gal/conn/day

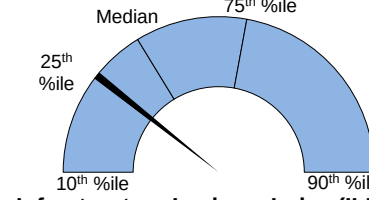


Unit Real Losses^A
32.7 gal/conn/day

Average Operating Pressure

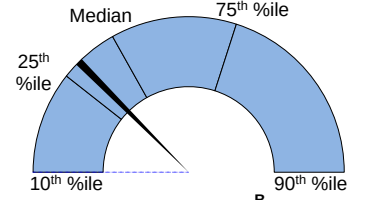


AOP is above 90th %ile



Infrastructure Leakage Index (ILI)
1.2 dimensionless

See UARL definition for additional guidance on the ILI



Unit Real Losses^B
1,476 gal/mile/day

(UARL) Unavoidable Annual Real Losses 112.6 MG/Yr 28.1 gal/conn/day

Guidance Information for Key Performance

- The eight indicators shown are the recommended suite per the AWWA Water Loss Control Committee 2020 Position on KPIs¹.
- A suite of KPIs is necessary, as no single KPI can holistically communicate water loss performance for a given water system.
- See Table 1 below for Uses and Limitations for each KPI, excerpted from the AWWA Water Loss Control Committee Report (2020)¹, with naming conventions updated.
- Percentiles (%iles) shown on KPI gauges come from Level 1 validated data in the AWWA WLCC Reference Water Audit Dataset (2020)².
- KPI %iles shown above are not segregated by cohorts. Limited KPI data by cohorts may be found in WRF 4695 Guidance Manual, Appendix B (2019)³.
- Actual KPI results that fall below 10th %ile or above 90th %ile do not necessarily imply error, but should be viewed with scrutiny.
- Percentiles not intended to imply targets. Targets may be input by user for operational KPIs, if desired, on Worksheet.
- See UARL and ILI in Definitions tab for discussion of size and pressure limitations.
- Systems that fall on the extreme ends of size or connection density should use caution when interpreting Unit Losses KPIs.

Table 1

Source: AWWA Water Loss Control Committee Report (2020)¹, with naming conventions updated

2020 AWWA Water Audit Method – Water Audit Outputs and Key Performance Indicators: Uses and Limitations

Type	Indicator	Description	Suitable Purposes					Uses and Limitations	Principal Users
			Assessment	Bench-Marking	Target-Setting	Planning	Tracking		
Attribute	Apparent Loss Volume	Calculated by Free Water Audit Software	✓				✓	Assess loss level	Utility, Regulators
	Apparent Loss Cost	Calculated by Free Water Audit Software	✓				✓	Assess cost loss level	Utility, Regulators
	Real Loss Volume	Calculated by Free Water Audit Software	✓				✓	Assess loss level	Utility, Regulators
	Real Loss Cost	Calculated by Free Water Audit Software	✓				✓	Assess loss cost level	Utility, Regulators
	Unavoidable Annual Real Loss (UARL)	Calculated by Free Water Audit Software	✓				✓	Reveal theoretical technical low level of leakage	Utility, Regulators
Volume	Unit Apparent Losses (vol/conn/day)	Strong and understandable indicator for multiple users.	✓	✓	✓	✓	✓	Used for performance tracking and target-setting	Utility, Regulators
	Unit Real Losses ^A (vol/conn/day)	Strong and understandable indicator for multiple users.	✓	✓	✓	✓	✓	Used for performance tracking and target-setting	Utility, Regulators, Policy Makers
	Unit Real Losses ^B (vol/pipeline length/day)	Strong and understandable indicator for use by utilities with low connection density.	✓	✓	✓	✓	✓	Data collection and assessment of systems with “low” connection density	Utility, Regulators, Policy Makers
	Unit Total Losses (vol/conn/day) New KPI	Strong and understandable indicator, suitable for high-level performance measurement.	✓				✓	High level indicator for trending analysis. Not appropriate for target-setting or benchmarking	Utilities, Customers
	Infrastructure Leakage Index (ILI)	Robust, specialized ratio KPI; can be influenced by pressure and connection density.	✓	✓			✓	Benchmarking after pressure management is implemented	Utilities
Value	Apparent Loss Cost Rate (value/conn/year) New KPI	Indicators with sufficient technical rigor. Provide the unit financial value of each type of loss, which is useful for planning and assessment of cost efficiency of water loss reduction and control interventions and programs.	✓			✓	✓	Data collection and assessment on AWWA indicators or contextual parameters to use in conjunction with Loss Cost Rates	Utilities, Regulators, Customers
	Real Loss Cost Rate (value/conn/year) New KPI		✓			✓	✓		Utilities, Regulators, Customers
Validity	Data Validity Tier (DVT)	Strong indicator of water loss audit data quality, if data has been validated. Tier provides guidance on priority areas of activity.	✓	✓		✓	✓	Assess caliber of data inputs of the water audit	Regulators, Utilities



AWWA Free Water Audit Software: User Notes

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Water Audit Report for: **Atascadero Mutual Water Company**
Audit Year: **2022**

Calendar
Jan 01 2022 - Dec 31 2022

General Notes:		
Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
Volume from Own Sources (VOS)	VOS shown includes 0.871 MG reduction in storage between 05/01/2023 and 04/30/2024	
Volume from Own Sources Error Adjustment (VOSEA)	Weighted average of production meter accuracy. 100% of production was metered in reporting period. Of that, 80% of the production was reported with meters that were calibrated against to an ultrasonic flow meter during the reporting period.	
Water Imported (WI)		
Water Imported Error Adjustment (WIEA)		
Water Exported (WE)		

[go to worksheet](#) [go to grading](#)

[go to worksheet](#) [go to grading](#)

[go to worksheet](#) [go to grading](#)

[go to worksheet](#) [go to grading](#)

[go to worksheet](#) [go to grading](#)

		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	Water Exported Error Adjustment (WEIA)		
go to worksheet	go to grading	Billed Metered Authorized Consumption (BMAC)		
go to worksheet	go to grading	Billed Unmetered Authorized Consumption (BUAC)		
go to worksheet	go to grading	Unbilled Metered Authorized Consumption (UMAC)	Meters serving AMWC properties	
go to worksheet	go to grading	Unbilled Unmetered Authorized Consumption (UUAC)	Unbilled unmetered water tracked via spreadsheet, with detailed information on discharge type, duration, and total volume	
go to worksheet	go to grading	Systematic Data Handling Errors (SDHE)		
go to worksheet	go to grading	Customer Metering Inaccuracies (CMI)	Weighted average meter inaccuracy based on test flow. Meter inaccuracies based on meter testing that occurred 05/01/2022 - 04/30/2023. No customer meters were tested 05/01/2023 - 04/30/2024 due to labor being utilized for the EPA's lead line survey.	

		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	Unauthorized Consumption (UC)		
go to worksheet	go to grading	Length of Mains (Lm)	Length taken from GIS system	Hydrant pipe length estimated = (number of dedicated fire lines + number of fire hydrants) x 25 feet
go to worksheet	go to grading	Number of Service Connections (Nc)		
go to worksheet	go to grading	Average Length of (private) Customer Service Line (Lp)		
go to worksheet	go to grading	Average Operating Pressure (AOP)	weighted average of all pressure zones	
go to worksheet	go to grading	Customer Retail Unit Charge (CRUC)	Total commodity revenue/annual metered use + PFAS surcharge Water revenue used to determine the unit charge was the total across all 5 tiers in rate structure	
go to worksheet	go to grading	Variable Production Cost (VPC)	Total annual variable costs/total annual production = cost of electricity, natural gas, and treatment chemicals	



AWWA Free Water Audit Software v6.0

FWAS v6.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format and is not meant to take the place of a full-scale, comprehensive water audit format. Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targeting loss reduction levels. This tool contains several separate worksheets. Sheets can be accessed using the tabs at the bottom of the screen, or by clicking the TOC links below.

Table of Contents (TOC)

Start Page	The current sheet. Enter contact information and basic audit details.
Worksheet	Enter the required data on this worksheet to calculate the water balance and data grading.
Interactive Data Grading	Answer questions about operational practices for each audit input, and the data validity grades will automatically populate.
Dashboard	Review NRW components, performance indicators and graphical outputs to evaluate the results of the audit.
Notes	Enter notes to explain how values were calculated, document data sources, and related information about data management practices.
Blank Sheet	By popular demand! A blank sheet. The world is your canvas.
Water Balance	The values entered in the Worksheet automatically populate the Water Balance.
Loss Control Planning	Use this sheet to interpret the results of the audit validity score and performance indicators.
Definitions	Use this sheet to understand the terms used in the audit process.
Service Connection Diagram	Diagrams depicting possible customer service connection line configurations.
Acknowledgements	Acknowledgements for development of the AWWA Free Water Audit Software v6.0.

AWWA Web Resources for Water Loss Control

<https://www.awwa.org/Resources-Tools/Resource-Topics/Water-Loss-Control>

Items referenced in the Free Water Audit Software v6.0 on the web:

Data Grading Matrix v6.0
Example Water Audit v6.0
Water Audit Compiler v6.0
AWWA Reports on Performance Indicators
M36 Manual

Enter Basic Information

Name of Utility:	Atascadero Mutual Water Company
Name of Contact Person:	John B Neil
Email:	jneil@amwc.us
Telephone Ext.:	805.466.2428
City/Town/Municipality:	Atascadero
State / Province:	California (CA)
Country:	USA
Audit Preparation Date:	Dec 15 2024
Audit Year:	2023
Audit Year Label:	Calendar (Fiscal, Calendar, etc)
Audit Period Start Date:	Jan 01 2023
Audit Period End Date:	Dec 31 2023
Volume Reporting Units:	Million gallons (US)
Water System Structure:	Select
Water Type:	Potable Water
System ID Number:	CA4010002
Validator Name/ID:	Robert Lepore
Validator Email:	rlepore@mkassociates.us
Estimated Total Population Served by Water Utility:	31,500

Key of Input Acronyms

In order of appearance in the Worksheet

VOS	Volume from Own Sources
VOSEA	VOS Error Adjustment
WI	Water Imported
WIEA	WI Error Adjustment
WE	Water Exported
WEEA	WE Error Adjustment
BMAC	Billed Metered Authorized Consumption
BUAC	Billed Unmetered Authorized Consumption
UMAC	Unbilled Metered Authorized Consumption
UUAC	Unbilled Unmetered Authorized Consumption
SDHE	Systematic Data Handling Errors
CMI	Customer Metering Inaccuracies
UC	Unauthorized Consumption
Lm	Length of mains
Nc	Number of service connections
Lp	Average length of (private) customer service line
AOP	Average Operating Pressure
CRUC	Customer Retail Unit Charge
VPC	Variable Production Cost

Color Key

User input

Calculated

Optional default

Guidance for the Worksheet

Choosing to enter unit of **percent** or **volume**
(applies to VOSEA, WIEA, WEEA, CMI)

choose entry option:

1.00%	percent	or
	volume	25.000

Choosing to enter **default** or **custom input**
(applies to UUAC, SDHE, UC)

choose entry option:

0.25%	default	or
	custom	75.000

Guidance for the Interactive Data Grading

Use acronym buttons in IDG header to navigate among inputs. Acronym Key above.
White = needs answers, orange = complete, clear = not required. Example below.

VOS	VOSEA	WI	WIEA	WE	WEEA	BMAC	BUAC	UMAC	UUAC
SDHE	CMI	UC	Lm	Nc	Lp	AOP	CRUC	VPC	

After clicking an acronym button, answer all visible questions in the order they're presented, choosing best-fit answer

Grade will populate when all visible questions are complete for an input

7

The limiting criteria will be labeled along the right. If only 1 limiting criterion is shown, improving on that criterion will achieve a higher data grade. If multiple limiting criteria are shown, improving on *each* limiting criterion is necessary to achieve a higher data grade. A complete inventory of data grading criteria is available in the Data Grading Matrix v6.0 (see web resources)

Limiting

If you have questions or comments regarding this software please contact us at: wlc@awwa.org



AWWA Free Water Audit Software: Worksheet

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Water Audit Report for: **Atascadero Mutual Water Company**
Audit Year: **2023** **Jan 01 2023 - Dec 31 2023** **Calendar**

Click 'n' to add notes

Click 'g' to determine data validity grade

To edit water system info: [go to start page](#)

To access definitions, click the [input name](#)

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

choose entry option:

WATER SUPPLIED

VOS	Volume from Own Sources:	n g 7	1,787.282	MG/Yr	n g 4	2.65%	percent	over-registration	VOSEA
WI	Water Imported:	n g n/a	0.000	MG/Yr					WIEA
WE	Water Exported:	n g n/a	0.000	MG/Yr					WEEA

WATER SUPPLIED: MG/Yr

AUTHORIZED CONSUMPTION

BMAC	Billed Metered:	n g 8	1,408.701	MG/Yr					
BUAC	Billed Unmetered:	n g n/a	0.000	MG/Yr					
UMAC	Unbilled Metered:	n g n/a	0.000	MG/Yr					
UUAC	Unbilled Unmetered:	n g 10	2.608	MG/Yr					

choose entry option: MG/Yr

AUTHORIZED CONSUMPTION: MG/Yr

WATER LOSSES MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

SDHE	Systematic Data Handling Errors:	n g 3	3.522	MG/Yr	0.25%	default			
CMI	Customer Metering Inaccuracies:	n g 3	16.516	MG/Yr	1.16%	percent			
UC	Unauthorized Consumption:	n g 3	3.522	MG/Yr	0.25%	default			

choose entry option:

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: MG/Yr

Real Losses

Real Losses: MG/Yr

WATER LOSSES: MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: MG/Yr

SYSTEM DATA

Lm	Length of mains:	n g 10	244.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n g 8	11.021		(active and inactive)
	Service connection density:		45	conn./mile main	

Are customer meters typically located at the curbstop/property line?

Lp

Average length of customer service line has been set to zero and a data grading of 10 has been applied

AOP **Average Operating Pressure:** psi

COST DATA

CRUC	Customer Retail Unit Charge:	n g 10	\$7.90	\$/1000 gallons (US)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n g 8	\$843.27	\$/Million gallons	\$11,140,757	\$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

*** The Water Audit Data Validity Score is in Tier IV (71-90). See Dashboard tab for additional outputs. ***

[go to dashboard](#)

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

- 1: Volume from Own Sources (VOS)
- 2: Customer Metering Inaccuracies (CMI)
- 3: Billed Metered (BMAC)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses ¹ :		gal/conn/day
Unit Real Losses ² :		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

2023

VOS

VOSEA

WI

WIEA

WE

WEEA

BMAC

BUAC

UMAC

UUAC

White = incomplete

Orange = complete

Use acronyms for navigation

SDHE

CMI

UC

Lm

Nc

Lp

AOP

CRUC

VPC

FWAS v6.0

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Limiting
criteria
(see Start
Page for
details)

go to input

Volume from Own Sources (VOS) - Data Grading Criteria

go to notes

vos	Criteria Question	Select Best-Fit Answers to All Visible Questions
vos.0	Did the water utility supply any water from its own sources during the audit year?	Yes
vos.1	What percent of own supply volume is metered?	>95 - 99%
For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the finished water volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.		
vos.2	What is the frequency of electronic calibration?	Annually
vos.3	What level of data transfer errors are checked as part of the electronic calibration process?	Data transfer errors are checked at secondary device(s) AND tertiary device(s)
vos.4	Is the most recent electronic calibration documentation available for review?	Yes
vos.5	What is the frequency of in-situ flow accuracy testing?	Less than annual but within last 5 years
vos.6	Is the most recent in-situ flow accuracy testing documentation available for review?	No
vos.7		
vos.8	Have testing and calibration procedures been closely scrutinized for compliance with procedures described in the AWWA M36 and/or M33 Manual(s)?	Yes
vos.9	Which best describes the frequency of finished water meter readings?	Daily
vos.10	Which best describes the frequency of data review for anomalies/errors? These can include numbers that are outside of typical patterns, and zero or 'null' values that may reflect a gap in data recording.	Daily
FINAL DATA GRADE FOR THIS AUDIT INPUT:		7

[go to input](#)

Volume from Own Sources Error Adjustment (VOSEA) - Data Grading Criteria

[go to notes](#)

vosea	Criteria Question	Select Best-Fit Answers to All Visible Questions	
vosea.1	Are tank levels monitored automatically & recorded daily?	Yes	
vosea.2	Are daily changes of stored water volumes in distribution system tanks included in the tabulation of the daily "Volume from Own Sources" quantity?	Yes	
vosea.3	Is the annual net distribution storage change included in either the VOS input or the VOSEA input?	Yes	
vosea.4	Are the flow accuracy test and/or electronic calibration results included in the VOSEA input in the water audit?	Results are available but not analyzed	Limiting
FINAL DATA GRADE FOR THIS AUDIT INPUT:		4	

[go to input](#)

Water Imported (WI) - Data Grading Criteria

[go to notes](#)

wi	Criteria Question	Select Best-Fit Answers to All Visible Questions
wi.0	Did the water utility import any water during the audit year?	No
wi.1		
	For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the water imported volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.	
wi.2		
wi.3		
wi.4		
wi.5		
wi.6		
wi.7		
wi.8		
wi.9		
wi.10		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

go to input

Water Imported Error Adjustment (WIEA) - Data Grading Criteria

go to notes

wiea	Criteria Question	Select Best-Fit Answers to All Visible Questions
wiea.1		
wiea.2		
wiea.3		
wiea.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)

Water Exported (WE) - Data Grading Criteria

[go to notes](#)

we	Criteria Question	Select Best-Fit Answers to All Visible Questions
we.0	Did the water utility export any water during the audit year?	No
we.1		
	For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the water exported volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.	
we.2		
we.3		
we.4		
we.5		
we.6		
we.7		
we.8		
we.9		
we.10		
	FINAL DATA GRADE FOR THIS AUDIT INPUT:	n/a

go to input

Water Exported Error Adjustment (WEEA) - Data Grading Criteria

go to notes

weea	Criteria Question	Select Best-Fit Answers to All Visible Questions
weea.1		
weea.2		
weea.3		
weea.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)**Billed Metered Authorized Consumption (BMAC) - Data Grading Criteria**[go to notes](#)

bmac	Criteria Question	Select Best-Fit Answers to All Visible Questions
bmac.0	Were any customers metered in the audit year?	Yes
bmac.1	For billed metered accounts, what % of bills are estimated in a typical billing cycle?	5% or less
bmac.2	How often does the utility read its customer meters? For systems with multiple read frequencies, select the reading frequency that describes the majority of your customers.	Monthly
bmac.3	Is the BMAC volume pro-rated to represent consumption occurring exactly during the audit period?	Yes
bmac.4	How frequently does internal review by utility staff of the BMAC volumes occur?	Every billing cycle
bmac.5	What level of detail is examined in the internal review of BMAC volumes?	Totals grouped by use type or customer class and specific accounts flagged for anomalous consumption
bmac.6	When was the most recent billing data review by someone who is independent of the utility billing process?	More than 5 years ago, or not sure
bmac.7		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8

Limiting

[go to input](#)**Billed Unmetered Authorized Consumption (BUAC) - Data Grading Criteria**[go to notes](#)

buac	Criteria Question	Select Best-Fit Answers to All Visible Questions
buac.0	Was there any billed consumption on unmetered accounts in the audit year?	No
buac.1		
buac.2		
buac.3		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)**Unbilled Metered Authorized Consumption (UMAC) - Data Grading Criteria**[go to notes](#)

umac	Criteria Question	Select Best-Fit Answers to All Visible Questions
umac.0	Did the water utility have any unbilled-metered consumption in the audit year?	No
umac.1		
umac.2		
umac.3		
umac.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)

Unbilled Unmetered Authorized Consumption (UUAC) - Data Grading Criteria

[go to notes](#)

uuac	Criteria Question	Select Best-Fit Answers to All Visible Questions
uuac.0	On the Worksheet, the status of the default option is:	A system specific volume has been entered
uuac.1	How well-understood is the extent of unbilled unmetered use?	Complete inventory exists
uuac.2	Which best describes the records that are kept for events of unbilled unmetered use?	Each event is documented
uuac.3	How is the majority of unbilled unmetered use estimated?	Entirely from event-specific estimates
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

[go to input](#)

Systematic Data Handling Error (SDHE) - Data Grading Criteria

This Data Grading Criteria is hidden when the 'default' input is used on the Worksheet

[go to notes](#)

FINAL DATA GRADE FOR THIS AUDIT INPUT:

3

[go to input](#)**Customer Metering Inaccuracies (CMI) - Data Grading Criteria**[go to notes](#)

cmi	Criteria Question	Select Best-Fit Answers to All Visible Questions	
cmi.0	Was there any metered customer usage during the audit period?	Yes	
cmi.1	Do you test meters reactively (when triggered by customer complaint or billing/consumption flag)?	Reactive testing conducted	
cmi.2	For small size customer meters, which best describes the frequency of proactive testing (effort beyond when triggered by customer complaint or billing/consumption flags)?	No proactive small meter testing activity to date	Limiting
cmi.3			
cmi.4	For mid and large size customer meters, which best describes the frequency of the proactive testing program?	No proactive large meter testing activity to date	Limiting
cmi.5			
cmi.6	Which best describes how the input was derived?	Calculated based on most recent meter accuracy tests, but not comprehensive of all meter performance	
cmi.7	Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	No	
cmi.8	To what extent does meter replacement occur and for which meters?	Replacement upon complete failure or special circumstance (as needed)	
cmi.9	Which best describes the reliability of meter installation records?	Records are kept for meter installations, and they include data on installation date, type, size, and manufacturer	
FINAL DATA GRADE FOR THIS AUDIT INPUT:		3	

[go to input](#)

Unauthorized Consumption (UC) - Data Grading Criteria

This Data Grading Criteria is hidden when the 'default' input is used on the Worksheet

[go to notes](#)

FINAL DATA GRADE FOR THIS AUDIT INPUT:

3

[go to input](#)**Length of Mains (Lm) - Data Grading Criteria**[go to notes](#)

Lm	Criteria Question	Select Best-Fit Answers to All Visible Questions
Lm.1	How was the input derived?	Derived directly from Mains inventory (GIS, ledger, etc)
Lm.2	Are hydrant laterals included in the input derivation?	Yes
Lm.3	Which best describes how the Mains inventory (GIS, ledger, etc) is kept up to date?	Additions or subtractions are updated in the mains inventory (GIS, ledger, etc), at least annually
Lm.4	Which best describes how the Mains inventory (GIS, ledger, etc) is field validated to confirm field conditions match the inventory?	Field validation is accomplished (i.e. in daily operations or specific validation projects)
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

[go to input](#)

Number of Service Connections (Nc) - Data Grading Criteria

[go to notes](#)

Nc	Criteria Question	Select Best-Fit Answers to All Visible Questions	
Nc.1	How was the input derived?	Extracted from Services inventory (GIS, billing system, etc)	
Nc.2	What is the count of services based on?	Premise based, i.e. service connection count, location ID count	
Nc.3	Are inactive (but still pressurized) service lines included in the input? These may be metered or unmetered.	Yes	
Nc.4	Which best describes how the inventory of service connections (GIS, billing system, etc) is kept up to date?	Additions or subtractions are updated in the service line inventory (GIS, billing system, etc), at least annually	
Nc.5	Which best describes how the inventory of service connections (GIS, billing system, etc) is field validated to confirm field conditions match the inventory?	Field validation is accomplished for a portion of the system (i.e. in daily operations or specific validation projects)	Limiting
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8	

[go to input](#)**Average Length of (Private) Customer Service Line (Lp) - Data Grading Criteria**[go to notes](#)

Lp	Criteria Question	Select Best-Fit Answers to All Visible Questions
Lp.0	Are customer meters typically located at the curbstop or property line?	Yes
Lp.1		
Lp.2		
Lp.3		
Lp.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

go to input

Average Operating Pressure (AOP) - Data Grading Criteria

go to notes

aop	Criteria Question	Select Best-Fit Answers to All Visible Questions	
aop.1	Which best describes checks on the boundary integrity for the system's pressure zone(s)?	Normally-closed boundary valves between zones have been confirmed within the past 3 years to be fully closed	Limiting
aop.2	Which best describes how one-time pressure readings (i.e. from hydrants) are collected?	Collected annually during routine system flushing and/or hydrant testing	
aop.3	Which best describes where continuous pressure data (via temporary data loggers or permanent telemetry) is collected?	At zone boundary conditions only (i.e. supply entry points, PRVs, booster stations)	
aop.4	Which best describes how continuous pressure data is collected?	Year-round data collection via permanent monitoring	
aop.5	How was the input derived?	Calculated from field data as a weighted average, compliant with methods described in the M36 Manual	
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8	

[go to input](#)**Customer Retail Unit Charge (CRUC) - Data Grading Criteria**[go to notes](#)

cruc	Criteria Question	Select Best-Fit Answers to All Visible Questions
cruc.0	Was any metered consumption billed on a volumetric basis in the audit period?	Yes
cruc.1	Which best describes the use and reliability of the current rate structure?	Customer bill calculations have been checked to confirm the rate structure is correctly implemented
cruc.2	Choose the option that best describes how the input was derived	A volume-weighted average of all rates was calculated
cruc.3	Is there any additional volumetric revenue the utility receives that depends on water meter readings, such as sewer?	Yes, and this has been incorporated into the volume-weighted average calculation
cruc.4	Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	Yes
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

go to input		Variable Production Cost (VPC) - Data Grading Criteria		go to notes	
vpc		Criteria Question	Select Best-Fit Answers to All Visible Questions		
vpc.1		Choose the option that best describes how the input was derived	Multiple sources of water exist, and a volume-weighted average was calculated for all sources		
vpc.2		Choose the option that best describes which short-run marginal costs have been included in the input, using the definitions below for reference. Short-run marginal costs can include the following: - chemicals + power for treatment, typically applicable if the utility is producing/treating water - power for distribution, typically applicable if pumps exist in the distribution network - water acquisition costs, typically applicable if the utility is purchasing water or incurs any extraction costs for withdrawing from a source Some short-run marginal costs may not be applicable. The auditor should analyze the system characteristics to determine which costs are applicable for inclusion in the VPC input derivation. See also the latest AWWA M36 Manual for further guidance.	All applicable short-run marginal costs are included		
vpc.3		Choose the option that best describes which long-run marginal costs have been included in the input, using the definitions below for reference. Long-run marginal costs can include the following: - water treatment residuals management, typically applicable if solids are produced from water treatment process - accelerated wear & tear on dynamic equipment, typically applicable if pumps exist for treatment and/or distribution, or any other equipment exists that wears out as a function of use instead of time (i.e. filter media, chemical dosing pumps, uv disinfection bulbs, etc) - payouts for damage claims from main and service line breaks, typically applicable if damage claims are paid by the utility - accelerated expansion of supply capacity, typically applicable if the utility is at or nearing supply capacity, or scarecity costs in water scarce areas - full cost pricing that includes all lifecycle costs and externalities (internalized or not) Some long-run marginal costs may not be applicable. The auditor should analyze the system characteristics to determine which costs are applicable for inclusion in the VPC input derivation. See also the latest AWWA M36 Manual for further guidance.	Long-run marginal costs have not been evaluated for applicability, and are not included		
vpc.4		Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	Yes		
		FINAL DATA GRADE FOR THIS AUDIT INPUT:	8		

Limiting

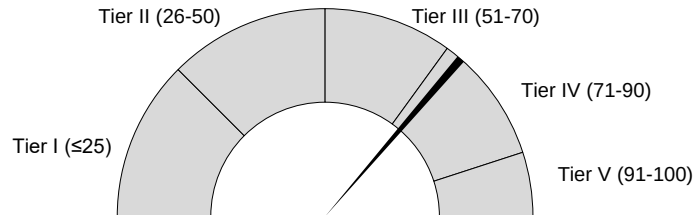
Limiting



Data Validity

Data Validity Score: **72** Data Validity Tier: **Tier IV (71-90)**

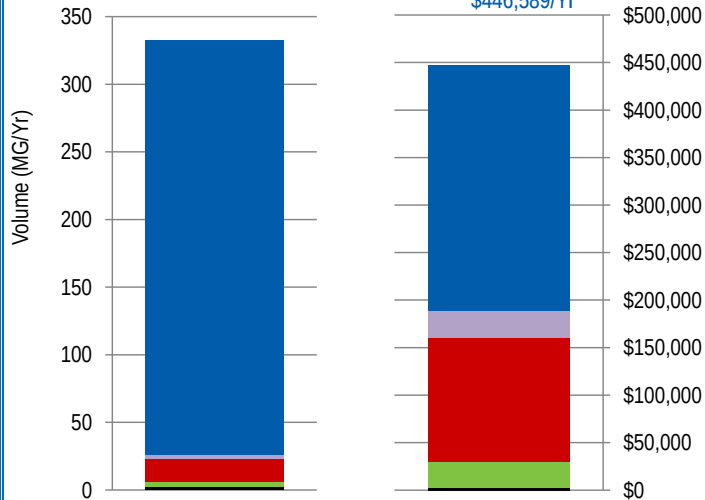
See [Loss Control Planning](#) for Tier Details



NRW Components Summary

Total Volume of NRW = 332 MG/Yr

Total Cost of NRW =
\$446,589/Yr



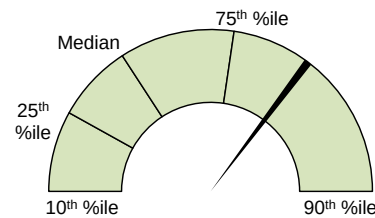
	Volume MG/Yr	Value \$/Yr	Basis of Valuation
Apparent Losses	23.6	\$186,119	CRUC
Real Losses	306.3	\$258,271	VPC
Unbilled Authorized Cons	2.6	\$2,199	VPC
Non-Revenue Water	332.4	\$446,589	Blended

Actual KPI result

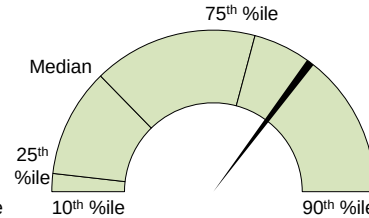
Key Performance Indicators

gauge %iles per validated industry ranges²

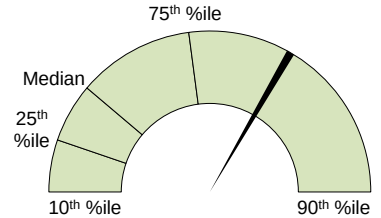
Target (see Worksheet)



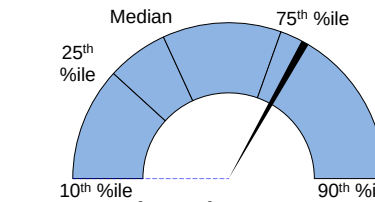
Total Loss Cost Rate
40.32 \$/conn/year



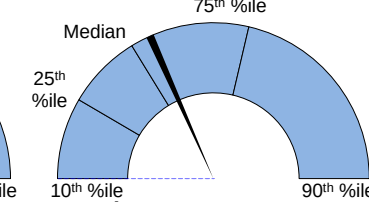
Apparent Loss Cost Rate
16.89 \$/conn/year



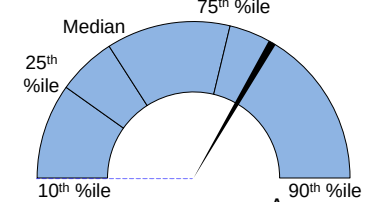
Real Loss Cost Rate
23.43 \$/conn/year



Unit Total Losses
82.0 gal/conn/day



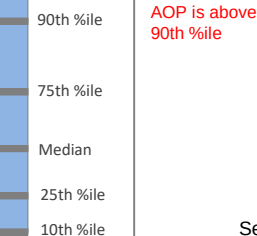
Unit Apparent Losses
5.9 gal/conn/day



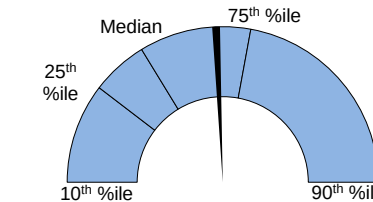
Unit Real Losses^A
76.1 gal/conn/day

Average Operating Pressure

103.9 psi

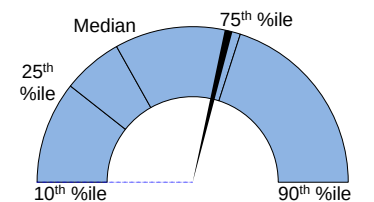


AOP is above
90th %ile



Infrastructure Leakage Index (ILI)
2.7 dimensionless

See UARL definition for additional guidance on the ILI



Unit Real Losses^B
3,439 gal/mile/day

(UARL) Unavoidable Annual Real Losses 112.8 MG/Yr 28.0 gal/conn/day

Guidance Information for Key Performance

- The eight indicators shown are the recommended suite per the AWWA Water Loss Control Committee 2020 Position on KPIs¹.
- A suite of KPIs is necessary, as no single KPI can holistically communicate water loss performance for a given water system.
- See Table 1 below for Uses and Limitations for each KPI, excerpted from the AWWA Water Loss Control Committee Report (2020)¹, with naming conventions updated.
- Percentiles (%iles) shown on KPI gauges come from Level 1 validated data in the AWWA WLCC Reference Water Audit Dataset (2020)².
- KPI %iles shown above are not segregated by cohorts. Limited KPI data by cohorts may be found in WRF 4695 Guidance Manual, Appendix B (2019)³.
- Actual KPI results that fall below 10th %ile or above 90th %ile do not necessarily imply error, but should be viewed with scrutiny.
- Percentiles not intended to imply targets. Targets may be input by user for operational KPIs, if desired, on Worksheet.
- See UARL and ILI in Definitions tab for discussion of size and pressure limitations.
- Systems that fall on the extreme ends of size or connection density should use caution when interpreting Unit Losses KPIs.

Table 1

Source: AWWA Water Loss Control Committee Report (2020)¹, with naming conventions updated

2020 AWWA Water Audit Method – Water Audit Outputs and Key Performance Indicators: Uses and Limitations

Type	Indicator	Description	Suitable Purposes					Uses and Limitations	Principal Users
			Assessment	Bench-Marking	Target-Setting	Planning	Tracking		
Attribute	Apparent Loss Volume	Calculated by Free Water Audit Software	✓				✓	Assess loss level	Utility, Regulators
	Apparent Loss Cost	Calculated by Free Water Audit Software	✓				✓	Assess cost loss level	Utility, Regulators
	Real Loss Volume	Calculated by Free Water Audit Software	✓				✓	Assess loss level	Utility, Regulators
	Real Loss Cost	Calculated by Free Water Audit Software	✓				✓	Assess loss cost level	Utility, Regulators
	Unavoidable Annual Real Loss (UARL)	Calculated by Free Water Audit Software	✓				✓	Reveal theoretical technical low level of leakage	Utility, Regulators
Volume	Unit Apparent Losses (vol/conn/day)	Strong and understandable indicator for multiple users.	✓	✓	✓	✓	✓	Used for performance tracking and target-setting	Utility, Regulators
	Unit Real Losses ^A (vol/conn/day)	Strong and understandable indicator for multiple users.	✓	✓	✓	✓	✓	Used for performance tracking and target-setting	Utility, Regulators, Policy Makers
	Unit Real Losses ^B (vol/pipeline length/day)	Strong and understandable indicator for use by utilities with low connection density.	✓	✓	✓	✓	✓	Data collection and assessment of systems with “low” connection density	Utility, Regulators, Policy Makers
	Unit Total Losses (vol/conn/day) New KPI	Strong and understandable indicator, suitable for high-level performance measurement.	✓				✓	High level indicator for trending analysis. Not appropriate for target-setting or benchmarking	Utilities, Customers
	Infrastructure Leakage Index (ILI)	Robust, specialized ratio KPI; can be influenced by pressure and connection density.	✓	✓			✓	Benchmarking after pressure management is implemented	Utilities
Value	Apparent Loss Cost Rate (value/conn/year) New KPI	Indicators with sufficient technical rigor. Provide the unit financial value of each type of loss, which is useful for planning and assessment of cost efficiency of water loss reduction and control interventions and programs.	✓			✓	✓	Data collection and assessment on AWWA indicators or contextual parameters to use in conjunction with Loss Cost Rates	Utilities, Regulators, Customers
	Real Loss Cost Rate (value/conn/year) New KPI		✓			✓	✓		Utilities, Regulators, Customers
Validity	Data Validity Tier (DVT)	Strong indicator of water loss audit data quality, if data has been validated. Tier provides guidance on priority areas of activity.	✓	✓		✓	✓	Assess caliber of data inputs of the water audit	Regulators, Utilities



AWWA Free Water Audit Software: User Notes

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Water Audit Report for: Atascadero Mutual Water Company
Audit Year: 2023

Calendar
Jan 01 2023 - Dec 31 2023

General Notes:			
Audit Item	Notes on Input Derivation	Notes on Data Validity Grading	
go to worksheet go to grading Volume from Own Sources (VOS)	VOS shown includes 0.871 MG reduction in storage between 05/01/2023 and 04/30/2024		
go to worksheet go to grading Volume from Own Sources Error Adjustment (VOSEA)	Weighted average of production meter accuracy. 100% of production was metered in reporting period. Of that, 80% of the production was reported with meters that were calibrated against to an ultrasonic flow meter during the reporting period.		
go to worksheet go to grading Water Imported (WI)			
go to worksheet go to grading Water Imported Error Adjustment (WIEA)			
go to worksheet go to grading Water Exported (WE)			

		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	Water Exported Error Adjustment (WEIA)		
go to worksheet	go to grading	Billed Metered Authorized Consumption (BMAC)		
go to worksheet	go to grading	Billed Unmetered Authorized Consumption (BUAC)		
go to worksheet	go to grading	Unbilled Metered Authorized Consumption (UMAC)	Meters serving AMWC properties	
go to worksheet	go to grading	Unbilled Unmetered Authorized Consumption (UUAC)	Unbilled unmetered water tracked via spreadsheet, with detailed information on discharge type, duration, and total volume	
go to worksheet	go to grading	Systematic Data Handling Errors (SDHE)		
go to worksheet	go to grading	Customer Metering Inaccuracies (CMI)	Weighted average meter inaccuracy based on test flow. Meter inaccuracies based on meter testing that occurred 05/01/2022 - 04/30/2023. No customer meters were tested 05/01/2023 - 04/30/2024 due to labor being utilized for the EPA's lead line survey.	

		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	Unauthorized Consumption (UC)		
go to worksheet	go to grading	Length of Mains (Lm)	Length taken from GIS system	Hydrant pipe length estimated = (number of dedicated fire lines + number of fire hydrants) x 25 feet
go to worksheet	go to grading	Number of Service Connections (Nc)	Active service connections as of 12/31/2023	
go to worksheet	go to grading	Average Length of (private) Customer Service Line (Lp)		
go to worksheet	go to grading	Average Operating Pressure (AOP)		
go to worksheet	go to grading	Customer Retail Unit Charge (CRUC)	Total commodity revenue/annual metered use + PFAS surcharge Water revenue used to determine the unit charge was the total across all 5 tiers in rate structure	
go to worksheet	go to grading	Variable Production Cost (VPC)	Total annual variable costs/total annual production = cost of electricity, natural gas, and treatment chemicals	



AWWA Free Water Audit Software v6.1

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FWAS v6.1

This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format and is not meant to take the place of a full-scale, comprehensive water audit format. Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targeting loss reduction levels. This tool contains several separate worksheets. Sheets can be accessed using the tabs at the bottom of the screen, or by clicking the TOC links below.

Table of Contents (TOC)

Start Page	The current sheet. Enter contact information and basic audit details.
Worksheet	Enter the required data on this worksheet to calculate the water balance and data grading.
Interactive Data Grading	Answer questions about operational practices for each audit input, and the data validity grades will automatically populate.
Dashboard	Review NRW components, performance indicators and graphical outputs to evaluate the results of the audit.
Notes	Enter notes to explain how values were calculated, document data sources, and related information about data management practices.
Blank Sheet	By popular demand! A blank sheet. The world is your canvas.
Water Balance	The values entered in the Worksheet automatically populate the Water Balance.
Carbon Calculations	An optional component to enter information on the utility's carbon intensity and calculation of carbon reduction through leakage reduction
Carbon Balance	The values entered in the Worksheet and optional Carbon Calculations automatically populate the Carbon Balance.
Loss Control Planning	Use this sheet to interpret the results of the audit validity score and performance indicators.
Definitions	Use this sheet to understand the terms used in the audit process.
Service Connection Diagram	Diagrams depicting possible customer service connection line configurations.
Acknowledgements	Acknowledgements for development of the AWWA Free Water Audit Software v6.1.

AWWA Web Resources for Water Loss Control

<https://www.awwa.org/resource/water-loss-control/>

Items referenced in the Free Water Audit Software v6.0 on the web:

Data Grading Matrix v6.0
Example Water Audit v6.0
Water Audit Compiler v6.0
AWWA Reports on Performance Indicators
M36 Manual
Leakage Emissions Initiative - Water Loss Control Committee Report¹⁰

If you have questions or comments regarding this software please contact us at: wlc@awwa.org

Enter Basic Information

Name of Utility:	Atascadero Mutual Water Company		
Name of Contact Person:	John B Neil		
Email:	jneil@amwc.us		
Telephone Ext.:	805.466.2428		
City/Town/Municipality:	Atascadero		
State / Province:	California (CA)		
Country:	USA		
Audit Preparation Date:	December 22 2025		
Audit Year:	2024		
Audit Year Label:	Calendar	(Fiscal, Calendar, etc)	
Audit Period Start Date:	Jan 01 2024		
Audit Period End Date:	Dec 31 2024		
Volume Reporting Units:	Million gallons (US)		
Water System Structure:	Retail		
Water Type:	Potable Water		
System ID Number:	CA4010002		
Validator Name/ID:	Chris Haugen		
Validator Email:	chaugen@mknassociates.us		
Estimated Total Population Served by Water Utility:	31,500		

Key of Input Acronyms

In order of appearance in the Worksheet

VOS	Volume from Own Sources
VOSEA	VOS Error Adjustment
WI	Water Imported
WIEA	WI Error Adjustment
WE	Water Exported
WEEA	WE Error Adjustment
BMAC	Billed Metered Authorized Consumption
BUAC	Billed Unmetered Authorized Consumption
UMAC	Unbilled Metered Authorized Consumption
UUAC	Unbilled Unmetered Authorized Consumption
SDHE	Systematic Data Handling Errors
CMI	Customer Metering Inaccuracies
UC	Unauthorized Consumption
Lm	Length of mains
Nc	Number of service connections
Lp	Average length of (private) customer service line
AOP	Average Operating Pressure
CRUC	Customer Retail Unit Charge
VPC	Variable Production Cost

Color Key

User input

Calculated

Optional default

Guidance for the Worksheet

Choosing to enter unit of **percent** or **volume**
(applies to VOSEA, WIEA, WEEA, CMI)

choose entry option:

1.00%	percent	or
	volume	25.000

Choosing to enter **default** or **custom input**
(applies to UUAC, SDHE, UC)

choose entry option:

0.25%	default	or
	custom	75.000

Guidance for the Interactive Data Grading

Use acronym buttons in IDG header to navigate among inputs. Acronym Key above.
White = needs answers, orange = complete, clear = not required. Example below.

VOS	VOSEA	WI	WIEA	WE	WEEA	BMAC	BUAC	UMAC	UUAC
SDHE	CMI	UC	Lm	Nc	Lp	AOP	CRUC	VPC	

After clicking an acronym button, answer all visible questions in the order they're presented, choosing best-fit answer

Grade will populate when all visible questions are complete for an input

7

The limiting criteria will be labeled along the right. If only 1 limiting criterion is shown, improving on that criterion will achieve a higher data grade. If multiple limiting criteria are shown, improving on *each* limiting criterion is necessary to achieve a higher data grade. A complete inventory of data grading criteria is available in the Data Grading Matrix v6.0 (see web resources)

Limiting



AWWA Free Water Audit Software: Worksheet

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Water Audit Report for: **Atascadero Mutual Water Company**
Audit Year: **2024** **Jan 01 2024 - Dec 31 2024** **Calendar**

Click 'n' to add notes
Click 'g' to determine data validity grade
To edit water system info: [go to start page](#)

To access definitions, click the [input name](#)

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

[Water Supplied Error Adjustments](#)

choose entry option:

WATER SUPPLIED

VOS	Volume from Own Sources:	n g 7	1,672.275	MG/Yr	n g 4	2.14%	percent	over-registration	VOSEA
WI	Water Imported:	n g n/a	0.000	MG/Yr					WIEA
WE	Water Exported:	n g n/a	0.000	MG/Yr					WEEA

WATER SUPPLIED: MG/Yr

AUTHORIZED CONSUMPTION

BMAC	Billed Metered:	n g 5	1,402.762	MG/Yr					
BUAC	Billed Unmetered:	n g n/a	0.000	MG/Yr					
UMAC	Unbilled Metered:	n g n/a	0.000	MG/Yr					
UUAC	Unbilled Unmetered:	n g 10	0.370	MG/Yr					

choose entry option: MG/Yr

AUTHORIZED CONSUMPTION: MG/Yr

WATER LOSSES MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

SDHE	Systematic Data Handling Errors:	n g 3	3.507	MG/Yr	0.25%	default		
CMI	Customer Metering Inaccuracies:	n g 3	45.176	MG/Yr	3.12%	percent		under-registration
UC	Unauthorized Consumption:	n g 3	3.507	MG/Yr	0.25%	default		

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: MG/Yr

Real Losses

Real Losses: MG/Yr

WATER LOSSES: MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: MG/Yr

SYSTEM DATA

Lm	Length of mains:	n g 10	244.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n g 8	11,037		(active and inactive)
	Service connection density:		45	conn./mile main	

Are customer meters typically located at the curbstop/property line?

Lp

Average length of customer service line has been set to zero and a data grading of 10 has been applied

AOP psi

COST DATA

CRUC	Customer Retail Unit Charge:	n g 10	\$5.07	\$1000 gallons (US)	Total Annual Operating Cost
VPC	Variable Production Cost:	n g 8	\$926.01	\$1000 gallons	\$11,859,481 \$/yr (optional input)

Click here to calculate carbon emissions ---> [carbon](#)

WATER AUDIT DATA VALIDITY TIER:

*** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. ***

[go to dashboard](#)

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

- 1: Volume from Own Sources (VOS)
- 2: Billed Metered (BMAC)
- 3: Customer Metering Inaccuracies (CMI)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses ^a :		gal/conn/day
Unit Real Losses ^b :		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

2024	VOS	VOSEA	WI	WIEA	WE	WEEA	BMAC	BUAC	UMAC	UUAC	Limiting criteria (see Start Page for details)
White = incomplete Orange = complete	SDHE	CMI	UC	Lm	Nc	Lp	AOP	CRUC	VPC		
Use acronyms for navigation	FWAS v6.1 American Water Works Association. Copyright © 2025. All Rights Reserved.										

[go to input](#)
[go to notes](#)

vos	Criteria Question	Select Best-Fit Answers to All Visible Questions
vos.0	Did the water utility supply any water from its own sources during the audit year?	Yes
vos.1	What percent of own supply volume is metered?	>99%
For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the finished water volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.		
vos.2	What is the frequency of electronic calibration?	Annually
vos.3	What level of data transfer errors are checked as part of the electronic calibration process?	Data transfer errors are checked at secondary device(s), but not to tertiary device(s)
vos.4	Is the most recent electronic calibration documentation available for review?	Yes
vos.5	What is the frequency of in-situ flow accuracy testing?	Annually
vos.6	Is the most recent in-situ flow accuracy testing documentation available for review?	Yes
vos.7	What are the total volume-weighted average results of in-situ flow accuracy testing (during or closest to audit year)?	At or within $\pm 3\%$
vos.8	Have testing and calibration procedures been closely scrutinized for compliance with procedures described in the AWWA M36 and/or M33 Manual(s)?	Yes
vos.9	Which best describes the frequency of finished water meter readings?	Daily
vos.10	Which best describes the frequency of data review for anomalies/errors? These can include numbers that are outside of typical patterns, and zero or 'null' values that may reflect a gap in data recording.	Daily
FINAL DATA GRADE FOR THIS AUDIT INPUT:		7

Limiting

[go to input](#)

Volume from Own Sources Error Adjustment (VOSEA) - Data Grading Criteria

[go to notes](#)

vosea	Criteria Question	Select Best-Fit Answers to All Visible Questions	
vosea.1	Are tank levels monitored automatically & recorded daily?	Yes	
vosea.2	Are daily changes of stored water volumes in distribution system tanks included in the tabulation of the daily "Volume from Own Sources" quantity?	Yes	
vosea.3	Is the annual net distribution storage change included in either the VOS input or the VOSEA input?	Yes	
vosea.4	Are the flow accuracy test and/or electronic calibration results included in the VOSEA input in the water audit?	Results are available but not analyzed	Limiting
FINAL DATA GRADE FOR THIS AUDIT INPUT:		4	

[go to input](#)

Water Imported (WI) - Data Grading Criteria

[go to notes](#)

wi	Criteria Question	Select Best-Fit Answers to All Visible Questions
wi.0	Did the water utility import any water during the audit year?	No
wi.1		
	For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the water imported volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.	
wi.2		
wi.3		
wi.4		
wi.5		
wi.6		
wi.7		
wi.8		
wi.9		
wi.10		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

go to input

Water Imported Error Adjustment (WIEA) - Data Grading Criteria

go to notes

wiea	Criteria Question	Select Best-Fit Answers to All Visible Questions
wiea.1		
wiea.2		
wiea.3		
wiea.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)

Water Exported (WE) - Data Grading Criteria

[go to notes](#)

we	Criteria Question	Select Best-Fit Answers to All Visible Questions
we.0	Did the water utility export any water during the audit year?	No
we.1		
	For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the water exported volume. In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume. Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary device can include conversion to mA, meter transmitter or similar instrumentation. Tertiary device can include SCADA, historian or other computerized archival system.	
we.2		
we.3		
we.4		
we.5		
we.6		
we.7		
we.8		
we.9		
we.10		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

go to input

Water Exported Error Adjustment (WEEA) - Data Grading Criteria

go to notes

weea	Criteria Question	Select Best-Fit Answers to All Visible Questions
weea.1		
weea.2		
weea.3		
weea.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)**Billed Metered Authorized Consumption (BMAC) - Data Grading Criteria**[go to notes](#)

bmac	Criteria Question	Select Best-Fit Answers to All Visible Questions
bmac.0	Were any customers metered in the audit year?	Yes
bmac.1	For billed metered accounts, what % of bills are estimated in a typical billing cycle?	5% or less
bmac.2	How often does the utility read its customer meters? For systems with multiple read frequencies, select the reading frequency that describes the majority of your customers.	Monthly
bmac.3	Is the BMAC volume pro-rated to represent consumption occurring exactly during the audit period?	Yes
bmac.4	How frequently does internal review by utility staff of the BMAC volumes occur?	Every billing cycle
bmac.5	What level of detail is examined in the internal review of BMAC volumes?	Totals grouped by use type or customer class and specific accounts flagged for anomalous consumption
bmac.6	When was the most recent billing data review by someone who is independent of the utility billing process?	More than 5 years ago, or not sure
bmac.7		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		5

Limiting

[go to input](#)**Billed Unmetered Authorized Consumption (BUAC) - Data Grading Criteria**[go to notes](#)

buac	Criteria Question	Select Best-Fit Answers to All Visible Questions
buac.0	Was there any billed consumption on unmetered accounts in the audit year?	No
buac.1		
buac.2		
buac.3		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)**Unbilled Metered Authorized Consumption (UMAC) - Data Grading Criteria**[go to notes](#)

umac	Criteria Question	Select Best-Fit Answers to All Visible Questions
umac.0	Did the water utility have any unbilled-metered consumption in the audit year?	No
umac.1		
umac.2		
umac.3		
umac.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		n/a

[go to input](#)

Unbilled Unmetered Authorized Consumption (UUAC) - Data Grading Criteria

[go to notes](#)

uuac	Criteria Question	Select Best-Fit Answers to All Visible Questions
uuac.0	On the Worksheet, the status of the default option is:	A system specific volume has been entered
uuac.1	How well-understood is the extent of unbilled unmetered use?	Complete inventory exists
uuac.2	Which best describes the records that are kept for events of unbilled unmetered use?	Each event is documented
uuac.3	How is the majority of unbilled unmetered use estimated?	Entirely from event-specific estimates
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

[go to input](#)

Systematic Data Handling Error (SDHE) - Data Grading Criteria

This Data Grading Criteria is hidden when the 'default' input is used on the Worksheet

[go to notes](#)

FINAL DATA GRADE FOR THIS AUDIT INPUT:

3

[go to input](#)**Customer Metering Inaccuracies (CMI) - Data Grading Criteria**[go to notes](#)

cmi	Criteria Question	Select Best-Fit Answers to All Visible Questions	
cmi.0	Was there any metered customer usage during the audit period?	Yes	
cmi.1	Do you test meters reactively (when triggered by customer complaint or billing/consumption flag)?	Reactive testing conducted	
cmi.2	For small size customer meters, which best describes the frequency of proactive testing (effort beyond when triggered by customer complaint or billing/consumption flags)?	No proactive small meter testing activity to date	Limiting
cmi.3			
cmi.4	For mid and large size customer meters, which best describes the frequency of the proactive testing program?	No proactive large meter testing activity to date	Limiting
cmi.5			
cmi.6	Which best describes how the input was derived?	Calculated based on most recent meter accuracy tests, but not comprehensive of all meter performance	
cmi.7	Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	No	
cmi.8	To what extent does meter replacement occur and for which meters?	Replacement upon complete failure or special circumstance (as needed)	
cmi.9	Which best describes the reliability of meter installation records?	Records are kept for meter installations, and they include data on installation date, type, size, and manufacturer	
FINAL DATA GRADE FOR THIS AUDIT INPUT:		3	

[go to input](#)

Unauthorized Consumption (UC) - Data Grading Criteria

This Data Grading Criteria is hidden when the 'default' input is used on the Worksheet

[go to notes](#)

FINAL DATA GRADE FOR THIS AUDIT INPUT:

3

[go to input](#)**Length of Mains (Lm) - Data Grading Criteria**[go to notes](#)

Lm	Criteria Question	Select Best-Fit Answers to All Visible Questions
Lm.1	How was the input derived?	Derived directly from Mains inventory (GIS, ledger, etc)
Lm.2	Are hydrant laterals included in the input derivation?	Yes
Lm.3	Which best describes how the Mains inventory (GIS, ledger, etc) is kept up to date?	Additions or subtractions are updated in the mains inventory (GIS, ledger, etc), at least annually
Lm.4	Which best describes how the Mains inventory (GIS, ledger, etc) is field validated to confirm field conditions match the inventory?	Field validation is accomplished (i.e. in daily operations or specific validation projects)
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

[go to input](#)

Number of Service Connections (Nc) - Data Grading Criteria

[go to notes](#)

Nc	Criteria Question	Select Best-Fit Answers to All Visible Questions	
Nc.1	How was the input derived?	Extracted from Services inventory (GIS, billing system, etc)	
Nc.2	What is the count of services based on?	Premise based, i.e. service connection count, location ID count	
Nc.3	Are inactive (but still pressurized) service lines included in the input? These may be metered or unmetered.	Yes	
Nc.4	Which best describes how the inventory of service connections (GIS, billing system, etc) is kept up to date?	Additions or subtractions are updated in the service line inventory (GIS, billing system, etc), at least annually	
Nc.5	Which best describes how the inventory of service connections (GIS, billing system, etc) is field validated to confirm field conditions match the inventory?	Field validation is accomplished for a portion of the system (i.e. in daily operations or specific validation projects)	Limiting
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8	

[go to input](#)**Average Length of (Private) Customer Service Line (Lp) - Data Grading Criteria**[go to notes](#)

Lp	Criteria Question	Select Best-Fit Answers to All Visible Questions
Lp.0	Are customer meters typically located at the curbstop or property line?	Yes
Lp.1		
Lp.2		
Lp.3		
Lp.4		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

go to input

Average Operating Pressure (AOP) - Data Grading Criteria

go to notes

aop	Criteria Question	Select Best-Fit Answers to All Visible Questions	
aop.1	Which best describes checks on the boundary integrity for the system's pressure zone(s)?	Normally-closed boundary valves between zones have been confirmed within the past 3 years to be fully closed	Limiting
aop.2	Which best describes how one-time pressure readings (i.e. from hydrants) are collected?	Collected annually during routine system flushing and/or hydrant testing	
aop.3	Which best describes where continuous pressure data (via temporary data loggers or permanent telemetry) is collected?	At zone boundary conditions only (i.e. supply entry points, PRVs, booster stations)	
aop.4	Which best describes how continuous pressure data is collected?	Year-round data collection via permanent monitoring	
aop.5	How was the input derived?	Calculated from field data as a weighted average, compliant with methods described in the M36 Manual	
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8	

[go to input](#)**Customer Retail Unit Charge (CRUC) - Data Grading Criteria**[go to notes](#)

cruc	Criteria Question	Select Best-Fit Answers to All Visible Questions
cruc.0	Was any metered consumption billed on a volumetric basis in the audit period?	Yes
cruc.1	Which best describes the use and reliability of the current rate structure?	Customer bill calculations have been checked to confirm the rate structure is correctly implemented
cruc.2	Choose the option that best describes how the input was derived	A volume-weighted average of all rates was calculated
cruc.3	Is there any additional volumetric revenue the utility receives that depends on water meter readings, such as sewer?	Yes, and this has been incorporated into the volume-weighted average calculation
cruc.4	Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	Yes
FINAL DATA GRADE FOR THIS AUDIT INPUT:		10

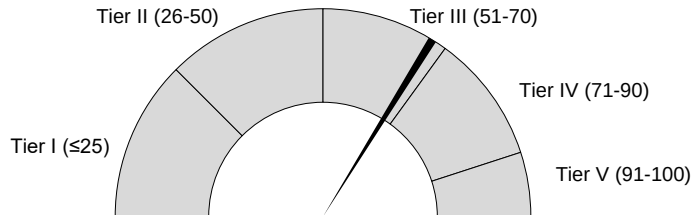
go to input		Variable Production Cost (VPC) - Data Grading Criteria		go to notes
vpc	Criteria Question	Select Best-Fit Answers to All Visible Questions		
vpc.1	Choose the option that best describes how the input was derived	Only one source of water exists, which was the basis for the input derivation		
vpc.2	Choose the option that best describes which short-run marginal costs have been included in the input, using the definitions below for reference. Short-run marginal costs can include the following: - chemicals + power for treatment, typically applicable if the utility is producing/treating water - power for distribution, typically applicable if pumps exist in the distribution network - water acquisition costs, typically applicable if the utility is purchasing water or incurs any extraction costs for withdrawing from a source Some short-run marginal costs may not be applicable. The auditor should analyze the system characteristics to determine which costs are applicable for inclusion in the VPC input derivation. See also the latest AWWA M36 Manual for further guidance.	All applicable short-run marginal costs are included		
vpc.3	Choose the option that best describes which long-run marginal costs have been included in the input, using the definitions below for reference. Long-run marginal costs can include the following: - water treatment residuals management, typically applicable if solids are produced from water treatment process - accelerated wear & tear on dynamic equipment, typically applicable if pumps exist for treatment and/or distribution, or any other equipment exists that wears out as a function of use instead of time (i.e. filter media, chemical dosing pumps, uv disinfection bulbs, etc) - payouts for damage claims from main and service line breaks, typically applicable if damage claims are paid by the utility - accelerated expansion of supply capacity, typically applicable if the utility is at or nearing supply capacity, or scarcity costs in water scarce areas - full cost pricing that includes all lifecycle costs and externalities (internalized or not) Some long-run marginal costs may not be applicable. The auditor should analyze the system characteristics to determine which costs are applicable for inclusion in the VPC input derivation. See also the latest AWWA M36 Manual for further guidance.	Long-run marginal costs have not been evaluated for applicability, and are not included		Limiting
vpc.4	Has the input derivation been reviewed by someone with expert knowledge in the M36 methodology?	Yes		
FINAL DATA GRADE FOR THIS AUDIT INPUT:		8		



Data Validity

Data Validity Score: **67** Data Validity Tier: **Tier III (51-70)**

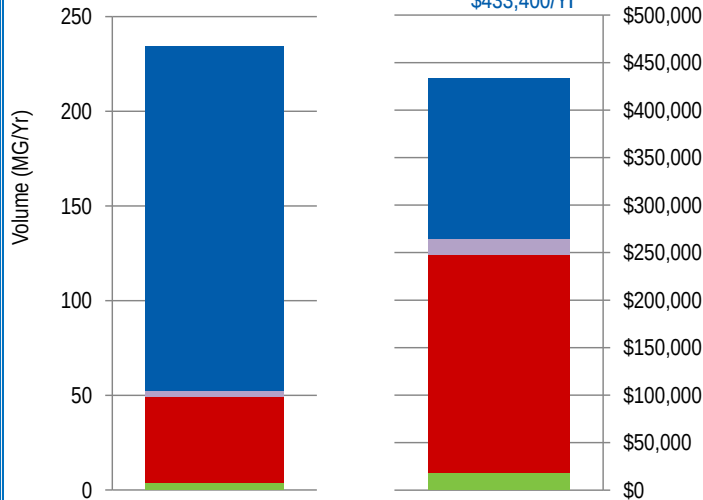
See [Loss Control Planning](#) for Tier Details



NRW Components Summary

Total Volume of NRW = 234 MG/Yr

Total Cost of NRW =
\$433,400/Yr



Real Losses	Unauthorized Consumption
Systematic Data Handling Errors	Unbilled Unmetered Auth Cons
Customer Metering Inaccuracies	Unbilled Metered Authorized Cons

	Volume MG/Yr	Value \$/Yr	Carbon Emissions mt/Yr
Apparent Losses	52.2	\$264,601	0
Real Losses	181.9	\$168,457	0
Unbilled Authorized Cons	0.4	\$343	0
Non-Revenue Water	234.5	\$433,400	0

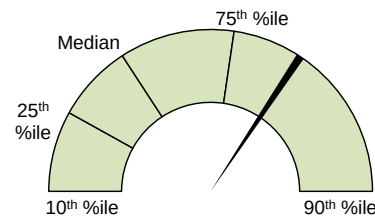
mt = metric tons

Actual KPI result

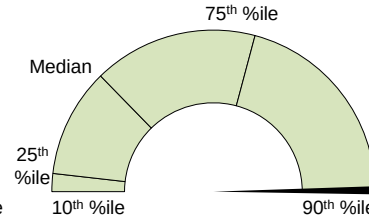
Key Performance Indicators

gauge %iles per validated industry ranges²

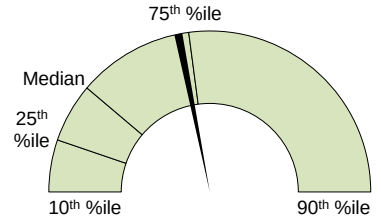
Target (see Worksheet)



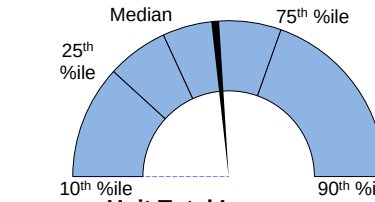
Total Loss Cost Rate
39.24 \$/conn/year



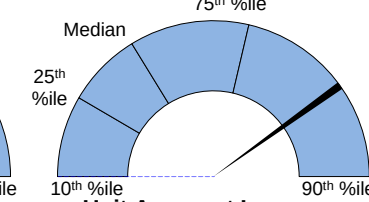
Apparent Loss Cost Rate
23.97 \$/conn/year



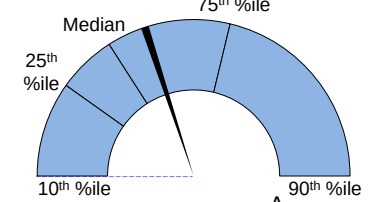
Real Loss Cost Rate
15.26 \$/conn/year



Unit Total Losses
58.1 gal/conn/day



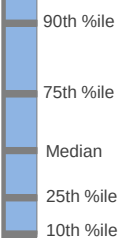
Unit Apparent Losses
13.0 gal/conn/day



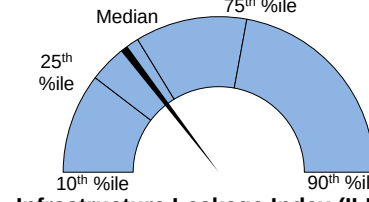
Unit Real Losses^A
45.2 gal/conn/day

Average Operating Pressure

103.9 psi

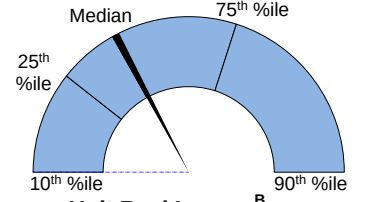


AOP is above
90th %ile



Infrastructure Leakage Index (ILI)
1.6 dimensionless

See UARL definition for additional guidance on the ILI



Unit Real Losses^B
2,043 gal/mile/day

(UARL) Unavoidable Annual Real Losses 112.8 MG/Yr 28.0 gal/conn/day

Guidance Information for Key Performance

- The eight indicators shown are the recommended suite per the AWWA Water Loss Control Committee 2020 Position on KPIs¹.
- A suite of KPIs is necessary, as no single KPI can holistically communicate water loss performance for a given water system.
- See Table 1 below for Uses and Limitations for each KPI, excerpted from the AWWA Water Loss Control Committee Report (2020)¹, with naming conventions updated.
- Percentiles (%iles) shown on KPI gauges come from Level 1 validated data in the AWWA WLCC Reference Water Audit Dataset (2020)².
- KPI %iles shown above are not segregated by cohorts. Limited KPI data by cohorts may be found in WRF 4695 Guidance Manual, Appendix B (2019)³.
- Actual KPI results that fall below 10th %ile or above 90th %ile do not necessarily imply error, but should be viewed with scrutiny.
- Percentiles not intended to imply targets. Targets may be input by user for operational KPIs, if desired, on Worksheet.
- See UARL and ILI in Definitions tab for discussion of size and pressure limitations.
- Systems that fall on the extreme ends of size or connection density should use caution when interpreting Unit Losses KPIs.

Table 1

Source: AWWA Water Loss Control Committee Report (2020)¹, with naming conventions updated

2020 AWWA Water Audit Method – Water Audit Outputs and Key Performance Indicators: Uses and Limitations

Type	Indicator	Description	Suitable Purposes					Uses and Limitations	Principal Users
			Assessment	Bench-Marking	Target-Setting	Planning	Tracking		
Attribute	Apparent Loss Volume	Calculated by Free Water Audit Software	✓				✓	Assess loss level	Utility, Regulators
	Apparent Loss Cost	Calculated by Free Water Audit Software	✓				✓	Assess cost loss level	Utility, Regulators
	Real Loss Volume	Calculated by Free Water Audit Software	✓				✓	Assess loss level	Utility, Regulators
	Real Loss Cost	Calculated by Free Water Audit Software	✓				✓	Assess loss cost level	Utility, Regulators
	Unavoidable Annual Real Loss (UARL)	Calculated by Free Water Audit Software	✓				✓	Reveal theoretical technical low level of leakage	Utility, Regulators
Volume	Unit Apparent Losses (vol/conn/day)	Strong and understandable indicator for multiple users.	✓	✓	✓	✓	✓	Used for performance tracking and target-setting	Utility, Regulators
	Unit Real Losses ^A (vol/conn/day)	Strong and understandable indicator for multiple users.	✓	✓	✓	✓	✓	Used for performance tracking and target-setting	Utility, Regulators, Policy Makers
	Unit Real Losses ^B (vol/pipeline length/day)	Strong and understandable indicator for use by utilities with low connection density.	✓	✓	✓	✓	✓	Data collection and assessment of systems with “low” connection density	Utility, Regulators, Policy Makers
	Unit Total Losses (vol/conn/day) New KPI	Strong and understandable indicator, suitable for high-level performance measurement.	✓				✓	High level indicator for trending analysis. Not appropriate for target-setting or benchmarking	Utilities, Customers
	Infrastructure Leakage Index (ILI)	Robust, specialized ratio KPI; can be influenced by pressure and connection density.	✓	✓			✓	Benchmarking after pressure management is implemented	Utilities
Value	Apparent Loss Cost Rate (value/conn/year) New KPI	Indicators with sufficient technical rigor. Provide the unit financial value of each type of loss, which is useful for planning and assessment of cost efficiency of water loss reduction and control interventions and programs.	✓			✓	✓	Data collection and assessment on AWWA indicators or contextual parameters to use in conjunction with Loss Cost Rates	Utilities, Regulators, Customers
	Real Loss Cost Rate (value/conn/year) New KPI		✓			✓	✓		Utilities, Regulators, Customers
Validity	Data Validity Tier (DVT)	Strong indicator of water loss audit data quality, if data has been validated. Tier provides guidance on priority areas of activity.	✓	✓		✓	✓	Assess caliber of data inputs of the water audit	Regulators, Utilities

Water Audit Report for:

Atascadero Mutual Water Company

Calendar

Jan 01 2024 - Dec 31 2024

Audit Year: 2024

		General Notes:		
		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	Volume from Own Sources (VOS)		
go to worksheet	go to grading	Volume from Own Sources Error Adjustment (VOSEA)		
go to worksheet	go to grading	Water Imported (WI)		
go to worksheet	go to grading	Water Imported Error Adjustment (WIEA)		
go to worksheet	go to grading	Water Exported (WE)		

		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	Water Exported Error Adjustment (WEIA)		
go to worksheet	go to grading	Billed Metered Authorized Consumption (BMAC)		
go to worksheet	go to grading	Billed Unmetered Authorized Consumption (BUAC)		
go to worksheet	go to grading	Unbilled Metered Authorized Consumption (UMAC)		
go to worksheet	go to grading	Unbilled Unmetered Authorized Consumption (UUAC)		
go to worksheet	go to grading	Systematic Data Handling Errors (SDHE)		
go to worksheet	go to grading	Customer Metering Inaccuracies (CMI)		

		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	Unauthorized Consumption (UC)		
go to worksheet	go to grading	Length of Mains (Lm)		
go to worksheet	go to grading	Number of Service Connections (Nc)		
go to worksheet	go to grading	Average Length of (private) Customer Service Line (Lp)		
go to worksheet	go to grading	Average Operating Pressure (AOP)		
go to worksheet	go to grading	Customer Retail Unit Charge (CRUC)		
go to worksheet	go to grading	Variable Production Cost (VPC)		

Appendix C: SB X7-7 Verification Form Submitted for 2020 UWMP

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* (select one from the drop down list)
Million Gallons
<i>*The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.</i>
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	31,749
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use*	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	1,727	-		-		-	1,727

* 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 5: 2020 Gallons Per Capita Per Day (GPCD)

2020 Gross Water <i>Fm SB X7-7 Table 4</i>	2020 Population <i>Fm SB X7-7 Table 3</i>	2020 GPCD
1,727	31,749	149

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	Atascadero Basin		
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
	1,128	-	1,128

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: Groundwater pumped from the Atascadero Basin includes imported water from the NWP that is used to recharge the basin.

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	Salinas River Underflow		
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
	599		599

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: Groundwater under the influence of surface water

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD ¹	Optional Adjustments to 2020 GPCD					2020 Confirmed Target GPCD ^{1, 2}	Did Supplier Achieve Targeted Reduction for 2020?
	Enter "0" if Adjustment Not Used			TOTAL Adjustments ¹	Adjusted 2020 GPCD ¹ <i>(Adjusted if applicable)</i>		
	Extraordinary Events ¹	Weather Normalization ¹	Economic Adjustment ¹				
149	-	-	-	-	149	158	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 D: SB X7-7 2025 Compliance Form

SB X7-7 Table 0: Units of Measure Used in UWMP
Water Code Section 10608.20 (e) and 10608.20(h)(1)(2)
(select one from the drop down list)

Million Gallons

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 Population Estimate
Water Code Section 10608.20 (e) and 10608.20(h)(1)(2)

Method Used to Determine 2025 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: Service Area Population Water Code Section 10608.20 (e) and 10608.20(h)(1)(2)	
2025 Compliance Year Population	
2025	31,940
NOTES:	

Water Code Section 10608.20 (e) and 10608.20(h)(1)(2)

DWR NOTES: 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: Volume Entering the Distribution System(s), Meter Error Adjustment

Water Code Section 10608.20 (e) and 10608.20(h)(1)(2)

Complete one table for each source.

Name of Source	Atascadero Basin		
This water source is (check one):			
☒	The supplier's own water source		
☐	A purchased or imported source		
Compliance Year 2025	Volume Entering Distribution System	Meter Error Adjustment Optional (+/-)	Corrected Volume Entering Distribution System
	530	-	530
DWR NOTES: 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. Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document			
NOTES			

SB X7-7 Table 4-A: 2025 Volume Entering the Distribution System(s), Meter Error Adjustment

Water Code Section 10608.20 (e) and 10608.20(h)(1)(2)

Complete one table for each source.

Name of Source	Salinas River Underflow		
This water source is (check one):			
☒	The supplier's own water source		
☐	A purchased or imported source		
Compliance Year 2025	Volume Entering Distribution System	Meter Error Adjustment Optional (+/-)	Corrected Volume Entering Distribution System
	1,104		1,104
DWR NOTES: 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. Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document			
NOTES:			

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD) Water Code Section 10608.20 (e) and 10608.20 (h)(1)(2)		
2025 Gross Water Fm SB X7-7 Table 4	2025 Population Fm SB X7-7 Table 3	2025 GPCD
1,634	31,940	140
NOTES:		

Appendix E: Delivery Entitlement Contract

**NACIMIENTO PROJECT WATER
DELIVERY ENTITLEMENT CONTRACT**

ATASCADERO MUTUAL WATER COMPANY

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EXHIBIT A: UNIT DESCRIPTIONS

EXHIBIT B: ENVIRONMENTAL IMPACT REPORT ENTITIES

**NACIMIENTO PROJECT WATER
DELIVERY ENTITLEMENT CONTRACT**

~~August~~^{17th} This Water Delivery Entitlement Contract (the "Contract"), made this ~~7th~~^{17th} day of ~~July~~^{August}, 2004, by and between the San Luis Obispo County Flood Control and Water Conservation District, a Flood Control and Water Conservation District duly established and existing under the San Luis Obispo County Flood Control and Water Conservation District Act, Act 7205 of the Uncodified Acts of the California Water Code (the "District"), and Atascadero Mutual Water Company, a California mutual water company (the "Participant"), as follows:

WITNESSETH:

WHEREAS, the lands and inhabitants within the jurisdiction of the Participant are in need of water; and

WHEREAS, the District has certain rights to water stored in the Nacimiento Reservoir located in the northwest corner of the County of San Luis Obispo (the "County") and the District is willing to provide a portion of said water to the Participant and to other public water distribution agencies within the District; and

WHEREAS, the Participant desires to contract with the District for the supply of additional water for the use and benefit of the lands and inhabitants served by the Participant; and

WHEREAS, the Participant and the District desire to join with other public water distribution entities within the District to have the District finance, construct and operate a water system which will convey the District's waters from the Nacimiento Reservoir to the Participant and to the other public water distribution entities all on the terms and conditions hereinafter set forth;

NOW, THEREFORE, IT IS HEREBY MUTUALLY AGREED by and between the Participant and the District as follows:

**ARTICLE 1:
DEFINITIONS**

(A) Unless the context otherwise requires, the terms defined in this Article shall, for all purposes of this Water Delivery Entitlement Contract, have the meanings set forth in the Recitals hereof or hereunder specified, to be equally applicable to both the singular and plural forms of any of the terms herein defined. Defined terms used herein without capitalization shall have the same meanings as the corresponding capitalized defined terms but do not refer to the specific Participant hereunder.

"Additional Capital Project" shall mean one or more capital projects related to the Nacimiento Facilities, or other improvements or repairs to the Nacimiento Facilities, undertaken

from time to time by the District in addition to the Nacimiento Project, which is an Approved Additional Project, an Emergency Project or a Required Additional Project.

"Additional Capital Project Costs" shall mean costs expended or incurred by the District for Additional Capital Projects and not attributable to, financed by or included in Capital Projects Installment Debt Service.

"Additional Debt" shall mean, as to the Participant and its Water Enterprise, and as to the Water Enterprises, individually, of the respective Other Participants, such debt or similar obligations to be payable from the revenues of such Water Enterprise, as may be permitted under the terms of the Legal Documents.

"Approved Additional Project" shall mean a capital improvement to the Nacimiento Facilities that has been agreed to by the Participant and/or certain Other Participants, and that will be paid by that group within All Participants which has requested or agreed to such capital improvement.

"All Participants" shall mean those public or private entities then participating in the Nacimiento Pipeline by the purchase of Project Water under this Contract or a Like-Contract.

"Board of Supervisors" shall mean the Board of Supervisors of San Luis Obispo County acting as the governing board of the County Flood Control and Water Conservation District.

"Calendar Quarter" shall mean each three (3)-month period commencing on January 1, April 1, July 1, and October 1 of each year.

"Calendar Year" shall mean each twelve (12)-month period commencing January 1 and ending December 31, both dates inclusive.

"Capital Projects" shall mean and include the following terms, each of which is separately defined herein: Additional Capital Projects; Approved Additional Projects; Required Additional Projects; Emergency Projects and the Nacimiento Project.

"Capital Projects Installment Debt Service" shall mean payments on debt or similar obligations incurred by the District for the Nacimiento Facilities consisting of, in the aggregate, (a) principal and interest (or mandatory sinking fund payments, installments or lease or similar payments due) with respect to all Municipal Obligations at the time outstanding in accordance with their terms, *provided* that capitalized interest funded from the proceeds of Municipal Obligations need not be taken into account, (b) annual costs of administering the Municipal Obligations, including the annual fees of any trustee or paying agent therefor, and (c) the costs, if any, of annual credit enhancement for the Municipal Obligations, whether or not based on a derivative structure as provided in Section 5922(a) of the Government Code. In the event, and to the extent that, any Additional Capital Project is financed by means of the issuance of a series of additional Municipal Obligations, then the payments and costs associated with the additional Municipal Obligations shall become a part of the Capital Projects Installment Debt Service.

"Capital Reserve Costs" shall mean the District's annual costs of maintaining Capital Reserves, determined by the District and budgeted annually by the District as provided for in

Article 4(C) hereof, to be apportioned among All Participants as provided for in Article 16(C)(1) hereof.

"Capital Reserves" shall mean those reserves established and maintained by the District for (i) Scheduled Maintenance or (ii) for anticipated costs of a Required Additional Project imposed, or likely to be imposed, by a Governmental Authority (an "External Requirement") in order for the District to continue to operate the Nacimientto Facilities, *provided* however, that the District shall not expend any portion of the Capital Reserves for any External Requirement until and unless such External Requirement becomes a final order of such Governmental Authority, not subject to further appeal. Such Capital Reserves may be established either, (i) on a year-to-year basis by the District in its annual budgets, copies of which shall be supplied to the Participant promptly following adoption, or (ii) on a multi-year basis by the District through the development and promulgation to the Participant of a long-term capital improvement plan of the District; *provided*, however, that no Approved Additional Projects shall be funded from the Capital Reserves.

"Commission" or "Nacimientto Project Commission" shall mean the commission formed of a representative of the Participant, each Other Participant and the Board of Supervisors, to operate as provided under Article 33 hereof.

"Construction Bids" shall mean the bids for construction of the Nacimientto Project, as further described in Article 2(B).

"Construction Phase" shall mean the period of time following the opening of the final Construction Bid, during which the District shall apply the proceeds of the Municipal Obligations to pay the Nacimientto Project Costs.

"Consultants" shall mean contractors, environmental specialists, engineers, financial advisors, underwriters, attorneys, accountants and similar consultants under contract with the District to perform services related to the Nacimientto Project or the Nacimientto Facilities.

"Contract Payments" shall mean those payments due from the Participant to the District, representing the Participant's pro rata share of Nacimientto Project Costs.

"Costs" shall include the following terms, each of which is separately defined herein: Additional Capital Project Costs; Contract Costs; Nacimientto Project Construction Costs; Master Water Contract Costs; Nacimientto Project Costs; Reserve Water Costs; and Variable Energy Costs.

"County Treasury Pool" shall mean the Treasury Pool of the County of San Luis Obispo, California.

"Coverage Account" shall mean an account established for the Participant either with the District or with a Depository, as provided in Article 24 hereof.

"Coverage Factor" shall mean one hundred twenty-five percent (125%) of Participant's pro rata share of Capital Projects Installment Debt Service, determined in accordance with Article 20(C) hereof, calculated for each Fiscal Year.

"CPA" shall mean a certified public accountant or firm of certified public accountants.

"Debt Service Shortfall" shall mean the aggregate amount of Delinquent Debt Service Payments due from Defaulting Participants on the Due Date in question.

"Delinquent Debt Service Payment" shall mean those payments of Capital Projects Installment Debt Service due under this Contract or any Like-Contract that are not, in fact, paid on its Due Date.

"Delinquent Participant" shall mean any of the Participant or any Other Participant which fails to meet its obligation for payment for Nacimientto Project Water hereunder or under any Like-Contract, as further described in Article 25(A) hereof.

"Delivery Entitlement" shall mean the quantity of Nacimientto Project Water which the Participant is entitled to have delivered by the District to the Participant under this Contract in any given Water Year, as set forth in Article 6(A) herein.

"Delivery Entitlement Share" shall mean the proportion of the Delivery Entitlement as compared to the Total Delivery Entitlement Obligation in any given Water Year.

"Depository" shall mean a financial institution designated for the deposit and administration of the Participant's Coverage Account, as and when appointed in accordance with Article 24 hereof.

"Design Phase" shall mean the period of time during which the proceeds of the Notes are being expended to finance the costs of design, engineering and planning for the construction of the Nacimientto Project. The Design Phase shall conclude with the opening of the final construction bid for the Nacimientto Project.

"Due Date" shall mean the date upon which each payment of Capital Projects Installment Debt Service is required to be made by the Participant or any Other Participant hereunder or under a Like-Contract.

"Effective Date" shall mean the date upon which all Initial Participants have executed and delivered this Contract and the Like-Contracts to the District, and the District has executed each of this Contract and such Like-Contracts.

"Emergency Projects" shall mean those Additional Capital Projects undertaken by the District without notice to or consultation with the Participant, any Other Participant, or the Commission, whenever the District determines that there is a substantial risk of harm to the Nacimientto Facilities or to the operation of the Nacimientto Facilities which requires immediate remedy.

"Fiscal Year" shall mean the twelve (12)-month period from July 1 of a Calendar Year to June 30 of the immediately following Calendar Year, both dates inclusive or such other dates constituting the designated fiscal year of the Participant as shall be determined by the governing board of the Participant.

"Governing Board" shall mean the legislative body which at the time in question governs the Participant and is responsible for the administration and operation of its Water Enterprise.

"Governmental Authority" shall mean any State of California, federal or local government authority having jurisdiction or authority over the District or the Nacimientto Facilities, or any portion thereof, empowered to regulate or control any aspect of its or their operations.

"Initial Participant" shall mean the Participant and the following Other Participants, each of which has executed a Like-Contract as of the Effective Date: City of San Luis Obispo, the Templeton Community Services District and City of Paso Robles.

"Legal Documents" shall mean any legal documents entered into by or on behalf of the District with respect to the Municipal Obligations.

"Long-Term Project Debt" shall mean those Municipal Obligations, whether Tax-Exempt or Taxable as to their interest component, whose proceeds are to be expended for the costs of the Construction Phase of the Nacimientto Project.

"Master Water Contract" shall mean that certain Agreement, entered into by and between the District and the Monterey Water Agency (the "Monterey Water Agency"), successor to the Monterey County Flood Control and Water Conservation District, on October 19, 1959.

"Master Water Contract Costs" shall mean those amounts that the District is obligated to pay under the Master Water Contract and which are attributable to the 15,750 acre-feet per year of Nacimientto Project Water.

"Municipal Obligations" shall mean all the Taxable Obligations and the Tax-Exempt Obligations, in the form of bonds, notes, certificates or similar securities, sold by or on behalf of the District to finance all or a portion of the Nacimientto Facilities or an Additional Capital Project, and specifically includes the Notes and Long-Term Project Debt.

"Nacimientto Facilities" shall mean all those facilities comprising the water delivery and treatment facilities bringing water from the Nacimientto Reservoir to the Participants, to be purchased hereunder, including without limitation, the Nacimientto Project, any Additional Capital Project, the land underlying the same and any easements or similar rights associated therewith or appurtenant thereto, as they may exist from time to time.

"Nacimientto Project" shall mean the project described in the Nacimientto Water Project Environmental Impact Report SCH # 2001061022 certified January 2004.

"Nacimientto Project Construction Costs" shall mean the costs of constructing any portion of the Nacimientto Project, including design, engineering, planning, environmental mitigation, equipping new facilities and/or construction efforts, accounting services, project administration and management, installation, grading, razing and building the Nacimientto Project, and includes the elements defined in Article 16(C)(3).

"Nacimientto Project Costs" shall mean the sum of (i) the Nacimientto Project Construction Costs; and (ii) all other costs of operating and maintaining the Nacimientto Facilities and of all Additional Capital Projects.

"Nacimientto Project Water" shall mean, in each Water Year, the Total Delivery Entitlement Obligation plus the Reserve Water, but not more than Fifteen Thousand Seven-Hundred (15,750) Acre-Feet of Nacimientto Reservoir Water. Nacimientto Project Water is the source of the Delivery Entitlement, Surplus Water and Reserve Water.

"Nacimientto Reservoir Water" shall mean the Seventeen Thousand Five Hundred (17,500) Acre-Feet of water which the District has the right to take from the Nacimientto Reservoir pursuant to the Master Water Contract in each Water Year.

"Nacimientto Water Fund" shall mean the separate fund established and maintained by the District within the County Treasury Pool, into which the District shall deposit all Net Revenues and all payments received by the District under this Contract and each Like-Contract.

"Net Revenues" shall mean the sum of (a) the proceeds of sale by the District of Surplus Water, (b) revenues received by the District from Wheeling Customers, and (c) revenues received by the District from the sale of Reserve Water, less the costs of making such sales and collecting said revenues.

"New Participant" shall mean and include each Other Participant which executes a Like-Contract after the Effective Date, in accordance with Article 29(C) hereof.

"Non-Delinquent Participant" shall mean any of the Participant or any Other Participant which at the time is then complying with its obligations to pay for Nacimientto Project Water hereunder or under its Like-Contract, as set forth in Article 25(A) hereof.

"Notes" shall mean those short-term notes to be issued by the District after the Effective Date, whether Tax-Exempt or Taxable as to their interest component, whose proceeds are to be expended for the costs of design, engineering and planning for the construction of the Nacimientto Project.

"Operation and Maintenance Costs" shall mean the reasonable and necessary current expenses of maintaining, repairing and operating the Nacimientto Facilities, including District administrative expenses directly attributable to the Nacimientto Facilities, but excluding the Capital Reserve Costs and the Capital Projects Installment Debt Service, all computed in accordance with generally accepted accounting principles applicable to enterprise funds of government agencies.

"Opt-out Date" shall mean the date following the Effective Date upon which the Participant may elect to opt out of the Construction Phase of the Nacimientto Project and cease to accrue obligations under this Contract, as further described in Article 2(B).

"Other Delivery Entitlement" shall mean the quantity of Nacimientto Project Water which any Other Participant is entitled to have delivered by the District under its Water Delivery Entitlement Contract in any given Water Year.

"Other Delivery Entitlement Share" shall mean the proportion of the Other Delivery Entitlement of each Other Participant as compared to the Total Delivery Entitlement Obligation in any given Water Year.

"Other Participant" shall mean any other water-distributing public agency of the State of California, city, mutual water company or other entity established under the laws of the State of California, which, having the legal power to do so, executes a Water Delivery Entitlement Contract substantially identical to this Contract for the delivery of water from the Nacimiento Facilities (a "Like-Contract"), except for Participant information, dates, Unit Participations, Participant's Unit Percentage Share and Delivery Entitlement Share, other than for the purpose of purchasing Surplus Water.

"Parity Debt" shall mean, as to the Participant and its Water Enterprise, and as to the Water Enterprises, individually, of the respective Other Participants, all Additional Debt that, by its terms, is payable on a parity with the obligations of the Participant under this Contract.

"Participant Revenue Fund" shall mean that special segregated fund established with or by the District for the deposit of amounts collected from the Participant hereunder as its portion of Capital Projects Installment Debt Service.

"Participations" include the following types of participation in the purchase of Project Water, each of which is separately defined herein: All Participants; Delinquent Participant; Initial Participants; New Participants; Non-Delinquent Participants; Other Participants and Participant.

"Participant's Capital Share" shall mean the portion of the Total Nacimiento Project Construction Costs to be borne by the Participant, and as set forth in Article 16(C)(3).

"Prior Commitment Water" shall mean 1,750 acre-feet of Project Water available to the District each Water Year from the Nacimiento Reservoir under the terms of the Master Water Contract that has been committed to persons and entities other than the Participant and the Other Participants.

"Required Additional Project" shall mean any capital improvement to the Nacimiento Facilities that the District has determined to be necessary in order to keep the Nacimiento Facilities in good repair and operating condition and to maintain the water supply at the quality required hereunder, or which has been ordered or directed by a Governmental Authority.

"Reserved Capacity" shall mean that part of the capacity of the Nacimiento Facilities which is not needed by the District for the delivery of the Total Delivery Entitlement Obligation.

"Reserve Pool Water" shall mean the portion of Reserve Water remaining, if any, after the District applies and delivers the Reserve Water in accordance with the priorities set forth in Article 29(A) hereof.

"Reserve Water" shall mean that part of the Nacimiento Reservoir Water remaining after the subtraction of the Prior Commitment Water and the Total Delivery Entitlement Obligation.

"Reserve Water Customer" shall mean any person or entity that is a party to a contract with the District pursuant to which that person or entity is obligated to purchase Reserve Water from the District.

"Scheduled Maintenance" shall mean the maintenance tasks for the Nacimientto Facilities which are required to be accomplished less frequently than annually, a portion of the costs of which shall be set aside in each annual budget of the District in anticipation of such requirement.

"Surplus Water" shall mean, beginning with the first Water Year during which Nacimientto Project Water is delivered to the Participant, and in each Water Year thereafter, the sum of (i) the Reserve Water for such Water Year, if any, plus (ii) the Turn-Back Pool Water for such Water Year, if any.

"Taxable Obligations" shall mean those certain obligations of the District under an indenture of trust or evidenced by an installment purchase agreement or similar instrument whose proceeds are used in whole or in part to pay the costs of the Nacimientto Project, any Approved Additional Project or any Required Additional Project, the interest on which is included in gross income pursuant to federal income tax law.

"Tax-Exempt Obligations" shall mean those certain obligations of the District under an indenture of trust or evidenced by an installment purchase agreement or similar instrument whose proceeds are used in whole or in part to pay the costs of the Nacimientto Project, any Approved Additional Project, or any Required Additional Contract, the interest on which is excluded from gross income for federal income tax purposes.

"Total Delivery Entitlement Obligation" shall mean, subject to the Master Water Contract, the total amount of Nacimientto Project Water which the District shall make available in each Water Year as Delivery Entitlements to the Participant and Other Delivery Entitlements to the Other Participants under this Contract and under all the other Like-Contracts, and which total shall not exceed the Nacimientto Reservoir Water, less the Prior Commitment Water and less the Reserve Water.

"Total Nacimientto Project Construction Costs" shall mean the costs and expenses incurred by the District in the acquisition and construction of the Nacimientto Facilities.

"Total Participant Contract Payments" shall mean all of the payments due from the Participant and the Other Participants pursuant to Articles 16 and 17 hereof and the corresponding Articles of the Like-Contracts with the Other Participants.

"Turn-Back Pool Water" shall mean that part of the Delivery Entitlement which the Participant does not request be delivered for the Water Year in question in accordance with Article 7 hereof, together with those portions of the Other Delivery Entitlements which are not requested to be so delivered under the correlative provisions of the affected Like-Contracts.

"Unit" shall mean those facilities, which collectively make up the operating segments of the Nacimientto Facilities, delineated as provided in Exhibit A.

"Unit Percentage Share" shall mean the Participant's pro rata share of the Capital Reserve Costs, the Operation and Maintenance Costs and All Other Construction Costs Component for each Unit and as set forth in Article 16(C)(1) and (3)(c) herein; or, in the context of a Like-Contract with any Other Participant, the term "Unit Percentage Share" shall mean and refer to the correlative pro rata share of such Other Participant or Participants.

"Variable Energy Costs" shall mean the actual Nacimientto Facilities pumping energy costs incurred by the District in conveying and delivering: (i) the Delivery Entitlement and Surplus Water to the Participant and (ii) the respective Other Delivery Entitlements and surplus water to the Other Participants as defined under their respective Like-Contracts and as set forth in Article 16(C)(2) hereof.

"Water Delivery Entitlement Contracts" shall mean this Contract and the other Nacimientto Project Water Delivery Entitlement Contracts entered into by and between the District and the Other Participants.

"Water Enterprise" shall mean the water system operated and to be operated by the Participant for sales of water to its customers or to the general public within the Participant's jurisdiction.

"Water Enterprise Charges" shall mean the rates and charges imposed and collected by the Participant for the provision of water through its Water Enterprise.

"Water Rights" shall mean (a) water rights, (b) claims to water rights or (c) agreements concerning water rights, including, but not limited to, overlying, prescriptive, appropriative, riparian or pueblo rights.

"Water Year" shall mean the twelve (12)-month period from October 1 of a each year to and including September 30 of next following year.

"Wheeling Customer" shall mean any person or entity to which the District conveys water, other than Nacimientto Project Water, through any Unit.

ARTICLE 2: TERM OF CONTRACT; RESCISSION

(A) Term. This Contract shall become effective on the Effective Date and shall remain in effect throughout the term provided by Section 3 of the Master Water Contract; *provided*, that if and when, through no fault of the District, one or more provisions of the Master Water Contract shall be terminated or suspended in the manner and for a cause specified in the Master Water Contract, the District's obligations to the Participant and to the Other Participants under this Contract and under Like-Contracts shall likewise be terminated or suspended; *provided*, however, that this Contract may not be terminated, suspended or rescinded so long as there remain outstanding any Municipal Obligations issued by the District for the Nacimientto Facilities.

(B) Implementation of the Design Phase and Construction Bidding. The parties hereto acknowledge that the total Nacimientto Project Construction Costs are estimated to be \$150,000,000 as of the Effective Date; the parties hereto further acknowledge that the actual total costs of construction of the Nacimientto Project will be determined through a competitive bid process applicable to the District at the conclusion of the Design Phase (collectively, the "Construction Bids"). The District covenants and agrees to provide All Participants with a summary report of the Construction Bids, not less than two (2) Business Days following the date upon which the last of such bids is received. In the event that the District finds it necessary or advisable to divide the Construction Phase into two or more subphases, it shall provide a summary report to All Participants of those Construction Bids it deems sufficient to begin the Nacimientto Project (which shall include Construction Bids on no less than thirty percent (30%) of the total estimated Nacimientto Project Construction Costs) and a sound estimate (which shall then be current and shall be based, as appropriate, on construction bids received) of total Nacimientto Project Costs, and shall so state and so estimate in its report to All Participants. The thirtieth (30th) calendar day following the date upon which such report is received by the Participant is referred to as the "Opt-out Date." It is understood and agreed by the parties hereto that the District will incur certain costs and expenses for the Design Phase, which it intends to pay for, in large part, from the proceeds of sale of the Notes. The Construction Bids can only be developed as a result of planning to be accomplished during the Design Phase, by the end of which, the District anticipates that all of the proceeds of the Notes will have been expended. The Participant expressly understands and agrees that the use of the Notes to finance the costs of the Design Phase is an expenditure for the shared benefit of its Water Enterprise and the Water Enterprise of each Other Participant. The District shall not award any construction contracts for the Nacimientto Project until such time as the District shall have consulted with All Participants as to whether to proceed with the Nacimientto Project, and in no event shall any award of a Construction Bid be made, nor shall any Long-Term Project Debt be issued, prior to the Opt-out Date.

(C) Termination of Participation in Nacimientto Facilities by Participant after Effective Date. Subject to the provisions of subparagraph (A) above, the Participant may withdraw from this Contract (and any Other Participant may withdraw from any Like-Contract) following the Effective Date and on or prior to the Opt-out Date, but only if the total Nacimientto Project Construction Costs shall exceed the figure given in paragraph (B) above. In order to withdraw from participation hereunder, the Participant shall provide written notice to the District and to each Other Participant that it elects to opt out of the Construction Phase.

(D) Obligations of District, of All Participants and of Participant in the Event of Opting Out. The Participant agrees with the District and all Other Participants that the Initial Participants shall share the costs of the Design Phase by the expedient of remaining obligated for the repayment in full of the principal of and interest on the Notes, whether or not the Participant should subsequently take advantage of the forgoing provisions to opt out of the remaining term of this Contract. Should the Participant elect to withdraw from this Contract on the Opt-out Date, it shall nonetheless repay to the District its pro rata share (in proportion to its Delivery Entitlement Share) of the principal of and interest on the Notes by a date no later than one (1) year following the Opt-out Date. The Participant understands and agrees that the District shall not be obligated to pay any portion of the expenses for the Design Phase or the Municipal Obligations, which shall instead be the pro rata obligations of the Participant and the Other

Participants which will benefit from the Nacimiento Project, and that, in the absence of the Participant's having withdrawn on an Opt-out Date, the Participant and the Other Participants then remaining shall pay to the District pro rata (in proportion to their respective Delivery Entitlement Share or Other Delivery Entitlement Shares) the amount necessary to pay or redeem any outstanding Municipal Obligations. The provisions of this Article shall survive the rescission of this Contract.

(E) Rescission Following Construction of the Nacimiento Project. Subject to the provisions of subparagraph (A) above, this Contract may be rescinded by the unanimous written consent of the District, the Participant and all Other Participants.

ARTICLE 3: CONSTRUCTION OF THE NACIMIENTO FACILITIES

(A) District's Authority to Enter Contracts, to Engage Consultants and to Finance the Nacimiento Facilities. The Participant understands and agrees that the District will finance the acquisition and construction of the Nacimiento Facilities by means of the issuance and sale of Municipal Obligations and the Participant agrees that the District shall, and is hereby authorized to cause the execution and delivery of the Municipal Obligations on terms and conditions favorable to the District, to the Participant and to the Other Participants, and which terms and conditions will be established by the market conditions at the time of the sale of the Municipal Obligations. In particular, the Participant acknowledges and agrees that:

(1) The District shall contract for the public works comprising the Nacimiento Facilities on such terms as the District, in its sound business judgment may deem in the best interests of the District, the Participant and the Other Participants, but only following consultation with the Nacimiento Project Commission; and

(2) The District may engage Consultants as may be necessary and/or convenient in order to plan, finance, acquire and construct the Nacimiento Facilities and to issue and sell the Municipal Obligations, on such terms and conditions as the District shall determine, *provided*, however, that the District and the Participant hereby agree that all such contracts already in place as of the effective date of this Contract shall be deemed valid and the costs thereof to the District shall be deemed appropriate costs and expenses of the District in the acquisition and construction of the Nacimiento Facilities ; and

(3) The District may authorize and sell at either public or private sale, and cause to be executed and delivered, the Municipal Obligations at any time, or times, following the effective date hereof, to provide for the financing or reimbursement to the District of the costs of the acquisition and construction of the Nacimiento Facilities, to pay capitalized interest on the Municipal Obligations, to establish a reserve fund for the Municipal Obligations and to pay the costs of delivery thereof; and

(4) The Participant shall execute and provide such instruments, certificates, agreements and opinions of counsel as may be necessary in order for the District to deliver the Municipal Obligations, including, without limitation, information for inclusion in the disclosure document for the Municipal Obligations and a continuing

disclosure agreement to permit compliance with Rule 15c2-12 of the Securities and Exchange Commission, respecting the Participant's financial condition and operations, and certificates and agreements evidencing compliance with the covenants set forth in Article 22 hereof; and

(5) The Participant will cooperate with the District and its Consultants in connection with the planning, acquisition and construction of the Nacimiento Facilities and the authorization and delivery of the Municipal Obligations.

(B) Commencement of Construction. The District will use its best efforts to cause or accomplish the construction and financing of the Nacimiento Facilities, the obtaining of all necessary authority and rights, and the performance of all things necessary and convenient therefor. The District will commence the acquisition and construction of the Nacimiento Facilities on any date after the Effective Date and when the following conditions have been met:

(1) The District determines such acquisition and commencement of construction is permitted under the Master Water Contract and state, federal and local law; and

(2) The District has received from the District's Consulting Engineer a certification that, based on contracts awarded by the District for the acquisition and construction of the Nacimiento Facilities, and based upon the Consulting Engineer's estimates of the costs of the portions of the Nacimiento Facilities for which contracts have not been awarded, the District has sufficient moneys from (i) the proceeds of the Municipal Obligations, together with (ii) estimated proceeds to be derived from any other authorized but unissued Municipal Obligations, and (iii) moneys on deposit with the District and legally available to complete the Nacimiento Facilities.

ARTICLE 4: OWNERSHIP, OPERATION AND MAINTENANCE OF NACIMIENTO FACILITIES

(A) District Ownership of the Nacimiento Facilities. The Nacimiento Facilities and all of its pumps, machinery, conduits, apparatus, fixtures, fittings and equipment of any kind, real property (including rights-of-way) and capacity are and shall be, owned by the District and shall be held and operated and maintained by the District as provided for herein.

(B) District's Objectives and Covenants. The parties hereto acknowledge and agree that the primary goal of the District under this Contract shall be to deliver Nacimiento Project Water to the Participant and to the Other Participants, subject to cost considerations, as to which the District shall be expected to exercise sound business judgment. In this regard, the District covenants and agrees that it will operate and maintain the Nacimiento Facilities in accordance with the Master Water Contract, all governmental laws, ordinances, approvals, rules, regulations and requirements, including, without limitation, such zoning, sanitary, pollution, environmental and safety ordinances and laws and such rules and regulations thereunder as may be binding upon the District. The District further covenants and agrees that it will maintain and operate the Nacimiento Facilities in good repair, working order and condition, and that it will from time to time inspect and test all Nacimiento Facilities against then-current water supply industry

standards, and that the District will pursue all necessary and proper replacement, repairs, renewals and improvements thereto. In its operation of the Nacimientto Project, the District shall have as an objective the maximum beneficial use of the Nacimientto Project Water and its conservation. The District, the Participant and the Other Participants agree that they shall individually and collectively cooperate and work towards this objective. The District, the Participant and the Other Participants, individually and collectively, agree further that, to the extent feasible, all revenues received from the Nacimientto Facilities shall be used for the sole benefit of the Nacimientto Facilities and that all parties shall pay their respective shares of Nacimientto Project Costs for Nacimientto Project Water received.

The District further covenants and agrees that it will take any and all action necessary to enforce the rights vested in the District by this Contract and the Master Water Contract as the District deems most appropriate. However, in the event the District fails to enforce any such rights, the Participant may assert such rights on behalf of the District by such means as the Participant deems most appropriate. Nothing in this Contract shall impair or otherwise affect, in any manner, the Participant's right to assert, defend, enforce or otherwise protect any and all rights vested in the Participant by this Contract.

(C) District's Capital Reserves; Annual Budgets to Be Prepared by the District. In order to satisfy its covenants set forth in this Article, the District shall determine the amount of Capital Reserves necessary for the Nacimientto Facilities for the upcoming Water Year and shall prepare its draft annual budget by no later than March 1 to reflect such Capital Reserves. The District shall provide copies of each such budget to the Nacimientto Project Commission, the Participant and the Other Participants for review and comment prior to the distribution of the draft annual budget to the Board of Supervisors, and shall, if deemed necessary or advisable, develop and promulgate to the Nacimientto Project Commission, the Participant and the Other Participants a multi-year improvement plan for the Nacimientto Facilities reflecting the annual requirements for the Capital Reserves.

ARTICLE 5:

EXISTING OBLIGATIONS: MASTER WATER CONTRACT AND PRIOR COMMITMENT WATER

(A) Primacy of Master Water Contract. The obligations of the District under this Contract and the obligations of the District under each and every Like-Contract with the Other Participants, shall be subject to the provisions of the Master Water Contract and should the provisions of the Master Water Contract restrict, impair or prohibit the District from the performance of any or all of the District's obligations under this Contract and/or the Like-Contracts with the Other Participants, then the District shall, to the extent that the District is so restricted, impaired or prohibited, be relieved of its said performance obligations to the Participant under this Contract. This Contract does not create in the Participant any right, rights or interest in or to the Master Water Contract. The Participant has been provided with a copy of the Master Water Contract for review. On advice of counsel, the Participant has reviewed the Master Water Contract and determined that the terms of the Master Water Contract do not conflict with the terms of this Contract or the Participant's obligations hereunder.

(B) Prior-Commitment Water. No part of the Prior-Commitment Water shall be used by the District to satisfy any of the District's obligations under this Contract with the Participant, Like-Contracts with Other Participants or the District's agreements with Reserve Water Customers or third parties.

ARTICLE 6: DELIVERY ENTITLEMENT

(A) Amount of Delivery Entitlement. Subject to the provisions of Article 14(D), and so long as water is made available to the District under the Master Water Contract, the District shall make available to the Participant, in each Water Year, the Delivery Entitlement of Two Thousand (2,000) acre-feet of Nacimientto Project Water. Notwithstanding the foregoing:

(1) The Total Delivery Entitlement Obligation available under this Contract and under the Like-Contracts with the Other Participants may be reduced, following written notice given to the Participant from the District, for any of the conditions or reasons set forth in Articles 13, 14 and 15 hereof; and

(2) Under this Contract and all Like-Contracts, the District shall not be obligated to deliver to the Participant or to any Other Participants, nor shall said Participants have any rights in or to, any of the District's Prior-Commitment Water.

(B) Limit on Rate of Deliveries of Water to Participant. In no event shall the District be obligated to deliver the Delivery Entitlement and/or Surplus Water through any delivery structure of the Nacimientto Facilities at a total combined instantaneous rate of flow exceeding 3.0 cubic feet per second. The maximum amount of said water to be delivered by the District to the Participant from the Nacimientto Facilities in any one month of any year shall not exceed 183 acre-feet. While the District is not required to deliver more than 183 acre-feet of water to the Participant in any one month of any year, and while the District is not obligated to deliver the Delivery Entitlement and/or Surplus Water through any delivery structure of the Nacimientto Facilities at a total combined instantaneous rate of flow exceeding 3.0 cubic feet per second, in the event deliveries required to be made by the District to the Other Participants do permit a higher monthly rate of delivery to the Participant, then the District shall have the discretion temporarily to exceed the maximum monthly deliveries provided for herein.

In the event that the Participant shall desire to have the Nacimientto Project constructed in such a manner as to allow the District to deliver the Delivery Entitlement through any delivery structure of the Nacimientto Project at a total combined instantaneous rate of flow exceeding 3.0 cubic feet per second, the Participant shall notify the District in writing prior to the time that the District shall have completed the final design of the Nacimientto Project. At the time the District receives said request, the District shall determine the additional costs of the Nacimientto Project which are attributable to the Participant's desired increased rate of flow. The Commission shall review the District's determination of the aforesaid additional costs and report the additional costs to the Participant. The Participant agrees that the Participant shall be solely responsible for and shall pay to the District the additional costs of construction of the Nacimientto Project which are attributable to the increased rate of flow.

(C) No District Obligation to Deliver at Particular Head or Pressure. The District is under no obligation to the Participant to deliver the Delivery Entitlement at any particular head or pressure; however, the Nacimiento Project shall be designed to deliver water to the Participant's turnout at a hydraulic grade line of 1,020 feet.

(D) Participant's Right to Acquire Additional Delivery Entitlement. To the extent that the District has available Reserved Water, Participant shall have the right to apply to, and acquire from, the District, additional delivery entitlement as provided for in Article 29 herein.

ARTICLE 7: WATER YEAR DELIVERY AMOUNTS AND SCHEDULE

The amounts, times and rates of delivery of the Delivery Entitlement to the Participant during any Water Year shall be in accordance with a water delivery schedule determined by the District in the following manner:

(A) Preliminary Water Delivery Schedule. On or before October 1 of each Calendar Year, the Participant shall submit in writing to the District a preliminary water delivery schedule which sets forth the amounts, rates and times of the conveyance and delivery of the Delivery Entitlement as is desired by the Participant for each month of the next succeeding three (3) Water Years.

(B) Coordination with Other Participant Preliminary Schedules. Upon receipt of the Participant's preliminary water delivery schedule, the District will consider the Participant's requested schedule, and the preliminary water delivery schedules submitted to the District by the Other Participants, and, after consultation with the Participant, the District shall make such modifications in the Participant's preliminary water delivery schedule as will allow the District to schedule the amounts, times and rates of the conveyance and delivery of the Delivery Entitlement, and those of the Other Participants, so that the requests of the respective Participants will match as closely as possible their respective requests but in a manner which is consistent with the efficient and economical operation of the Nacimiento Facilities.

(C) Amendment of Schedules. The Participant's water delivery schedule may be amended, from time to time, upon the written request of the Participant to the District, subject to the pre-existing obligations of the District under the water delivery schedules of Other Participants for the same period of time.

ARTICLE 8: PLACE OF DELIVERY

(A) Place of Delivery. All of the Delivery Entitlement and all Surplus Water furnished to the Participant shall be delivered to the Participant at Unit T6 (the "Place of Delivery").

(B) Request for Change in Place of Delivery during First Half of Design Phase. If the Participant shall desire to change its Place of Delivery at any time prior to the time that the Design phase is half completed, the Participant may do so, *provided*, the Participant shall be

solely responsible for any and all costs of design, construction or operation attributable to the change in Place of Delivery. No request during the Design Phase for a change in the place of delivery will be granted if such change would cause a material delay in either the Design Phase or the Construction Phase or would require the District to prepare an environmental impact report.

(C) Request for Change in Place of Delivery at any Time. If the Participant shall desire at any time during the term of this Contract to change the Place of Delivery, or to request an additional place(s) of delivery, the Participant may do so, *provided*, the new or additional place of delivery will not interfere with, or restrict, or impair, the conveyance or delivery of the delivery entitlement of any Other Participant and, *provided* that the Participant shall furnish to the District all of the costs and expenses which the District shall incur in the acquisition and construction of the new or additional place of delivery for the Participant.

ARTICLE 9: MEASUREMENT OF DELIVERY ENTITLEMENT AND SURPLUS WATER

All of the Delivery Entitlement and all Surplus Water furnished to the Participant pursuant to this Contract shall be measured by the District by means of the District's measuring device(s) located at the place(s) of delivery established for the Participant under Article 8 of this Contract. Upon the request of the Participant, the District shall investigate the accuracy of the District's measurements, and the District, in writing, shall deliver the findings of the District to the Participant. Any error discovered in the course of such an investigation shall be cause for an adjustment in the amounts charged the Participant. The Participant may, at the Participant's expense, and after reasonable notice to the District, inspect the District's measuring equipment for the purpose of determining the accuracy of the equipment.

ARTICLE 10: NO RESPONSIBILITY

After the Delivery Entitlement or any portion thereof, and/or after the Surplus Water or any portion thereof, shall have passed the place(s) of delivery established for the Participant under Article 8 of this Contract, neither the District nor its officers, agents or employees shall be liable for the control, carriage, conveyance, handling, use, disposal, distribution or changes occurring in the quality or quantity of such water, or for any claim or damages of any nature whatsoever, including, but not limited to, property damage or personal injury or death arising out of or connected with the control, carriage, conveyance, handling, use, disposal, distribution or changes occurring in the quality or quantity of such water beyond such place(s) of delivery. The Participant shall defend, indemnify and hold harmless the District and its officers, agents and employees from and against any such damages or claims of damage.

ARTICLE 11: WATER QUALITY

When the District shall deliver the Delivery Entitlement and/or any Surplus Water to the Participant from the Nacimientto Project Water, said water shall be at a quality that is

substantially the same as the quality of said water at the time it was taken from the Nacimientto Reservoir by the District. The District shall assume no further or additional responsibility for the quality of the water delivered to the Participant under this Contract and the District does not warrant the quality of any such water for any particular use. The Participant shall be responsible for the treatment of all such water to the minimum water quality standards for water for domestic use as may be established from time to time by the State of California and/or by the federal government and the Participant shall defend, indemnify and hold harmless the District from and against any and all claims, damages, costs, expenses, judgments, attorney fees or other liability to any person or entity asserting that said water does not meet or has not met said domestic use water quality standards.

ARTICLE 12: SURPLUS WATER

(A) District Determination of Amount of Surplus Water; Reserve Pool; Turn-Back. The District shall notify All Participants of the total amount of Surplus Water, if any, available for a Water Year on or about the first day of the then-current Water Year, and once so declared by the District, said amount shall not be changed without first obtaining the consent of All Participants. Surplus Water purchased by the Participant will be delivered to the Participant in the same manner provided for the delivery of the Participant's Delivery Entitlement and to the extent that all of said Surplus Water purchased is not in fact taken by the Participant by the end of the Water Year in question, then such undelivered amount of Surplus Water shall revert to the District and shall not thereafter be available to the Participant.

(B) Sale of Surplus Water by District; Rates. From the Surplus Water held by the District, the District shall first sell any and all of the Reserve Pool Water portion of the Surplus Water. No Turn-Back Pool Water shall be sold by the District so long as any Reserve Pool Water remains unsold.

(1) Sale of Reserve Pool Water. The District shall offer the Reserve Pool Water to the Participant and to Other Participants pro rata in proportion to their respective Delivery Entitlement Share and Other Delivery Entitlement Shares. Any amounts of Reserve Pool Water not purchased by an Other Participant shall be re-offered to the Participant, if it purchased its pro rata share of Reserve Pool Water, and the Other Participants purchasing Reserve Pool Water pro rata according to their respective Delivery Entitlement Share and Other Delivery Entitlement Shares until all of the Reserve Pool Water has been sold.

(a) Price for Reserve Pool Water. For Reserve Pool Water, the Participant shall pay to the District the sum of the following:

(1) The portion of the Operation and Maintenance Costs attributable to the Reserve Pool Water and incurred by the District in the immediately preceding Water Year per acre-foot; plus

(2) The Variable Energy Costs incurred by the District for the delivery of the Reserve Pool Water as calculated in Article 16(C)(2) hereof.

(b) Revenues from Sale of Reserve Pool Water. All revenues derived by the District from the sale of Reserve Pool Water shall be applied as a credit against the obligations of the Participant and the Other Participants in proportion to the Delivery Entitlement Share and the Other Delivery Entitlement Shares of the Participant and the Other Participants, respectively.

(2) Sale of Turn-Back Pool Water. The District shall offer the Turn-Back Pool Water to the Participant and to the Other Participants pro rata in proportion to their Delivery Entitlement Share and Other Delivery Entitlement Shares, respectively.

(a) Price for Turn-Back Pool Water. For the Turn-Back Pool Water, the Participant shall pay to the District the sum of the following:

(1) The average of the Operation and Maintenance Costs incurred by the District in the immediately preceding Water Year per acre-foot for the delivery of the Delivery Entitlement and the Other Delivery Entitlements to the Participant and to the Other Participants, respectively; plus

(2) The Variable Energy Costs incurred by the District for the delivery of the Turn-Back Pool Water as calculated in Article 16(C)(2) hereof.

(b) Revenues from Sale of Turn-Back Pool Water. All revenues derived by the District from the sale of Turn-Back Pool Water shall be applied as a credit against the obligations of those Participants contributing to the Turn-Back Pool Water and in the proportion to the amount each Participant contributes to the Turn-Back Pool Water in the Water Year, if at all.

(C) If the Participant shall commit in writing to purchase such Surplus Water from the District, the Participant shall be obligated to pay for such Surplus Water, whether or not the Participant accepts delivery of the Surplus Water, so long as such Surplus Water was available for the period in question. Neither the Participant nor any Other Participant shall resell Surplus Water on a wholesale basis at any time to persons or entities not a party to this Contract or to Like-Contracts, without the prior written consent of the District and all Other Participants; provided, however, that this provision is not intended to limit the sales of Surplus Water to the end customers of the Participant.

(D) The District may offer to sell and deliver any Surplus Water not purchased by the Participant or the Other Participants to any other prospective purchaser without right of renewal, in a manner and at prices which will return to the District the largest Net Revenue practicable for the benefit of the Nacimientto Facilities, but in no event at prices less than those at which such Surplus Water is offered to the Participant, unless the Participant is first tendered such Surplus Water by the District at the lower price in writing, and in each case, attempting to recapture the

Operation and Maintenance Costs, the Variable Energy Costs and the Capital Projects Installment Debt Service attributable to the volume of Surplus Water actually purchased by such third parties, at the highest price the market will then bear.

ARTICLE 13: CURTAILMENT OF DELIVERY

The District may temporarily discontinue or reduce the amount of Nacimientto Project Water to be furnished to the Participant during such time as the District is maintaining, repairing, replacing, investigating, or inspecting any of the portions of the Nacimientto Facilities necessary for the furnishing of water to the Participant. Insofar as it is feasible, the District shall give the Participant notice in advance of any such temporary discontinuance or reduction, except in the case of emergency, in which case no notice need be given. In the event of such discontinuance or reduction, the District will upon resumption of service, deliver, as nearly as may be feasible, the quantity of Nacimientto Project Water which would have been furnished to the Participant in the absence of such discontinuance or reduction. Notwithstanding the foregoing, under no circumstances shall the Participant be relieved of any obligation to make Contract Payments as a result of such temporary discontinuance or reduction of Nacimientto Project Water.

ARTICLE 14: NACIMIEN TO PROJECT WATER SHORTAGES

(A) Temporary Shortages. In any Water Year in which there may occur a shortage or interruption due to drought or other temporary cause in the supply of the Nacimientto Reservoir Water available for delivery by the District to the Participant, to the Other Participants and/or to the Reserve Water Customers, with the result that the amount of such supply is less than the total of: (i) the Delivery Entitlement and (ii) the Other Delivery Entitlements, plus (iii) the amount of the District's obligations to the Reserve Water Customers for that Water Year, the District shall calculate the amount of said reduced supply of water available to the District for use as Nacimientto Project Water and shall apportion the reduced supply of water as follows:

(1) Subject to the provisions of paragraph (D) below, from the reduced amount of Nacimientto Reservoir Water available to the District under the Master Water Contract in the Water Year in question, the District will subtract One Thousand Seven Hundred Fifty (1,750) Acre-Feet of the Prior-Commitment Water and the result shall be the reduced supply of Nacimientto Reservoir Water available to the District for use as Nacimientto Project Water under this Contract and under the Like-Contracts with Other Participants, and for the District's obligations to Reserve Water Customers; and

(2) For the Water Year in question, the District shall first apply the said reduced supply of Nacimientto Project Water to satisfy the Delivery Entitlement and the Other Delivery Entitlements, and then, to the satisfaction of the District's obligations to Reserve Water Customers. In the event that the said reduced supply of Nacimientto Project Water is insufficient to meet, in full, the Delivery Entitlement and the Other Delivery Entitlements, then the District (i) shall make no deliveries to Reserved Water Customers for that Water Year, and (ii) shall reduce the delivery of water to All

Participants pro rata according to the Delivery Entitlement Share or Other Delivery Entitlement Shares of the Participant and each Other Participant, respectively. In the event that said reduced supply of Nacimientto Project Water is sufficient to meet the Delivery Entitlement and the Other Delivery Entitlements, but not the full amount then due to Reserve Water Customers, the District shall reduce the delivery of Reserve Water among the Reserve Water Customers pro rata, according to the amounts they have contracted for during the Water Year in question.

(B) Permanent Shortages. In the event that there is a reduction in the supply of Nacimientto Reservoir Water provided to the District under the Master Water Contract, which notwithstanding the preventative or remedial measures taken by the Monterey Water Agency, threatens or causes a permanent shortage in the amount of Nacimientto Reservoir Water available to the District under the Master Water Contract, with the result that the District concludes such supply will, for an indefinite period extending beyond the current Water Year, be less than Seventeen Thousand Five Hundred (17,500) Acre-Feet, the District shall calculate and apportion the permanently reduced supply of water as follows:

(1) Subject to the provisions of paragraph (D) below, from the reduced supply of Nacimientto Reservoir Water available to the District under the Master Water Contract, the District will subtract One Thousand Seven Hundred Fifty (1,750) Acre-Feet of Prior-Commitment Water and the result shall be the amount of Nacimientto Reservoir Water available to the District for use as the reduced Nacimientto Project Water under this Contract, the Like-Contracts with Other Participants and for the District's obligations to Reserve Water Customers; and

(2) For future Water Years, the District shall first apply the reduced supply of Nacimientto Project Water to satisfy the District's obligations to the Participant under this Contract and to the Other Participants under Like-Contracts, and then to the satisfaction of the District's obligations to Reserve Water Customers. In the event that the reduced Nacimientto Project Water is insufficient to meet, in full, the District's obligations to the Participant under this Contract and to the Other Participants under the Like-Contracts, the District shall permanently reduce the delivery of water to All Participants pro rata, in proportion to the Participant's Delivery Entitlement Share and the Other Participants' Other Delivery Entitlement Shares. In the event that the reduced Nacimientto Project Water is sufficient to meet the District's obligations to All Participants under this Contract and the Like-Contracts, but not the full amount then due to Reserve Water Customers then the District shall reduce the delivery of Reserve Water to Reserve Customers pro rata, according to the amounts contracted for during the most recent Water Year completed.

(3) In the event and to the extent that the permanent shortage is ameliorated and some or all of the reduced Nacimientto Reservoir Water is later restored to the District, the restored amount of water shall be allocated to the Participant and the Other Participants in proportion to the Delivery Entitlement Share and the Other Delivery Entitlement Shares, respectively.

(C) No Liability for Shortages. Neither the District nor any of its officers, agents, or employees shall be liable for any damage, direct or indirect, arising from shortages in the amount of Nacimientto Project Water to be made available to the Participant under this Contract caused by the non-availability of water to the District under the Master Water Contract or caused by drought, operation of the Nacimientto Reservoir, operation of area of origin laws, or any other cause beyond the control of the District.

(D) Equitable Sharing of Shortages with Prior-Commitment Water. To the extent that the District is able to do so under the District's contractual obligations to the persons and entities entitled to Prior-Commitment Water, the District will, during times of shortage, endeavor to reduce the amounts of Prior-Commitment Water extracted from the District's 17,500 acre-feet of water from the Nacimientto Reservoir in proportion to the ratio of 1,750 to 17,500.

ARTICLE 15: LIMITATIONS ON OBLIGATION TO FURNISH WATER

(A) Limited District Obligations. Notwithstanding any provisions of this Contract to the contrary, the obligation of the District to furnish Nacimientto Project Water hereunder shall be limited to the times and to the extent that water from the Nacimientto Reservoir and the facilities necessary for furnishing the same are available to the District pursuant to the Master Water Contract.

(B) District Not Liable for Monterey Water Agency Failure to Perform Master Water Contract. The District shall not be liable for its failure to perform any part of this Contract to the extent that such failure is caused by the wrongful failure of the Monterey Water Agency to perform any obligation imposed on the Monterey Water Agency by the Master Water Contract; *provided*, that the District shall diligently and promptly pursue all rights and remedies available to the District to enforce the rights of the District against the Monterey Water Agency under the Master Water Contract relative to such failure to perform and *provided* further, that the costs and expenses incurred by the District in the enforcement or attempted enforcement of said rights under the Master Water Contract shall be considered to be a part of the Operation and Maintenance Costs under this Contract.

ARTICLE 16: OBLIGATIONS FOR NACIMIENTO PROJECT COSTS

(A) Participant's Obligations to Pay. The Participant shall pay its Contract Payments to the District, in the manner provided below

(B) District's Determination of Nacimientto Project Costs for each Fiscal Year. On or before April 1 of each Calendar Year, the District shall estimate the new or additional Nacimientto Project Costs for the Fiscal Year commencing on the immediately following July 1 and the result shall comprise the Total Participant Contract Payments due, collectively, from the Participant hereunder and from the Other Participants under their respective Like-Contracts for the said Fiscal Year. Nacimientto Project Costs shall include:

- (1) Nacimientto Project Construction Costs;

- (2) Additional Capital Project Costs;
- (3) Capital Projects Installment Debt Service;
- (4) Master Water Contract Costs incurred following the first date upon which an allocation of *ad valorem* property taxes under Article 17(B)(5);
- (5) Capital Reserve Costs;
- (6) Operation and Maintenance Costs;
- (7) Variable Energy Costs;
- (8) Reserved Capacity Costs;
- (9) Environmental mitigation costs; and
- (10) Other annual or incidental costs associated with the Nacimientto Facilities.

(C) District's Allocation of District's Nacimientto Project Costs. Nacimientto Project Costs shall be allocated by the District among the Participant and all Other Participants as follows:

(1) The District shall allocate Capital Reserve Costs and Operation and Maintenance Costs to the Participant on the basis of the Unit Percentage Share of Capital Reserve Costs and Operation and Maintenance Costs attributable to the Units used by the District to deliver the Delivery Entitlement to the Participant. As of the date of execution of this Contract, there is apportioned to the Participant the following proportional share of the said costs (expressed as a percentage) for each of the Units used to deliver water to the Participant:

<u>Project Segment</u>	<u>Participant's Unit Percentage Share</u>
Systemwide Operating Cost	20.768%
Unit No. A	20.768
Unit No. A1	20.768
Unit No. B	20.768
Unit No. C	20.768
Unit No. C1	20.768
Unit No. D	35.524
Unit No. E	37.175
Unit No. F	0.000
Unit No. F1	20.768
Unit No. F2	0.000
Unit No. G	0.000
Unit No. G1	0.000
Unit No. G2	0.000
Unit No. H	0.000
Unit No. H1	0.000
Unit No. T6	100.000

The Participant shall pay such amounts allocated to the Participant under this paragraph in the manner provided for in Article 17(A)(1) and (2) below.

(2) For each Calendar Quarter, Variable Energy Costs shall be determined by the District and shall be allocated to the Participant and to the Other Participants as follows:

(a) Variable Energy Costs for the Calendar Quarter in question shall be divided by the total acre-feet of Nacimientto Project Water delivered by the District during such Calendar Quarter to the Participant and to all Other Participants pursuant to this Contract and Like-Contracts; and,

(b) The result in subsection (a) shall be multiplied by the number of acre-feet of Nacimientto Project Water delivered by the District to the Participant during such Calendar Quarter, which result shall be allocated to the Participant. The District shall notify the Participant in writing of the amount of Variable Energy Costs allocated to the Participant by a date no later than the forty-fifth (45th) day following the end of each Calendar Quarter for the variable costs attributable to the Calendar Quarter most recently concluded. The Participant shall pay such amounts allocated to the Participant under this paragraph in the manner provided for in Article 17(A)(3) below.

(3) The District shall allocate Nacimientto Project Construction Costs as follows:

The Nacimientto Project Construction Costs shall have three components:

(a) The costs attributable to environmental mitigation requirements (the "Environmental Mitigation Construction Cost Component"). The Environmental Mitigation Construction Cost Component shall be allocated pro rata to the Participant and to the Other Participants on the basis of the Delivery Entitlement Share and the Other Delivery Entitlement Shares, respectively. As of the date of execution of this Contract, there is apportioned to the Participant Twenty and 768/1000 (20.768%) of the Environmental Mitigation Construction Cost Component.

(b) The costs attributable to the District's Reserved Capacity (the "Reserved Capacity Construction Cost Component"). The Reserved Capacity Construction Cost Component shall be allocated pro rata to the Participant and to the Other Participants on the basis of the Delivery Entitlement Share and the Other Delivery Entitlement Shares, respectively. As of the Effective Date, there is apportioned to the Participant Twenty and 768/1000 percent (20.768%) of the Reserved Capacity Construction Cost Component.

(c) The costs attributable to all other construction costs (the "All Other Construction Costs Component"). The All Other Construction Costs Component shall be allocated on a Unit Percentage Share basis. As of the date of execution of

this Contract, there is apportioned to the Participant the following proportional share of All Other Construction Costs Components (expressed as a percentage) for each of the Units used to deliver water to the Participant:

<u>Project Segment</u>	<u>Participant's Unit Percentage Share</u>
Unit No. A	20.768%
Unit No. A1	20.768
Unit No. B	20.768
Unit No. C	20.768
Unit No. C1	20.768
Unit No. D	28.146
Unit No. E	28.972
Unit No. F	10.384
Unit No. F1	20.768
Unit No. F2	10.384
Unit No. G	10.384
Unit No. G1	10.384
Unit No. G2	10.384
Unit No. H	10.384
Unit No. H1	10.384
Unit No. T6	100.000

The Participant shall pay such amounts allocated to the Participant under this paragraph in the manner provided for in Article 17(A)(1) and (2) below.

(4) The District shall allocate Capital Projects Installment Debt Service among All Participants, pro rata, according to the proportion of Nacimiento Project Construction Costs paid by the Participant and the Other Participants, as they may be adjusted for cash contributions under Article 17(B); *provided, however*, that the Capital Projects Installment Debt Service shall further be allocated into a component representing debt service on Tax-Exempt Obligations (the "Tax-Exempt Debt Service") and a component representing the debt service on Taxable Obligations (the "Taxable Debt Service"). If the Participant is eligible to borrow on a tax-exempt basis under the Tax Code, then the Participant and the Other Participants who are also so eligible shall be allocated their pro rata shares of Tax-Exempt Debt Service; if the Participant is not eligible to borrow on a tax-exempt basis under the Tax Code, then the Participant and any Other Participants who are also ineligible to so borrow shall be allocated their pro rata shares of Taxable Debt Service.

(5) The District shall allocate all other Nacimiento Project Costs not otherwise provided for above, including Master Water Contract Costs, to the Participant and to all of the Other Participants pro rata on the basis of the Delivery Entitlement Share for the Participant and the Other Delivery Entitlement Shares for the Other Participants. As of the date of execution of this Contract, there is apportioned to the Participant Twenty and 768/1000 percent (20.768%) of the District's said remaining costs, including the Required Additional Project Costs and Master Water Contract Costs. The Participant

shall pay such amounts allocated to the Participant under this paragraph in the manner provided for in Article 17(A)(4) below.

(6) The foregoing allocations shall be calculated by the District each Fiscal Year for the Participant and for each Other Participant and the calculations of said allocations shall be made available to the Participant.

(7) No more frequently than annually, the District shall retain a CPA with the approval of the Commission. The CPA shall be responsible for reviewing and confirming the District's allocation of the Participant's portion of Nacimientos Project Costs and reporting the same to the Participant, the District and each Other Participant.

(8) The obligations of the Participant, if any, for any Approved Additional Project will be established at the time of and by the agreement for each such Approved Additional Project.

ARTICLE 17: CONTRACT PAYMENTS

(A) Time and Amount of Contract Payments. Except as established under Paragraph (C) below as to Capital Projects Installment Debt Service, the Contract Payments to the District shall commence no later than the first Fiscal Year during which the Delivery Entitlement is made available to the Participant hereunder, and in any event, promptly following receipt by the Participant of an invoice from the District. The Contract Payments shall be determined by the District as provided in Article 16 of this Contract and shall be paid by the Participant to the District in accordance with the further provisions of this Article, except and to the extent the Participant shall, in accordance with paragraph (B) below, be entitled to an offsetting credit.

(1) On or before July 1 of each Fiscal Year, the Participant shall pay a sum equal to sixty percent (60%) of the Participant's Allocation of Capital Reserve Costs, and Operation and Maintenance Costs as calculated and allocated under Article 16(C)(1) above; and

(2) On the immediately following January 1 within each Fiscal Year, the Participant shall pay a sum equal to forty percent (40%) of the Participant's Allocation of Capital Reserve Costs and Operation and Maintenance Costs as calculated and allocated under Article 16(C)(1) above; and

(3) On or before the thirtieth (30th) day following its receipt of an invoice from the District under Article 16(C)(2), the Participant shall pay Variable Energy Costs as calculated and allocated under Article 16(C)(2) above, for the Calendar Quarter most recently concluded; and

(4) On or before July 1 of each Fiscal Year, the Participant shall pay a sum equal to the Participant's Allocation of Capital Projects Installment Debt Service as calculated and allocated under Article 16(C)(3) above.

(5) On or before July 1 of each Fiscal Year, the Participant shall pay a sum equal to the Participant's allocation of remaining Nacimientto Project Costs, including Additional Capital Project Costs and Master Water Contract Costs as calculated and allocated under Article 16(C)(4) above.

(B) Participant Credits against Contract Payments. The following shall constitute credits against the Contract Payments to the District:

(1) If, prior to the date upon which the District causes the Municipal Obligations to be sold, the Participant shall contribute to the District, in cash, a sum as and for the Participant's Capital Share of the District's estimate of the Total Nacimientto Project Construction Costs, or any portion of the Participant's Capital Share of said construction costs, then the amount of Capital Projects Installment Debt Service allocated to the Participant under Article 16(C)(3) above shall be reduced accordingly, but in no event to less than zero; and

(2) If the Participant shall, following the date of delivery of the Municipal Obligations, successfully implement a financing plan within its jurisdiction to fund all or a portion of the Participant's Contract Payments, during the term of the Municipal Obligations, by means of a levy of *ad valorem* property taxes, special assessments or special taxes, then all or a portion of the amount of Capital Projects Installment Debt Service to be allocated to the Participant under Article 16(C)(3) above, shall be credited to the Participant from amounts paid under such levy as though such amounts were paid directly by the Participant hereunder, subject to the prior approval of each rating agency then rating the Municipal Obligations and any bond insurer then providing insurance therefor; provided however, that, to the extent legally permissible, the District shall be made a third-party beneficiary of any pledge of such alternate source of revenues, with the power to enforce collection thereof, in the event that the Participant should fail to do so; and

(3) The Participant shall be entitled to a credit against the Participant's obligations to the District hereunder in the form of a share of the Net Revenues the District shall have received during the Fiscal Year in question. In determining the amount of such credits against the obligations of the Participant hereunder, the District shall apportion the District's net revenues from the foregoing sources; (i) first, against the obligations allocated to the Participant and to the Other Participants for the Reserved Capacity Construction Cost Component and in the same amount as the percentage allocation set forth for the Participant in Article 16(C)(3)(a) herein, and then (ii) against the obligations allocated to the Participant and to the Other Participants for the All Other Construction Costs Component and in the same amount as the percentage allocation set forth for the Participant in Article 16(C)(3)(c) herein.

(4) On or before December 1 of each year, the District shall deliver to the Participant a statement as to the actual Operation and Maintenance Costs and Capital Reserve charges incurred or imposed during the Fiscal Year most recently concluded, and shall set forth in such statement the District's determination as to whether the Contract Payments theretofore paid by the Participant were in excess of or less than the

Participant's allocated share of the actual costs incurred by the District for said items. If the Participant shall have paid less than the Participant's actual Unit Percentage Share for said items for such Fiscal Year, the Participant shall remit the difference to the District within one hundred eighty (180) days of the date upon which the Participant receives such a statement from the District. If the Participant shall have paid more than the Participant's actual Unit Percentage Share for such items for such Fiscal Year, the District shall credit the difference against the Participant's future Contract Payments to the District.

(5) If, in any Fiscal Year, the Nacimiento Water Fund of the District receives its allocated portion of the *ad valorem* taxes levied on the real property within the County of San Luis Obispo under the authority of Article XIII A, Section 1(a) of the California Constitution, then the District shall apply said apportioned amount received by the District to the reduction of Reserved Capacity Construction Cost Component and the District shall continue to do so in each Fiscal Year in which the District receives such apportioned amounts up to and until the said Reserved Capacity Construction Cost Component is paid. The District shall credit to the Participant the Unit Percentage Share of said apportioned tax proceeds received by the Nacimiento Water Fund of the District, less any amounts (i) which the District is obligated to pay under the terms of the Master Water Contract and/or (ii) any amounts which are not received or retained by the District because of the operation of the Community Redevelopment Law (California Health and Safety Code Sections 33000 *et seq.*) or any other applicable law.

(C) Participant's Election Regarding Capitalized Interest. The District and the Participant understand and agree that the Participant's share of Capital Projects Installment Debt Service will be lower in the event that the Municipal Obligations attributable to the Participant are marketed and sold without capitalized interest. Accordingly, each Participant shall be entitled, by delivering written notice to the District no later than three (3) business days prior to the pricing of any Municipal Obligations issued, to elect to commence making its portion of Capital Projects Installment Debt Service during the first Bond Year as defined in that certain Indenture of Trust by and between SLO County Financing Authority and BNY Western Trust Company to be entered into in connection with the issuance of the Municipal Obligations, without regard to the date upon which delivery of Nacimiento Project Water is first made to the Participant. If no such election is received from the Participant, the District shall be entitled to include a capitalized interest component in the Municipal Obligations attributable to the Participant, to apportion said capitalized interest to the Participant and to include the costs of same in the Participant's portion of Capital Projects Installment Debt Service.

ARTICLE 18: USE OF TOTAL PARTICIPANT CONTRACT PAYMENTS

During the term of this Contract and the Like-Contracts with Other Participants, the District shall proceed with due diligence to collect Total Participant Contract Payments as and when due, and shall deposit amounts collected into the Participant Revenue Fund promptly upon receipt, and shall apply all other amounts comprising Total Participant Contract Payments in the following order of priority:

- (A) To the payment of Master Water Contract Costs;
- (B) To the payment of Operation and Maintenance Costs;
- (C) To the payment of Variable Energy Costs;
- (D) To the payment of Additional Capital Project Costs; and
- (E) To the replenishment of Capital Reserves for the Nacimiento Project.

ARTICLE 19: OBLIGATION TO "TAKE-OR-PAY"

Neither the Participant's failure or refusal to accept delivery of water from the Nacimiento Facilities to which the Participant is entitled under this Contract nor the District's failure to deliver said water shall in any way relieve the Participant of its obligations to make payments to the District as provided for herein. Commencing on the first date that debt service payments are due under the Municipal Obligations provided for herein, the Participant shall pay all amounts due hereunder, including, without limitation, those due under Article 17 hereof, without reduction or offset of any kind, whether or not the Nacimiento Facilities or any part thereof is then operating or operable or its service is suspended, interfered with, reduced or curtailed or terminated in whole or in part, due to any of the reasons set forth in Articles 6(A), 13, 14 and 15, or otherwise, and such Participant's Contract Payments shall not be conditional upon the performance or nonperformance by any party to this Contract, or to the Like-Contracts, for any cause whatsoever; provided, however, that any savings from non-operation of the Nacimiento Facilities shall be apportioned among the Participant and the Other Participants in accordance with their respective percentages of the Participant's and each Other Participant's Unit Percentage Share.

The Participant's obligations to make Contract Payments and other payments required to be made hereunder are incurred by the Participant for the benefit of future holders of Municipal Obligations, and shall be absolute and unconditional. Such payments shall be absolutely net, free of any deductions, and are not subject to any reduction, whether by offset, recoupment, counterclaim or others. The Participant shall make all such payments notwithstanding the occurrence of any act or circumstances that may constitute failure of consideration, destruction of or damage to the Nacimiento Facilities, commercial frustration of purpose, any change in the tax or other laws of the United States of America or of the State of California, or any political subdivision or either of these.

ARTICLE 20: PARTICIPANT'S PLEDGE AND COVENANTS

The Participant, unless it shall have paid cash as the Participant's portion of the Total Nacimiento Project Construction Costs as provided in Article 16 hereof, hereby pledges the gross water sales revenues of the Participant's Water Enterprise to the Participant's obligations under this Contract, and covenants and agrees to establish, fix and collect rates and charges from the

customers of Participant's Water Enterprise at levels sufficient to produce revenues from the Participant's Water Enterprise which are at least equal to:

- (A) The costs of operating and maintaining the Participant's Water Enterprise; plus
- (B) The Contract Payments, calculated in accordance with Article 16 hereof, including the amounts allocated to the Participant as the Participant's share of Capital Projects Installment Debt Service under Article 16(C)(3) hereof; plus
- (C) The Coverage Factor for the amounts allocated to the Participant as the Participant's share of Capital Projects Installment Debt Service under Article 16(C)(3) hereof; and
- (D) Under certain circumstances, that the Participant understands and agrees that the provisions of Article 25(B) hereof may impose upon the Participant a surcharge following the occurrence of any payment default by the Participant.

ARTICLE 21: WATER ENTERPRISE OPERATION AND MAINTENANCE

(A) No Sale, Lease or Disposing of Participant's Water Enterprise. The Participant covenants and agrees not to sell, lease or otherwise dispose of its Water Enterprise or any part thereof essential to the proper operation thereof or to the earning or collection of the gross revenues of the Participant's Water Enterprise, nor to enter into any agreement or lease which would impair the operation of the Participant's Water Enterprise, or any part thereof necessary in order to secure adequate revenues for the payment of amounts due under this Contract; *provided*, however, that any real or personal property which has become nonfunctional or obsolete or which is not needed for the efficient operation of the Participant's Water Enterprise may be sold or disposed of if such disposition will not have the effect of reducing revenues of the Participant's Water Enterprise below the levels required under this Contract.

(B) Participant to Maintain Participant's Water Enterprise. The Participant covenants and agrees to maintain and preserve the Participant's Water Enterprise in good repair and working order at all times, to operate the same in an efficient and economical manner and to pay all operation and maintenance costs of the Participant's Water Enterprise as they become due, all in accordance with the best business judgment of the Participant.

(C) Participant's Budgets. The Participant covenants and agrees to adopt and deliver a budget to the District approved by the Participant's governing body setting forth the amounts budgeted to be paid under this Contract no later than the first day of each Fiscal Year.

(D) Participant's Covenants. The Participant covenants and agrees to comply with, keep, observe and perform all agreements, conditions, covenants and terms, express or implied, required to be performed by the Participant contained in all contracts for the use of the Participant's Water Enterprise and all contracts affecting or involving the Participant's Water Enterprise to the extent that the Participant is a party thereto.

(E) No Superior Liens or Payments. The Participant covenants and agrees not to create or allow any lien on or payment from the revenues of the Participant's Water Enterprise or any part thereof prior to, or superior to, the Participant's obligations to amounts payable under this Contract.

(F) Participant to Insure Water Enterprise. The Participant covenants and agrees to procure and maintain insurance relating to the Participant's Water Enterprise which the Participant shall deem advisable or necessary to protect its interests. Such insurance shall afford protection in such amounts and against such risks as are usually covered in connection with similar water enterprises in the State of California; provided, that the Participant shall not be required to procure or maintain any such insurance unless such insurance is commercially available at reasonable cost; and provided further, that any such insurance may be maintained under a self-insurance program, so long as such self-insurance program is maintained in accordance with standards and in such amounts as are then usually maintained for similar water enterprises in the State of California.

(G) Participant to Pay Obligations; Observe Laws. The Participant covenants and agrees to pay and discharge all taxes, assessments and other governmental charges which may hereafter be lawfully imposed upon the Participant's Water Enterprise or any part thereof when the same shall become due and to duly observe and conform to all valid regulations and requirements of any governmental authority relative to the operation of the Participant's Water Enterprise that are not being contested by the Participant in good faith.

(H) Eminent Domain. The Participant covenants and agrees that if all or any material part of the Participant's Water Enterprise shall be taken by eminent domain proceedings, or if the Participant receives any insurance proceeds resulting from a casualty loss to any material portion of the Participant's Water Enterprise, the proceeds thereof shall be used by the Participant to construct or install replacements for the condemned or destroyed components of the Participant's Water Enterprise or to prepay the Participant's share of Capital Projects Installment Debt Service under Article 16(C)(3) of this Contract.

ARTICLE 22: COVENANTS OF THE DISTRICT AND THE PARTICIPANT; SPECIAL TAX COVENANTS

(A) Punctual Payment; Compliance with Documents. The District shall punctually pay or cause to be paid the interest and principal to become due with respect to all of the Municipal Obligations, but solely from amounts paid to the District under this Contract and the Like-Contracts, and the Participant shall punctually pay or cause to be paid the Capital Projects Installment Debt Service, in strict conformity with the terms of the Municipal Obligations, this Contract and the Legal Documents and will faithfully observe and perform all of the conditions, covenants and requirements of this Contract and the Legal Documents including any and all supplements thereto.

(B) Extension of Payment of Municipal Obligations. Neither the District nor the Participant shall directly or indirectly extend or assent to the extension of the maturity of any of the Municipal Obligations or the time of payment of any claims for interest by the purchaser or

owner of such Municipal Obligations or by any other arrangement, and in case the maturity of any of the Municipal Obligations or the time of payment of any such claims for interest shall be extended, such Municipal Obligations or claims for interest shall not be entitled, in case of any default under the Legal Documents, to the benefits of this Contract, except subject to the prior payment in full of the principal of all of the Municipal Obligations then outstanding and of all claims for interest thereon which shall not have been so extended. Nothing in this Article shall be deemed to limit the right of the District to issue obligations or cause obligations to be issued for the purpose of refunding any outstanding Municipal Obligations, and such issuance shall not be deemed to constitute an extension of maturity of the affected Municipal Obligations.

(C) Against Encumbrances. Neither the District nor the Participant shall create, or permit the creation of, any pledge, lien, charge or other encumbrance upon the revenues and other assets pledged under this Contract while any of the Municipal Obligations are outstanding, except the pledge created by the Legal Documents and this Contract, any Additional Debt and any pledge, lien, charge or other encumbrance which is subordinate to the obligations under this Contract. Subject to this limitation, the District expressly reserves the right to enter into one or more indentures or trust agreements for any of its corporate purposes, and reserves the right to issue other obligations or cause them to be issued for such purposes.

(D) Covenants to Maintain Tax-Exempt Status of Tax-Exempt Obligations. In the event that any Tax-Exempt Obligations attributable in whole or in part, to the Participant are issued and outstanding, the Participant covenants and agrees as follows:

(1) Definitions. When used in this Section, the following terms have the following meanings:

"Bond Counsel" means Fulbright & Jaworski L.L.P.

"Bond Year" means the period of one year established in the Legal Documents, during which the Tax-Exempt Obligations are outstanding, for purposes of the Code; provided, that either the first Bond Year or the final Bond Year may be a period shorter than twelve calendar months.

"Code" means the Internal Revenue Code of 1986 as in effect on the date of issuance of the Tax-Exempt Obligations or (except as otherwise referenced herein) as it may be amended to apply to obligations issued on the date of issuance of the Tax-Exempt Obligations, together with applicable proposed, temporary and final regulations promulgated, and applicable official public guidance published, under the Code.

"Computation Date" has the meaning set forth in section 1.148-1(b) of the Tax Regulations.

"Gross Proceeds" means any proceeds as defined in section 1.148-1(b) of the Tax Regulations, and any replacement proceeds as defined in section 1.148-1(c) of the Tax Regulations, of the Tax-Exempt Obligations.

"Investment" has the meaning set forth in section 1.148-1(b) of the Tax Regulations.

"Nonpurpose Investment" means any investment property, as defined in section 148(b) of the Code, in which Gross Proceeds of Tax-Exempt Obligations are invested and that is not acquired to carry out the governmental purposes of such Tax-Exempt Obligations.

"Rebate Amount" has the meaning set forth in section 1.148-1(b) of the Tax Regulations.

"Yield" of

(1) any Investment has the meaning set forth in section 1.148-5 of the Tax Regulations; and

(2) the Tax-Exempt Obligations has the meaning set forth in section 1.148-4 of the Tax Regulations.

"Tax Regulations" means temporary and permanent regulations promulgated under or with respect to section 103 of the Code.

(2) Not to Cause Interest to Become Taxable. Neither the District nor the Participant shall use, permit the use of, or omit to use Gross Proceeds or any other amounts (or any property, the acquisition, construction or improvement of which is to be financed directly or indirectly with Gross Proceeds) in a manner that if made or omitted, respectively, would cause the interest on any of the Tax-Exempt Obligations to become includable in the gross income, as defined in section 61 of the Code, of the owner thereof for federal income tax purposes. Without limiting the generality of the foregoing, unless and until the District and the Participant receive a written opinion of Bond Counsel to the effect that failure to comply with such covenant will not adversely affect the exclusion from gross income for federal income tax purposes of the interest on any Tax-Exempt Obligation, the District and the Participant shall comply with each of the specific covenants in this Section.

(3) No Private Use or Private Payments. Except as would not cause any Tax-Exempt Obligation to become a "private activity bond" within the meaning of section 141 of the Code and the Tax Regulations and rulings thereunder, the District and the Participant shall at all times prior to the last maturity date of the Tax-Exempt Obligations:

(a) require that one or more state or local governmental agencies exclusively own, operate and possess all property the acquisition, construction or improvement of which is to be financed or refinanced directly or indirectly with Gross Proceeds of the Tax-Exempt Obligations, and not use or permit the use of such Gross Proceeds (including all contractual arrangements with terms different than those applicable to the general public) or any property acquired, constructed or improved with such Gross Proceeds in any activity carried on by any person or

entity (including the United States or any agency, department and instrumentality thereof) other than a state or local government, unless such use is solely as a member of the general public; and

(b) not permit the direct or indirect imposition of any charge or other payment on or by any person or entity who is treated as using Gross Proceeds of the Tax-Exempt Obligations or any property, the acquisition, construction or improvement of which is to be financed or refinanced directly or indirectly with such Gross Proceeds, other than taxes of general application within the boundaries of the Participant or interest earned on investments acquired with such Gross Proceeds pending application for their intended purposes.

(4) No Private Loan. Except as would not cause any Tax-Exempt Obligation to become a "private activity bond" within the meaning of section 141 of the Code and the Tax Regulations and rulings thereunder, neither the District nor the Participant shall use or permit the use of the Gross Proceeds of the Tax-Exempt Obligations to make or finance loans to any person or entity other than a state or local government. For purposes of the foregoing covenant, such Gross Proceeds are considered to be "loaned" to a person or entity if: (1) property acquired, constructed or improved with such Gross Proceeds is sold or leased to such person or entity in a transaction that creates a debt for federal income tax purposes; (2) capacity in or service from such property is committed to such person or entity under a take-or-pay, output or similar contract or arrangement; or (3) indirect benefits, or burdens and benefits of ownership, of such Gross Proceeds or any property acquired, constructed or improved with such Gross Proceeds are otherwise transferred in a transaction that is the economic equivalent of a loan.

(5) Not to Invest at Higher Yield. Except as would not cause the Tax-Exempt Obligations to become "arbitrage bonds" within the meaning of section 148 of the Code and the Tax Regulations and rulings thereunder, neither the District nor the Participant shall at any time prior to the final maturity of the Tax-Exempt Obligations directly or indirectly invest or permit the investment of Gross Proceeds in any Investment, if as a result of such investment the Yield on Investments acquired with Gross Proceeds, whether then held or previously disposed of, materially exceeds the Yield of the Tax-Exempt Obligations within the meaning of said section 148. For purposes of this paragraph, Yield on Investments shall be determined in accordance with the provisions of section 1.148-5 of the Tax Regulations (which, under certain circumstances, requires Yield to be determined on less than all such Investments).

(6) Not Federally Guaranteed. Except to the extent permitted by section 149(b) of the Code and the Tax Regulations and rulings thereunder, neither the District nor the Participant shall take or omit to take, or permit, any action that would cause any Tax-Exempt Obligations to be treated as "federally guaranteed" within the meaning of section 149(b) of the Code and the Tax Regulations and rulings thereunder.

(7) Information Report. The District shall timely file or cause to be filed any information required by section 149(e) of the Code with respect to the Tax-Exempt

Obligations with the Secretary of the Treasury on Form 8038-G or such other form and in such place as the Secretary may prescribe.

(8) Rebate. Except to the extent otherwise provided in section 148(f) of the Code and the Tax Regulations and rulings thereunder:

(a) The District shall account for all Gross Proceeds (including all receipts, expenditures and investments thereof) on its books of account separately and apart from all other funds (and receipts, expenditures and investments thereof) and shall retain all records of accounting for at least six years after the day on which the last outstanding Tax-Exempt Obligation is retired. However, to the extent permitted by law, the District may commingle Gross Proceeds of Tax-Exempt Obligations with other money of the District, provided that the District separately accounts for each receipt and expenditure of Gross Proceeds and the obligations acquired therewith.

(b) Not less frequently than each Computation Date, the District shall calculate or caused to be calculated the Rebate Amount in accordance with rules set forth in section 148(f) of the Code and the Tax Regulations and rulings thereunder, which calculation the District shall maintain with its official transcript of proceedings relating to the issuance of the Tax-Exempt Obligations until six years after the final Computation Date.

(c) In order to assure the excludability of the interest on Tax-Exempt Obligations from the gross income of the owners thereof for federal income tax purposes, the District shall make rebate payments at the times and in the amounts as are or may be required by section 148(f) of the Code and the Tax Regulations and rulings thereunder, which payments shall be accompanied by Form 8038-T or such other forms and information as is or may be required by section 148(f) of the Code and the Tax Regulations and rulings thereunder; *provided, however*, that the District and the Participant agree that liability of the District to make any such payments shall be limited to amounts received by it for such purpose pursuant to this Contract and the Like-Contracts.

(d) The District shall cause the exercise of reasonable diligence to assure that no errors are made in the calculations and payments required by paragraphs (2) and (3), and if an error is made, to discover and promptly correct such error within a reasonable amount of time thereafter (and in all events within one hundred eighty (180) days after discovery of the error), including payment to the United States of any additional Rebate Amount owed to it, interest thereon, and any penalty imposed under section 1.148-3(h) of the Tax Regulations.

(9) Not to Divert Arbitrage Profits. Except to the extent permitted by section 148 of the Code and the Tax Regulations and rulings thereunder, the District shall not enter into any transaction that reduces the amount required to be paid to the United States pursuant to section 148(f) of the Code because such transaction results in a smaller

profit or a larger loss than would have resulted if the transaction had been at arm's length and the Yield of the Tax-Exempt Obligations had been irrelevant to each party.

(10) Tax-Exempt Obligations Not Hedge Bonds. The District represents that the Tax-Exempt Obligations will not be structured so as to comprise "hedge bonds" within the meaning of section 149(g) of the Code.

(11) Elections. The Participant hereby directs and authorizes any authorized representative of the District to make elections permitted or required pursuant to the provisions of the Code or the Tax Regulations, as such authorized representative of the District (after consultation with Bond Counsel) deems necessary or appropriate in connection with the Tax-Exempt Obligations.

ARTICLE 23: NO OUTSIDE SERVICE

Neither the Delivery Entitlement nor the Participant's Surplus Water, nor any portion of either, shall be sold or delivered or otherwise disposed of by the Participant outside the boundaries of the District.

ARTICLE 24: FAILURE TO LEVY, SET OR COLLECT TAXES, RATES AND CHARGES; ESTABLISHMENT OF COVERAGE ACCOUNT

(A) Participant's Failure to Establish Taxes, Rates and Charges; Establishing Coverage Account. If the Participant for any reason shall fail or refuse to establish or levy taxes or rates and charges sufficient to satisfy the requirements of Article 20 hereof, or if the Participant shall be precluded from establishing rates and charges at the levels required by said Article 20, then the Participant shall promptly notify the District of such fact in writing, and shall establish a Coverage Account either with the District or with a Depository designated by the Participant to the District in writing. The Participant shall deposit to the Coverage Account, from the first lawfully available funds therefor, an amount equal to one year's Coverage Factor for the amounts allocated to the Participant as the Participant's Capital Projects Installment Debt Service share under Article 16(C)(3) hereof. The Coverage Account shall be invested in accordance with applicable provisions of the Government Code, subject to any limitations established pursuant to Section 148 of the Internal Revenue Code of 1986, as amended, applicable to surplus moneys of the Participant and shall be made and remain available to the Participant and to the District as a source of funds to remedy any failure of the Participant to make its Contract Payments hereunder. The Coverage Account shall be pledged to the District for the purposes described herein, and the Participant covenants and agrees to execute such instruments as may be necessary in order to effect a pledge of amounts on deposit in the Coverage Account, acknowledging and agreeing as well to follow the advice of special tax counsel to the District in connection with the pledge and investment of the Coverage Account, as may be necessary or advisable in order to maintain the tax status of the Tax-Exempt Obligations.

(B) Release of Coverage Account. If at any time following the establishment of the Coverage Account hereunder, the Participant shall again be able to and does collect rates and

charges as required under Article 20 hereof, the Coverage Account may be released to the credit and name of the Participant for any lawful purpose thereof, upon delivery to the District of satisfactory evidence that (1) the Participant has successfully levied rates and charges for the Participant's Water Enterprise at the appropriate levels for at least one full Fiscal or Water Year since the Coverage Account was first created, and (2) the Participant is then current on all payments due under this Contract; whereupon, the District shall either release the Coverage Account to the Participant or shall direct the Depository to do so, free from the lien described herein; subject, however to any contrary requirements of rating agencies or credit providers providing security for any of the outstanding Municipal Obligations.

**ARTICLE 25:
PARTICIPANT'S OBLIGATIONS SEVERAL AND NOT JOINT; STEP-UP
PROVISIONS AND REIMBURSEMENT**

(A) Participant Not Responsible for Failures of Other Participants; Exception. Except as provided in paragraph (B) of this Article, the Participant shall be solely responsible and liable for performance under this Contract and shall not be responsible for any failures of any Other Participant to perform such Other Participant's obligations under any other Like-Contract. The obligations to the District to make payments under this Contract and under the other Like-Contracts are expressly recognized by the District as several, and not joint, and no default on the part of one, or more, of the Other Participants shall, in and of itself, create an event of default under this Contract. The Coverage Account of the Participant, if any is established hereunder, shall not be available for any failure of any Other Participant to make payments under any of the other Like-Contracts between the District and the Other Participants, unless otherwise directed or approved in writing by the Participant.

(B) Participant's "Step-Up" Obligations. If for any reason the Participant or any Other Participant shall fail to pay its share of Capital Projects Installment Debt Service hereunder or under its Like-Contract, the amount of the resulting Debt Service Shortfall shall be paid, collectively, by all Non-Delinquent Participants. If there is more than one Delinquent Participant, the amount of the Debt Service Shortfall shall be the sum of the unpaid amounts for each Delinquent Participant. When such a Debt Service Shortfall occurs, the Participant shall be required to increase its Contract Payments for the particular Water Year by an amount equal to its pro rata share of the Debt Service Shortfall; *provided*, however, that each Other Participant who is not a Delinquent Participant shall be required by the Other Participant's Like-Contract to also contribute to the Debt Service Shortfall so that the Participant, and all of the Other Participants who are not Delinquent Participants, shall each contribute to the Debt Service Shortfall in a proportion determined by dividing each said Non-Delinquent Participant's Capital Projects Installment Debt Service share (under Article 16(C)(3) of this Contract and the Like-Contracts) by the aggregate of all the Participant's Installment Debt Service shares of all Non-Delinquent Participants, including the Participant; and *provided* further, that the Participant in no event shall be required under this paragraph to contribute to the Debt Service Shortfall by an amount in any Water Year exceeding the amount which is twenty-five percent (25%) of the share of Capital Projects Installment Debt Service allocated to the Participant under Article 16(C)(3) hereof.

(C) Repayment to Participant by Delinquent Participant(s). If payments are made by the Participant as a Non-Delinquent Participant during any Water Year under the foregoing paragraph (B), the District shall, beginning on the first Due Date when a Debt Service Shortfall is created by a Delinquent Participant, declare a default as to such Delinquent Participant under the Delinquent Participant's Like-Contract and the District shall be entitled to suspend deliveries of the Delivery Entitlement established for such Delinquent Participant under its Like-Contract; notwithstanding the foregoing, by the terms of its Like-Contract, such Delinquent Participant shall nonetheless continue to be obligated for amounts paid on its behalf by the Non-Delinquent Participants, until the Defaulting Participant has reimbursed each Non-Defaulting Participant in full for the amounts they have previously paid in as their pro rata shares of the Debt Service Shortfall. Reimbursement of amounts advanced by the Participant and the Other Participants as Non-Delinquent Participants (or, in the case of multiple Delinquent Participants, the proportionate share thereof) is immediately due and payable to the District by the responsible Delinquent Participant or Participants, and, if not so paid, and notwithstanding the provisions of Article 26(C) of the Delinquent Participant's Like-Contract, shall incur interest on the unpaid portion until paid in full at a rate per annum equal to the average rate for the County Treasury Pool, plus two percent (2%) per annum, for the month for which the County Treasury Pool rate was most recently calculated, based on a 360-day year of twelve 30-day months; *provided*, however, that payments to be made as reimbursements by a Delinquent Participant are deemed and understood to be subordinate to the obligations of the Delinquent Participant to pay the amounts allocated to the Delinquent Participant as the Delinquent Participant's share of the District's Capital Projects Installment Debt Service under Article 16(C)(3) of the Delinquent Participant's Like-Contract.

(D) "Step-Up" to Be Exhausted before Recourse to Debt Service Reserve Fund/Surety Bond. Shortfalls in Total Participant Contract Payments shall be remedied under this Article prior to the District's making any withdrawal from any debt service reserve fund established, or under the reserve surety bond posted, for the Municipal Obligations, if any are then outstanding. Drawings on or under the debt service reserve fund or reserve surety bond shall be delayed until and unless insufficient moneys are available from Non-Defaulting Participants hereunder.

(E) District's Covenant to Owners of Municipal Obligations. The District covenants and agrees to enforce the provisions of this Contract with due diligence, including, without limitation, the provisions of this Article for the benefit of the owners, from time to time, of the Municipal Obligations.

ARTICLE 26: EVENTS OF DEFAULT; DISTRICT'S REMEDIES

(A) Events of Default by Participant. The following shall constitute events of default hereunder:

(1) The Participant shall fail to make timely payments in full of all amounts due from the Participant under the terms of this Contract; or

(2) The Participant shall fail to establish or collect, or cause to be collected, all rates and charges, and other sums, necessary to enable Participant to make the

payments required hereunder, as provided in Article 20 hereof, and, following thirty (30) days written notice from the District to the Participant, the Participant shall fail to remedy such failure to the satisfaction of the District; or

(3) The Participant shall fail to perform any other obligation or covenant hereunder and shall fail to remedy such failure to the satisfaction of the District within thirty (30) days following the Participant's receipt of written notice from the District, or for such additional time as is reasonably required, in the sole discretion of the District, to correct the same; or

(4) The Participant shall file any petition or institute any proceedings under any act or acts, State or federal, dealing with or relating to the subject of bankruptcy or insolvency or under any amendments to such act or acts, either as a bankrupt or as an insolvent or as a debtor or in any similar capacity, wherein or whereby the Participant seeks or prays to be adjudicated a bankrupt or is to be discharged from any or all of its debts or obligations, or offers a reorganization of its obligations for the benefit of creditors, or asks for similar relief.

(B) District's Remedies. Upon the occurrence of an event of default hereunder, the District shall be entitled to protect and enforce the rights vested in the District by this Contract by appropriate judicial proceedings as the District may deem most effective or convenient, either in equity or law. The use by the District of any remedy specified herein for the enforcement of this Contract is not exclusive and shall not deprive the District of, or limit the application of, any other remedy provided hereunder or by law or by equity. Without limiting the generality of the foregoing, the District shall be entitled to pursue any of the following remedies:

(1) The District may suspend the delivery to the Participant of water hereunder during the period when the Participant is delinquent in its payments or other obligations to the District hereunder, but only following notice to the Participant and the imposition of such remedy following a formal hearing conducted by the Board of Supervisors, unless such failure to pay is as described in subparagraph (5) below;

(2) The District may compel the Participant, or its governing board, by action in any court of competent jurisdiction to account to the District as the trustee of an express trust;

(3) The District may pursue an action in any court of competent jurisdiction to enjoin any acts or things which may be unlawful or in violation of the rights of the District hereunder; and

(4) The District may proceed in mandamus or other suit, action or proceeding at law or in equity to enforce its rights against the Participant (and its governing board, officers, agents and employees) and to compel the Participant to perform and carry out its duties and obligations under the law and its covenants and obligations as set forth herein.

(5) If the Participant shall fail to make timely payments in full of all amounts due from the Participant under the terms of this Contract, and if, as a result, payments are made by any Non-Delinquent Participant during any Water Year under Article 25(B)

hereof, then the District shall, beginning on the first Due Date, declare a default as to the Participant and the District shall be entitled to suspend deliveries of the Delivery Entitlement without referring the matter to the Board of Supervisors for a hearing; notwithstanding the foregoing, by the terms of this Contract, the Participant shall nonetheless continue to be obligated for amounts paid on its behalf by the Non-Delinquent Participants, until such time as the Participant has reimbursed each Non-Defaulting Participant in full. Said amounts advanced by the Non-Delinquent Participants are immediately due and payable by the Participant, and, if not so paid, and notwithstanding the provisions of paragraph (C) of this Article, shall incur interest on the unpaid amounts until paid in full at a rate per annum equal to the average rate for the County Treasury Pool, plus two percent (2%) per annum, for the month for which the County Treasury Pool rate was most recently calculated, based on a 360-day year of twelve 30-day months; *provided*, however, that payments to be made as reimbursements under this paragraph are deemed and understood to be subordinate to the obligations of the Participant to pay the amounts allocated to the Participant as the Participant's share of the District's Capital Projects Installment Debt Service under Article 16(C)(3) of this Contract.

(C) Rate of Interest. Upon each charge to be paid by the Participant to the District pursuant to this Contract which remains unpaid after the time the same shall have become due and payable, interest shall accrue at an annual rate equal to that earned by the County Treasury Pool as provided in California Government Code at Section 16480 *et seq.*, calculated monthly on the amount of such delinquent payment from time to time after the due date when the same becomes due until paid, and the Participant hereby agrees to pay such interest; *provided*, that no interest shall be charged to or paid by the Participant unless such delinquency continues for more than thirty (30) days. The Participant hereby agrees to pay such interest to the District, whether or not the District shall pursue any of the remedies specified in this Article. In no event shall said default interest be compounded.

ARTICLE 27: CHANGES IN ORGANIZATION

The Participant shall furnish the District with maps showing the boundaries of the Participant and showing the service area or areas of the Participant's water distribution system. Throughout the term of this Contract, the Participant shall promptly notify the District of any changes in said boundaries and in said service area or areas occasioned either by addition or by removal of territory. So long as there are outstanding any Municipal Obligations, the Participant shall take no action to remove any lands from the Participant or its service areas without the prior written consent of the District.

ARTICLE 28: ADDITIONAL CAPITAL PROJECTS

(A) Required Additional Projects. At any time, and from time to time, without the consent of the Participant or any Other Participant, the District shall have the authority to undertake the construction or equipping of any Required Additional Project, *provided* that,

before a Required Additional Project may be commenced by the District pursuant to direction or order of a competent Governmental Authority, the Participant and the Other Participants shall be afforded notice by the District of said direction or order and each shall have the opportunity to oppose the imposition of such requirement before a court of competent jurisdiction. Only if a final judgment is thereafter rendered in favor of such direction or order of the said Governmental Authority, or if no such opposition is filed, shall the directed or ordered project be undertaken by the District. It is the intention of the parties hereto that the District shall, as and when necessary, be deemed to assign its rights to pursue opposition to the creation of any obligations hereunder by a Governmental Authority to the Participant and/or the Other Participants as third party beneficiaries hereof and real parties in interest. The District shall allocate the costs of each Additional Capital Project among All Participants pro rata according to the Delivery Entitlement Share and the Other Delivery Entitlement Shares, respectively, unless the Commission shall determine that some other manner of cost allocation is more equitable in which case the Commission's determination shall be final.

(B) Approved Additional Projects. An Approved Additional Project may be undertaken at any time, and from time to time, by the District in accordance with the terms of the specific agreements between the District and the Participant and the Other Participants, *provided* that, funding for an Approved Additional Project will not be from Capital Reserves but from a new and separate capital fund established by the District as a part of the agreement establishing each Approved Additional Project.

(C) Emergency Projects. Emergency Projects, including emergency repairs to the Nacimiento Project, may, notwithstanding the above, be made by the District without notice to, or consultation with, the Participant or the Nacimiento Project Commission or with any Other Participant. The District shall then allocate the costs of each Emergency Project among All Participants pro rata according to the Delivery Entitlement Share and the Other Delivery Entitlement Shares, respectively, unless the Commission shall determine that some other manner of cost allocation is more equitable, in which case the Commission's determination shall be final.

ARTICLE 29: USE OF RESERVE WATER

The District may use the District's Reserve Water as follows:

(A) Priorities. The District shall use the District's Reserve Water in the following order of priority:

(1) For the alleviation of any permanent water shortage described in Article 14(B) hereof;

(2) For the alleviation of any temporary water shortage described in Article 14(A) hereof;

(3) For the satisfaction of the District's obligations to each of the Reserve Water Customers;

(4) For adding to and supplementing the Delivery Entitlements for the Participant and/or the Other Delivery Entitlements for the Other Participants who are Initial Participants as provided for by Article 6(D) herein;

(5) For additional and New Participants (defined in paragraph (C) below) who were not Initial Participants;

(6) For such other purposes as the District deems useful and beneficial to the Nacimientto Project.

(B) District's Sale of Reserve Water/Reserved Capacity by Amending Participant's Contract and/or the Like-Contracts of Other Participants who were Initial Participants. In the event that the Participant, or any Other Participant who was an Initial Participant, desires to purchase additional capacity in the Nacimientto Facilities and additional rights to have a portion of Reserve Water conveyed and delivered to the Participant and to the extent that the amount of Reserve Water and Reserved Capacity is sufficient to do so, the District and the Participant may amend this Contract (or, in the case of an Other Participant, the Like-Contract), *provided* that the District shall not enter into any such amendment which provides terms more favorable than those presently existing in this Contract, and in each Like-Contract, and *provided* that the Participant shall, in addition to the payments required under the Like Contract, pay to the District a fee (the "Purchase of Reserve Water Delivery Entitlement and Reserved Capacity Fee") amounting to a sum which will reasonably compensate the District for the Participant's Unit Percentage Share of the Total Nacimientto Project Construction Costs plus the costs of any Additional Capital Projects which are necessary or convenient for the conveyance and/or delivery of the Delivery Entitlement. The District shall apply the Purchase of Reserve Water Delivery Entitlement and Reserved Capacity Fee as a credit to the obligations of the Participant and the Other Participants based on their respective Unit Percentage Share. However, the District shall not so amend this Contract without having first provided sixty (60) days written notice to each Other Participant of the fact that the Participant has applied to the District for such an amendment to this Contract and providing each such Other Participant an opportunity to likewise apply for an additional Delivery Entitlement of Reserve Water/Reserved Capacity. In the event that Other Participants shall also apply to the District at the time of Participant's application for additional Delivery Entitlements of Reserve Water, then to the extent that there is not sufficient Reserve Water or Reserved Capacity to satisfy all of the applications for additional Delivery Entitlements, the Participant and all Other Participants applying for additional Delivery Entitlements shall be granted additional Delivery Entitlements in proportion to their respective Delivery Entitlements existing at the time of the applications.

(C) District's Contract(s) for All or a Portion of Reserve Water and Reserved Capacity by Execution of Like-Contracts with New Participants who were Not Initial Participants. In the event that an entity desires to become a New Participant, acquiring rights to capacity in the Nacimientto Facilities and rights to have conveyed and delivered to the New Participant a portion of Reserve Water, and to the extent that the amount of Reserve Water and the District's Reserved Capacity is sufficient to do so, then the District, after consulting with the Nacimientto Project Commission, and after receiving the written approval from that portion of All Participants holding, in the aggregate, at least fifty-five percent (55%) of the total of all delivery entitlements to Nacimientto Project Water existing at that time, may enter into a Like-

Contract with such New Participant, *provided* that said New Participant shall, in addition to the payments required under the Like-Contract, pay to the District a Purchase of Reserve Water Delivery Entitlement and Reserved Capacity Fee as described above herein. However, notwithstanding the foregoing sentence, each entity listed on Exhibit B hereto shall have the right to become a New Participant, and the District may enter into a Like-Contract with such New Participant, on any day after the last day of the Design Phase without consultation with the Commission or written approval from any portion of All Participants, *provided*, that said New Participant shall, in addition to the payments required under its Like-Contract, pay to the District a Purchase of Reserve Water Delivery Entitlement and Reserved Capacity Fee as described above herein. The District shall apply the Purchase of Reserve Water Delivery Entitlement and Reserved Capacity Fee received from any New Participant as a proportionate credit to the obligations of the Participant and the Other Participants (excluding the New Participant) based on the Participant's and the Other Participants' Unit Percentage Shares. Notwithstanding the foregoing, or any other provision of this Contract, the District shall not execute a Like-Contract with a New Participant if such execution would result in any of the Tax-Exempt Obligations being treated as an obligation not described in Section 103(a) of the Internal Revenue Code of 1986, as amended, by reason of classification of such Tax-Exempt Obligation as a "private activity bond" within the meaning of Section 141 of said Code.

(D) District's Sale of Reserve Water to Reserve Water Customers.

(1) The District may enter into an agreement to deliver all or a part of Reserve Water to Reserve Water Customers under the following conditions:

(a) There is Reserve Water and Reserved Capacity available in any year after application of the priorities set forth above herein;

(b) The agreement cannot be for a period of time in excess of five years; and

(c) The price charged by the District to any Reserve Water Customer for the delivery of said Reserve Water may not be less than the greater of: (i) rates that the District would charge for Surplus Water under Article 12 of this Contract delivered to that Participant geographically nearest the place where the Reserve Water Customer takes delivery of Reserve Water; or, (ii) the charges resulting from the application of the provisions of Article 30(A) hereof.

(2) The District's revenues from an agreement for the temporary delivery of Reserve Water to Reserve Water Customers shall be applied by the District to effect a credit under Article 17(B)(3) hereof ("Credit for Participant's Portion of Any of District's Surplus/Wheeling/District Customer Revenues").

**ARTICLE 30:
USE OF RESERVED CAPACITY**

The District shall use its best efforts to temporarily lease the Reserved Capacity of the Nacimiento Facilities.

(A) District's Use of Capacity in the Nacimientto Facilities for the Delivery of Reserve Water through the Nacimientto Facilities to a Reserve Water Customer. If at any time during the term of this Contract, the District conveys Reserve Water through any Unit to a Reserve Water Customer, the Reserve Water Customer shall be required to pay the District for such conveyance and delivery service in a manner and at prices which will return to the District the largest net revenue practicable, but in no event shall such conveyance be effected at charges less than those applicable to the conveyance of Delivery Entitlement through the same Unit or Units. In determining the appropriate charges for water conveyed and delivered for a Reserve Water Customer, the District shall take into account the particular Unit or Units through which conveyance of such water occurs, shall compare the Operation and Maintenance Costs and Capital Projects Installment Debt Service apportionable to such Unit or Units with Nacimientto Project Costs, and shall further compare the amount of water conveyed for Reserve Water Customers through such Unit or Units with the amount of Nacimientto Project Water conveyed for the Participant and for the Other Participants through such Unit or Units for the same period of time.

(B) Wheeling of Water. If at any time during the term of this Contract, the District conveys water to any Wheeling Customer, said Wheeling Customer shall be required to pay the District for such conveyance and delivery service in a manner and at prices which will return to the District the largest net revenue practicable, but in no event shall such conveyance be effected at charges less than those applicable to the conveyance of Delivery Entitlement through the same Unit or Units. In determining the appropriate charges for water conveyed and delivered for a Wheeling Customer, the District shall take into account the particular Unit or Units through which conveyance of such water occurs, shall compare the Operation and Maintenance Costs and Capital Projects Installment Debt Service apportionable to such Unit or Units with Nacimientto Project Costs, and shall further compare the amount of water conveyed for Wheeling Customers through such Unit or Units with the amount of Nacimientto Project Water conveyed for the Participant and for the Other Participants through such Unit or Units for the same period of time. The District hereby covenants and agrees not to enter into any contract with a Wheeling Customer for the conveyance of water with a term to exceed one (1) year.

ARTICLE 31: UNIFORM CONTRACTS

Nacimientto Project Water Delivery Entitlement Contracts executed by the District with the Other Participants (or with any New Participant) shall be substantially uniform with respect to basic terms and conditions when compared with this Contract, but shall provide for different dates and quantities of water to be conveyed and delivered, the places of water delivery, each delivery entitlement share and each unit percentage share and the payment amounts for each participant.

ARTICLE 32: AMENDMENTS TO CONTRACT

This Contract shall be subject to amendment at any time by mutual agreement of the parties hereto, except insofar as any proposed amendments are in any way contrary to applicable

law, or would have a material adverse effect upon the owners of any of the Municipal Obligations. As a condition to any amendment to this Contract or to the Like-Contracts with the Other Participants, the District shall first have received written confirmation from the rating agency or agencies then providing a rating for the Municipal Obligations, to the effect that the proposed amendments will not adversely affect the rating of the Municipal Obligations and, in the event that the Municipal Obligations, or any portion thereof, shall be covered by municipal bond insurance, the District shall have received prior written consent to such proposed amendments from the provider of such bond insurance. Amendments to this Contract and to the Like Contracts of the Other Participants shall occur only after the written and unanimous consent of the District, the Participant and all Other Participants, except, that the following Additional Projects may be effected without said unanimous consent and upon the following conditions:

(A) Approved Additional Projects. Subject to the provisions of Article 28 hereof, and upon the request of the Participant or of any Other Participant, the District may enter into an amendment of this Contract, and/or of Like-Contracts, in order to undertake the acquisition and construction of an Approved Additional Project; *provided*, however, the Participant and/or Other Participants desiring such Project shall first demonstrate that said Approved Additional Project will be economically feasible with the financial support of only the Participant and/or the Other Participants participating in said Approved Additional Project.

(B) Required Additional Project/Emergency Project. The undertaking of a Required Additional Project or of any Emergency Project by the District shall not require the consent of the Participant or of any Other Participant nor the amendment of this Contract or of any Like-Contract(s).

(C) Approval of Amendments by Participant. The Participant covenants and agrees to act in good faith to approve or reject any proposed amendments hereto within a reasonable period of time. The failure to either approve or reject any such proposed amendment within sixty (60) days from the date of adoption by the Board of a resolution approving such proposed amendment shall constitute a lack of good faith.

ARTICLE 33: ESTABLISHMENT OF NACIMIENTO PROJECT COMMISSION

In connection with its approval of this Contract, the Participant has appointed a representative of the Participant to sit on the Nacimiento Project Commission. The District covenants and agrees to call a first organizational meeting of the Commission within thirty (30) days of the Effective Date, in accordance with law and, particularly, the provisions of the Ralph M. Brown Act. The Commission shall meet at such intervals and at such places as it shall determine. The total number of votes that may be cast on any issue or proposition considered by the Commission shall be the sum of the number of Commissioners. The Commission member representing the District shall be entitled to vote in proportion to the number of Commissioners. The Commissioners representing the Participant and the Other Participants shall share the remaining votes in proportion to the Delivery Entitlement of the Participant and of each of the Other Participants.

The purpose of the Commission shall be to review and approve all substantive matters pertaining to the construction and operations of the Nacimiento Facilities, including the annual budget; provided, however, that the Commission shall have no authority to contract, employ persons, or make expenditures. The Board of Supervisors may approve, alter, or return any said approval of the Commission. Furthermore, in every case that the Board alters or returns to the Commission any item or proposition approved by the Commission, the Board shall set forth in writing its findings that caused the Board to alter or return said item or proposition and shall do so only after holding a public hearing at which time the Commissioners shall have the right to appear and address the Board of Supervisors.

**ARTICLE 34:
OPINIONS AND DETERMINATIONS; GOOD FAITH**

Where the terms of this Contract provide for action to be based upon opinion, judgment, approval, review or determination of either party hereto, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review, or determination to be arbitrary, capricious, or unreasonable.

**ARTICLE 35:
WAIVER OF CONTRACT RIGHTS**

Any waiver at any time by either party to this Contract of the party's rights with respect to a default or any other matter arising in connection with this Contract shall not be deemed to be a waiver with respect to any other default or matter.

**ARTICLE 36:
NOTICES**

All notices that are required either expressly or by implication to be given by any party to the other under this Contract shall be signed for the District and for the Participant by such officers as they may, from time to time, authorize to so act. All such notices shall be deemed to have been given and delivered if delivered personally or if enclosed in a properly addressed envelope and deposited with the United States Postal Service for delivery by registered or certified mail. Unless and until formally notified otherwise, all notices shall be addressed to the parties as follows:

To the Participant: Atascadero Mutual Water Company
 P.O. Box 6075
 5005 El Camino Real
 Atascadero, California 93423
 Attention: Chief Executive Officer

To the District: Department of Public Works
County of San Luis Obispo
County Government Center
San Luis Obispo, CA 93408
Attention: Director of Public Works

ARTICLE 37: ASSIGNMENT

The provisions of this Contract shall apply to and bind the successors and assigns of the respective parties, but no assignment or transfer of this Contract, or any part hereof or interest herein, shall be valid until and unless approved by the District. The District shall not approve any such assignment or transfer to any person or entity that is not one or more of the Initial Participants, or a then-existing New Participant, unless and until the proposed assignment or transfer of this Contract has been offered to and refused in writing by all said Participants. The offer of any such assignment or transfer of this Contract shall be on the same basis to all Participants and if more than one of the said Participants desires to accept the offer, this Contract or portion thereof to be assigned or transferred shall be prorated among them in proportion to their respective unit percentage share in the facilities involved in the assignment or transfer. The foregoing notwithstanding, no assignment or transfer of this Contract or any part hereof or interest herein shall be valid until such time as the District has received assurances from each rating agency then rating the Municipal Obligations, to the effect that such assignment or transfer will not adversely affect the rating on the Municipal Obligations, and, so long as any Municipal Obligations are then being insured by a municipal bond insurance company, until such time as the District has received the written consent from such bond insurer as to such assignment or transfer. The Participant understands and acknowledges that the District may pledge amounts received and to be received hereunder and under the other Like-Contracts to a financial institution and/or Joint Exercise of Powers Authority as further support for the District's obligations under the Municipal Obligations.

ARTICLE 38: INSPECTION OF BOOKS AND RECORDS

The authorized officers of the Participant shall have full and free access at all reasonable times to the account books and official records of the District insofar as the same pertain to the matters and services provided for in this Contract, with the right at any time during regular business hours of the District to make copies thereof at the Participant's expense, and the authorized officers of the District shall have similar rights in respect to the account books and records of the Participant for its Water Enterprise.

ARTICLE 39: SEVERABILITY

Any provision of this Contract that is prohibited, unenforceable or not authorized in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition,

unenforceability or nonauthorization without invalidating the remaining provisions hereof affecting the validity, enforceability or legality of such provision in any other jurisdiction.

ARTICLE 40: WATER RIGHTS

The parties hereto acknowledge and agree that this Contract is an agreement for service, and only contractual rights are created by this Contract. This Contract does not create an entitlement to nor does it convey to the Participant any property right or interest in the Master Water Contract. Except as to rights associated with imported water discussed in this Article, no provision of this Contract shall be considered, interpreted or applied in any fashion to derogate or otherwise diminish, reduce or detrimentally affect, in any fashion, any parties' existing or subsequently developed or acquired Water Rights. This Contract shall not be considered, interpreted nor applied in any fashion to result in any relinquishment or adjustment of any such Water Rights. In particular, no provision of this Contract shall be considered, interpreted or applied in any fashion to diminish, reduce or detrimentally affect, in any fashion, any party's rights pursuant to Water Code Section 1005.1 or Section 1005.2. Notwithstanding anything to the contrary set forth herein, the parties to this Contract acknowledge that the water delivered to the Participant pursuant to this Contract constitutes "imported water." The District agrees to support any effort of the Participant to establish that the water delivered to the Participant pursuant to this Contract constitutes "imported water." The parties further acknowledge that any rights to water which may arise from the importation and/or use by the Participant of the water delivered pursuant to this Contract (including, but not limited to the use, storage, capture, recapture and/or reuse of such water) are held exclusively by the Participant and no other party.

ARTICLE 41: GOVERNING LAW

This contract shall be interpreted, governed and enforced in accordance with the laws of the State of California applicable to contracts made and performed in such State.

ARTICLE 42: VALIDATION

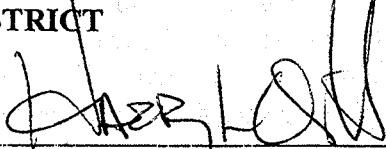
Either the District, the Participant or any Other Participant may file and diligently prosecute to a final decree in a court of competent jurisdiction a proceeding in mandamus or other appropriate proceeding or action for the judicial examination, approval, and confirmation of the proceedings had for the organization of the District and for the participation of the Participant in the Nacimiento Facilities hereunder, or for the validation of the agreement(s) which is the basis for the Municipal Obligations, or any of them, or the proceedings of the governing body of the Participant leading up to and including the making of this Contract and the validity of the provisions thereof and hereof.

**ARTICLE 43:
COUNTERPARTS**

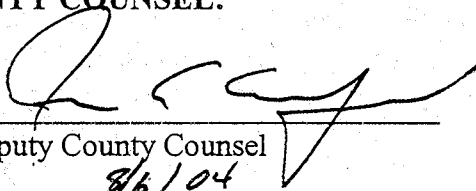
This Contract may be executed in several counterparts, each of which shall be regarded as an original and all of which shall constitute one and the same document.

IN WITNESS WHEREOF, the parties hereto have executed this Contract on the date first above written.

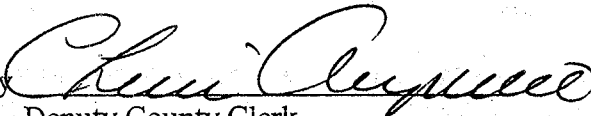
**SAN LUIS OBISPO COUNTY FLOOD
CONTROL AND WATER CONSERVATION
DISTRICT**

By 
Chairperson, Board of Supervisors

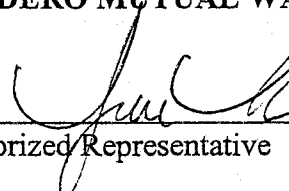
**APPROVED AS TO FORM:
COUNTY COUNSEL:**

By 
Deputy County Counsel
8/6/04

**ATTEST:
JULIE L. RODEWALD, COUNTY CLERK**

By 
Deputy County Clerk

ATASCADERO MUTUAL WATER COMPANY

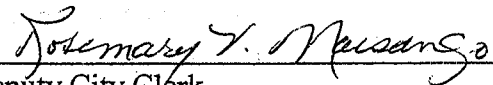
By  - President
Authorized Representative

**APPROVED AS TO FORM:
CITY ATTORNEY**

By _____

By _____
Deputy City Clerk

**ATTEST:
~~CITY CLERK~~ CORPORATE SECRETARY**

By 
Deputy City Clerk
Corporate Secretary

**ARTICLE 43:
COUNTERPARTS**

This Contract may be executed in several counterparts, each of which shall be regarded as an original and all of which shall constitute one and the same document.

IN WITNESS WHEREOF, the parties hereto have executed this Contract on the date first above written.

**SAN LUIS OBISPO COUNTY FLOOD
CONTROL AND WATER CONSERVATION
DISTRICT**

By _____
Chairperson, Board of Supervisors

**APPROVED AS TO FORM:
COUNTY COUNSEL:**

By _____
Deputy County Counsel

**ATTEST:
JULIE L. RODEWALD, COUNTY CLERK**

By _____
Deputy County Clerk

ATASCADERO MUTUAL WATER COMPANY

By _____
Authorized Representative

**APPROVED AS TO FORM:
~~CITY~~ ATTORNEY**

602
ELLIS & COLLINS
By *Samuel D. Ellis*
Samuel D. Ellis, Esq.

**ATTEST:
CITY CLERK**

By _____
Deputy City Clerk

By _____
Deputy City Clerk

EXHIBIT A

UNIT DESCRIPTIONS

Unit A - Lake Nacimiento Intake and Pump Station to Camp Roberts West Property Line: Shall consist of the raw water intake structure including multiport tower, pumps, piping, surge control facilities, access road, screens, gates, valves, controls, electrical service, instrumentation, grounds, fencing, and appurtenances; and pipeline from the intake to the Camp Roberts west property line, including road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances

Unit A1 - Camp Roberts West Property Line to Camp Roberts Tank and Pump Station Inlet: Shall consist of the pipeline from the Camp Roberts west property line to the inlet connection of the Camp Roberts Pump Station including road crossings, the Nacimiento River crossing, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances; and Camp Roberts Tank including piping and valves, connections to the main pipeline, controls, instrumentation, corrosion control and coatings, access roads, grounds, fencing, and appurtenances.

Unit B - Camp Roberts Pump Station: Shall consist of the Camp Roberts Pump Station from the inlet connection to the discharge connection, including pumps, piping, connections to the main pipeline, surge control facilities, access road, valves, controls, instrumentation, grounds, fencing, and appurtenances.

Unit C - Camp Roberts Pump Station Discharge to Monterey Rd / Wellsona: Shall consist of the pipeline from the Camp Roberts Pump Station discharge connection to the intersection of Old Highway 101 and Monterey Road, including the highway crossing, road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit C1 - Monterey Rd / Wellsona to Paso Robles Turnout: Shall consist of the pipeline from the intersection of Old Highway 101 and Monterey Road to the mainline connection for the Paso Robles Turnout, including the Salinas River crossing, railroad crossing, road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit D - Paso Robles Turnout to Templeton CSD Turnout: Shall consist of the pipeline from the mainline connection for the Paso Robles Turnout to the mainline connection for the Templeton CSD turnout, including surge control, microtunneling through Santa Ysabel Ranch, road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit E - Templeton CSD Turnout to Atascadero MWC Turnout: Shall consist of the pipeline from the mainline connection for the Templeton CSD turnout to the mainline connection for the Atascadero MWC turnout, including road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit F – Atascadero MWC Turnout to Rocky Canyon Tank Inlet: Shall consist of the pipeline from the mainline connection for the Atascadero MWC turnout to the inlet flange of the Rocky Canyon Tank, including road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit F1 – Rocky Canyon Tank: Shall consist of the Rocky Canyon Tank from the inlet flange of the tank through to the inlet connection to the Rocky Canyon Pump Station, including piping and valves, connections to the main pipeline, controls, instrumentation, corrosion control and coatings, access roads, grounds, fencing, and appurtenances.

Unit F2 – Rocky Canyon Pump Station: Shall consist of the Rocky Canyon Pump Station from the pump station inlet connection through to the discharge connection, including pumps, piping, connections to the main pipeline, surge control facilities, access road, valves, controls, instrumentation, grounds, fencing, and appurtenances.

Unit G – Rocky Canyon Pump Station Discharge to Route 58/Maria Avenue: Shall consist of the pipeline from the discharge connection of the Rocky Canyon Pump Station to the intersection of Maria Avenue and Route 58 in Santa Margarita, including a Salinas River Crossing, road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit G1 – Route 58/Maria Avenue to Cuesta Tank Inlet: Shall consist of the pipeline from the intersection of Maria Avenue and Route 58 in Santa Margarita to the inlet flange of the Cuesta Tunnel Tank, including railroad and road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit G2 – Cuesta Tunnel Tank: Shall consist of the Cuesta Tunnel Tank from the inlet flange of the tank through the north portal inlet flange of the existing Cuesta Tunnel pipeline, including piping and valves, connections to the main pipeline, controls, instrumentation, corrosion control and coatings, access roads, grounds, fencing, and appurtenances.

Unit H – Cuesta Tunnel: Shall consist of the existing Nacimiento Pipeline in Cuesta Tunnel from the existing north portal inlet flange through the south portal outlet flange, including controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit H1 – Cuesta Tunnel to San Luis Obispo WTP: Shall consist of the pipeline from the south portal outlet flange of the Nacimiento Pipeline in Cuesta Tunnel to the San Luis Obispo City Water Treatment Plant on Stenner Creek Road, including railroad crossings, road crossings, controls, instrumentation, air release structures, blowoffs, valves, vaults, corrosion control, and appurtenances.

Unit T6 – Atascadero Mutual Water Company Turnout. Shall consist of the piping, instrumentation and appurtenant facilities connecting the Nacimiento Facilities to the Atascadero Mutual Water Company water system facilities along Templeton Road approximately 5,500 feet Southeast of the intersection with Vineyard Street.

EXHIBIT B
ENVIRONMENTAL IMPACT REPORT
ENTITIES

California Army National Guard

County of San Luis Obispo Service Area No. 10A, 22 and 23

Edna Valley Mutual Water Company

Fiero Lane Water Company

Lewis C. Pollard Family Trust

Morrow Rock Mutual Water Company

San Miguel Community Services District

Santa Margarita Ranch Mutual Water Company

NWP Delivery Entry Sheet
Contract Amendment No. 1
24 May 2005
Atascadero MW

RESOLUTION NO. 2005-0401

**RESOLUTION OF THE BOARD OF DIRECTORS, IN CONNECTION WITH THE
FINANCING OF THE NACIMIENTO WATER PROJECT DESIGN PHASE AND
DECLARING ITS INTENT TO REIMBURSE CERTAIN EXPENDITURES FROM
BOND ANTICIPATION NOTE PROCEEDS**

WHEREAS, the Atascadero Mutual Water Company ("Company") has heretofore entered into a Nacimeinto Project Water Delivery Entitlement Contract (the "Contract") with the San Luis Obispo County Flood Control and Water Conservation District (the "District"), pursuant to which, among other things, the Company has agreed to pay its pro rata share of the costs of construction of a water pipeline from Lake Nacimiento to the Company (the "Project"); and

WHEREAS, the District now desires to commence the design and engineering phase of the Project (the "Design Phase") and the Company and the District wish to provide for the advancement of funds, from time to time, by the Company to pay the Company's pro rata share of the Design Phase costs (the "Reimbursable Expenditures"); and

WHEREAS, the District has advised the Company that it intends to cause to be issued certain bond anticipation notes (the "Notes") or revenue bonds (the "Bonds") to reimburse the Company among others for the Reimbursable Expenditures and to pay for additional Design Phase and/or Project expenditures; and

WHEREAS, Section 1.150-2 of the Treasury Regulations requires the Board to declare its reasonable official intent to reimburse such Reimbursable Expenditures for the Project with proceeds of such Notes which the Company reasonably expects will be issued to finance the costs of the Design Phase incurred prior to the date of issuance of the Notes and that certain of the proceeds of such Notes or Bonds (collectively, the "Obligations") in the amount of not to exceed \$ 4,708,000 will be used to reimburse the Reimbursable Expenditures;

NOW, THEREFORE, BE IT HEREBY RESOLVED, DETERMINED AND ORDERED BY THE BOARD OF DIRECTORS OF ATASCADERO MUTUAL WATER COMPANY, AS FOLLOWS:

Section 1. Recitals. The foregoing recitals are true and correct.

Section 2. Intention to Reimburse. The Board hereby declares its reasonable official intention to use a portion of the proceeds of the Notes to reimburse itself for the Reimbursable Expenditures.

File A.7.3

*Atascadero mwc
Ref: Contract Amendment No. 1
(a.k.a. mou)*

Section 3. Intention to Issue Obligations. The District presently intends and reasonably expects to issue or cause to be issued the Obligations on behalf of the Company within 18 months of the date of the expenditure of moneys on the Design Phase or the date upon which the Project is placed in service or abandoned, whichever is later (but in no event more than 3 years after the date of the original expenditure of such moneys), and to allocate an amount of not to exceed \$ 4,708,000 of the proceeds thereof to the Reimbursable Expenditures in connection with the Project. All of the Reimbursable Expenditures covered by this Resolution were made not earlier than 60 days prior to the date of this Resolution.

Section 4. Compliance with Treasury Regulations. This Resolution is adopted for purposes of establishing compliance with the requirements of Section 1.150-2 of the Treasury Regulations.

Section 5. Official Actions. The President, the Treasurer and the Secretary of the Company (the "Authorized Representatives") are hereby authorized and directed to take all actions and do all things necessary or desirable hereunder in connection with the financing of the Design Phase, including but not limited to the execution and delivery of any and all related agreements, filings, instruments and other documents which they, or any of them, may deem necessary or desirable and not inconsistent with the purposes of this Resolution.

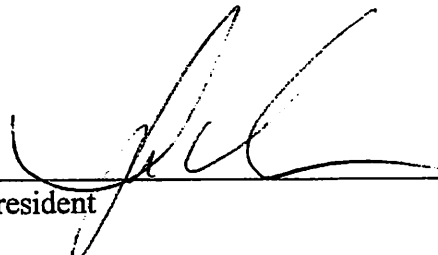
Section 6. Effective Date. This Resolution shall take effect immediately upon its passage and adoption.

PASSED AND ADOPTED by the Board of Directors of Atascadero Mutual Water Company, at a [regular] meeting of said Board of Directors held on April 13, 2005, by the following vote:

AYES: 5

NOES: 0

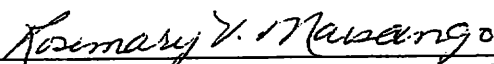
ABSENT: 0



Title: President

(SEAL)

ATTEST:



[Secretary of Atascadero Mutual Water Company]

SECRETARY'S CERTIFICATE

I, Rosemary V. Marsango, Secretary of the Board of Directors of Atascadero Mutual Water Company, hereby certify as follows:

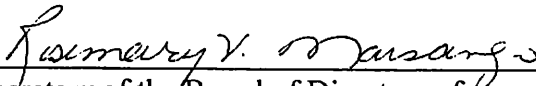
The foregoing is a full, true and correct copy of a resolution duly adopted at a [regular/special] meeting of the Board of Directors of Atascadero Mutual Water Company, duly and regularly and legally held at the regular meeting place thereof on April 13, 2005, of which meeting all of the members of the Board of Directors of Atascadero Mutual Water Company had due notice and at which a quorum was present.

An agenda of said meeting was posted at least seventy-two (72) hours before said meeting at 5005 El Camino Real, Atascadero, California, a location freely accessible to members of the public, and a brief general description of said resolution appeared on said agenda.

I have carefully compared the same with the original minutes of said meeting on file and of record in my office and the foregoing is a full, true and correct copy of the original resolution adopted at said meeting and entered in said minutes.

Said resolution has not been amended, modified or rescinded since the date of its adoption, and the same is now in full force and effect.

Dated: April 13, 2005.



Secretary of the Board of Directors of
Atascadero Mutual Water Company

[Seal]

MEMORANDUM OF UNDERSTANDING

(First Amendment to Nacimiento Project Water Delivery Entitlement Contract)

This Memorandum of Understanding (the "MOU") is entered into by and between the San Luis Obispo County Flood Control and Water Conservation District, a Flood Control and Water Conservation District duly established and existing under the San Luis Obispo County Flood Control and Water Conservation Act, Act 7205 of the Uncodified Acts of the California Water Code (the "District"), and Atascadero Mutual Water Company, a California mutual water company (the "Participant"), is undertaken with regard to the following facts:

RECITALS:

WHEREAS, the Participant has contracted with the District pursuant to that certain Nacimiento Project Water Delivery Entitlement Contract, approved by the District on August 17, 2004 (as originally executed, the "Original Contract" and as amended hereby, the "Contract") regarding the financing, construction and operation of a water pipeline project intended to reach from Lake Nacimiento to the Participant (the "Project") for the delivery of additional water for the use and benefit of the lands and inhabitants served by the Participant; and

WHEREAS, the Contract requires the Participant to make semiannual payments with respect to the Participant's allocation of costs accumulated in connection with the financing and later operation of the Project;

WHEREAS, notwithstanding such payment schedule in the Contract, the Participant and the District desire to follow a separate payment schedule with respect to the initial financing of the preliminary, planning and design costs of the Project;

WHEREAS, the Participant and the District now wish to use this MOU to effect an amendment to the Contract to reflect an additional option available to the Participant for its share of such costs; and

WHEREAS, in compliance with Article 32 of the Contract, all Other Participants (as defined in the Contract) are also being provided with a Memorandum of Understanding (First Amendment to Nacimiento Project Water Delivery Entitlement Contract) (each, an "Other MOU"), all of which shall be executed by the respective Other Participants as a condition to the effectiveness hereof;

NOW, THEREFORE, be it agreed and understood by the parties hereto, as follows:

Section 1. Recitals; Defined Terms. The foregoing recitals are true and correct. Capitalized terms used but not defined herein shall have the meanings ascribed thereto in the Contract.

Section 2. Amended and Added Definitions. The following definitions shall replace the definitions of "Design Phase" and "Construction Phase" in the Original Contract:

*Atascadero mwc contract
Ref: BOS Mtg. 5.24.05, Resolution
No. 2005-143*

"Design Phase" shall mean that period of time preceding the Construction Phase during which the design, engineering and/or planning for the construction of the Nacimientto Project are being undertaken. The Design Phase shall conclude with the opening of the first group of Construction Bids resulting in the award of a construction contract for all, or a sub-phase of, the Nacimientto Project. Any costs incurred for the design, engineering, and/or planning of the Nacimientto Project after the Design Phase still constitute part of the Nacimientto Project Construction Costs.

"Construction Phase" shall mean the period of time following the opening of the first group of Construction Bids resulting in the award of a construction contract for all, or a sub-phase of, the Nacimientto Project. During the Construction Phase, the District shall apply the proceeds of the Municipal Obligations to pay the Nacimientto Project Costs.

The following new definitions shall be added to the Original Contract:

"Cash Contribution" shall mean the cash payment(s) made to the District by the Participant towards its *pro rata* share of Design Phase Costs pursuant to Article 2.5. Proceeds of Notes do not constitute the payment of a Cash Contribution.

"Design Phase Costs" shall mean the costs and expenses incurred by or on behalf of the District, the Participant or any Other Participant in connection with the design, engineering and/or planning of the Nacimientto Project during the Design Phase.

Section 3. Correction of Clerical Error in Article 2(D). The words "on the Opt-out Date" and "on an Opt-out Date" in the second and third sentences respectively of paragraph (D) of Article 2 of the Original Contract are hereby both corrected and replaced with the words "by the Opt-out Date."

Section 4. Addition of New Article to Contract. A new Article is hereby added to the Contract, to be inserted between Article 2 and Article 3 of the Contract, and to read in its entirety as follows:

ARTICLE 2.5

ALTERNATE FINANCING OF DESIGN PHASE COSTS

(A) Financing Design Phase Costs. The Participant is obligated to pay to the District its *pro rata* share of the Design Phase Costs. The parties have determined that the Design Phase Costs may be financed initially with Cash Contributions from the Participant and from some or all the Other Participants and/or from the proceeds of certain Tax-Exempt and/or taxable Notes to be issued by the District or by the SLO County Financing Authority on behalf of the Participant and/or Other Participant(s). To the extent that the Participant elects to make Cash Contributions towards its *pro rata* share of Design Phase Costs, such Cash Contributions shall be calculated and become due in accordance with this MOU.

(B) Notice of Election. In order to make Cash Contributions under this Article, the Participant shall provide the District with its written election to make Cash Contributions towards Design Phase Costs by a date no later than 30 days following the effective date of this MOU, as described in Section 7 of this MOU. In the event the Participant does not elect to make

a Cash Contribution, or in the event that the Cash Contributions described herein do not completely cover the Participant's *pro rata* share of all Design Phase Costs, the Participant confirms and ratifies the authorization of the District to issue or cause to be issued Notes on behalf of the Participant.

(C) Cash Contribution Amount. If the Participant elects to use the Cash Contribution method described in this Article, the amount of said Cash Contributions is hereby established as follows:

(i) *Current Cash Contribution Amount.* The amount of the Participant's Cash Contribution is set forth in the attached Exhibit A, which is incorporated herein by this reference, and made a part hereof. Exhibit A also sets forth the District's current estimate of the total Design Phase Costs and the Participant's and each Other Participant's *pro rata* share of that estimate. Participant shall pay its Cash Contribution to the District pursuant to the payment schedule set forth on Exhibit A.

(ii) *Methodology for Calculating Any Additional Cash Contributions.* The Parties understand and agree that the amount of the current Cash Contribution is based upon a District estimate of the cost of the various services and tasks needed to complete the Design Phase, and that the actual Design Phase Costs may actually be higher or lower than these estimates. In the event the Design Phase Costs exceed the District's original estimates, additional Cash Contributions may be necessary to pay for the total Design Phase Costs. The exact amount of any such additional Cash Contributions will depend upon (1) the actual Design Phase Costs incurred to date, (2) any anticipated additional Design Phase Costs need to complete the Design Phase, and (3) whether any Notes have or will be issued to finance Design Phase Costs. Any such additional Cash Contributions shall be evidenced by a revised Exhibit A to this MOU which will reflect the increases in Design Phase Costs calculated by the District. Any such revised Exhibit A shall be submitted by the District to the Nacimientto Project Commission ("NPC") for the NPC's approval. No revision to Exhibit A will be presented to the NPC until after the District has provided written notice of such revision to the Participants. Once approved by the NPC and delivered by the District to the Participant, the amount of any additional Cash Contributions set forth in the revised Exhibit A shall be binding upon the Participant. Only one revision of Exhibit A is allowed under this paragraph.

Regardless of whether any additional Cash Contribution(s) are required of Participant under this Article, the Participant is still obligated to pay its *pro rata* share of the total Design Phase Costs. In the event the NPC should fail to approve future revisions to Exhibit A, any Design Phase Costs not paid through Cash Contribution(s) shall be financed as provided in the Contract. In such event, the Participant understands and agrees that it may not be possible to complete the Design Phase unless the District issues or causes to be issued Notes in the name and on behalf of one or more of the Participants in order to fund the remaining Design Phase Costs not covered by Exhibit A.

(D) Participant's Access to Information. At Participant's request, the District shall provide the Participant with any and all updated engineering or design information, contract terms and other information relating to the Project which supports the District's calculation of the Cash Contribution.

(E) Payment Schedule. The Participant covenants and agrees that, in the event it elects to make a Cash Contribution, it will make installment payments to the District pursuant to the payment schedule included on Exhibit A. The payment schedule for any additional Cash Contributions shall be set forth in any further revision to Exhibit A. The Participant understands that, unless it has opted out under the provisions of Article 2(B) of the Contract, its Cash Contribution(s), if any, may (at the option of the Participant, and only to the extent covered by the terms of a resolution adopted by the governing body of the Participant in compliance with U.S. Treasury Regulation Section 1.150-2) be reimbursed to the Participant from the proceeds of the Notes and/or the Revenue Bonds. The parties understand and agree that any payment schedule for the Notes and/or the Revenue Bonds shall be dictated by financial market conditions on such date of issuance and that payments due from the Participant in connection with its proportionate share of the Notes and/or the Revenue Bonds may be made more frequently, or less frequently, and in larger or smaller amounts than the Participant's payments hereunder.

Section 5. Governing Law. This MOU shall be governed by the provisions of the laws of the State of California applicable to contracts made and performed in such State.

Section 6. Counterparts. This MOU may be executed in counterparts, each of which shall, together, constitute an entire document.

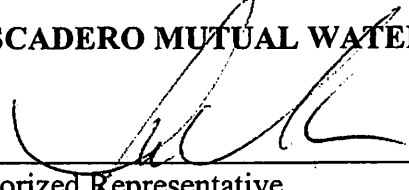
Section 7. Effective Date. This MOU shall become effective as of the last date upon which the District, the Participant, and the Other Participants shall execute this MOU or one of the Other MOUs, in accordance with Article 32 of the Contract.

Section 8. Ratification. In all other respects, the provisions of the Original Contract are confirmed and ratified.

IN WITNESS WHEREOF, the parties have each executed this MOU by their duly authorized representatives as of the first date set forth above:

ATASCADERO MUTUAL WATER COMPANY

By

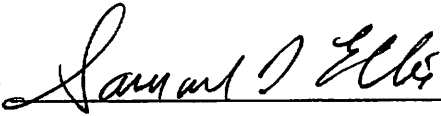

Authorized Representative

Date

April 13, 2005

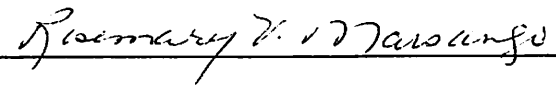
**APPROVED AS TO FORM:
[PARTICIPANT ATTORNEY]**

By



**ATTEST:
[PARTICIPANT CLERK]**

By

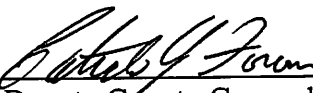


**SAN LUIS OBISPO COUNTY FLOOD
CONTROL AND WATER CONSERVATION
DISTRICT**

By SHIRLEY BIANCHI
Chairperson, Board of Supervisors

Date MAY 24 2005

**APPROVED AS TO FORM:
COUNTY COUNSEL:**

By 
Deputy County Counsel

Date 3/10/05

**ATTEST:
JULIE L. RODEWALD, COUNTY CLERK**

By C.M. CHRISTENSEN
Deputy County Clerk

Date MAY 27 2005

EXHIBIT A

ESTIMATED DESIGN PHASE COSTS AND CASH CONTRIBUTIONS

The current estimated total Design Phase Costs of the Project are \$18,890,000, within which the District calculates the following numbers as the Cash Contributions of various Participants:

<u>Participant</u>	<u>Total Estimated Cash Contribution</u>
City of San Luis Obispo	\$ 6,630,202
City of Paso Robles	7,846,339
Templeton CSD	490,384
Atascadero MWC	<u>3,923,075</u>
Total	\$18,890,000

Payment Schedule

<u>Installment No.</u>	<u>Participant</u>	<u>Due Date</u>	<u>Amount</u>
1	SLO City	April 1, 2005	\$816,964
	Paso Robles	April 1, 2005	\$966,815
	Templeton	April 1, 2005	\$60,425
	AMWC	April 1, 2005	\$483,396
2	SLO City	July 1, 2005	\$616,514
	Paso Robles	July 1, 2005	\$729,597
	Templeton	July 1, 2005	\$45,599
	AMWC	July 1, 2005	\$364,790
3	SLO City	October 1, 2005	\$681,447
	Paso Robles	October 1, 2005	\$806,441
	Templeton	October 1, 2005	\$50,401
	AMWC	October 1, 2005	\$403,211
4	SLO City	January 1, 2006	\$659,510
	Paso Robles	January 1, 2006	\$780,480
	Templeton	January 1, 2006	\$48,779
	AMWC	January 1, 2006	\$390,231

Payment Schedule Continued

<u>Installment No.</u>	<u>Participant</u>	<u>Due Date</u>	<u>Amount</u>
5	SLO City	April 1, 2006	\$922,753
	Paso Robles	April 1, 2006	\$1,092,008
	Templeton	April 1, 2006	\$68,249
	AMWC	April 1, 2006	\$545,990
6	SLO City	July 1, 2006	\$1,473,526
	Paso Robles	July 1, 2006	\$1,743,806
	Templeton	July 1, 2006	\$108,985
	AMWC	July 1, 2006	\$871,882
7	SLO City	October 1, 2006	\$1,459,487
	Paso Robles	October 1, 2006	\$1,727,192
	Templeton	October 1, 2006	\$107,947
	AMWC	October 1, 2006	\$863,575
Total			\$18,890,000

RESOLUTION OF THE BOARD OF DIRECTORS OF THE ATASCADERO MUTUAL WATER COMPANY, IN CONNECTION WITH THE NACIMIENTO WATER PROJECT, APPROVING CERTAIN DISCLOSURES REGARDING ATASCADERO MUTUAL WATER COMPANY AND APPROVING AN AMENDMENT TO THE WATER SUPPLY CONTRACT WITH THE SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

WHEREAS, this Board of Directors (the "Board") has heretofore entered into a Nacimiento Project Water Delivery Entitlement Contract (the "Delivery Contract") with the San Luis Obispo County Flood Control and Water Conservation District (the "District"), in connection with the Nacimiento Water Project (the "Project") for the supply of additional water for the use and benefit of the lands and inhabitants served by Atascadero Mutual Water Company ("AMWC"); and

WHEREAS, the District and the SLO County Financing Authority (the "Authority") are ready to proceed with the financing of the Project in the municipal bond markets (the "Bond Issue") through the issuance and sale of Municipal Obligations (as defined in the Delivery Contract); and

WHEREAS, in connection with the financing of the Project, the Board has been presented with a form of Preliminary Official Statement, together with an appendix containing statistical and other descriptive information regarding AMWC (the "Appendix") and a form of Continuing Disclosure Agreement (the "Continuing Disclosure Agreement"); and

WHEREAS, the District has proposed that AMWC would benefit from certain amendments to the Delivery Contract, having the effect of reducing the annual rate levels for water sales by AMWC and, to that end, this Board has been presented with an amendment to the Delivery Contract (the "Delivery Contract Amendment"), and wishes to approve such amended terms;

NOW, THEREFORE, the Board of Directors of Atascadero Mutual Water Company does hereby resolve and determine as follows:

Section 1. The foregoing recitals are true and correct.

Section 2. UBS Securities LLC, as underwriter for the Authority (the "Underwriter") is authorized to use a Preliminary Official Statement and Official Statement, each containing an Appendix A (or a revised form thereof) describing certain statistical and other information of AMWC in the marketing and sale of the Authority's Revenue Bonds (the "Bonds"), based upon information provided and to be provided by AMWC, with such changes from the form of Preliminary Official Statement submitted to this Board as the Board President, General Manager, or a designee thereof (each, an "Authorized Representative") may determine to be in the best interests of AMWC. AMWC shall be responsible for notifying the Authority and the Underwriter should any information regarding AMWC in said Appendix materially change from the time of submission to the closing date of the Bond Issue.

Section 3. The form of Continuing Disclosure Agreement presented to and reviewed by this meeting of the Board is hereby approved, and the Authorized Representative of AMWC is

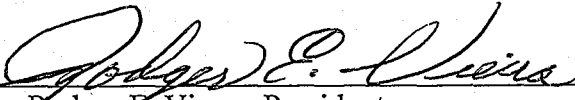
hereby authorized and directed to execute and deliver a Continuing Disclosure Agreement, substantially in the form presented to and approved at this meeting of the Board, with such changes therein as the Authorized Representative, AMWC Counsel, and the District may approve, such approval to be evidenced by the signature of said Authorized Representative.

Section 4. The terms and provisions of the Delivery Contract Amendment, as presented to and reviewed by this meeting of the Board of Directors, are hereby approved, and the Authorized Representative is hereby authorized and directed to execute the amendment to the Contract in the name and on behalf of AMWC, in substantially the form presented to and approved at this meeting of the Board, with such changes therein as the Authorized Representative, the AMWC Counsel and the SLO County Financing Authority may approve, such approval to be evidenced by the signature of said Authorized Representative.

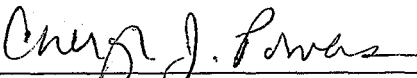
Section 5. The Board President or General Manager of AMWC is hereby authorized and directed, for and in the name and on behalf of AMWC, to do or cause to be done any and all things and take any and all other actions in support of the issuance of the Municipal Obligations, including, without limitation, the execution of certificates and ancillary documents and the delivery of opinions on behalf of AMWC as may be reasonably required by the District, which they, or any of them, deem necessary or advisable in order to consummate the purposes described herein.

Section 6. This resolution shall take effect immediately upon its adoption.

PASSED, APPROVED, AND ADOPTED at the regular meeting of the Board of Directors held at Atascadero, California, on August 8, 2007.

By: 
Rodger E. Vierra, President

ATTEST:

By: 
Cheryl J. Powers, Corporate Secretary

Appendix F: Consumer Confidence Report (2024)

ANNUAL Water Quality Report

REPORTING YEAR 2024

Presented By



SERVING OUR COMMUNITY

We are pleased to present our annual water quality report covering January 1 through December 31, 2024. Atascadero Mutual Water Company's (AMWC) highly competent staff constantly seeks the best approaches to delivering the highest quality water possible to you and is dedicated to producing drinking water that meets all state and federal standards. We are committed to meeting the state's water source protection, water conservation, and community education goals and serving the needs of all our water users.

WHAT'S THE SOURCE OF MY WATER?

AMWC's water sources are groundwater from the Atascadero Basin, the underflow of the Salinas River, and Lake Nacimiento (via the Nacimiento Water Project (NWP) pipeline). AMWC pumps the groundwater from its 15 wells into its distribution system. If needed, water from the NWP can be discharged into AMWC's recharge basin to replenish the groundwater. The watershed that replenishes the Atascadero Basin encompasses a 247-square-mile area along the Salinas River, extending to its headwaters. Of that area, only a small percentage (about 550 acres) is owned by AMWC. The majority of the watershed is composed of open space and residential or commercial development.

IMPORTANT HEALTH INFORMATION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those undergoing chemotherapy, who have undergone organ transplants, with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from:

Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>

SUBSTANCES THAT COULD BE IN WATER

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resources Control Board (SWRCB) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Contaminants that may be present in source water include: Microbial Contaminants: such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; Inorganic Contaminants: such as salts and metals, that can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; Pesticides and Herbicides: that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; Organic Chemical Contaminants: including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems; Radioactive Contaminants: that can be naturally occurring or can be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Este informe contiene información muy importante sobre su agua potable. Por favor tradúzcala o hable con alguien que la entienda.

PWS ID#: CA 4010002

DRINKING WATER SOURCE ASSESSMENT AND PROTECTION PROGRAM

Drinking Water Source Assessment Plans (DWSAPs) assess the area around a drinking water source through which contaminants might move and reach that drinking water supply. They include an inventory of possible contaminating activities (PCAs) that might lead to the release of microbiological or chemical contaminants within the delineated area and a determination of the PCAs to which the drinking water source is most vulnerable.

According to the DWSAPs, our water system has a physical barrier effectiveness rating of low to moderate. It is important to understand that this susceptibility rating does not imply poor water quality, only the system's potential to become contaminated within the assessment area. If you would like to review the DWSAPs, please feel free to contact our office during regular business hours.

PER- AND POLYFLUOROALKYL SUBSTANCES

PFAS are a large group of human-made chemicals. Of this group, perfluorobutane sulfonic acid (PFBS), perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), and perfluorohexane sulfonic acid (PFHxS) have been detected in some of AMWC's 15 water supply wells. Most wells are below the Response Level¹ but above Notification Level² established by the SWRCB.

Four wells have PFOA levels above the response level. Water from these wells is blended with water from wells with very low or no PFAS detections to effectively reduce PFAS levels, as approved by the SWRCB. Ongoing sampling shows that the blended water consistently has levels of PFBS, PFOA, PFOS, and PFHxS below the response level of 5,000, 10, 40, and 20 parts per trillion (ppt), respectively. Notification levels for these three chemicals is 500, 5.1, 6.5, and 3.0 ppt, respectively. AMWC is currently designing and seeking funds to construct a water treatment facility using granulated activated carbon to remove PFAS from the drinking water. Construction of the treatment facility is expected to begin in late 2026.

¹ Response Level— Water source must be taken out of service.

² Notification Level— SWRCB recommends that water utility notify customers.

LEAD IN HOME PLUMBING

In 2024, the EPA required AMWC to survey its entire system to determine the presence of lead service lines. The survey included the customer's service lines. No lead service lines were found.

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. We are responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time.

You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula.

Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for a longer period.

If you are concerned about lead in your water and wish to have your water tested, contact Mike Stephens, Chief Operator, at 805-464-5361. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at <https://www.epa.gov/safewater/lead>.



DO YOU NEED A GUEST SPEAKER?

AMWC offers a variety of presentations to adult and youth clubs, organizations, and troops. Topics include:

- **AMWC:** 100+ Years of Service to the Colony
- **Water 101:** Water treatment & production facilities
- **Water Conservation + Education:** Water conservation, water cycle, and activities (ages 4-18)
- **Water Wise Landscaping for Atascadero**
- **Well Field Tours** (in-person, approx. 2 hours)



CONSERVATION PROGRAMS AND REBATES

Each year, over 50% of the water produced by AMWC is directly applied to lawns and other landscaping, primarily during the months of May through August. To help offset the significant stress placed on our limited water resources by landscape irrigation, AMWC offers a range of water conservation resources and programs aimed at decreasing high summer water usage, including:

- **Home Water Survey Program**
 - › Free program to help manage landscape irrigation use
- **Landscape Rebates**
 - › Turf Conversion
 - › Weather-based Irrigation
- **Indoor Rebates**
 - › High-efficiency Toilet
 - › High-efficiency Clothes Washer
- **Other Rebates**
 - › Pressure Reducing Valve (PRV) Program
 - › Flow Sensor Pilot Program
 - › Rainwater Harvesting Program

Visit amwc.us or call (805) 466-2428 for more information

Test Results

DEFINITIONS

90th percentile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Regulatory Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

grains/gal (grains per gallon): Grains of compound per gallon of water.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard.

NTU: Nephelometric Turbidity Units

pCi/L (picocuries per liter): Measure of radioactivity.

PDWS (Primary Drinking Water Standard): MCLs, MRDLs and treatment techniques (TTs) for contaminants that affect health, along with their monitoring and reporting requirements.

PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

UCMR 5: The Fifth Unregulated Contaminant Monitoring Rule

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

COMMUNITY PARTICIPATION

AMWC holds monthly board meetings, typically on the second Wednesday of each month at 4:30 p.m. The meetings are held at the AMWC business office at 5005 El Camino Real, Atascadero. Please call (805) 466-2428 or check our website to confirm the date. Agendas are available at the meetings and on our website. Public comment is welcome.

QUESTIONS?

Should you ever have questions regarding this report or the quality of your drinking water, please call Mike Stephens, Chief Operator, at (805) 464-5361, or email mstephens@amwc.us.

Our water is monitored for many different kinds of substances on a very strict sampling schedule. The information in the tables represents only those substances that were detected. Unless otherwise noted, the data presented in this table is from testing between January 1, 2024 through December 31, 2024. The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently; in these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

WITH PRIMARY DRINKING WATER STANDARDS							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2024	10	.004	.65	ND—3.1	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2022	1	2	.014	ND—0.11	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine (ppm)	2024	[4.0 (as Cl ₂)]	[4 (as Cl ₂)]	.90	0.81—0.95	No	Drinking water disinfectant added for treatment
Fluoride (ppm)	2024	2.0	1	.23	0.10—0.30	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2022	15	0	.46	0.42—0.57	No	Erosion of natural deposits
HAA5 [Sum of 5 Haloacetic Acids] (ppb)	2024	60	N/A	16.2	7.9—19.9	No	By-product of drinking water disinfection
Nitrate [as N] (ppm)	2024	10	10	2.25	ND—5.1	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate + Nitrite (ppm)	2024	10	10	1.07	ND—1.6	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium (ppb)	2024	50	30	1.6	ND—7.6	No	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from live-stock lots (feed additive)
TTHMs [Total Trihalomethanes] (ppb)	2024	80	N/A	61.1	39.3—63.5	No	By-product of drinking water disinfection
Uranium (pCi/L)	2022	20	.43	1.68	ND—2.6	No	Erosion of natural deposits
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90th PERCENTILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2024	1.3	0.3	1	1 / 63	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2024	15	0.2	ND	0 / 63	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Tap water samples were collected for lead and copper analyses from sample sites throughout the community.							
WITH SECONDARY DRINKING WATER STANDARDS							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE	
Chloride (ppm)	2024	500	92	31—170	No	Runoff/leaching from natural deposits; seawater influence	
Color (Units)	2024	15	.4	ND < 3	No	Naturally-occurring organic materials	
Manganese (ppb)	2023	50	7	ND—21	No	Leaching from natural deposits	
Odor (Units)	2024	3	2	1—3	No	Naturally-occurring organic materials	
Sulfate (ppm)	2024	500	92	79—100	No	Runoff/leaching from natural deposits; industrial wastes	
Specific Conductance (µS/cm)	2024	1600	763	650—880	No	Substances that form ions when in water; seawater influence	
Total Dissolved Solids (ppm)	2024	1000	594	330—780	No	Runoff/leaching from natural deposits	
Turbidity (NTU)	2024	5	.25	ND—0.70	No	Soil runoff	

UNREGULATED SUBSTANCES

WITH MINIMUM REPORTING LEVELS (MRL) - FEDERAL UCMR 5						
Substance (in units of ppt unless noted otherwise)	Year Sampled	Amount Detected	Range Low-High	MRL	Typical Source	
Perfluoroheptanoic acid (PFHpA)	2024	.20	ND—2.1	3	Industrial manufacturing. Consumer products. Persistent in environment.	
Perfluorohexanoic Acid [PFHxA]	2024	1.6	ND—8.3	3	Industrial manufacturing. Persistent in environment.	
Perfluoro-N-Butanoic acid (PFBA)	2024	5.5	ND—17	5	Industrial manufacturing. Consumer products. Persistent in environment.	
Perfluorononanoic Acid [PFNA]	2024	1.3	ND—5.5	4	Industrial manufacturing. Persistent in environment.	
Perfluoro-N-Pentanoic acid (PFPeA)	2024	3.5	ND—7.0	3	Industrial manufacturing. Consumer products. Persistent in environment.	
Lithium	2024	14.3	9.0—20.7	9	Naturally occurring	
WITH NOTIFICATION LEVELS (NL) AND RESPONSE LEVELS (RL) - STATE						
Substance (in units of ppt unless noted otherwise)	Year Sampled	Amount Detected	Range Low-High	NL	RL	Typical Source
Boron (ppb)	2024	30	ND—140	1000	N/A	Naturally occurring
Perfluorobutane Sulfonic Acid [PFBS]	2024	5.4	ND—16	500	5,000	Industrial manufacturing. Persistent in environment.
Perfluorohexane Sulfonic Acid [PFHxS]	2024	5.6	ND—18	3	20	Industrial manufacturing. Persistent in environment.
Perfluorooctane Sulfonic Acid [PFOS]	2024	10.8	ND—32	6.5	40	Industrial manufacturing. Consumer products. Persistent in environment.
Perfluorooctanoic Acid [PFOA]	2024	4.8	ND—15	5.1	10	Industrial manufacturing. Consumer products. Persistent in environment.
Vanadium (ppb)	2024	1.48	ND—7.2	50	N/A	Industrial manufacturing. Consumer products. Persistent in environment.
OTHER SUBSTANCES OF INTEREST						
Substance (in units of ppm unless noted otherwise)	Year Sampled	Amount Detected	Range Low-High	Typical Source		
Alkalinity, Total [as CaCO3]	2024	220	180—360	Naturally occurring		
Bicarbonate [HCO3]	2024	250	240—260	Naturally occurring		
Calcium	2024	75	60—90	Erosion of natural deposits		
Hardness, Total [as CaCO3] (grains/gal)	2024	18.1	13—23	Sum of polyvalent cations in water, generally naturally occurring magnesium and calcium		
Magnesium	2024	29	26—31	Erosion of natural deposits		
o-Phosphate [as PO4]	2024	2.2	2.0—2.4	Added as a corrosion inhibitor		
Potassium	2024	1.4	1.1—1.8	Erosion of natural deposits		
Sodium	2024	35	30—44	Naturally occurring		
Unregulated contaminant monitoring helps U.S. EPA and the State Board determine where certain contaminants occur and whether the contaminants need to be regulated.						

COMPARATIVE FIGURES FOR INTERPRETATION

1 PPM	1 PPB	1 PPT
1 second in 11.5 days	1 second in 31.7 years	1 second in 317.1 centuries
1 penny in \$10,000	1 penny in \$10,000,000	1 penny in \$10,000,000,000
1 inch in 15.9 miles	1 inch in 15,782.8 miles	1 inch in 657.6 trips around the equator
1 minute in 1.9 years	1 minute in 19 centuries	1 minute in 1,900 millenniums
1 ounce in 62,500 pounds	1 ounce in 31,250 tons	1 ounce in 31,250,000 tons

Appendix G: Water Shortage Contingency Plan

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Appendices

Appendix A – Relevant Water Code Sections

Appendix B – Relevant Sections of San Luis Obispo County Local Hazard Mitigation Plan October 2019

Appendix C – Notification to Cities and Counties

Appendix D – WSCP Adoption Resolution

Bibliography

The following reports, studies, and other material were reviewed during preparation of this Water Shortage Contingency Plan.

- 1) 2020 Urban Water Management Plans Guidebook for Urban Water Suppliers dated March 2021 and prepared by the California Department of Water Resources.
- 2) Draft Atascadero Basin Groundwater Sustainability Plan dated February 2021 and prepared by AMWC.

List of Acronyms

AB - Assembly Bill

AF - Acre-Foot

AMWC - Atascadero Mutual Water Company

AWIA - America's Water Infrastructure Act

BMP - Best Management Practice

CEHTP - California Environmental Health Tracking Program

CASGEM - California Statewide Groundwater Elevation Monitoring Program

CII - Commercial, Industrial, Institutional, water use sectors

CIMIS - California Irrigation Management Information System

County – County of San Luis Obispo

CUWCC - California Urban Water Conservation Council

CWC - California Water Code

DMMs - Demand Management Measures

DOF - Department of Finance

DU – Dwelling Unit

DWR - Department of Water Resources

eARDWP - Electronic Annual Reports to the Drinking Water Program (SWRCB)

ERP - Emergency Response Plan

ETo - Reference Evapotranspiration

GIS - Geographic Information System

GPCD - Gallons per Capita per Day

IRWM - Integrated Regional Water Management

ITP - Independent Technical Panel

LAFCO - Local Agency Formation Commission

NOAA - National Oceanic and Atmospheric Administration

NPDES - National Pollutant Discharge Elimination System

PWS - Public Water System

RRA - Risk and Resiliency Assessment

RWQCB - Regional Water Quality Control Board

SB - Senate Bill

SB X7-7 - Senate Bill Seven of the Senate's Seventh Extraordinary Session of 2009

SGMA - Sustainable Groundwater Management Act

SQ FT – Square Feet

SWP - State Water Project

SWRCB - State Water Resources Control Board

RUWMP - Regional Urban Water Management Plan

UWMP - Urban Water Management Plan

WARN - Water/Wastewater Agency Response Network

WDR - Waste Discharge Requirement

WRR - Water Recycling Requirement

WSCP - Water Shortage Contingency Plan

CHAPTER 1 INTRODUCTION

1.1 Law

This Water Shortage Contingency Plan (WSCP) for the Atascadero Mutual Water Company (AMWC) outlines a program for responding to water supply limitations. The intent of the water conservation measures and progressive restrictions on water use and method of use identified in this WSCP is to provide certainty to water users and enable AMWC to control water use, provide water supplies, and plan and implement water management measures in a fair and orderly manner for the benefit of the public.

In 2015, in accordance with the Governor of the State of California mandate, AMWC revised declaration of a stage 2 water shortage condition and prohibitions on the wasteful use of water. AMWC updated and amended the WSCP in June 2021 to meet the new requirements of the 2020 UWMP update.

This WSCP describes measures to be implemented during times of declared water shortages, or declared water shortage emergencies by either the District, State or Federal government. It establishes six stages of drought response actions to be implemented in times of shortage, with increasing restrictions on water use in response to decreasing available supplies.

1.2 Atascadero Mutual Water Company (AMWC)

Atascadero Mutual Water Company (AMWC) serves over 30,000 people and covers approximately 24,000 acres in northern portion of the County. AMWC boundary includes incorporated area of the City of Atascadero and certain areas within the unincorporated area of the County of San Luis Obispo.

AMWC depends on three sources of water supply, which include the following: surface water from the Salinas River underflow, groundwater from the Atascadero Basin, and supplemental surface water from the Nacimiento Water Project (NWP). The County of San Luis Obispo (County) has prepared a reliability analysis for the water that they wholesale to AMWC through the NWP. AMWC has used the numbers prepared by the County in determining the frequency and magnitude of surface water supply deficiencies that AMWC may face.

AMWC benefits from having multiple water sources from which to draw from during shortages. AMWC works to build capacity in their system such that they can maximize their existing resources without importing new sources. Although many portions of California experienced shortages during the most recent drought, AMWC was able to meet customer demands by voluntary reduction of customer usage without forced rationing.

Relevant sections of the water code as related to the WSCP are included in Appendix A.

CHAPTER 2 WATER SUPPLY ANALYSIS

2.1 Water Supply Reliability Analysis

AMWC has never had a single year or multiple dry years in which it did not pump 100% of its demand, regardless of regional hydrology. Therefore, there is no basis in the hydrologic record for reducing supply reliability based upon single and/or multiple dry year conditions when imported water supply is available in addition to historical groundwater production. On this assumption, AMWC's supply is presented as 100% reliable for single and multiple dry year periods as summarized in the following sections.

To supplement this statement AMWC, developed **Table 2-1**, which involved a preliminary climate change vulnerability screening (including impacts from extreme heat, water quality, sea level rise, flooding, and wildfire) for its water supplies.

Table 2-1: Climate Change Vulnerability Screening			
Assessment	Imported Water - Nacimiento Water Project	Groundwater - Atascadero Basin	Groundwater - Salinas River Underflow
	Level of Risk	Level of Risk	Level of Risk
I. Water Supply and Demand			
Are the water supply diversions sensitive to climate change?	2	2	3
Is the water supply source affected by urban or agricultural water demand that might be climate sensitive?	2	2	2
Is groundwater a major supply source?	Not applicable	3	3
Does the water supply source rely on or could it be affected by snowmelt?	Not applicable	Not applicable	Not applicable
Does the water supply source come from or could it be affected by coastal aquifers? Has saltwater intrusion been a problem in the past?	Not applicable	Not applicable	Not applicable
Does the water supply source rely on or could it be affected by changes in stored water supplies?	Not applicable	Not applicable	Not applicable
II. Extreme Heat			
Could extreme heat impact operations of the water supply project or diversions?	Not applicable	Not applicable	Not applicable
Does the supply source rely on equipment or infrastructure that could be impacted by extreme or prolonged heat?	Not applicable	Not applicable	Not applicable
III. Water Quality			
Could water quality issues, such as low dissolved oxygen, algal blooms, disinfectant byproducts affect the water supply source?	1	Not applicable	Not applicable
Could reduction in assimilative capacity of a receiving water body affect the water supply source?	1	3	3

Could the water supply source be affected by water quality shifts during rainfall/runoff events?	1	1	3
IV. Sea Level Rise			
Is any of the water supply source infrastructure located in area that could be exposed to rising tides?	Not applicable	Not applicable	Not applicable
Could coastal erosion affect the water supply source?	Not applicable	Not applicable	Not applicable
Is the water supply source dependent on coastal structures, such as levees or breakwaters, for protection from flooding?	Not applicable	Not applicable	Not applicable
V. Flooding			
Is the water supply or any of its associated infrastructure located within the 200-year floodplain? Does the water supply source rely on flood protection infrastructure such as levees or dams?	2	3	4
VI. Wildfire			
Is the water supply source located in an area that is expected to experience an increase in wildfire activity or severity? Would a wildfire result in damage to the water supply source infrastructure or interruption of its ability to perform as designed? Could the water supply source be affected by an increase in wildfire activity or severity in an upstream watershed or other adjacent area?	1	Not applicable	Not applicable
Notes: Level of Risk: 1 - low, 3-medium, 5-high			

2.2 Annual Water Supply and Demand Assessment Procedures

In accordance with CWC 10632 AMWC will conduct an annual water supply and demand assessment, or annual assessment by July 1st of each year.

AMWC will determine if a shortage in supply exists and declare the appropriate water shortage level based on the findings. AMWS will draft and prepare a written report that discusses the results of the annual water supply and demand assessment, what water shortage level and shortage response actions are to be implemented and issue the appropriate communication to customers and local governments. A copy of the annual report will be submitted to the Board Members ahead of the meeting for review. The Board of Directors will listen to the findings and recommendations outlined in the report and vote to approve and implement the actions described in the annual report at a May board meeting.

The Water shortage Contingency plan team will consist of AMWC's general manager and Engineer. The team will draft and prepare the annual water supply reliability analysis report. The report will use the key data inputs and methodology described in **Table 2-2** to determine the unconstrained demand, infrastructure capabilities, available water supply and reliability for the current year and one dry year.

Table 2-2: Key Data Inputs		
Key Input:	Data:	Description:
Current year Customer Demand and Available Supply	Public Water System Statistics Sheet (DRW sheet)	The water statistics sheet is prepared by AMWC's general manager in January for the previous year. The statistics sheet will be used to calculate water supply by source and show unconstrained water demand.
Projected Water Supply	Well Production History Worksheet	This worksheet is prepared by AMWC's general manager and is updated each year. This worksheet provides the monthly production totals for each well. This will be used to help determine water supply reliability.
Infrastructure Considerations	Annual Project List and Schedule	This list will be prepared by the general manager and describe all the planned AMWC projects for the year. The annual project list will be used to assess infrastructure capabilities and any potential constraints to the water system.

2.2.1 Assessment Methodology

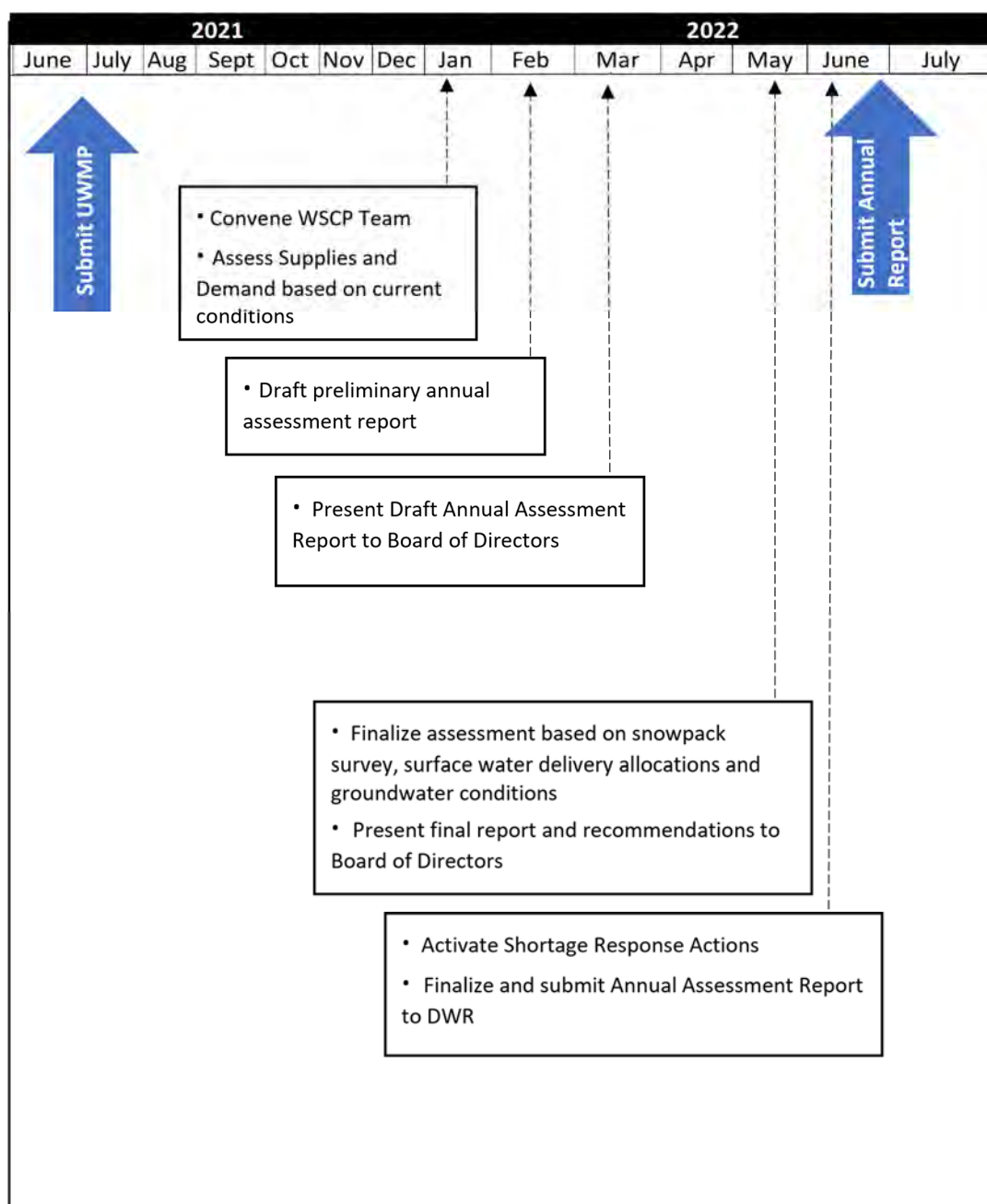
AMWC will enact water shortage response actions if the available water supply is less than the estimated demands. A dry year will be defined as a year where there is over a 10% reduction in the available water supply and corresponds to a stage 2 water shortage level in **Table 2-3**. AMWC will take the following steps to evaluate the water supply and demand:

1. Evaluate Water Supply: Using the Public Water System Statistics Sheet for the past year determine the total amount of water available to AMWC by each source. Review the water supply contract between the NWP and AMWC for any conditions that would lead to supply reductions. Calculate the total water supply available using an excel spreadsheet.
2. Calculate Unconstrained Customer Demand: Using the Public Water System Statistics Sheet calculate the total water delivered the previous year.
3. Planned Water Use for Current Year Considering Dry Year: Compare the available water supply and the customer demand and determine if there is an expected water shortage.
4. Infrastructure Considerations: Using the Annual Project list and schedule, determine if any projects will reduce or increase supply.
5. Compare supply and demand and decide of the level of water supply reliability for current year and one dry year, declare a water shortage level, and issue relevant communication, if necessary.

2.2.2 Water Supply Reliability Analysis Timeline

AMWC will start to evaluate the water supply availability in January and will submit the report to the DWR in June of each year as shown in **Figure 2-1**:

Figure 2-1: Water Supply Reliability Analysis Timeline



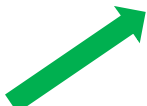
2.3 Six Standard Water Shortage Levels

This WSCP identifies water conservation measures and progressive restrictions on water use to provide certainty to water users and to enable AMWC to control water use, provide water supplies, and plan and implement water management measures in a fair and orderly manner for the benefit of the public in accordance with CWC §10632(a)(3). This WSCP establishes six (6) stages of drought response actions to be implemented in times of shortage, with increasing restrictions on water use in response to decreasing supplies. This WSCP includes both voluntary and mandatory water use reductions depending on the causes, severity, and anticipated duration of the water supply shortage. Water use reduction stages may be triggered by a shortage or contamination in one water source or a combination of sources or during times that a shortage is declared by AMWC, State, or Federal government. AMWC potable water sources are

groundwater and surface water. Because shortages overlap stages, triggers automatically implement the more restrictive Stage. Specific criteria for triggering AMWC's water use reduction stages are shown in **Table 2-3**.

Table 2-3: Water Shortage Contingency Plan Levels		
Shortage Level	Percent Shortage Range	Shortage Response Actions (Narrative Description)
1	Up to 10%	Reserve production capability of 20% above the maximum daily demand representing "Normal" water supply conditions with "Voluntary" (always in place) compliance with water savings measures.
2	Up to 20%	Reserve production capability of 10% above the maximum daily demand representing "Slightly Restricted" water supply conditions with "Mandatory" compliance with water savings measures.
3	Up to 30%	No reserve production capability representing "Moderately Restricted" water supply conditions with "Mandatory" compliance with water savings measures.
4	Up to 40%	Less than 0% reserve production capability representing "Restricted" water supply conditions with "Mandatory" compliance with water savings measures.
5	Up to 50%	Less than 0% reserve production capability representing "Severely Restricted" water supply conditions with "Mandatory" compliance with water savings measures.
6	>50%	Less than 0% reserve production capability representing "Extremely Restricted" water supply conditions with "Mandatory" compliance with water savings measures.

Figure 2-2 provides a crosswalk that shows AMWC's water shortage levels to those mandated by statute.

Figure 2-2: Crosswalk for AMWC's 2015 Shortage Levels and the 2020 WSCP Mandated Shortage Levels							
Stages from 2015 UWMP			Crosswalk	2020 WSCP Mandated Shortage Levels			
Shortage Level	Percent Supply Reduction	Water Supply Condition		Shortage Level	Percent Supply Reduction	Water Supply Condition	Mandatory compliance with water savings measures
0	0%	Reserve production capability of 20% above the maximum daily demand		1	0% to 10%	Normal	Voluntary, always in place
1	0%-15%	Reserve production capability of 10% above the maximum daily demand	 	2	10% to 20%	Slightly Restricted	Mandatory compliance
2	15%-35%	No reserve production capability	 	3	20% to 30%	Moderately Restricted	Mandatory compliance
3	35%-50%	Less than 0% reserve production capability	  	4	30% to 40%	Restricted	Mandatory compliance
				5	40% to 50%	Severely Restricted	Mandatory compliance
				6	50% and above	Extremely Restricted	Mandatory compliance

CHAPTER 3 WATER SHORTAGE RESPONSE ACTIONS

3.1 Shortage Response Actions

3.1.1 Demand Reduction

Table 3-1 summarizes the restrictions and prohibitions on end uses during each stage of water shortage response implemented by AMWC in accordance with CWC §10632(a)(4)(B). The shortage response actions are aligned to the six water shortage levels with the goal of reducing the gap between supply and demand by the required amount per level.

Shortage Level	Demand Reduction Actions	Estimated Extent of Reducing the Water Shortage Gap	Penalty, Charge, or Other Enforcement?
1	Education for water conservation methods.	Low	No
1	Public outreach for voluntary reduction in water use by 15%	Medium	No
2	Landscape - Restrict or prohibit runoff from landscape irrigation	Medium	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	High	Yes
2	Other - Shareholders must repair leaks, breaks, and malfunctions in a timely manner	Medium	Yes
3	Landscape - Limit landscape irrigation to specific times	High	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Low	Yes
3	Landscape - Prohibit certain types of landscape irrigation	Medium	Yes
4	CII - Other CII restriction or prohibition	Low	Yes
4	CII - Lodging establishment must offer opt out of linen service	Low	Yes
4	Landscape - Restrict or prohibit runoff from landscape irrigation	Medium	Yes
5	Other - Prohibit use of potable water for washing hard surfaces	High	Yes
5	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Medium	Yes
5	Landscape - Limit landscape irrigation to specific days	High	Yes
5	CII - Lodging establishment must offer opt out of linen service	Low	Yes
6	Landscape - Prohibit all landscape irrigation	High	Yes
6	Other - Prohibit use of potable water for construction and dust control	Medium	Yes

3.1.2 Supply Augmentation

Table 3-2 summarizes the restrictions and prohibitions on end users during each stage of water shortage responses implemented by AMWC in accordance with CWC §10632(a)(4)(A).

Table 3-2: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	Estimated Extent of Reducing the Water Shortage Gap	Penalty, Charge, or Other Enforcement?
All Stages	Expand Public Information Campaign	Medium	No
1 and 2	Other – Voluntary Water Use Reductions	Medium	No
	Implement or Modify Drought Rate Structure or Surcharge	High	No
5 and 6	Stored Emergency Supply	Low	No
5 and 6	Other – Interrupt Irrigation Services	High	No

3.1.3 Operational Changes

In the event of an extreme water shortage AMWC will implement some or all of the following operational changes in accordance with CWC §10632(a)(4)(C) and §10632.5(a):

- ☐ AMWC shall provide prompt notice to customer whenever AMWC obtains information that indicates a leak may exist within the end-user's exclusive control. The customer must repair all leaks within twenty-four (24) hours of notification by AMWC.
- ☐ Evaluate maintenance procedures and alter if needed to improve system efficiency.
- ☐ Evaluate infrastructure repairs, and complete if possible, to improve system efficiency.

3.1.4 Additional Mandatory Restrictions

AMWC shareholders shall comply to the mandatory water shortage response actions listed in **Table 3-1** associated with a level 3 or higher water shortage event in accordance with §10632(a)(4)(D). In the event of a water shortage emergency or severe drought AMWC may enact additional mandatory restrictions:

- ☐ Implement drought water rates.
- ☐ Restrict or prohibit the issuance of new water services.

CHAPTER 4 EMERGENCY RESPONSE ACTIONS

4.1 Emergency Response Plan

A catastrophic event may result in a complete loss of water supplies for a temporary period lasting from a day to a week or more. Examples of catastrophic events include earthquakes, widespread power outage, contamination, long-term drought, or loss of imported supplies. Through information included in billing inserts, and information on its website, AMWC encourages its shareholders to be prepared for emergencies and potential interruption of water supply system. AMWC employees will be contacted and activated as per AMWC's emergency response policy. In the event of a catastrophic emergency the AMWC will immediately declare and enact level six (VI) water shortage level and response actions, shown in **Table 3-1**. The UWMP Act requires a catastrophic supply interruption plan. This plan looks at the vulnerability of each source and distribution system to events such as wildfires, flooding, earthquakes, landslides, rockslides, other natural disasters, and unforeseen emergencies. The actions taken to address each catastrophe are presented in **Table 4-1** below:

Table 4-1: Catastrophic Supply Interruption Actions

Possible Catastrophe	Summary of Actions
Regional Power Outage	- Assess the problem - Mobilize backup generators to booster stations - Start natural gas driven wells as required to meet potable water demands, check backup propane fuel supplies - Estimate potable water requirements and determine if needs can be met - Increase disinfection residual as precaution to potential contamination - Notify shareholders that water service may be disrupted and that restrictions may be necessary - Issue "Boil Water", "Do Not Drink", or "Do Not Use" orders and press releases as appropriate - Notify shareholders when it is safe to use drinking water again if orders issued
Earthquake/ Fault Rupture/ Liquefaction	- Activate personnel accountability network to check for injury to staff - Inspect all structures, wells, tanks, and boosters for obvious cracks and damage - Remove from service any structures, wells, tanks, and boosters that exhibit obvious cracks and damage - Estimate potable water requirements and determine if needs can be met - Isolate main breaks - Increase disinfection residual as precaution to potential contamination - If power disrupted, refer to "Regional Power Outage" for recommended actions - Assess and prioritize repairs - Notify shareholders that water service may be disrupted and that restrictions may be necessary - Issue "Boil Water", "Do Not Drink", or "Do Not Use" orders and press releases as appropriate - Notify shareholders when it is safe to use drinking water again if orders issued
Flood	- Disconnect electric power to wells - Remove RTU's from wells - Wrap large electric motors subject to flooding w/ plastic - Remove equipment and critical supplies from flood plain

	• Notify shareholders that water service may be disrupted and that restrictions may be necessary • Issue “Boil Water”, “Do Not Drink”, or “Do Not Use” orders and press releases as appropriate • Notify shareholders when it is safe to use drinking water again if orders issued
Contamination	• Assess the problem • Confirm identity of contaminant • Identify contaminated area • Evaluate direction of movement • Isolate portion of system containing contaminant • Shut down system in area contaminant confirmed • Issue “Boil Water”, “Do Not Drink”, or “Do Not Use” orders and press releases as appropriate • Initiate Alternate Water Supply Plan • Develop and implement remediation and recovery plan • Notify shareholders when it is safe to use drinking water again if orders issued

4.2 Seismic Risk Assessment and Mitigation Plan

The existing AMWC water service area covers approximately 38 square miles including the City of Atascadero and a portion of unincorporated area within the County of San Luis Obispo. The water system is comprised of approximately 240 miles of pipeline ranging in size from 4 inches to 24 inches, with nine storage tanks that range in size from 120,000 gallons to 4.8 million gallons. There are 15 active wells, eight booster stations, five treatment buildings, and 20 pressure-reducing stations located throughout the system. In addition, there are over 10,000 customer service connections, 3,700 valves, and 1,700 fire hydrants. Elevations in the system vary from 800 feet, at the well fields along the Salinas River, to 1,916 feet at the tank located in Summit Hills.

With respect to the seismic risk assessment and mitigation plan, AMWC completed their America’s Water Infrastructure Act (AWIA) Risk and Resiliency Assessment (RRA) of the existing water distribution system in December 2020, which assessed seismic risk for AMWC’s critical infrastructure. AMWC also has an existing Emergency Response Plan (ERP) that will be reviewed/updated as part of AWIA by December 31, 2021 and will include a mitigation plan to address seismic risk. AMWC has also developed a catastrophic supply interruption plan, as stated in Section 4.1 of this chapter, that identifies the actions AMWC would implement following a seismic event.

In addition, the County of San Luis Obispo, in partnership with the City of Atascadero, developed a Multi-Jurisdictional Hazard Mitigation Plan (Hazard Plan), which evaluated seismic risk within AMWC’s service area. The following sections provide a summary of the general findings from the Hazard Plan with respect to potential impacts from earthquakes, faults, and liquefaction within the AMWC service area.

4.2.1 Faults, Earthquakes, and Liquefaction

Per the Hazard Plan, the following provides a description of major faults within the County of San Luis Obispo:

The California Geological Survey (CGS) is charged with recording and mapping faults throughout California. The Alquist-Priolo Earthquake Fault Zoning (AP) Act was passed into law following the destructive February 9, 1971 6.6 San Fernando earthquake. The AP Act provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the AP Act is to insure public safety by prohibiting the siting of most structures for human occupancy on or near active faults that constitute a potential hazard to structures from surface faulting or fault creep. Fault zoning is continually updated and reviewed by CGS and it is likely that other faults in addition to those currently listed by CGS will be added to the list in the future. The primary active faults identified by the AP Act in the County include the San Andreas, San Simeon-Hosgri, and Los Osos faults.

San Andreas Fault: The San Andreas is a historically active fault thought to be capable of an earthquake up to and above the 8.0 magnitude range and generally runs along the eastern county border. It enters the County near the Cholame area, passes through the Carrizo Plain, and exits the county near Maricopa. As it passes through the County, three relatively distinct portions of the fault have separate potentials for causing a damaging earthquake. The portion of the fault that runs from Monterey County into San Luis Obispo County to an area near Cholame has commonly been known as the Parkfield segment of the San Andreas fault system. That portion of the fault system is the one that has an approximate 5.6 – 6.0 magnitude earthquake from time to time. A segment of the system that runs from approximately the Cholame area to about the northern edge of the Carrizo Plain area has been commonly known as the Cholame segment. The portion running from the northern Carrizo Plain area and out of the County into Kern County has been commonly known as the Carrizo segment.

It is believed that in 1857 a large (possible 7.8 or larger) earthquake occurred on the San Andreas fault that possibly originated in the Parkfield area and stretched along the fault to the area near San Bernardino. This is perhaps an illustration of the potential for the San Andreas to cause a very powerful earthquake and the need to be prepared.

A major earthquake along any section of the San Andreas Fault could result in serious damage within San Luis Obispo County. An earthquake of 8.0 or greater magnitude would result in severe ground motion and could cause damage throughout the County.

With respect to the AMWC service area the Rinconada and Nacimiento fault zones are the closest in proximity and are described below based on the Hazard Plan:

Mapped faults in the vicinity of Atascadero are the potentially active Rinconada fault and the Nacimiento fault zones. The Rinconada fault and its western associated fault, the Jolon, is mapped trending northwest along the eastern City limits. The fault mostly lies east of the Salinas River and outside the City limits. Although there is evidence that indicates movement along the Rinconada fault, the fault lacks any geomorphic features to suggest the fault is active. Because the Rinconada fault is potentially active, it presents a moderate fault rupture hazard to the City of Atascadero. Further studies to evaluate the activity of the faults are warranted, prior to placing structures near the mapped fault traces.

The Nacimiento fault zone consists of a nearly 10-kilometer wide northwest trending, complex fault zone located in the Santa Lucia Range of southwest Atascadero. The Nacimiento fault zone is classified as inactive by CSG but is believed to be coincident with the location of the epicenter for historic earthquakes that suggest the fault is seismically active. Given the uncertainty of the Nacimiento fault's activity, further studies to evaluate the activity of the faults are warranted, prior to placing structures near the mapped fault traces.

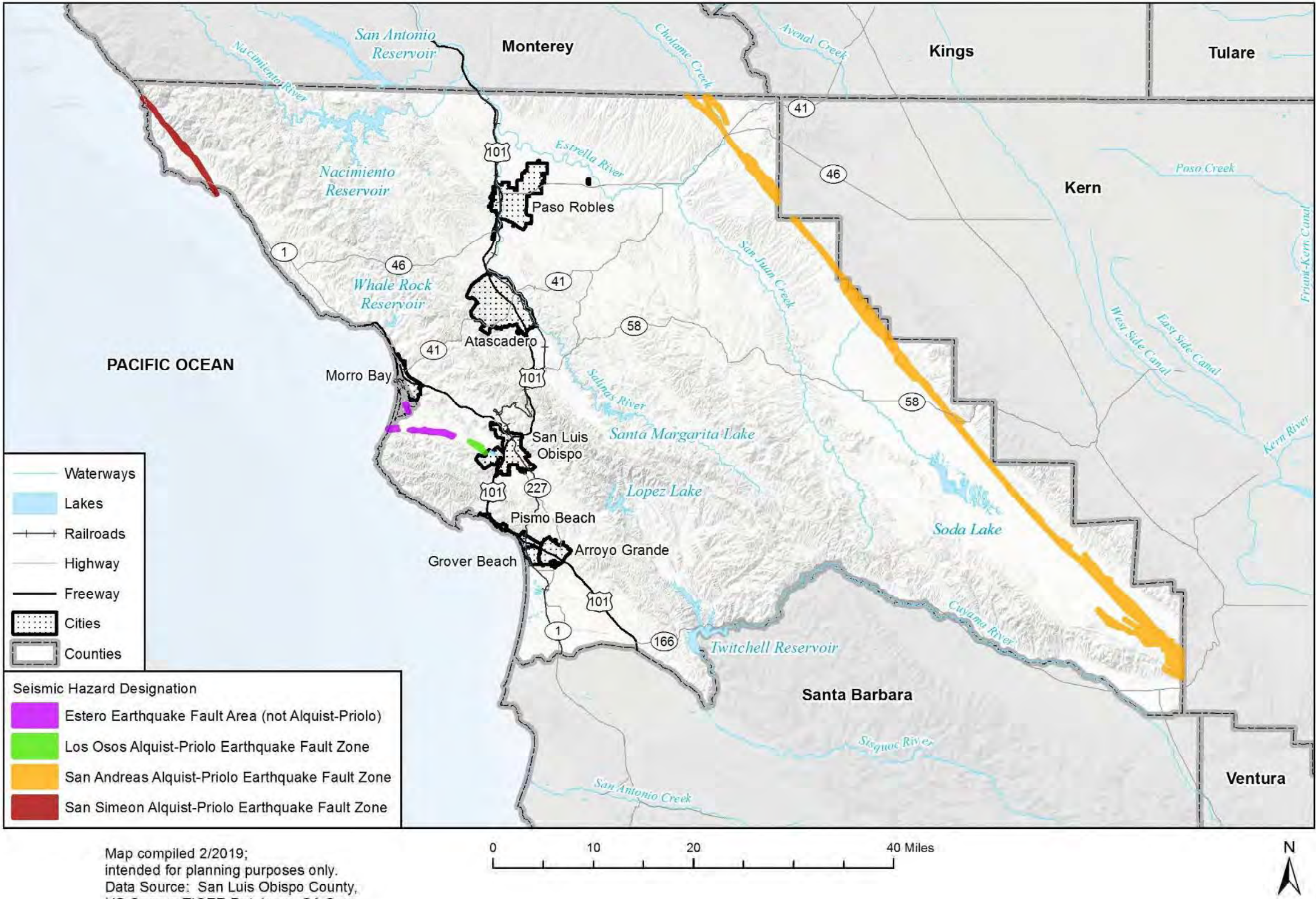
In addition, the Hazard Plan also provides a description of liquefaction susceptibility specifically within the City of Atascadero:

The areas of Atascadero that have a high potential to be underlain by potentially liquefiable sediments are those areas underlain by younger alluvium. Portions of the City in the low-lying areas adjacent to Atascadero Creek, Graves Creek, and the Salinas River are mapped as being underlain by younger alluvium. Site-specific studies are needed to evaluate if a geologic unit actually contains potentially liquefiable materials, and if they require mitigation for development.

Figure 4-1 provides an overview of the primary active earthquake fault lines described, **Figure 4-2** provides an overview of ground shaking potential across the County, and **Figure 4-3** provides an overview of liquefaction susceptibility. Relevant sections of the Hazard Plan are included as Appendix B.

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Figure 5-56 Earthquake Fault Zone Designations in San Luis Obispo County



Notes:
Map includes Figure 5-56 Earthquake Fault Zone
Designations from San Luis Obispo County Local
Hazard Mitigation Plan October 2019.



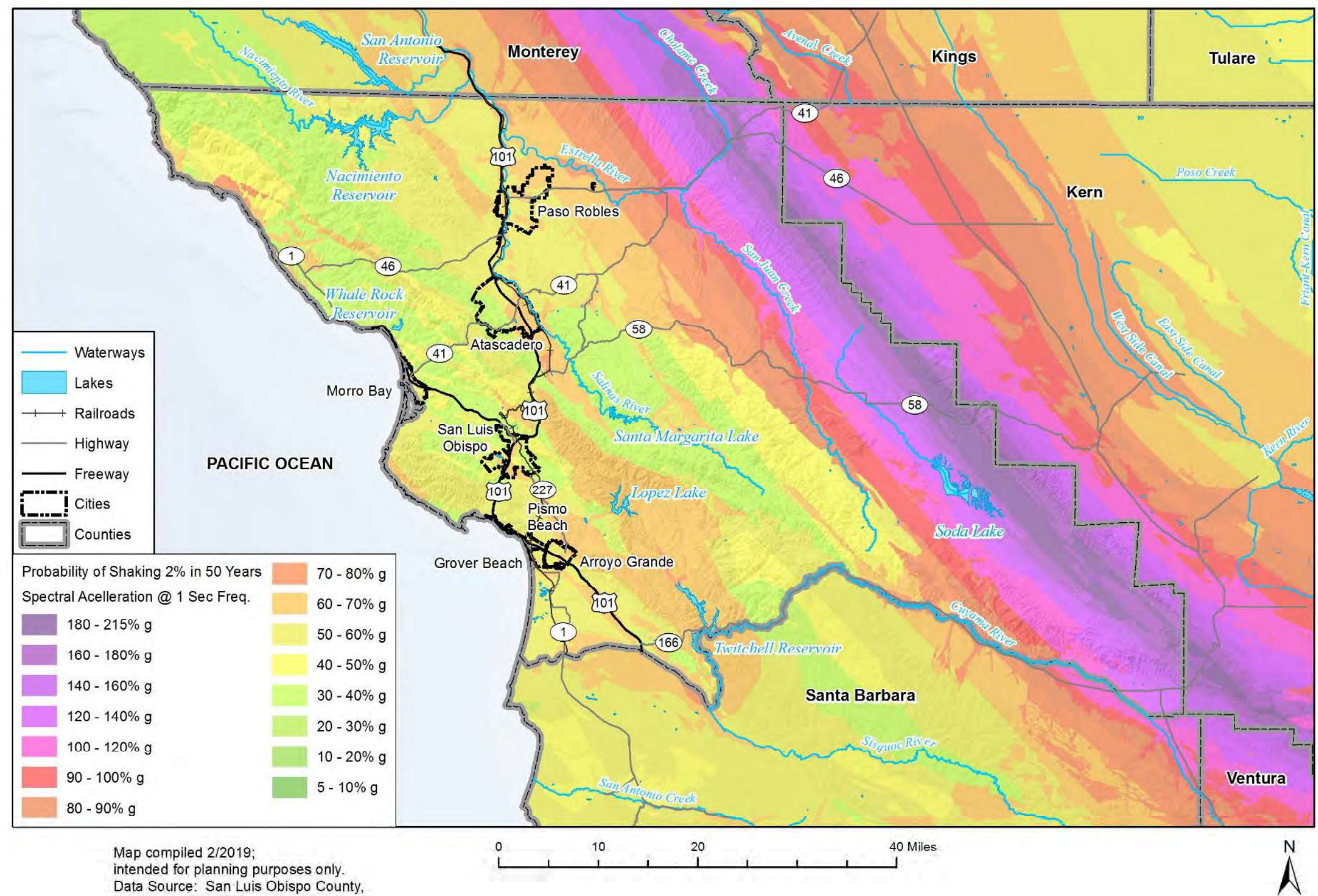
Atascadero Mutual
Water Company
2020 Urban Water
Management Plan

Figure 4-1:
Earthquake Fault
Line Map



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Figure 5-55 Ground Shaking Potential from Spectral Acceleration the Planning Area – Probability of Shaking 2% in 50 Years



Notes:
Map includes Figure 5-54 Ground Shaking Potential
from San Luis Obispo County Local Hazard
Mitigation Plan October 2019.



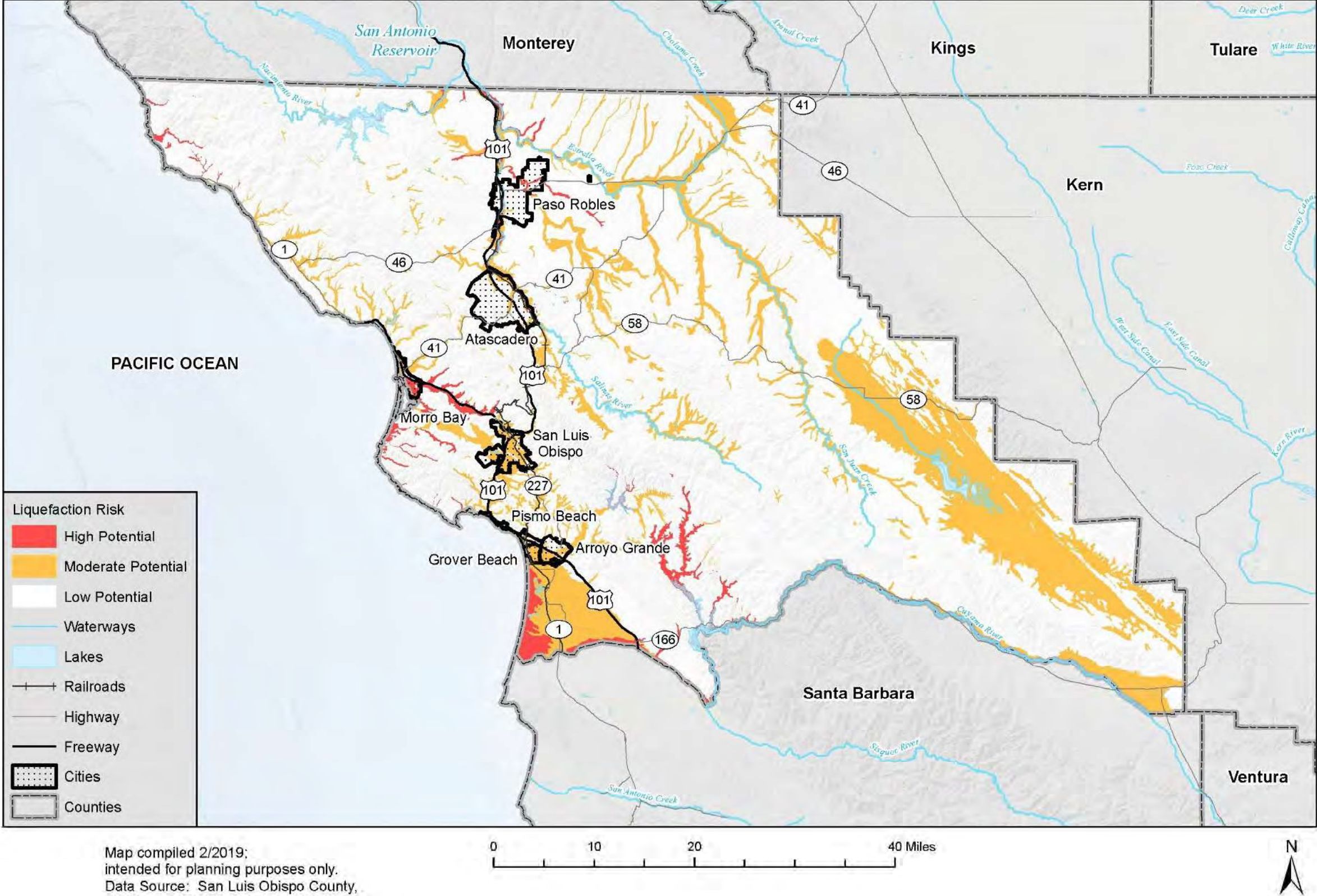
Atascadero Mutual
Water Company
2020 Urban Water
Management Plan

Figure 4-2:
Ground Shaking
Potential Map



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Figure 5-57 Liquefaction Susceptibility in San Luis Obispo County



Notes:
Map includes Figure 5-57 Liquefaction Susceptibility
in San Luis Obispo County from San Luis Obispo
County Local Hazard Mitigation Plan October 2019.



Atascadero Mutual
Water Company
2020 Urban Water
Management Plan

Figure 4-3:
Liquefaction
Susceptibility Map



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4.2.2 Seismic Risk

Per the California Department of Conservation Earthquake Hazards Zone Application and the area maps included in the Hazard Plan AMWC's existing water distribution facilities were not identified to be within critical fault, liquefaction, or landslide hazard zones. In addition, the RRA completed for AMWC identified a low vulnerability to seismic events for existing facilities.

4.2.3 Mitigation

In the event of a system disruption to existing water supplies from an earthquake, fault rupture, or liquefaction response actions are described in AMWC's emergency response plan.

CHAPTER 5 SHORTAGE RESPONSE EFFECTIVENESS

All water shortage response actions are intended to reduce the water demand below the available water supply, during a water shortage event. To ensure that all water response actions are effective in reducing the demand to the level necessary, AMWC will routinely monitor water production levels monthly through the current in place meter system as described below in **Section 8.9**. If the shortage response actions are not effective in reducing water consumption to the required level AMWC will refine and update the water shortage response actions until effective.

5.1 Communication Protocols

AMCW will inform its shareholders, the public, and the necessary local, regional, and state government entities regarding any current or predicted water shortages based on the results of the Annual Water Supply and Demand Assessment in accordance with CWC §10632(a)(5). AMWC will also notify all necessary entities of any shortage response actions mandated in response to the Annual Assessment.

In the event of a water shortage due to an emergency AMWC will follow emergency communication protocols outlined in the Emergency Response Plan as described by Section 4.1.

Table 5-1: Stages of Water Shortage Contingency Plan – Communication Protocols

Shortage Level	Communication Protocol and Procedure	Recipient to be notified
1	General conservation measures and resources will be posted on the AMWC website, published in the newsletter.	Shareholders and the public
2	Bill stuffers will be distributed to all shareholders that inform of the Stage II status and mandatory water shortage response actions. The Stage II water shortage response actions will be included in the newsletter and posted on the AMWC website.	Shareholders and the public
3	Bill stuffers will be distributed to all shareholders that inform of the Stage III status and mandatory water shortage response actions. The Stage III water shortage response actions will be included in the newsletter and posted on the AMWC website.	Shareholders, public, all government entities
4	Bill stuffers will be distributed to all shareholders that inform of the Stage IV status and mandatory water shortage response actions. The Stage IV water shortage response actions will be included in the newsletter and posted on the AMWC website. A Public Notice will be issued to all customers and relevant government entities.	Shareholders, public, all government entities
5	Bill stuffers will be distributed to all shareholders that inform of the Stage V status and mandatory water shortage response actions. The Stage V water shortage response actions will be included in the newsletter and posted on the AMWC website. A Public Notice will be issued to all shareholders and relevant government entities.	Shareholders, public, all government entities
6	Bill stuffers will be distributed to all shareholders that inform of the Stage VI status and mandatory water shortage response actions. The Stage VI water shortage response actions will be included in the newsletter and posted on the ENCSD website. A Public Notice will be issued to all shareholders and relevant government entities.	Shareholders, public, all government entities

CHAPTER 6 COMPLIANCE AND ENFORCEMENT

6.1 Compliance and Enforcement

The following compliance and enforcement actions to be taken by AMWC under a declared water shortage condition were developed in accordance with CWC §10632(a)(6).

The AMWC Board of Directors may impose a special water waste surcharge against a shareholder's account and may temporarily or permanently discontinue or restrict, with a flow regulating device, water service to the affected property in the event that the shareholder or political entity is found by the Board to be in violation of any restrictions or prohibitions under a water shortage mandate declared by the Board.

Before taking such actions, the Board shall give any such shareholder thirty (30) days written notice and an opportunity to be heard and protest the finding of such violation and the imposition of such measure.

Table 6-1 summarizes the compliance measures that AMWC may implement during a declared water shortage. The Board has determined that the surcharges listed below reasonably compensate AMWC and its shareholders for all loss of water and other damages incurred and as will foster water conservation within the service area. AMWC will implement the following penalties and charges for excessive water use within its service areas:

Table 6-1: Excessive Water Use Penalties and Charges		
Shortage Level	Violation	Notices and Surcharges
1	1st	Written and oral notice (door hanger and follow-up call) identifying the nature of violation
1	2nd	Written notice including notification of possible surcharge and the possible installation of flow restrictor
1	3rd	The third violation within one year of first violation will incur a 50% surcharge based on current month's water usage added to current month's water bill
1	4th and Subsequent	The fourth and subsequent violations within one year of the first violation will incur a 100% surcharge based on the current month's water usage added to the current month's water bill plus installation of a flow restrictor

6.2 Legal Authorities

AMWC is governed by a five (5) member Board of Directors who are elected annually via proxy to serve one (1) year terms. The Board of Directors has the legal authority to implement and enforce any and all of the water shortage response actions of this WSCP.

In the event of a water shortage emergency where the ordinary demands and requirements of AMWC's shareholders cannot be satisfied without depleting AMWC's water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection the AMWC Board of Directors shall declare a water shortage emergency and implement and enforce the corresponding water shortage response actions in accordance with CWC Division 1, §350.

If the AMWC Board of Directors declares a water shortage emergency, AMWC shall coordinate with the City of Atascadero and the County of San Luis Obispo to issue a proclamation of a local emergency in accordance with CWC §10632(a)(7)(D).

6.3 Financial Consequences of WSCP Activation

AMWC recognizes that there are additional operating expenses associated with the various water shortage condition stages including, but not limited to: the hiring of a part-time water conservation technician; additional outreach and education; additional state reporting; additional monitoring of water use to gage the effectiveness of compliance efforts; responding to shareholder inquiries and complaints; investigating and monitoring of violations of watering restrictions and prohibitions; and increased facilities, pumping, and utility costs. In addition, water sales revenues will decrease due to lower water use by AMWC's shareholders.

AMWC has established water rates that allow reasonable working capital to be maintained. This working capital is reviewed by the Board of Directors in a monthly financial report. If projections indicate a depletion of working capital, the Board of Directors has sole discretion on adjusting water rates. In addition, the Board has and will adopt drought water rates to encourage conservation and offset revenue declines. To offset increased expenses, non-critical capital investments may be deferred.

6.4 Monitoring and Reporting

AMWC will monitor, analyze, and report on water production and use data in accordance with CWC §10632(a)(9).

All AMWC's shareholder accounts are metered. Meter classes include single-family residential, multi-family residential, mixed use, commercial, industrial, and landscape. Meters are manually read on a monthly basis.

Under all water supply conditions, potable water production figures are recorded daily by Water Treatment Operators. Totals are reported weekly to the General Manager. The General Manager and Chief Operator incorporates the information into a monthly water supply /demand report to the Board of Directors.

During a Stage 1 or Stage 2 water shortage, the General Manager compares the monthly production to the target monthly production to verify that the reduction goal is being met. The General Manager presents monthly reports to the Board of Directors. If reduction goals are not met, the General Manager will notify the Board of Directors so that corrective action can be taken.

During a Stage 3 water shortage or Stage 4, the procedure listed above are followed, with the addition of a bi-monthly production report to the Board of Directors.

During a Stage 5, 6, or an emergency event, reports will also be provided weekly to the Board of Directors. During emergency shortages, production figures are reported to the General Manager regularly or as needed.

CHAPTER 7 WSCP REFINEMENT, ADOPTION AND SUBMITTAL

7.1 WSCP Refinement Procedures

The WSCP is intended to implement water shortage mitigation strategies that can quickly and effectively reduce water demand during a water shortage event in accordance with CWC §10632(a)(10). The water shortage response actions listed in **Table 3-2** will be routinely monitored as outlined above. If shortage response actions are not effective in meeting the required water use reduction the AMWC Board of Directors will have the ability to amend the WSCP as deemed necessary.

7.1.1 Special Water Feature Distinction

AMWC specifically distinguishes between “Decorative Water Features” and all other water features in the WSCP. In the event of a water shortage potable water use for decorative water features such as fountains is prohibited, and only re-circulated water can be used to operate ornamental fountains or other decorative water features.

7.2 Plan Adoption, Submittal and Availability

The Notice of the public hearing, held during the June 2021 Board meeting at AMWC’s office, was sent to the City of Atascadero and County of San Luis Obispo on April 1, 2021, in accordance with CWC §10632(a)(c). A copy of the letters from AMWC to the City and County are included in Appendix C of this WSCP.

Table 7-1: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
City of Atascadero	☒	☒
City of Paso Robles	☒	☒
County Name	60 Day Notice	Notice of Public Hearing
San Luis Obispo County	☒	☒

A public adoption hearing was held on June 9, 2021 at AMWC’s office. The public hearing provided opportunity for community input. The WSCP update was adopted by AMWC during the June 2021 Board meeting by approval of Resolution 2021-XX. A copy of the resolution can be viewed in Appendix D.

Within 30 days of adoption, AMWC will submit the WSCP update to the DWR for review. During the DWR review process AMWC will coordinate with DWR reviewers as necessary. AMWC will use the online submittal tool located at www.wuedata.water.ca.gov.secure/ developed by the DWR to electronically submit the WSCP update. Confirmation of the electronic submittal will be included in Appendix E.

Within 30 days of adoption, AMWC will submit a CD of the adopted WSCP to the California State Library at the following address:

California State Library
 Government Publications Section
 P.O. Box 942867
 Sacramento, CA 94237-001
 Attention: Coordinator, Urban Water Management Plans

A copy of the transmittal to the State Library will be included in Appendix D.

Within 30 days of adoption, AMWC will submit an electronic copy of the adopted WSCP update to the City of Atascadero, the City of Paso Robles and the County of San Luis Obispo electronically in accordance with CWC Section 10632(a)(c). A copy of the transmittals to said agencies will be included in Appendix B.

Commencing no later than August 15, 2021, AMWC will have a copy of the WSCP update available for public review at the AMWC office (see address below) during normal business hours.

Atascadero Mutual Water Company
5005 El Camino Real
Atascadero, CA 93422
Phone – 805.466.9004

Appendix H: 60-Day Notification to Cities and Counties

Appendix I: Newspaper Notification

Appendix J: Adoption Resolution

Appendix K: 2025 UWMP Checklist

Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	1	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	n/a	1-1
x	1	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.	Plan preparation	n/a	1-1
x	2.1	Section 2.1	10620(b)	Every person that becomes a Supplier shall adopt UWMP within one year after it has become a Supplier.	Plan preparation	n/a	n/a
n/a	2.5	Section 2.5	10644	Supplier shall report the Public Water Systems number, volume of delivered water, and number of connections that are included in this UWMP.	Plan preparation	2-1	2-1
x	2.5	Section 2.5	10644	Supplier shall report if this UWMP is an individual UWMP and whether the Supplier belongs to a regional UWMP or regional alliance.	Plan preparation	2-2	2-2
x	2.5	Section 2.5	10644	Supplier shall report whether the data is in fiscal or calendar years and the units of measure used for reporting water volumes.	Plan preparation	2-3	2-3
x	2.4	Section 2.4	10642	Provide supporting documentation that the 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	n/a	2-4
x	2.4	Section 2.4.2	10620(d)(3)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other Suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan preparation	n/a	2-4
n/a	2.4	Section 2.4.1	10631(h)	Retail Suppliers will include documentation that they have provided their Wholesale Supplier(s)—if any—with water use projections from that source.	Plan preparation	2-4 R	2-3
x	2.4	Section 2.4.1	10631(h)	Wholesale Suppliers will provide their Suppliers with identification and quantification of the existing and planned sources of water available from the Wholesale Supplier to the Supplier during various water year types.	Plan preparation	2-4 W	n/a
x	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	Page 3-1, Section 3.1
x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	Page 3-4, Section 3.3
x	3.4	Section 3.4.1	10631(a)	Provide the current and projected service area populations for 2030, 2035, 2040, 2045 and optionally 2050.	System description	3-1	Page 3-6, Section 3.4.1, Table 3-1R
x	3.4	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the Supplier's water management planning.	System description	n/a	Page 3-6, Section 3.4.2
x	3.5	Section 3.5	10631(a)	Describe the land uses within the service area... include the current and projected land uses within the existing or anticipated service area affecting the Supplier's water management planning. Describe the land uses within the service area.	System description and baselines	n/a	Page 3-8, Section 3.5
Optional	4.2	Sections 4.2.3 and 4.2.4	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System water use	4-1 and 4-2	Page 4-2, Section 4.2.3, Table 4-0; Page 4-3, Section 4.2.4, Table 4-1 and 4-1a; Section 4.2.5, Page 4-5, Table 4-2
Optional	4.3	Section 4.3.1	10631(d)(3)(A)	Report the distribution system water loss for each of the five years preceding the plan update.	System water use	4-5	Page 4-8, Section 4.3, Table 4-5R
n/a	4.3	Section 4.3.2	10631(d)(3)(C)	Retail Suppliers shall provide data to show the distribution loss standards were met.	System water use	4-6	Page 4-8, Section 4.3, Table 4-6R
n/a	4.2	Section 4.2.5.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the Supplier.	System water use	4-3	Page 4-7, Section 4.2.7, Table 4-3R
n/a	4.2	Section 4.2.5.3	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	4-3	Page 4-7, Section 4.2.7
n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System water use	4-3	Page 4-7. Section 4.2.7
n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)(i)	To the extent that a Supplier reports the information described in subparagraph (A), an urban water Supplier shall... 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.	System water use	4-3	Page 4-7, Section 4.2.7
x	4.2	Section 4.2.5.6	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System water use	n/a	Page 4-9, Section 4.4
x	5.1	Section 5.1	10608.36	Wholesale Suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their Retail Suppliers achieve targeted water use	Baselines and targets	n/a	
n/a	5.2	Section 5.2	10608.4	Retail Suppliers shall report on their compliance in meeting their water use targets. Reporting requirements will vary depending on whether the Supplier: - Was considered an urban retail water supplier in 2020, - Met its 2020 target in 2020, or - Was part of a merger or consolidation since 2020. Chapter 5 Subsections 5.2.1, 5.2.2, and 5.2.3 address each of these situations.	Baselines and targets	5-1	Page 5-1, Section 5.2, Table 5-1R
x	6.1	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	n/a	Page 6-1, Section 6.2.1; Page 6-3, Section 6.2.2
x	6.1	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, including changes in supply due to climate change.	System supplies	n/a	Page 6-3, Section 6.2.1

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x	6.2	Section 6.2.2	10631(b)(4)(C)	Indicate whether groundwater is an existing or planned source of water available to the Supplier. If groundwater is identified as an existing or planned source of water... (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	Water supplies and recycled water	6-1	Page 6-3, Section 6.2.2
x	6.2	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the Supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System supplies	n/a	Page 6-6, Section 6.2.2.3
x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	Page 6-5, Section 6.2.2.1
x	6.2	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	Page 6.6, Section 6.2.2.1
x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins... (include) information as to whether DWR has identified the basin as a high- or medium-priority basin in the most current official departmental	Water supplies and recycled water	n/a	Page 6-5, Section 6.2.2.1
x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins... describe efforts by the Supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	Water supplies and recycled water	n/a	Page 6-5, Section 6.2.2.1
x	6.2	Section 6.2.2.	10631(b)(4)(C)	If groundwater is identified as an existing or planned source of water... (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	System supplies	n/a	Page 6-7, Section 6.2.2.4
x	6.2	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	6-9	Page 6-15, Table 6-9R
x	6.1	Section 6.1	10631(b)	Identify and quantify the existing and planned sources of water available for 2025, 2030, 2035, 2040, 2045 and optionally 2050.	System supplies	6-8 and 6-9	Page 6-14, Table 8R; Page 6-15, Table 9R
x	6.2	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	n/a	Page 4-2, Section 4.2.2 (not applicable)' Page 6-12, Section 6.2.7
n/a	6.2	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)	6-2	Page 6-9, Section 6.2.5.2; Page 6-10, Table 6-2
x	6.2	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 water project.	System supplies (recycled water)	6-3	Page 6-10, Table 6-3R
x	6.2	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the Supplier's service area.	System supplies (recycled water)	6-4	Page 6-11, Table 6-4R
x	6.2	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)	6-4	Page 6-11, Table 6-4R
x	6.2	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 describe the actual use of recycled water in comparison to uses previously projected.	System supplies (recycled water)	6-4 and 6-5	Page 6-11, Tables 6-4R and 6-5R
x	6.2	Section 6.2.5	10633(f)	Describe the actions that 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)	6-6	Page 6-12, Table 6-6R
x	6.2	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)	n/a	Page 6-11, Section 6.2.5.5
x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	Page 6-12, Section 6.2.7
x	6.2	Section 6.2.10	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 five consecutive water years.	System supplies	6-7	Page 6-13, Table 6-7R
x	6.3	Section 6.3 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	O-1A, O-1B, O-1C, and O-2	Page 6-16, Table O-1B
	7.1	Section 7.1	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 supply reliability.	Water supply reliability assessment	n/a	Page 7-4, Section 7.1.1
x	7.2	Section 7.2	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 Supplier with the total projected water use over the next 20	Water supply reliability assessment	7-2, 7-3, and 7-4	Page 7-5, Table 7-2R; Page 7-7, Table 7-3R; Page 7-7, Table 7-4R
x	7.2	Section 7.2.3	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	n/a	Page 7-7, Section 7.1.4
x	7.3	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	n/a	Page 7-8, Section 7.2
x	7.3	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 five consecutive years.	Water supply reliability assessment	n/a	Page 7-8, Section 7.2.1
x	7.3	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	n/a	Page 7-9, Section 7.2.2
x	7.3	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the Supplier with the total projected water use for the drought period.	Water supply reliability assessment	7-5	Page 7-10, Table 7-5R
x	7.3	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	n/a	Page 7-8, Section 7.2
x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	Page 8-1, Chapter 8; Appendix G

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x	8	Chapter 8	10632(a)(1)	Provide an analysis of water supply reliability (from Guidebook Chapter 7) in the WSCP.	Water shortage contingency planning	n/a	Appendix G
x	8.2	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	n/a	Appendix G
x	8.2	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	n/a	Appendix G
x	8.3	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10%, 20%, 30%, 40%, 50% shortage, and greater than 50% 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	n/a	Appendix G
x	8.3	Section 8.3	10632(a)(3)(B)	Suppliers with an existing WSCP that uses different water shortage levels must cross reference their categories with the six standard categories.	Water shortage contingency planning	8-1	Appendix G
x	8.4	Section 8.4	10632(a)(4)(A)	Suppliers with WSCPs that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water shortage contingency planning	8-2	Appendix G
x	8.4	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water shortage contingency planning	8-3	Appendix G
x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	Appendix G
x	8.4	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	Table 8-3	Appendix G
x	8.4	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	8-2 and 8-3	Appendix G
x	8.4	Section 8.4.6	10632.5	The UWMP shall include a seismic risk assessment and mitigation plan.	Water shortage contingency plan	n/a	Appendix G
x	8.5	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	n/a	Appendix G
x	8.5	Section 8.5	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	n/a	Appendix G
n/a	8.6	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	n/a	Appendix G
x	8.7	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the Supplier to enforce shortage response actions.	Water shortage contingency planning	n/a	Appendix G
x	8.7	Section 8.7	10632(a)(7)(B)	Provide a statement that the Supplier will declare a water shortage emergency per Water Code Chapter 3, <i>Water Shortage Emergencies</i> .	Water shortage contingency planning	n/a	Appendix G
x	8.7	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	n/a	Appendix G
x	8.8	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	n/a	Appendix G
x	8.8	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	n/a	Appendix G
n/a	8.8	Section 8.8	10632(a)(8)(C)	Retail Suppliers must describe the cost of compliance with Water Code Chapter 3.3, <i>Excessive Residential Water Use During Drought</i> .	Water shortage contingency planning	n/a	Appendix G
n/a	8.9	Section 8.9	10632(a)(9)	Retail Suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data are collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water shortage contingency planning	n/a	Appendix G
x	8.10	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the WSCP to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water shortage contingency planning	n/a	Appendix G
n/a	8.11	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	n/a	Appendix G
x	8.12	Section 8.12	10632(c)	Make available the WSCP to customers and any city or county where it provides water within 30 days after adoption of the plan.	Water shortage contingency planning	n/a	Appendix G
n/a	9.1	Sections 9.1	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	n/a	Chapter 9
x	9.2	Sections 9.2	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	
n/a	10	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	n/a	Page 10-1, Section 10.3.1
x	10.2	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 Supplier will be reviewing the UWMP and considering amendments or changes to the plan.	Plan adoption, submittal, and implementation	10-1	Page 10-1, Section 10.2
x	10.4	Section 10.4	10621(f)	Each urban water Supplier shall update and submit its 2025 plan to DWR by July 1, 2026.	Plan adoption, submittal, and implementation	n/a	Page 10-2, Section 10.4.2
x	10.2	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the Supplier made the UWMP and WSCP available for public inspection, published notice of the public hearing, and held a public hearing about the UWMP and WSCP.	Plan adoption, submittal, and implementation	n/a	Page 10-1, Section 10.2; Page 10-1, Section 10.3.1; Page 10-2, Section 10.3.2; Page 10-3, Section 10.4

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x	10.2	Section 10.2.2	10642	The 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	10-1	Page 10-2, Section 10.4.2
x	10.3	Section 10.3.2	10642	Provide supporting documentation that the UWMP and WSCP has been adopted as prepared or modified.	Plan adoption, submittal, and implementation	n/a	Page 10-2, Section 10.5
x	10.4	Section 10.4	10644(a)	Provide supporting documentation that the Supplier has submitted their UWMP to the California State Library.	Plan adoption, submittal, and implementation	n/a	Page 10-2, Section 10.5
x	10.4	Section 10.4	10644(a)(1)	Provide supporting documentation that the Supplier has submitted their UWMP to any city or county within which the Supplier provides water no later than 30 days after adoption.	Plan adoption, submittal, and implementation	n/a	Page 10-2, Section 10.5
x	10.4	Sections 10.4.1 and 10.4.2	10644(a)(2)	The UWMP, or amendments to the UWMP, submitted to DWR shall be submitted electronically.	Plan adoption, submittal, and implementation	n/a	Page 10-2, Section 10.5.2
x	10.7	Section 10.7.2	10644(b)	If revised, submit a copy of the WSCP to DWR within 30 days of adoption.	Plan adoption, submittal, and implementation	n/a	Page 10-3, Section 10.9.2
x	10.5	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its UWMP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Page 10-2, Section 10.6
x	10.5	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its WSCP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Page 10-2, Section 10.5.4
x	10.6	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	NA