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2020 Urban Water Management Plan

28 June 2021

Prepared for

City of Livermore
Water Resources Division
101 West Jack London Boulevard
Livermore, California 94551

KJ Project No. 2068015.00

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Section 1: Introduction\Layperson's Description

1.1 Overview

This report presents the 2020 Urban Water Management Plan (2020 UWMP) for the Livermore Municipal Water (LMW) system. This section describes the general purpose of the 2020 UWMP, discusses UWMP implementation, and provides general background and information about the City and its service area characteristics. It should be noted that this UWMP covers the City-owned LMW service area only.

It is the stated goal of the City to deliver a reliable and high-quality water supply for customers, even during dry periods. The analysis in this Plan documents that projected water supplies in normal and drought years are adequate to service the City's customers. Additionally, The City plans to continue water recycling and conservation to meet and exceed water use reduction and reliability goals.

1.2 Purpose

The City of Livermore has prepared this 2020 Urban Water Management Plan (UWMP) for the City of Livermore's Municipal Water system in accordance with the Urban Water Management Planning Act (Act) and its amendments. The Act requires every urban retail water supplier to prepare and adopt an UWMP in years that end in 0 and 5 to document its water supply planning efforts.

The Act defines an urban retail water supplier as "a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes". The UWMP supports an urban retail water supplier's long-term water resource planning and ensures adequate water supplies are available to meet existing and future water demands. The reliability and efficient use of water supplies are assessed over a 20-year planning horizon during normal, dry, and multiple dry year conditions.

It should be noted that this UWMP covers the City-owned LMW service area only. The LMW system, which serves a portion of the City of Livermore, is operated and maintained by the City of Livermore Public Works Department's Water Resources Division (WRD). Water service for the rest of the City of Livermore is provided by the California Water Service Company (Cal Water); Cal Water prepares a separate Urban Water Management Plan documenting its activities.

This UWMP includes information required by the Water Conservation Act of 2009. In February 2008, Governor Arnold Schwarzenegger set a goal of a 20% statewide reduction in per capita daily water use by year 2020. The reduction in per capita daily water use outlined in the 20 x 2020 plan was supported by legislation passed in November 2009 (SBX7_7 Steinberg), also known as the Water Conservation Bill of 2009. The 2020 UWMP reports on compliance with SBX7-7).

Since 2015, there have been changes to the UWMP requirements. Each urban retail water supplier is required to provide a separate Water Shortage Contingency Plan with six shortage stages, a multiple dry year analysis for five years rather than three years, narratives describing their water demand management measures addressing the nature and extent of each measure implemented over the past five years and include plans to implement demand management measures with targets and progress tracking to achieve water use targets. UWMPs must quantify and report on distribution system water loss. Urban retail water suppliers must also analyze and define water features that are artificially supplied with water, separately from swimming pools and spas. UWMPs and amendments must be submitted electronically, and standardized tables specified by the California Department of Water Resources must be used. Applicable changes have been incorporated into this UWMP. The completed checklist of requirements for LMW's UWMP is included as Appendix A:.

The City of Livermore adopted its first UWMP for the Livermore Municipal Water system in 1992. A Water Shortage Contingency Plan was prepared and adopted in 1991. The City updated and adopted UWMPs for the Livermore Municipal Water system, including updates to the Water Shortage Contingency Plan, in 1995, 2005, 2011, and 2016. This 2020 UWMP updates and supersedes all previous UWMPs.

1.3 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

Urban water suppliers that anticipate participating in or receiving water from a proposed project (covered action), such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring, exporting, or using water in the Sacramento-San Joaquin Delta (Delta) should provide information in their 2015 and 2020 UWMPs that demonstrates consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code Reg., tit. 23 § 5003). To demonstrate reduced reliance on the Delta and improved regional self-reliance, urban water suppliers are to:

1. Complete an UWMP.

2. Identify, evaluate, and commence implementation of programs and projects included in the UWMP that are locally cost effective and technically feasible in reducing reliance on the Delta.

3. Include expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance in their UWMPs, commencing in their 2015 UWMPs, and continuing their subsequent UWMPs. Programs and projects identified above should reduce the amount or percentage of water used from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply.

LMW, as a retailer of Zone 7 Water Agency, anticipates participating in a covered action and is therefore required to demonstrate reduced Delta reliance. Appendix B: of this UWMP demonstrates LMW's consistency with Delta Plan Policy WR P1.

1.4 Basis for Preparing a Plan

In accordance with the California Water Code (CWC), urban water suppliers with 3,000 or more service connections, or supplying 3,000 or more acre-feet of water per year (AFY), are required to prepare a UWMP every five years. In 2020, the City of Livermore provided water for municipal purposes to 10,543 active connections, thereby meeting the requirement for preparing an UWMP. The City of Livermore manages only the Livermore Municipal Water system, which is Public Water System Number 01-10-011.

1.4.1 Relationship to Other Planning done by LMW

LMW has plans and policies to expand and provide an adequate water supply and water quality for the City of Livermore. The plans and policies include:

- Water Master Plan (WMP) – The WMP provided an evaluation of LMW's water system's ability to meet existing and project buildout water demands and identified improvements needed to address system deficiencies.
- Recycled Water Master Plan (RWMP) - The RWMP provided a plan for the City to implement recycled water in a phased manner as technical, funding, partnering, and other factors align to make recycled water expansion feasible.
- Local Hazard Mitigation Plan (LHMP) – The LHMP was developed to identify potential hazards to LMW and formulate mitigation measures for future protection of the LMW's critical infrastructure and the community's safety with respect to the LMW's facilities and services.
- In general, regional water resources planning is also coordinated with LMW's wholesaler, Zone 7 Water Agency (Zone 7).

1.4.2 Relationship to Water Shortage Contingency Plan

LMW has prepared a separate Water Shortage Contingency Plan (WSCP) which contains and expands upon the information that was in the 2015 UWMP. The WSCP is included as Appendix D: to this 2020 UWMP update.

1.5 Structure and Organization of the Plan

The plan is organized as follows:

- Section 1: Introduction / Lay Person's Description
- Section 2: Water Demands
- Section 3: SB X7-7 Baseline and Targets
- Section 4: Water Resources
- Section 5: Recycled Water and Reuse

- Section 6: Water Quality
- Section 7: Reliability Planning
- Section 8: Demand Management Measures
- Section 9: Seismic Risk Assessment
- References
- Appendices
    - Appendix A contains a checklist this UWMP meets the requirements of the Urban Water Management Planning Act and SB X7-7.
    - Appendix B contains the Delta Reliance tables (DWR Table C-1 through C-4).
    - Appendix C contains the Water Shortage Contingency Plan, dated May 2021.
    - Appendix D contains the filled-in standardized tables developed by the Department of Water Resources (DWR).
    - Appendix E contains a copy of the resolution dated June 14, 2021, where City Council adopted the UWMP.
    - Appendix F contains a copy of the public outreach materials.
    - Appendix G includes the water system audit output for 2020.
    - Appendix H includes the SB X7-7 2015 and 2020 verification forms and output of the DWR population tool.
    - Appendix I includes the 2020 UWMP from Zone 7, the wholesale agency that provides water to LMW.
    - Appendix J include tables that describe the energy intensity (distribution energy only) of LMW's water supply operations.

This 2020 UWMP was developed as an individual UWMP reporting solely on LMW's service area in close coordination with water wholesaler Zone 7, Cal Water, and other stakeholders. This 2020 UWMP reports data on a calendar year basis of January 1st through December 31st. Report table column labels will signify the end year of the calendar year. The use of calendar year reporting remains consistent throughout the plan. All water volumes are reported in million gallons (MG), unless otherwise indicated. The use of million gallons reporting remains consistent throughout the plan. This information is also provided in Table 1-1, Table 1-2, and Table 1-3. This UWMP contains all the tables required as listed in the DWR Guidebook, both embedded into the UWMP chapters where appropriate and included separately in Appendix D:.

Table 1-1: Public Water System Covered by this Plan (DWR Table 2-1R)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (MG)
01-10-001	City of Livermore	10,543	2,134
Total		**10,543**	**2,134**

Note:
Connection counts include active connections only

Table 1-2: Plan Structure (DWR Table 2-2)

Select Only One	Type of Plan	Name of RUWMP or Regional Alliance if applicable
✓	Individual UWMP	
	Water Supplier is also a member of a RUWMP	
	Water Supplier is also a member of a Regional Alliance	
	Regional Urban Water Management Plan (RUWMP)	

Table 1-3: Agency and Plan Structure (DWR Table 2-3)

Select One	DWR Supplier
	Supplier is a wholesaler
✓	Supplier is a retailer
	Fiscal or Calendar Year (select one)
✓	UWMP Tables are in calendar years
	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
	Units of measure used in UWMP
	Unit MG

1.6 Implementation of the Plan

LMW updates the UWMP every five years, documenting the latest results of water supply planning efforts including other planning processes that integrate with the UWMP. This includes the City of Livermore General Plan, Water Master Plan, Recycled Water Master Plan, and regional water reports such as wholesale water agency Zone 7's UWMP and associated regional demand projection, Groundwater Management Plan for the Livermore-Amador Valley Groundwater Basin, and Water Supply Evaluation Update. Coordination and outreach are key elements to developing the UWMP, and each of these planning efforts relies on information found in the other documents to support and enhance the plan.

1.6.1 Joint Preparation of the Plan

The UWMP Act requires water suppliers to coordinate the preparation of its plan with other appropriate agencies in the area. This includes other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable. Table 1-4 summarizes the efforts LMW has taken to include the various City departments, agencies, and citizens in the preparation of this document.

LMW purchases all of its potable supplies from Zone 7, the wholesale water supplier. Zone 7 has provided LMW staff with water use projections in five-year increments from 2020 to 2045. Zone 7 staff has also provided City of Livermore staff with information on existing and planned sources of water over the same 5-year increments from 2020 through 2045 and for average, single, and multiple-dry years for inclusion in this 2020 UWMP.

During the preparation of this UWMP, staff worked particularly closely with Zone 7 staff and the other retailers to ensure consistency. Tri-Valley water retailers including Cal Water, Dublin San Ramon Services District, City of Pleasanton and City of Livermore (Retailers) met several times during the development of Zone 7's UWMP to discuss and provide necessary information including service area populations, water demand projections, and recycled water plans. Zone 7 staff completed their UWMP early to assist Retailers in preparing their individual UWMPs, and to ensure consistency of supply and demand projections between the Retailer and Zone 7 plans. Livermore staff coordinates closely with Zone 7 to project accurate demands, ensuring that Zone 7 can plan for and provide appropriate water deliveries. Due to the wholesale/retail relationship between Zone 7 and City of Livermore, staff relied on Zone 7 for information necessary to develop this 2020 UWMP.

Table 1-4: Agency Coordination Summary

Coordinating Agencies / Departments	Participated in UWMP Development	Commented on the Draft	Attended Public Meetings	Contacted for Assistance	Received Copy of Draft	Sent Notice of Intention to Adopt
City of Livermore Planning Division	X			X	X	X
Wholesaler: Zone 7 Water Agency				X		X
Other Tri-Valley Water Retailers: Dublin San Ramon Services District, City of Pleasanton, Cal Water	X	X	X	X	X	X
Alameda County					X	X

Table 1-5: Retail Water Supplier Information Exchange (DWR Table 2-4R)

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.

Wholesale Water Supplier Name
Zone 7 Water Agency

1.6.2 Plan Adoption

LMW began preparation of this Plan in October 2020. A draft of the plan was presented to and reviewed by the City Council on June 14, 2021. The Plan was adopted by the City Council on June 14, 2021 by Resolution No. 2021-090 (Appendix E:) and submitted to DWR within 30 days of City Council approval. This plan includes all information necessary to meet the requirements of Water Conservation Act of 2009 (Wat. Code, §§ 10608.12-10608.64) and the Urban Water Management Planning Act (Wat. Code, §§ 10610-10656). Additionally, the plan has also been submitted to all appropriate entities and made available for public review per the requirements of the Urban Water Management Planning Act.

1.6.3 Public Outreach

Urban water agencies preparing plans are required to hold a public hearing on the UWMP prior to its adoption. In response to these requirements, a public hearing was conducted June 14, 2021 by the City to receive public comment and input on the UWMP. Table 1-6 presents a timeline for public participation during the development of the Plan. A copy of the public outreach materials, including paid advertisements, newsletter covers, website postings, and invitation letters are attached in Appendix F:.

Table 1-6: Public Participation Timeline

Public Workshops and Hearings	Date	Public Participation Task
Draft Available	28 May 2021	Available for Public Review
Public Hearing	14 June 2021	City Council Meeting
Adoption	14 June 2021	City Council Meeting

1.7 System Description

1.7.1 Service Area Physical Description

As noted earlier, the LMW service area comprises portions of the City of Livermore, with the remainder of the City served by Cal Water. Founded in 1869, the City of Livermore is the easternmost city in the San Francisco Bay Area, the gateway to the Central Valley. Protection by the coastal range provides the Livermore Valley with a mild climate that enhances the pursuit of a more relaxed, less congested lifestyle. The City of Livermore is California's oldest wine region, framed by award-winning wineries, farmlands and ranches. Located in Alameda County, the City is a public entity that operates as a Council-Manager government.

1.7.2 Service Area Boundary Maps

LMW distributes treated water purchased from water wholesaler Zone 7 Water Agency in the potable water service area shown in Figure 1-1. The area comprises approximately 13 square miles and includes just over 10,000 service connections. The balance of the City of Livermore is provided water service by Cal Water. There have been no changes to the LMW service area from 1999 through 2020. The service area has about 160 acres of vacant or underutilized properties that are either under construction with housing or designated for residential use.

The City of Livermore's Recycled Water System is served entirely by the LMW. A map of the Recycled Water System is found in Section 5.

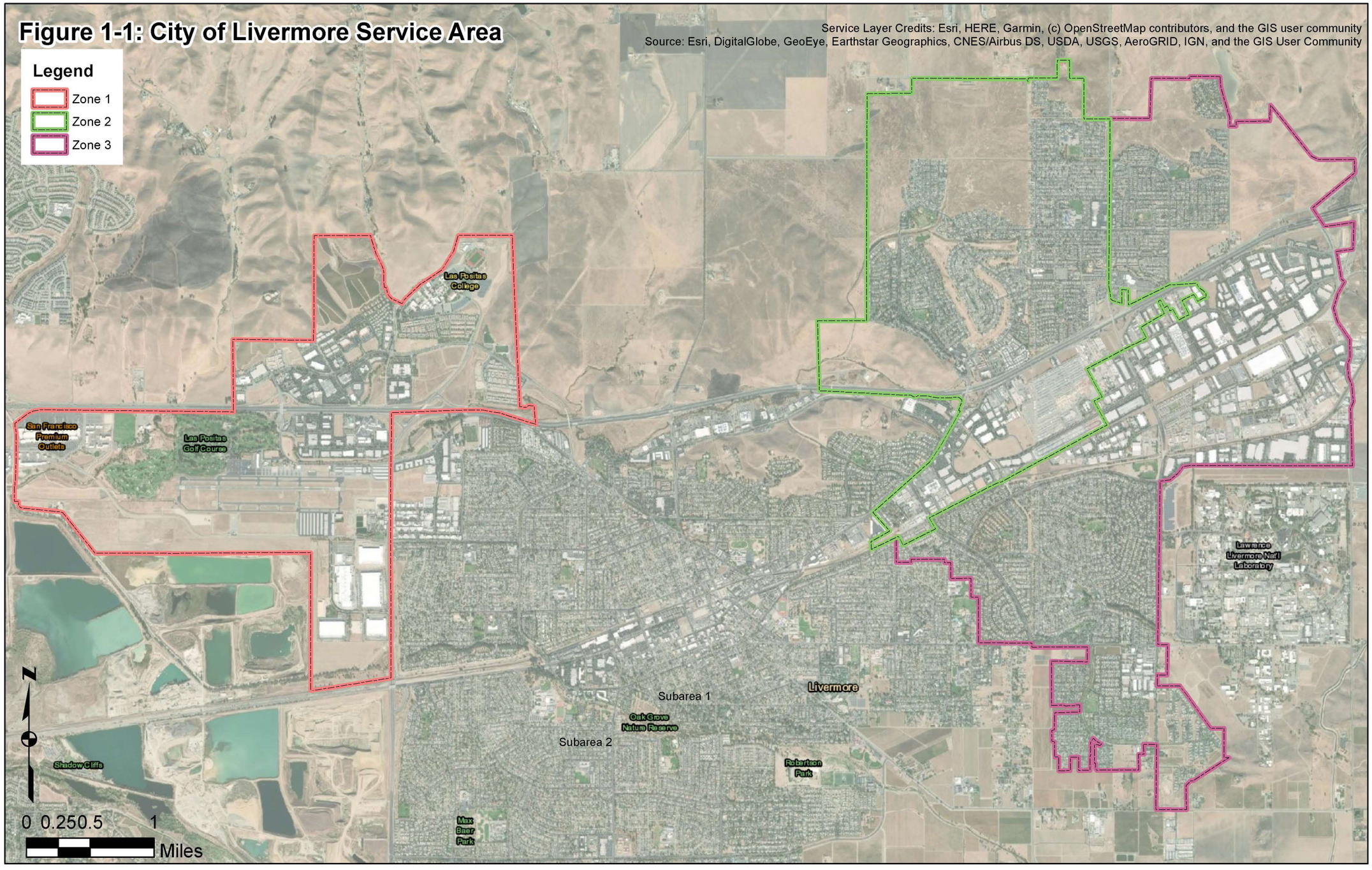

Figure 1-1: City of Livermore Municipal Water Service Area

1.8 Population, Demographics, and Socioeconomics

The City of Livermore is located in a mid- to high-income area relative to many parts of California and has no significant employment, economic or industrial factors that will significantly impact the water supply relative to other local communities. According to the U.S. Census Bureau's American Community Survey (ACS), the 2019 median household income in Livermore was $127,452 compared to the $80,440 statewide median household income and the $99,406 countywide median household income. In addition to a high median income, only about 4.5% of the Livermore population was living below the poverty line as of 2019, compared to a statewide poverty rate of about 11.8% in 2019. Relative to the rest of the state, water customers in the City of Livermore historically have had the financial resources available to support the water rates needed to develop and maintain a safe and reliable water supply.

Due to the level of additional public and private landscape present in well-developed suburban communities such as the City of Livermore, per capita water consumption in the City is likely higher than in other communities with less irrigated landscaping. 73% of Livermore households are classified as "family households", with 36% of households having children under the age of 18. By comparison, only about 69% of California households are classified as "family households", with about 33% having children under the age of 18. Since the percentage of households with children and families in the City of Livermore is higher than statewide averages, it is likely that overall water use in the City is higher than average as well. Additionally, approximately 70% of housing units in Livermore are owner-occupied, compared to 56% statewide. This also likely contributes to higher overall water demands, as homeowners are likely to invest a greater amount of time and effort into outdoor landscaping and irrigation.

The City's experience in the 2014/2015 drought showed that the community was receptive to water conservation and other environmental messaging. The City of Livermore observed over 30% conservation, exceeding the 25% conservation mandate set by the State. Based on this experience, it appears that the City's customers are accepting of conservation as a California way of life, which has been invaluable in achieving the goals set forth in the Water Conservation Act of 2009.

To coordinate regional planning efforts, Zone 7, the City's water wholesaler, conducted a 2020 Tri-Valley Municipal (Tri-Valley) and Industrial Water Demand Study to develop a regional, land-use based water demand forecasting model that produces key inputs that can be used by both Zone 7 and the Tri-Valley retailers. As part of this study, population projections were developed from 2020 through 2045 via linear interpolation of the estimated 2020 water service area population and the anticipated 2040 buildout population. The model assumes that buildout occurs in 2040 and that the City's population remains constant once buildout is reached. The 2040 buildout population was developed using the expected growth of the City based on the City's land use plans plus additional specific anticipated growth due to the development of the Isabel Neighborhood. The Isabel Neighborhood is a 1,100-acre area within the City's service area that is projected to include residential areas, commercial use, and open space. The Isabel Neighborhood is expected to account for most of the City's population growth through 2040.

Between general growth within the City's service area boundaries and the specific development plans for the Isabel Neighborhood, the City anticipates a 54% service population increase. With

buildout anticipated in 2040, the City expects to see approximately 2% growth rate between 2020 and buildout.

The current and projected populations within LMW's service area are presented in Table 1-7.

Table 1-7: Current and Projected Population (DWR Table 3-1)

	2020	2025	2030	2035	2040	2045 *(opt)*
Population Served	30,830	34,965	39,101	43,236	47,371	47,371

Note:

The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values

1.9 Land Uses in the Service Area

The City of Livermore's General Plan guides land use planning, conservation, and development policy for the City. The City's General Plan was adopted in 2003 and has been amended several times between 2005 and 2014. The expected buildout under the General Plan is by or before 2035, but with the adoption of the 2020 Isabel Neighborhood Specific Plan (which is expected to contribute the bulk of the City's future development), buildout is now assumed to occur in 2040. Land use is primarily industrial, residential, and open space, with some commercial use and community facilities. Additional discussion of Land Use occurs in Section 2.3.6.

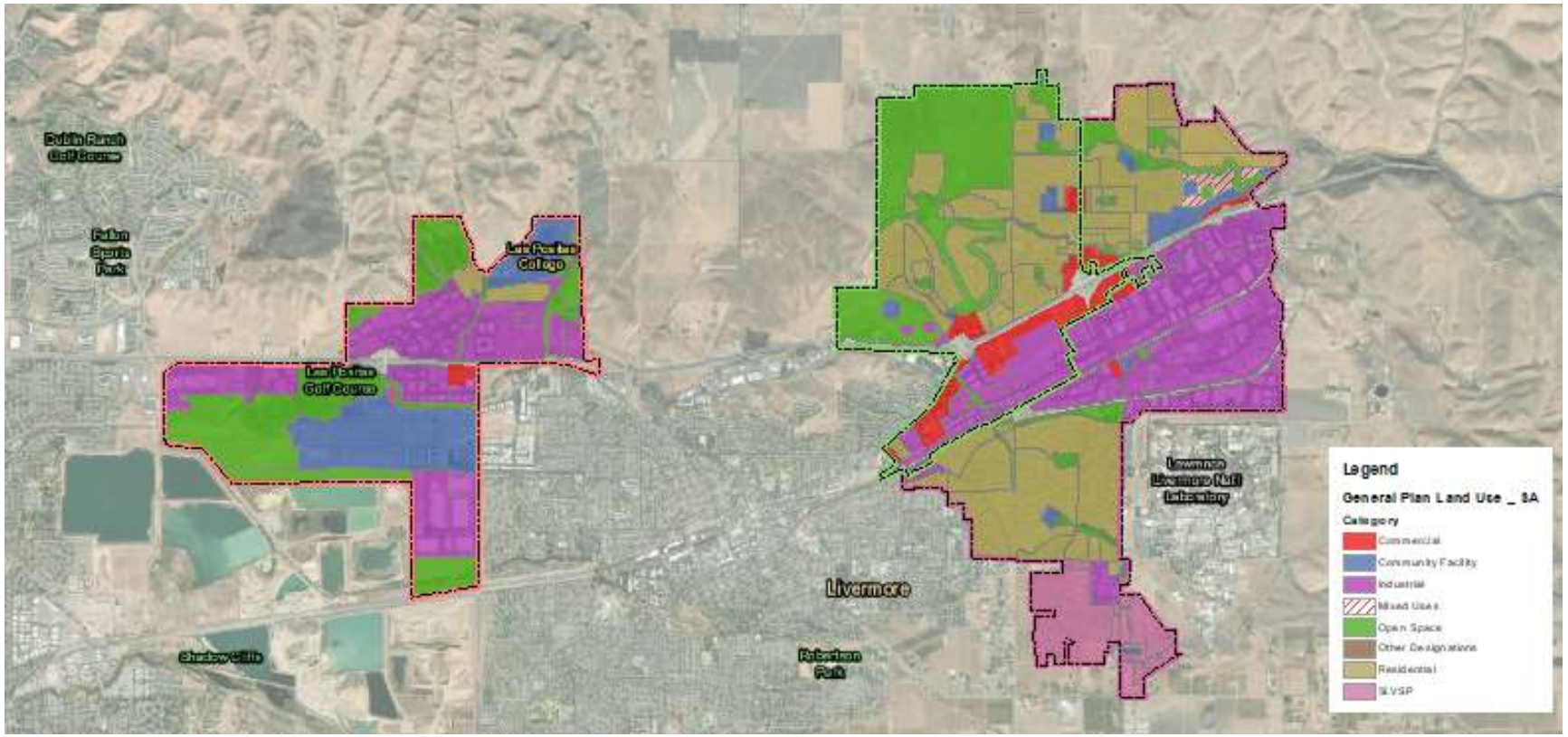

Figure 1-2: Existing Land Uses

1.10 Climate

The City of Livermore has a Mediterranean climate, with warm, dry summers and cool, moist winters. The average daily temperature in Livermore is 58.3°F with average annual high at 72.8°F and average annual low temperature at 47.8°F[1]. The average rainfall and evapotranspiration in Livermore are approximately 15.3 inches and 51.6 inches respectively[1], making the Livermore area relatively dry and arid, which may increase the associated irrigation demands within the LMW service area.

Average monthly temperature, precipitation, and evapotranspiration (ETo) data for the City of Livermore is below in Table 1-8[1] and Figure 1-3.

Table 1-8: Average Livermore Temperature / Precipitation

	Average Minimum Temperature (°F)	Average Maximum Temperature (°F)	Average Monthly Precipitation (in)	Average Monthly ETo (in)
January	40	60	3.49	1.46
February	40	65	3.19	2.45
March	43	67	3.12	3.54
April	46	71	1.69	4.96
May	50	74	0.79	6.01
June	53	85	0.32	4.58
July	55	88	0.20	7.95
August	56	88	0.17	6.85
September	53	85	0.25	5.17
October	48	80	1.02	3.89
November	40	68	1.36	2.03
December	37	60	1.96	1.52

[1] Data for CIMIS Station 191 (Pleasanton) from January 2015 through December 2020, downloaded March 2021.

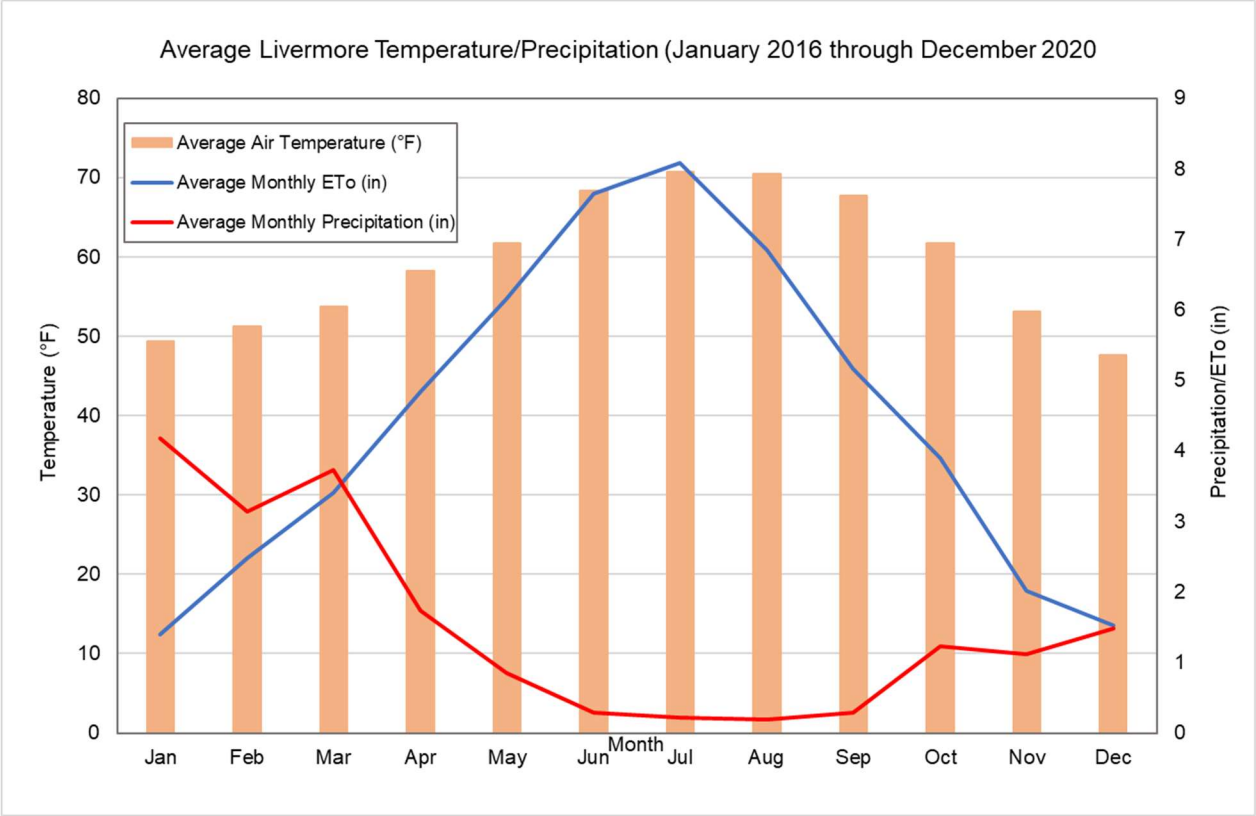

Figure 1-3: Average Livermore Temperature / Precipitation

1.11 Potential Effects of Climate Change

Water demand and use patterns may be impacted by climate change. Climate change models have predicted that potential effects from climatic changes will result in increased temperature, early snow melt, and a rise in sea level.

In the 2013 update of the *DWR California Water Plan*, the implications of future climate conditions are evaluated. These changing hydrological conditions could affect future planning efforts, which are typically based on historic conditions. The *California Water Plan* identifies the following probable impacts due to changes in temperature and precipitation:

- More winter runoff and less spring/summer runoff due to warmer temperatures.
- Greater extremes in flooding and droughts.
- Greater water demand for irrigation and landscape water due to increased temperatures and their impacts on plant water needs.
- Increased sea level rise, increased threat of coastal flooding, and saltwater intrusion into coastal groundwater aquifers.

Anticipated climate change impacts were assessed in the 2018 Tri-Valley Local Hazard Mitigation Plan which included an assessment of the probable impacts of climate change on hazards that could impact water supply. These hazards that were assessed to have potential impact from climate change include flood and wildfire.

Increased irrigation demand, increased evaporative losses due to warmer temperatures, and a longer growing season are also anticipated when temperatures rise. Increasing the use of recycled water for these demands could mitigate the effects of climate change on water demand.

1.12 Reduced Delta Reliance

Appendix B: of this UWMP demonstrates LMW's consistency with Delta Plan Policy WR P1. Overall, Livermore shows a reduction in reliance on the Delta Watershed with an increasing percent of supplies contributing to regional self-reliance projecting out to 2045.

Section 2: Water Demands

2.1 Overview

This Section describes the current and past water demands in the City of Livermore's Livermore Municipal Water service area and projects the estimated future water demands to 2045 based on the assumed reduction in per capita water usage required by the Water Conservation Bill of 2009. Accurately tracking and reporting current water demands allows City staff to properly analyze the use of its resources and conduct water supply planning.

2.2 Non-Potable Versus Potable Water Use

LMW provides both potable water and recycled water to customers within its municipal water service area. The City also supplies a small amount of recycled water to the City of Pleasanton for landscape irrigation uses outside the Livermore service area.

Potable water is water that is safe enough to drink and prepare food and which typically has had various levels of treatment and disinfection. LMW purchases all its potable water supply from wholesaler Zone 7 and has no additional potable supply sources during normal operations. LMW does maintain emergency interties with other water retailers in the area to provide back-up supplies for short-term service interruptions.

Recycled water is municipal wastewater that has been treated to a specified quality to enable it to be used again for a beneficial purpose or discharged from a wastewater facility. The City of Livermore owns and operates a wastewater treatment facility and produces recycled water for beneficial purposes to off-set potable water use. Recycled water is addressed comprehensively in Section 5, but a summary of recycled water demand is included in Table 2-5 (DWR Table 4-3).

Raw water is untreated water that is used in its natural state or with minimal treatment. LMW has an untreated water allocation from Zone 7 that was formerly used for golf course irrigation. Although the golf course is no longer operating, LMW is investigating other uses of raw water, such as dust control and other construction applications. Thus, the full raw water allocation was retained in projected demand calculations.

2.3 Past, Current, and Projected Water Use by Sector

Sections 10631(e) (1) and (2) require urban water suppliers to quantify, to the extent that records are available, past and current water use, and projected water use over five-year increments.

2.3.1 Water Use Sectors Listed in Water Code

Water suppliers are required to identify the uses among sectors of water customer classes, including, but not necessarily limited to, all of the following uses: (1) Single-family residential; (2) Multifamily; (3) Commercial; (4) Industrial; (5) Institutional and governmental; (6) Landscape; (7) Sales to other agencies; (8) Conjunctive use; (9) Groundwater recharge; (10) Saline water intrusion barriers; and (11) Agricultural. These classifications were used to analyze reported

consumption for water use patterns by sector. The LMW customer classifications are represented in sectors 1, 2, 3, 5, and 6, with Sector 3 (commercial) also including industrial usage. LMW has no reportable uses in the remaining sectors.

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

There are no additional water use sectors represented in the City's demands.

2.3.3 Past Water Use

Actual demands from 2015 and 2010 for LMW are summarized in Tables 2-1A and 2-1B.

Table 2-1A: 2015 Actual Demands for Potable and Raw Water

	2015 Actual		
Use Type *(Add additional rows as needed)*	**Additional Description** *(as needed)*	**Level of Treatment When Delivered**	**Volume**
Single Family		Drinking Water	679
Multi-Family		Drinking Water	81
Commercial		Drinking Water	308
Institutional/Governmental		Drinking Water	23
Landscape		Drinking Water	259
Losses			134
Total			**1,484**

Note:

Volumes reported in million gallons (MG). Commercial use includes industrial water use.

Table 2-1B: 2010 Actual Demands for Potable and Raw Water

	2010 Actual		
Use Type *(Add additional rows as needed)*	**Additional Description** *(as needed)*	**Level of Treatment When Delivered**	**Volume**
Single Family		Drinking Water	979
Multi-Family		Drinking Water	64
Commercial		Drinking Water	315
Institutional/Governmental		Drinking Water	24
Landscape		Drinking Water	306
Losses			7
Total			**1,695**

Note:

Volumes reported in million gallons (MG). Commercial use includes industrial water use.

2.3.4 Distribution System Water Losses

System water losses were determined using LMW's annual water loss audits. Losses were assumed to be the difference between water supplied to LMW by Zone 7 and total authorized

usage. In 2020, Zone 7 supplied LMW with 2,134 MG of water, and LMW reported 1,916 MG of authorized usage (1,890 MG of billed metered usage and 27 MG of unbilled unmetered usage), leaving 218 MG counted as losses. This value is reported in Row 54 of the AWWA Water Audit Reporting Worksheet. Table 2-2 presents the results of the Water Loss Audit for 2016 through 2020. Water Loss Audit documentation is provided in Appendix G:.

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

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2016	146
01/2017	95
01/2018	168
01/2019	179
01/2020	218

Note:

Volumes reported in MG and taken from the field "Water Losses" in Row 35 the AWWA worksheet.

2.3.5 Current Water Use

The actual potable water demands presented in Table 2-3 (DWR Table 4-1R) are based on metered, delivered water consumption information from 2020, and are measured in million gallons. There is no reportable actual raw water demand in 2020, however, the City of Livermore is entitled to 185 AFY (60 MGY) of raw water provided by Zone 7 Water Agency. This raw water allocation was formerly used for irrigation at the Springtown Golf Course. Since the golf course closed, LMW is considering other options for using the raw water allocation. Thus, the raw water allocation is incorporated into future projections since the City plans to continue use of raw water. There are no reportable actual or projected water use for sales to other agencies, conjunctive use, groundwater recharge, saline water intrusion barriers, or agricultural uses.

In 2020, LMW provided water service to 10,522 service connections (and an additional 21 connections for domestic city and fire uses). Table 2-3 summarizes the LMW's 2020 water usage by category, which totaled approximately 2,100 million gallons of water.

Table 2-3: DWR Retail: Demands for Potable and Non-Potable Water – Actual (DWR Table 4-1R)

	2020 Actual		
Use Type	Additional Description	Level of Treatment When Delivered	Volume
Single Family		Drinking Water	976
Multi-Family		Drinking Water	142
Commercial	Combined commercial and industrial use	Drinking Water	311
Industrial		Drinking Water	0
Institutional/Governmental		Drinking Water	20
Landscape		Drinking Water	441
Losses			218

Use Type	2020 Actual Additional Description	Level of Treatment When Delivered	Volume
Other	Unbilled/Unmetered	Drinking Water	27
	Total		**2,134**

Notes:

Volumes reported in million gallons (MG) and provided by the City of Livermore 2020 meter data.
Water losses are taken from the AWWA Water Loss Audit Reporting Worksheet, Line 54 (Water Losses)
Other uses (unbilled/unmetered) are taken from the AWWA Water Loss Audit Reporting Worksheet, Line 26 (unbilled unmetered)

Between 2015 and 2020, the City's municipal water system grew by about 350 service connections, or about 3%, to 10,522 service connections. This is equal to about half the growth in services observed between 2010 and 2015. Total volume of water sold increased by approximately 40% between 2015 and 2020. This likely reflects a rebound in water consumption within the past five years following the conservation measures enacted in the 2014/2015 drought.

Total combined commercial and industrial use increased by approximately 3 MG, or about 1% from 2015 to 2020, while landscape usage increased by approximately 70%, and institutional usage decreased by approximately 12% during this period. Single family and multi-family residential usage increased by approximately 45% and 75%, respectively, between 2015 and 2020.

2.3.6 Projected Water Use

Projected water use for the City of Livermore is summarized in Table 2-4 (DWR Table 4-2R). Projections were developed based on expected retailer demands on Zone 7 Water Agency from an analysis conducted by Zone 7. Projected retailer demands on Zone 7 were based on 2020 deliveries, retailer delivery requests for 2022-2025, and projected buildout demands. These items were reported in the Zone 7 Regional Demand Study, in which a regional, land-use based water demand forecasting model was developed for use in planning efforts including this plan. The Regional Demand Study developed a consistent method for estimating demands across the Tri-Valley Region while considering the unique characteristics of each of Zone 7's retailers (such as demographics, historical usage, demand hardening patterns, and future projection for land use and population).

The regional demand study forecasts demand by parcel, allowing Zone 7 and the retailers to analyze how current and future developments may trigger changes in demand forecasts, as well has how changes in land use or unique demand management approaches may change the outcomes. The focus of the Regional Demand Study was developing an estimate of buildout demand, which is expected to occur in 2040. Demands for 2045 were assumed to be the same as in 2040.

The Regional Demand Study provided demand projections from present to buildout by holding expected 2021 demands at 2020 levels, reflecting expected conservation in 2021 as a result of dry conditions. Retailers including LMW submit five-year delivery requests to Zone 7 annually, and these requests form the basis of Zone 7's contractual obligations. LMW's 2022-2025 delivery requests therefore make up the Regional Demand Study's projections for LMW water

usage for 2022-2025. Demand projections for 2026 through 2040 are then linearly interpolated between the 2025 delivery request and the estimated buildout demand. Projected water use in five-year increments from 2025 through 2045 for LMW are reported in Table 2-4.

LMW has a raw water allocation of approximately 60 MG per year from Zone 7 that historically has been used for golf course irrigation. Although raw water usage in 2020 was zero, LMW is exploring future uses of this allocation and anticipates that in the future there will be demand for the full volume of the raw water allocation. This anticipated demand is reported as “Other Non-Potable” in Table 2-4.

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

Use Type	Additional Description	Projected Water Use				
		2025	2030	2035	2040	2045
Single Family		942	954	962	965	965
Multi-Family		170	216	266	320	320
Commercial		755	747	739	731	731
Industrial						
Institutional/Governmental		23	24	25	25	25
Losses		149	153	157	161	161
Other Potable	Unbilled Unmetered Usage	23	24	25	25	25
Other Non-Potable	Raw Water Allocation	60	60	60	60	60
Other						
Total		2,100	2,155	2,209	2,263	2,263

Notes:

Volumes reported in million gallons (MG).
The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values.
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values.
Commercial usage includes commercial, industrial, and institutional/governmental (CII) usage.
Other Non-Potable (Raw Water) usage is equal to LMW's raw water allocation from Zone 7.
Projections in this table were based off of the total volumes projected in the Zone 7 Regional Demand Study. These were broken down into the appropriate DWR usage categories based on the projected split between usage categories reported in the Woodard & Curran 2020 Demand Study for Zone 7. The 2020 Demand Study reported residential usage as residential indoor and outdoor usage – this was converted to a split between single family residential and multi-family residential usage based on an analysis conducted by LMW that interpolated SFR and MFR usage from actual 2019 usage to projected buildout usage.

Potable water demand projections for water years 2040 and 2045 are estimated to remain level as the City of Livermore Municipal Water service area reaches buildout due to the Urban Growth Boundary (UGB). Livermore has an UGB that corresponds with Alameda County's Urban Growth Boundary. Livermore voters approved the South Livermore Urban Growth Boundary Initiative in 2000; and a North Livermore Boundary Initiative in 2002.

In addition to delivering potable water, the City also meets some of the water demand in the City of Livermore by using recycled water. Table 2-5 (DWR Table 4-3R) reflects the estimated projected amounts of recycled water that will be delivered in each water year based on estimates provided by LMW.

Table 2-5: DWR Retail: Total Gross Water Use (Potable and Non-Potable) (DWR Table 4-3R)

	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable From Tables 4-1R and 4-2 R	2,134	2,100	2,155	2,209	2,263	2,263
Recycled Water Demand* From Table 6-4	710	616	635	653	671	671

	2020	2025	2030	2035	2040	2045 (opt)
Optional Deduction of Recycled Water Put into Long-Term Storage						
Total Water Use	2,845	2,717	2,789	2,861	2,934	2,934

Notes:

Volumes reported in million gallons (MG).
The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values
Recycled water demand excludes recycled water sold to the City of Pleasanton

LMW provides the five-year demand projections for its municipal water service area to Zone 7 and requests confirmation of the wholesale water agency's ability to meet the water demands. Zone 7 provided the information contained in Table 6-12 of their 2020 UWMP in response to the request for verification. Based on the response, Zone 7 can meet the requested demands through implementation of water supply projects identified in the Zone 7 Water Supply Evaluation Plan (discussed in further detail in Section 7).

2.3.6.1 Current and Projected Land Use

As discussed in Section 1.9, current land use in the City of Livermore is primarily residential, industrial, and open space. Much of the City's major land use changes are expected to come from the Isabel Neighborhood, a 1,100-acre area within the City's service area that is projected to include residential areas, commercial use, and approximately 200 acres of parks and scenic open space (Figure 2-1). This development was addressed in the Isabel Neighborhood Specific Plan, which was incorporated into the 2020 Zone 7 Demand Study. In addition to the Isabel Neighborhood, the City also has a list of "Reasonably Foreseeable Development Projects", which were also included in the 2020 Zone 7 Demand Study. These developments have been superseded by the Isabel Neighborhood, and the composite projected land use is shown on Figure 2-2.

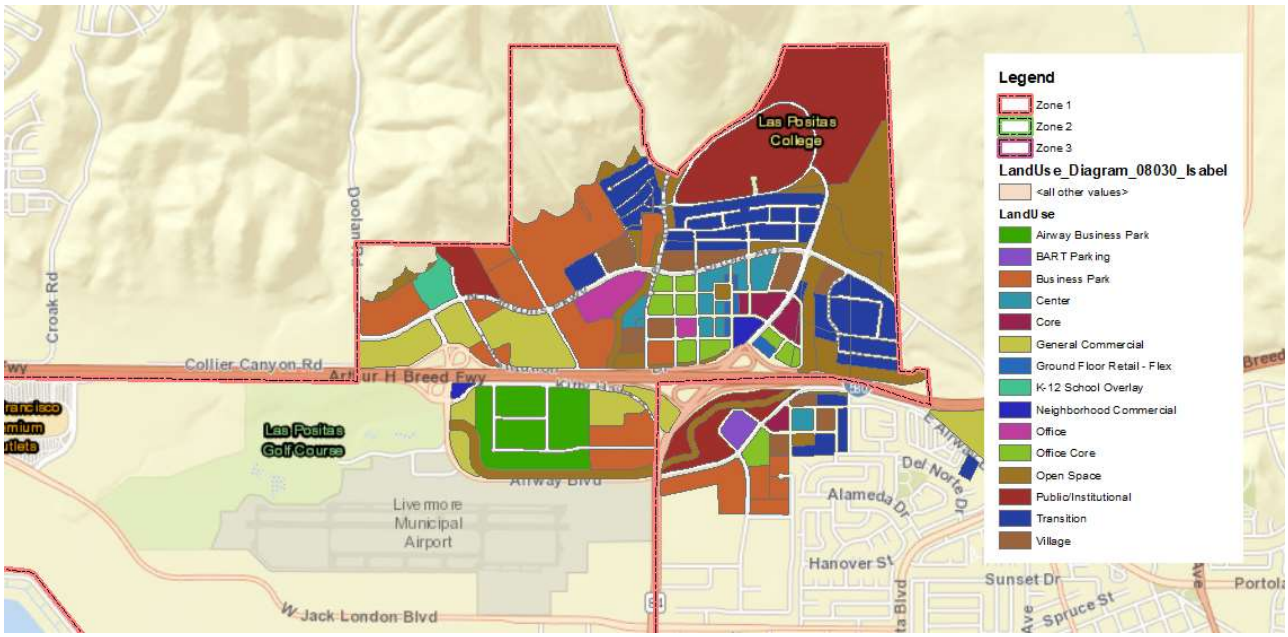

Figure 2-1: Isabel Neighborhood Projected Land Use Developments

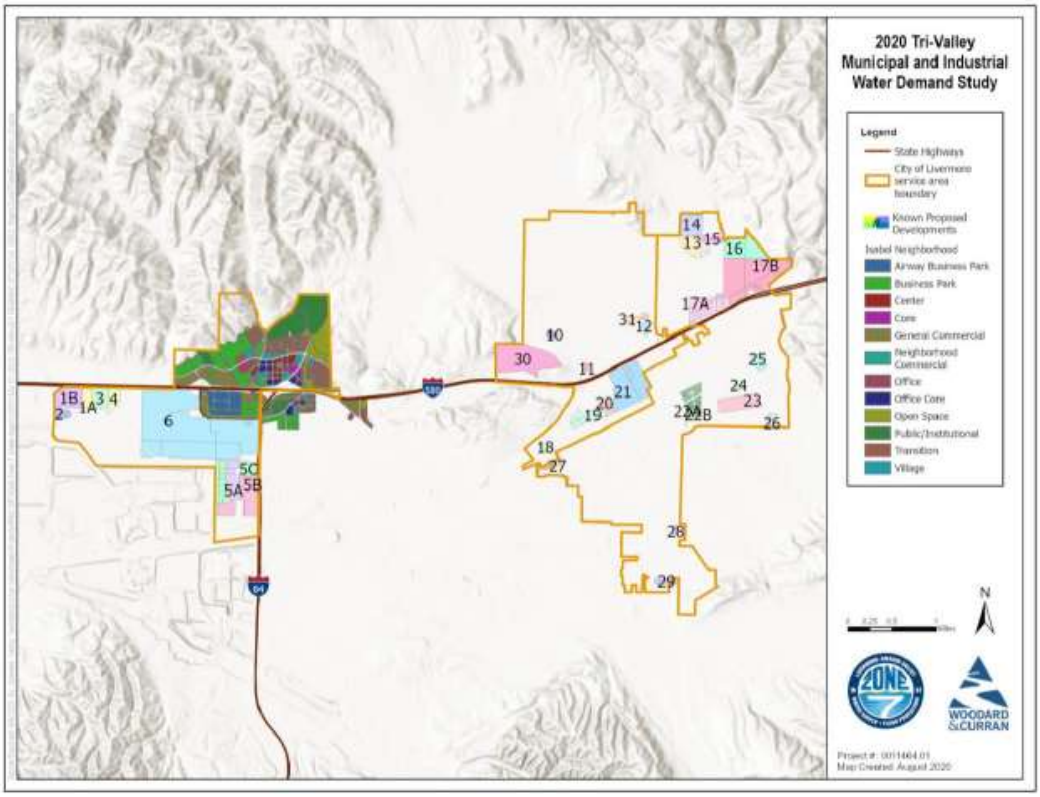

Figure 2-2: Planned Land Use

Specifically, the Isabel Neighborhood is planned to include residential land use ranging from low- to high-density, commercial services (such as grocery stores and restaurants), office and business park, open space, and institutional. These land use changes were all considered in the 2020 Zone 7 Demand Study.

Based on the planned land use developments, it is expected that the City of Livermore will observe an increase in water demand relative to current usage. However, since the Isabel Neighborhood will be served, in part, by recycled water for residential irrigation, it is likely that potable water demand will not increase as sharply as population increases.

The South Livermore Valley Specific Plan (2004) also discusses future planned developments throughout the City of Livermore (Figure 2-4). While most of the planned future developments fall outside of the LMW service area, Specific Plan subareas 1 and 2 fall within LMW's Zone 3. The overlap between the South Livermore Valley Specific Plan and the LMW service area is shown on Figure 2-4.

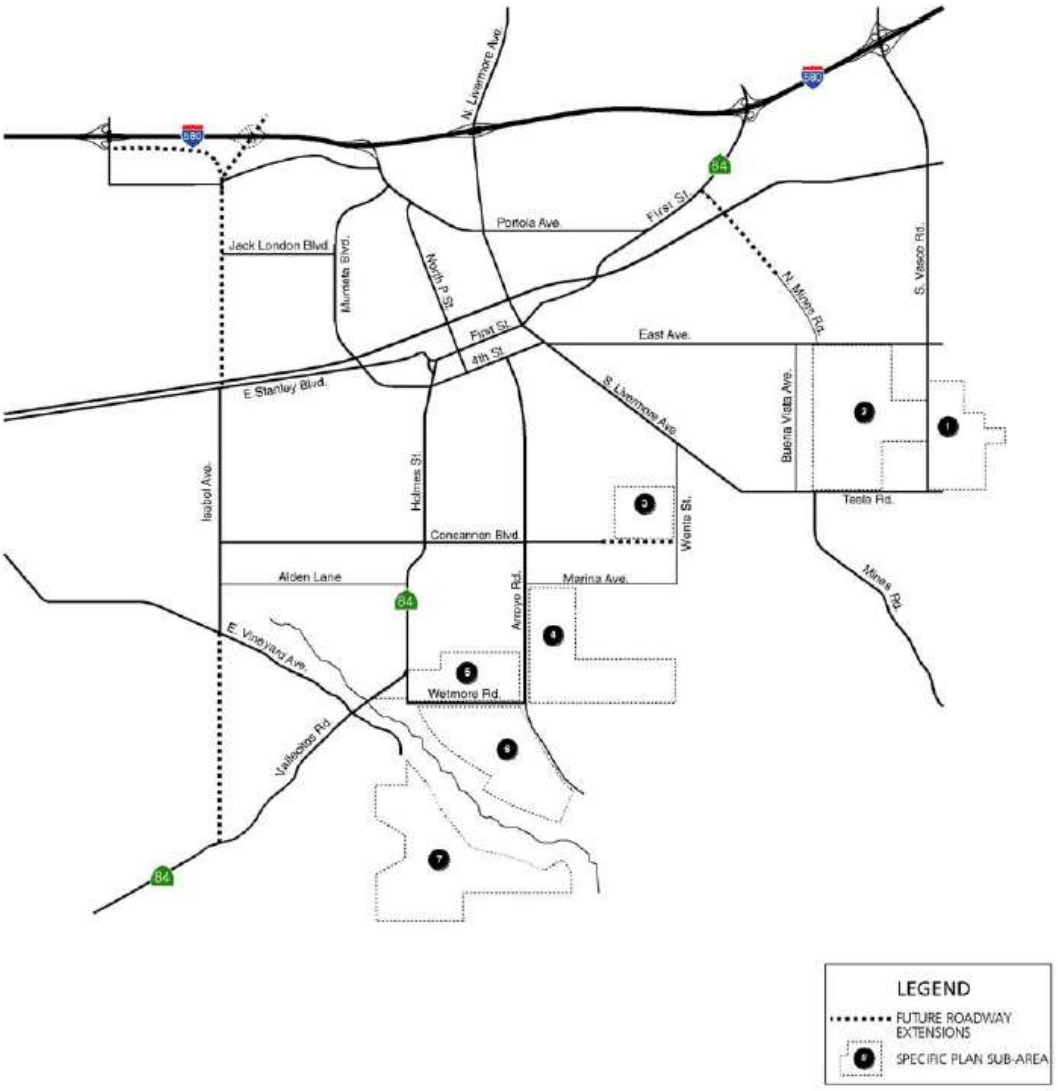

Figure 2-3: South Livermore Valley Specific Plan Development Subareas

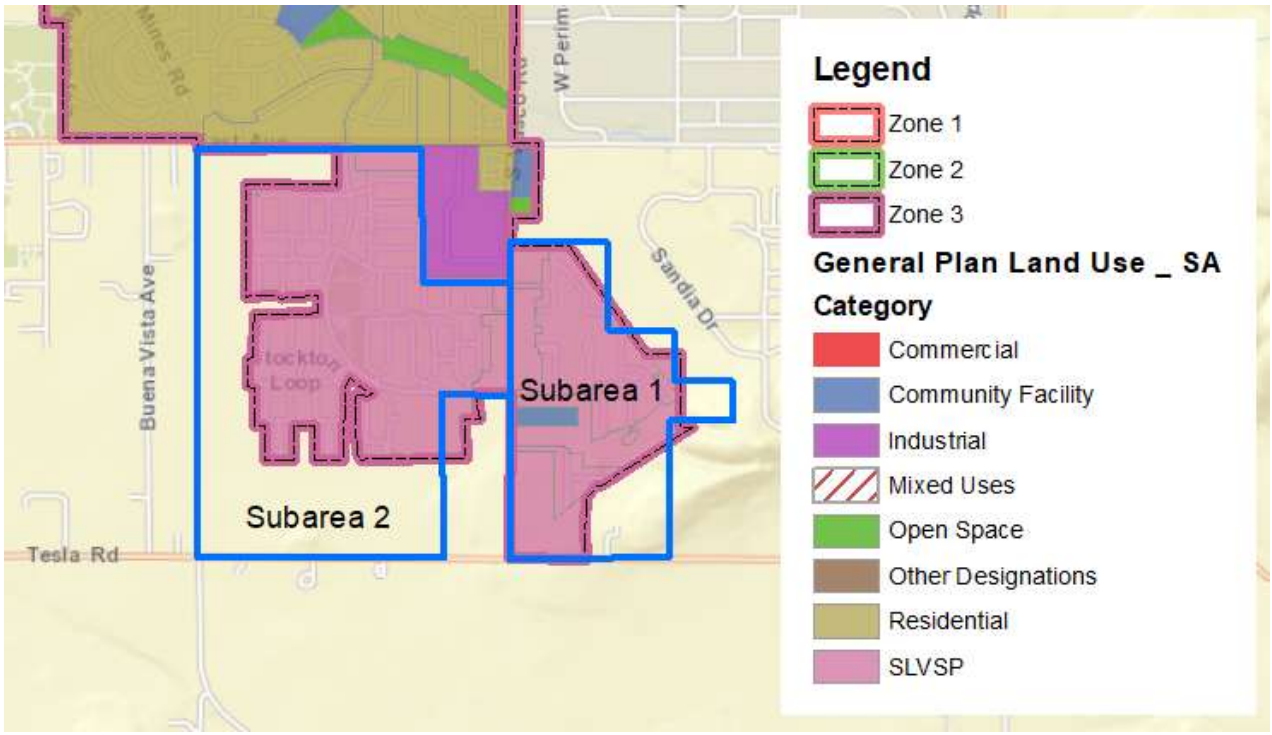

Figure 2-4: South Livermore Valley Specific Plan Overlap with LMW Service Area

Subarea 1 is currently considered primarily undeveloped. Existing use in the subarea is primarily rural residential (including horse boarding, lessons, breeding, and a riding ring), a small vineyard/winery/deli, and a private elementary school. This existing use is expected to remain in the subarea upon development. Otherwise, Subarea 1 consists of 170 acres set aside for primarily residential use with 133 anticipated residential dwelling units. Subarea 1 does not permit any new commercial use. 95 acres are slated for agricultural use (primarily wine grapes). The land use changes in Subarea 1 are primarily the conversion of undeveloped land to developed land, and thus water demands on the City of Livermore would be expected to increase.

The largest amount of proposed development in the South Livermore Valley Specific Plan is expected to occur in Subarea 2. Currently, Subarea 2 contains four developed parcels, including rural residences and office space. Proposed development consists of four principal residential development areas (574 dwelling units), two potential commercial sites associated with existing rural residential sites (two wineries), and a 12.5-acre park. The remainder of the land is slated for agricultural use. The land use changes in Subarea 2 would likely increase water demands in the City of Livermore service area.

2.3.6.2 Coordination with Land Use Agencies to Develop Water Projections

Water demand and population projections for the City of Livermore are developed in conjunction with Zone 7. The 2020 Zone 7 Demand Study developed population and demand projections for all the Tri-Valley water retailers (LMW, Cal Water, the City of Pleasanton, and Dublin San Ramon Services District (DSRSD)). The water projections in the 2020 Zone 7 Demand Study

were developed by using projected land use assumptions in the 2017 Water Master Plan as a baseline and fine-tuning them to include updates since the 2017 Master Plan and updates from the Isabel Neighborhood Specific Plan. As noted earlier, the 2020 Demand Study assumes that the City of Livermore reaches buildout (i.e., completion of all planned development projections including the Isabel Neighborhood) in 2040 and reports projected population and water demands in five-year increments between 2020 and 2040 buildout via linear interpolation. The 2020 Zone 7 Demand Study projects that the City of Livermore will see approximately 6,760 AF of annual water usage at buildout.

In addition to their collaboration on the 2020 Zone 7 Demand Study, the Tri-Valley water retailers met during the development of their UWMPs to discuss and provide necessary information to ensure that Zone 7 can plan for and provide appropriate water deliveries to their retailers. Zone 7 staff also coordinate with staff from the LMW and the other Tri-Valley retailers at the operational and policy level to improve system operations or plan for future supplies.

2.3.6.3 Effects of Codes, Standards, and Ordinances

The water demand projections developed in the 2020 Zone 7 Demand Study incorporated passive water conservation, which refers to water savings from regulatory drivers such as codes, standards, and ordinances that result in a decrease of water use, typically due to the replacement of inefficient water fixtures with more efficient models. The demand projections included corrections for the following items:

- Replacement of residential fixtures, including toilets, showerheads, washers, and dishwashers.
- Replacement of commercial/industrial fixtures, including toilets and urinals.

The corrections used in the 2020 Zone 7 Demand Study projections are reflective of the codes and standards set for flow rates of plumbing fixtures in new construction, including the CALGreen Building Code, the California Plumbing Code, California Water Code, and California Appliance Efficient Standards

2.3.6.4 Effects of Climate Change on Water Use

The 2020 Zone 7 Demand Study accounts for changes in water use due to climate change by incorporating a 5% increase in outdoor water demands linearly starting from 0% in 2020 and reaching 5% in 2040.

2.3.7 Characteristic 5-Year Water Use

The estimated expected gross potable water use for the next 5 years without drought conditions is shown in Table 2-6. The estimates in Table 2-6 were provided by Zone 7 and based on actual 2020 deliveries, retailer requests through 2025, and the projections developed in the 2020 Demand Study. These estimates are similar to the projections in the 2020 Demand Study but account expected increases in 2021 due to increased usage during the COVID-19 pandemic similar to the increases observed in 2020. The estimates in Table 2-6 are the same as the estimates shown in Table 7-5.

Table 2-6: Characteristic 5-Year Water Use

	2020	2021	2022	2023	2024	2025
Gross Water Use (MG)	2,134	2,135	1,994	2,007	2,020	2,040

Notes:

Volumes reported in million gallons (MG).
The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values

2.3.8 Low Income Projected Water Demands

California Water Code 10631.1 requires water retailers to include projected water use for lower income single-family and multi-family households in projected water demands. A lower income household has an income 80% below the Bay Area median income, adjusted for family size. According to the City of Livermore 2015 to 2022 Housing Element (Housing Element) adopted March 23, 2015, 25.6% of City of Livermore households have an income below 80% of the Area Median Income. In addition, the Housing Element indicates 15.9% of Lower Income households are renters and 9.7% of Lower Income households are owners.

Livermore is served by the City's Livermore Municipal Water and Cal Water. It would be difficult to determine the exact number of lower income households in each service area. Therefore, projections assume 25.6% of the City's Livermore Municipal Water demands are attributed to low-income households. The projections shown previously in Table 2-4 (DWR Table 4-2R) and Table 2-5 (DWR Table 4-3R) include water use for single family and multi-family residential housing needed for low-income households, as identified in the Housing Element. Table 2-7 (DWR Table 4-5R) presents portion of projected water demands for lower income single family and multi-family households.

Table 2-7: DWR Retail Only: Inclusion in Water Use Projections (DWR Table 4-5R)

Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc…utilized in demand projections are found	2.3.6.3
Are Lower Income Residential Demands Included in Projections?	Yes

Section 3: SB X7-7 Baseline and Targets

3.1 Existing and Target Per Capita Water Use

The adoption of the Water Conservation Act of 2009, also known as the SB X7-7, addresses urban and agricultural water conservation. The Water Conservation Act sets a goal of achieving 20% statewide reductions in urban per capita water use by the year 2020. Each urban water supplier, such as the LMW system, must determine baseline water use during their baseline period and target water use to be met for the years 2015 and 2020, reducing daily per capita water use as defined in SB X7-7.

In its 2010 UWMP, the City first calculated its 2015 and 2020 Urban Water Use Targets by applying Methodology 3 to calculate baseline daily per capita water use, as well as Part II, Section D of the Guidebook to develop a baseline period and water use targets required by SB X7-7. The Water Conservation Bill of 2009 includes a provision that an urban water supplier may update its 2020 urban water use target in in its 2015 UWMP and may use a different target method than was used in 2010.

After examining a sample of data from Department of Finance (DOF), DWR determined that significant discrepancies exist between DOF's projected populations for 2010 (based on 2000 U.S. Census data) and actual population for 2010, based on 2010 U.S. Census data. Therefore, if a water supplier did not use 2010 Census data for their baseline population calculations in the 2010 UWMP (the full census data set was not available until 2012) DWR has determined that these agencies must recalculate their baseline population for the 2015 UWMPs using 2000 and 2010 Census data. Therefore, baseline and target GPCD values in the 2010 UWMP must be modified accordingly in the 2015 UWMP, and standardized tables in the SB X7-7 Verification Form must be submitted with the 2015 UWMP. The 2015 UWMP reported no changes to the baseline and targets set in the 2010 UWMP were made.

3.1.1 Base Daily Per Capita Water Use for SBX7-7 Reduction

SB X7-7 requires urban water retailers to determine their baseline daily per capita water use measured in gallons per capita per day (GPCD) over a 10- or 15-year baseline period. Urban water retailers that used less than 10% of recycled water in the year 2008 must use a 10-year baseline period. The 10-year baseline period is defined as a continuous 10-year period ending between December 31, 2004 and December 31, 2010.

Staff re-evaluated potable and recycled water supply data for the year 2008. During 2008, LMW supplied 305 MG of recycled water, compared to 2,636 MG of total water deliveries. Therefore, approximately 11.6% of the 2008 water demand in the LMW water service area was met with recycled water. Under the Water Conservation Bill of 2009, water suppliers who met at least 10% of the 2008 demand using recycled water may elect to extend the multi-year base period from 10 up to 15 years.

Determination of the 5-Year Baseline Period (Target Confirmation)
SB X7-7 also requires each urban water retailer to calculate water use, for a 5-year baseline GPCD water demand, or Target Confirmation, calculated over a continuous 5-year period that ends no earlier than December 31, 2007 and no later than December 31, 2010.

LMW selected the following baseline periods:

- 10-year Baseline Period: 1999 to 2008
- 5-year Baseline Period: 2004 to 2008

These baseline periods are listed in SB X7-7 Baseline Period Ranges in Appendix H:. It should be noted that the 10-year and 5-year Baseline Periods are the same as reported in City's 2015 UWMP.

3.1.2 Base Daily Per Capita Water Use

Daily Per Capita Water Use is reported in gallons and is referred to as "Gallons per Capita per Day" or "GPCD". The GPCD is calculated for each of the baseline years and for the compliance year 2020. Annual gross water use is divided by annual service area population to calculate the annual GPCD for each year in the baseline periods. GPCD calculations reflect revised service area population estimates from the DWR Population Tool based on U.S. Census data and electronic maps as discussed in Section 1.8.

Using the revised service area population estimates and measured gross water use, the Base Per Capita Water Use for each year from 1989 through 2010 were calculated. This annual per capita water use data was used to calculate 10- and 15-year averages for the various potential 10- and 15-year base periods ending in 2004 through 2010. As previously discussed, LMW met more than 10% of its 2008 water demands with recycled water and is entitled to use up to a 15-year baseline period for determining Base Per Capita Water Use. However, based on an analysis of the data, the City elected to use a 10-year baseline period.

The LMW baseline daily per capita use has been calculated as follows:

- 10-year Baseline Daily per Capita Water Use:
  - 240 GPCD for period 1999 to 2008.
  - This value is 45 GPCD greater than the value calculated in 2010 UWMP (194.6 GPCD).
- 5-year Average Baseline Daily per Capita Water Use:
  - 236 GPCD for period 2004 to 2008.
  - This value is 41 GPCD greater than the value calculated in 2010 UWMP (195.4 GPCD).

These 10-year Baseline Daily per Capita Water Use and 5-year Average Baseline Daily per Capita Water Use values are shown in Table 3-1 and SB X7-7 Table 5. Additional SB X7-7 compliance forms can also be found in Appendix H: of this report. Based on the guidance for calculating Minimum Water Use Reduction Requirements, the 2015 Water Use Target was set at the mid-point between the 10-year baseline per capita water use and the 2020 water use target. Using a Base Per Capita Water Use of 240 gpcd and a 2020 Water Use Target of 192

gpcd, the interim 2015 Water Use Target was 216 gpcd. The per capita water use in 2015 was 141 gpcd which was well below the target amount. The 2020 water use target and actual use are presented in the tables below.

Table 3-1: DWR Baselines and Targets Summary Retail Supplier or Regional Alliance Only (DWR Table 5-1R)

Baseline Period	Start Year	End Year	Average Baseline GPCD	Confirmed 2020 Target
10-15 Year	1999	2008	240	192
5 Year	2004	2008	236	

Note:

Volumes reported in Gallons per Capita per Day (GPCD).

3.1.3 Compliance Water Use Targets

LMW actual 2020 GPCD is 190. As shown in Table 3-2, the actual 2020 GPCD is also below the final 2020 target of 192 GPCD, and therefore no additional assessment of present and proposed future measures, programs, or policies have been considered to achieve further water use reductions. LMW is not a wholesale supplier.

Table 3-2: DWR 2020 Compliance Retail Supplier or Regional Alliance Only (DWR Table 5-2R)

2020 GPCD			2020 Confirmed Target GPCD	Did Supplier Achieve Targeted Reduction for 2020?
Actual 2020 GPCD	Total Adjustments	Adjusted 2020 GPCD		
190	0	190	192	Yes

Note:

Volumes reported in Gallons per Capita per Day (GPCD).

3.1.4 Achievement of Target

LMW has met their 2020 target and achieved a water use reduction of approximately 20.8% when compared to the 10-year water use baseline of 240 gallons per capita per day. This reduction adequately meets the goals of SB X7-7. LMW will continue to monitor water use and utilize water use reduction methods to maintain this baseline reduction in future water years.

Section 4: Water Resources

4.1 Overview

This chapter describes and quantifies existing and future sources of water available to the City of Livermore's Livermore Municipal Water system, and discusses the origin of the water supply, water quality, quantity issues, and actions or projects anticipated to meet future water demands. Water volumes presented in this chapter reflect expectations for average or normal hydrologic year conditions.

4.2 Imported Supplies

The City's Livermore Municipal Water system purchases all of its potable water supply for its service area from wholesaler Zone 7 Water Agency. Zone 7 is a multi-purpose agency that oversees water-related issues in the Livermore-Amador Valley. Zone 7 is a State Water Project (SWP) contractor that wholesales treated water to four retail water agencies, including the City of Livermore, and uses a combination of water supplies and water storage facilities to meet its customers' water demands. These include imported surface water from the SWP, water transferred from the Byron Bethany Irrigation District, local surface runoff captured in Del Valle Reservoir, groundwater extraction from the Livermore Valley Main Groundwater Basin, non-local groundwater storage in the Semitropic Water Storage District and Cawelo Water District, and future local storage in the Chain-of-Lakes. Zone 7 completed an update to its 2011 Water Supply Evaluation (WSE Update) in early 2016 to reassess its long-term water supply. The WSE Update provides a basis for Zone 7's water supply projections as included in Zone 7's 2020 UWMP. Table 4-1 (Zone 7 2020 UWMP DWR Table 6-8W) and Table 4-2 (Zone 7 2020 UWMP Table 6-9W) below from Zone 7's 2020 UWMP indicate 2020 Actual water sources supplies and projected Normal Year water sources supplies. Zone 7's 2020 UWMP is included for reference as Appendix I:.

Table 4-1: Zone 7 Water Supplies in 2020 (Zone 7 UWMP – DWR Table 6-8)

Water Supply	Additional Detail	2020 Actual Volume	Water Quality
Purchased or Imported Water	SWP Table A	5,254	Drinking Water
Purchased or Imported Water	Yuba Accord	684	Drinking Water
Purchased or Imported Water	Water Transfer	1,629	Drinking Water
Supply from Storage	SWP Carryover	3,519	Drinking Water
Groundwater (Not Desalinated)	Main Basin	3,910	Drinking Water
Surface Water (Not Desalinated)	Arroyo Valle	2,835	Drinking Water
Supply from Storage	Non-Local Storage	326	Drinking Water
Total:		**18,158**	

Notes:

Volumes are in MG. These amounts reflect net yield for Yuba Accord and groundwater (i.e., they do not include carriage loss from Yuba Accord (293 MG) and brine disposal from groundwater production (130 MG)). Arroyo Valle supply includes carryover from 2019 (2,639 MG) and 2020 yield (196 MG)

Table 4-2: Zone 7 Summary of Projected Normal Year Water Supplies (Zone 7 UWMP Table 7-2W)

	2025	2030	2035	2040	2045 (Opt)
SWP Table A	15,315	14,989	14,663	14,175	14,175
Yuba Accord	0	0	0	0	0
Turnback Pool	0	0	0	0	0
SWP Carryover	3,259	3,259	3,259	3,259	3,259
Arroyo Valle	1,792	1,792	1,792	1,792	1,792
Main Basin	2,998	2,998	2,998	2,998	2,998
Semitropic	0	0	0	0	0
Cawelo	0	0	0	0	0
BARDP/Potable Reuse	0	1,629	1,629	1,629	1,629
Sites Reservoir Project	0	3,259	3,259	3,259	3,259
Transfers	1,629	1,629	0	0	0
Chain of Lakes	0	0	0	0	0
Supply Totals	**24,993**	**29,555**	**27,600**	**27,111**	**27,111**

Notes:

Volumes are in MG. Table references refer to DWR table numbers. Surplus supplies are stored as carryover, used to recharge the Main Basin, and stored in the Kern County groundwater banks.
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values.

Table 4-3 (DWR Table 6-8) and Table 4-4 (DWR Table 6-9) include actual water supplies and projected water supplies. Recycled water use is based on current demand, anticipated growth, and the City's current 2013 Recycled Water Master Plan. Additional details about recycled water are available in Section 5: Recycled Water and Reuse.

Table 4-3: City of Livermore 2020 Actual Water Supplies (DWR Table 6-8R)

		2020		
Water Supply	**Additional Detail**	**Actual Volume**	**Water Quality**	**Total Right or Safe Yield**
Purchased or Imported Water	Purchased from Zone 7 Water Agency	2,134	Drinking Water	
Recycled Water	From Livermore Water Reclamation Plant (LWRP)	710	Drinking Water	
	Total	**2,844**		

Notes:

Volumes reported in million gallons (MG).
Recycled water supplies assume that supply is equal to demand within the service area boundaries (thus excluding the City of Pleasanton allocation)

Table 4-4: City of Livermore Water Supplies - Projected (DWR Table 6-9R)

		2025		2030		2035		2040		2045 (optional)	
Water Supply	**Additional Detail**	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Purchased or Imported Water	Purchased from Zone 7 Water Agency	2,100		2,155		2,209		2,263		2,263	
Recycled Water	From City of Livermore WWTF	616		634		653		671		671	
Total		**2,716**		**2,789**		**2,861**		**2,934**		**2,934**	

Notes:

Volumes reported in million gallons (MG).
Recycled water supplies assume that supply is equal to projected demand within the service area boundaries (thus excluding the City of Pleasanton allocation)
The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values.

To minimize the need for imported water, the City implements the Demand Management Measures (DMMs) described in Section 8 of this Urban Water Management Plan and plans to maintain its efforts to ensure that water resources are used wisely and to meet the requirements of the SB X7-7. Furthermore, the City of Livermore produces and distributes recycled water, which offsets a significant amount of potable water demand that would otherwise need to be met with imported water. The City currently supplies over 10% of the municipal water service area demands with recycled water.

In addition to efforts to minimize demand, the City supports Zone 7's efforts to maximize the use of local runoff via surface storage in Lake Del Valle, and future storage in the Chain of Lakes to minimize reliance on imported water. The City also supports Zone 7's groundwater basin management and recharge efforts, which help to reduce the amount of imported water needed.

4.2.1 SWP Additional Supply Options

4.2.1.1 Delta Overview

Purchased water from the SWP is Zone 7's largest water source, providing over 80% of the treated water supplied to its customers on an annual average basis[2]. SWP water moves through the Sacramento-San Joaquin Delta (Delta) before it is conveyed by the California Aqueduct and the South Bay Aqueduct (SBA) to Zone 7's water facilities. The instability of the aging levees in the Delta (including their vulnerability to seismic events and climate change), regulatory uncertainty, water quality issues including saltwater intrusion, and the declining health of the Delta ecosystem all challenge the long-term reliability of the SWP and, more generally, the water conveyance capability of the Delta. Zone 7 and other SWP contractors are currently working with DWR and other key stakeholders to address the many complex issues undermining the Delta through the proposed Delta Conveyance Project. The proposed new diversion structure in the northern Delta, which allows for a single-conveyance system, provides alternative intakes in case the Delta is affected by an earthquake, levee failure, or some other catastrophic event that impacts water quantity and quality in the Delta. DWR is working closely with regulatory and fish agencies to address regulatory uncertainty and protect the Delta ecosystem under an adaptive management framework based on the best available science. Finally, the conveyance system provides a tool for protecting fish during sensitive periods in the Delta. With these benefits, the Delta Conveyance Project is expected to significantly alleviate constraints on SWP operation.

4.2.1.1.1 Source Water Quality

There are water quality considerations associated with the water that moves through the Delta. From a municipal water supply perspective, water quality issues in the Delta are associated with salinity from seawater intrusion; wastewater effluent discharges; agricultural drainages from the islands; and recreational activities. Water quality issues of specific concern to Zone 7 are:

- Algal byproducts – Parameters of concern include compounds that cause taste-and-odor (T&O) and algal toxins. T&O is primarily a problem in the warmer months when algal blooms may be present. It can affect supplies from the Delta and from Lake Del Valle

[2] Source: Zone 7 2020 UWMP, April 2021

(which stores SWP water). Algae produce geosmin and 2-methylisoborneol (MIB), which are key T&O-causing compounds in surface water supply. Algal toxins derived from blue-green algae can also be a concern. Zone 7's new ozonation facilities (recently installed at the DVWTP and scheduled for completion at the PPWTP in 2022) effectively treat algal byproducts. Without ozonation, high levels of algal byproducts in both Delta and Lake Del Valle supplies may necessitate temporarily switching to groundwater supplies; blending of sources is also an option depending on the source of algal byproducts and severity.

- Total and dissolved organic carbon (TOC/DOC) – Zone 7 treats organic carbon with coagulant and disinfectant chemicals, and therefore higher levels of organic carbon increase costs. In addition, TOC/DOC help form disinfectant byproducts (DBPs), which are regulated compounds in drinking water. Historically, Zone 7's water treatment plants (WTPs) have managed high TOC/DOC by increasing coagulant dosages. However, this operational change results in greater sludge production and limits plant production. The use of ozone reduces coagulant and chlorine demands, thus reducing typical chlorination DBPs; however, formation of ozonation DBPs such as bromate will need to be controlled.

- Turbidity – like TOC/DOC, turbidity affects the amount of chemicals used in treatment and Zone 7's ability to meet drinking water standards. It also can reduce the production capacities of Zone 7's WTPs, requiring increased groundwater production under high demands. Coagulant dosages can be adjusted to address high turbidity (which can happen after big storms), but if filters require more frequent backwashing, then production may be decreased.

- Salinity or TDS – salinity has significant impacts on SWP operations and the availability of water. To meet the salinity objectives in the Delta, water exports from the Delta may be restricted, reducing the amount of water supply available during certain times of the year. Salinity intrusion can be a problem during dry years, when there is insufficient freshwater to repel salinity. Sea level rise due to climate change is also expected to increase salinity in Delta. Finally, levee breaks—due to earthquakes and other factors—would result in significant saltwater intrusion from the Bay as water floods affected islands in the Delta that are below sea level.

- Algal blooms – in addition to T&O and the threat of algal toxins, algal blooms can significantly degrade filter performance through clogging. This reduces plant production capacities and could require supplemental groundwater use.

As noted above, Zone 7 will have state-of-the-art ozonation facilities at both the DVWTP and the PPWTP in 2022, improving treatment of T&O, TOC/DOC, turbidity, and algal blooms and significantly increasing the surface water system's reliability.

In 2008, the SBA contractors (ACWD, VW, and Zone 7) developed the SBA Watershed Protection Program to protect water quality once the water from the Delta reaches the SBA. The primary objectives of the SBA Watershed Protection Program include developing a Watershed Management Program for the SBA system, including Lake Del Valle and Bethany Reservoir, and protecting local drinking water and water resources from identified contaminant sources (e.g., septic tanks) for urban, agricultural, recreational, and environmental uses.

4.2.1.2 Groundwater

The groundwater supply from the Livermore-Amador Valley Main Basin in generally consistent in mineral quality, whereas the surface water supply can see large deviations in the quality of water due to high and low surface water runoff and algae blooms. Zone 7 plans to augment its ability to recharge the Main Basin to maintain higher levels of local storage and allow for more pumping when necessary, which will improve both water supply reliability and salt management. Zone 7 plans to build an additional demineralization facility to continue to decrease the salt content of the Main Basin. Finally, Zone 7 is managing Cr(VI) levels in groundwater through blending, with consideration of treatment facilities in the future, if required.

4.2.1.3 Arroyo Valle

Historically, access to Zone 7's stored water in Lake Del Valle has not been problematic, unless there is an outage on the Del Valle Branch pipeline. Zone 7 closely coordinates use of Arroyo Valle water with DWR. Water collected from the local watershed is protected under the SBA Watershed Protection Program Plan. In general, the water quality of Arroyo Valle runoff is good, and does not affect the reliability of this water supply; however, as noted above, taste and odor can also affect supplies from Lake Del Valle. Zone 7 treats taste and odor (T&O) using powdered activated carbon (PAC), although a switch to groundwater supplies is sometimes necessary under excessive levels of T&O compounds. Algal blooms in the lake can also reduce production capacities. A new ozonation facility at DVWTP planned for 2019 will help address these issues.

4.2.1.4 Byron Bethany Irrigation District

Zone 7's other imported surface water supply, transfer water from BBID, is also linked to the Delta and SWP facilities. This exchange water is diverted from the Delta and delivered to Zone 7 via the SBA. Consequently, the conveyance challenges related to possible shutdown of Delta pumping due to a facility outage, levee failure, earthquake, water quality (e.g., salinity intrusion), and fish impacts apply to the BBID transfer water. Physical limitations in the SWP conveyance capacity could also affect delivery of this supply. These conveyance issues should be addressed by the Delta Conveyance Project. Curtailment of BBID's pre-1914 water rights during extremely dry hydrologic conditions (like in 2015) also affects the availability of this supply.

4.2.1.5 Local Storage

Zone 7 has three options for local storage: Lake Del Valle, the Main Basin, and, in the future, Chain of Lakes (COLs). The key constraint on the use of the Chain of Lakes for storage is the duration of mining activities, which affects when the remainder of the Chain of Lakes will be transferred to Zone 7 ownership and how much storage is available over time. Zone 7 continues to work closely with the mining companies and quarry operators so planning efforts can be coordinated.

4.2.1.6 Non-Local Storage

Access to banked water in Semitropic Water Storage District (Semitropic) and Cawelo Water District (Cawelo)—both located downstream of Zone 7—requires exchange/s with other SWP contractors located south of Kern County. There must be sufficient water flowing through the

Delta to facilitate these exchanges, which could be a challenging condition to meet during a drought. Furthermore, the banked water must be conveyed through the Delta, rendering this supply susceptible to the Delta disruptions. Zone 7 will continue to coordinate closely with DWR, other SWP contractors, Semitropic, and Cawelo to ensure the future reliability of the banked water supplies.

Some of Semitropic's wells are affected by arsenic. This is currently being managed through treatment before the affected groundwater water is pumped into the California Aqueduct.

4.3 Transfers, Exchanges, and Groundwater Banking Programs

The City's Livermore Municipal Water system has the opportunity for short-term, emergency water transfers through interties with the California Water Service Company, the City of Pleasanton and Dublin San Ramon Services District. The City also maintains a small intertie with the San Francisco Public Utilities Commission (SFPUC) Water System via the Lawrence Livermore National Laboratory. During an emergency, the City's municipal water service area could receive small amounts of water from that intertie. However, the intertie has historically been used for the City of Livermore Water to supply water to the Lawrence Livermore National Laboratory during planned, temporary interruptions of the SFPUC system.

The Livermore Municipal Water system has only limited opportunities for long-term water transfers due to its contract with the Zone 7 Water Agency. Under the current water supply contract, if the City obtains water from another source, it must still pay Zone 7 for the amount of water it would have normally purchased *unless the Zone is unable to supply the water*. Since Zone 7 has traditionally guaranteed all deliveries requested for the City's Livermore Municipal Water system, it has not been economical for the City to establish additional long-term transfer agreements with other suppliers. However, should Zone 7 be unable to meet future projected delivery requests, the City would be free to seek transfer agreements or develop other independent water sources.

4.4 Recycled Water and Reuse

The City of Livermore Water Reclamation Plant (LWRP) produces and supplies recycled water to the Livermore Municipal Water. Additional details about recycled water are available in Section 5: Recycled Water and Reuse.

4.5 Local Surface Water

The City of Livermore does not self-supply surface water to meet any water demands of the municipal water service area. The City does receive surface water supplies from Zone 7 as part of the overall supply purchased for the service area.

4.6 Groundwater

The City of Livermore does not pump groundwater to meet any water demands of the municipal water service area and does not overly adjudicated/unadjudicated basins. While the City does

retain a small pumping quota of about 30 acre-feet per year from the Livermore-Amador Valley Main Basin, it is unlikely that it would be used during the 20-year planning horizon. The City does receive groundwater from wholesaler Zone 7 as part of the overall supply purchased from Zone 7.

4.7 Planned Water Supply Projects and Programs

The City has no planned projects to increase its independent water supply during the UWMP planning horizon. However, some future projects by Zone 7 as reported in the Zone 7 2020 UWMP may expand supplies available to LMW. These projects by Zone 7 are summarized in Table 4-5.

Table 4-5: DWR Retail: Expected Future Water Supply Projects or Programs (DWR Table 6-7R)

Name of Future Projects or Programs	Joint Project with Other Suppliers?	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier
Bay Area Regional Desalination Project	Yes	Zone 7 Water Agency, Contra Cost Water District, SFPUC, Santa Clara Valley Water District	Brackish water desalination in eastern Contra Costa County	2030	All Year Types	1,800
Delta Conveyance Project	Yes	Zone 7 Water Agency, DWR, and other SWP Contractors	Construction of new intakes and tunnel as part of the State Water Project	2040	All Year Types	TBD
Potable Reuse	Yes	Zone 7 Water Agency, DSRSD, City of Pleasanton, Cal Water Livermore	Use of purified water derived from wastewater effluent to supplemental potable water supplies	2030	All Year Types	1,300-2,300
Sites Reservoir	Yes	Zone 7 Water Agency, Sites Project Authority, and Sites Reservoir Project committee members	Construction of a new 1.5 million AF off-stream reservoir in Colusa County	2030	All Year Types	3,200
SWP Transfers	Yes	Other SWP Contractors	Temporary water transfer agreement/s until major projects are implemented	2021	All Year Types	Varies

Notes:

Volumes are in MG.
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values."
Projects are taken from the Zone 7 2020 UWMP. These projects are in the conceptual or planning stages. Zone 7 is participated in the planning efforts of these potential future water supply and/or storage projects to evaluate their benefits, including water supply yield. Implementation of these projects has not been approved by the Zone 7 Board but it is expected that a subset of these projects will be needed to meet future water demands and increase the reliability of Zone 7's system. The partners listed above are potential partners; final participation will be determined when the project has been approved by the respective agencies' governing boards. The 'expected increase in water supply...' are estimates at this time and may need to be adjusted when a final project has been approved. The 'planned implementation year' may also vary depending on project progress.

The City will continue to work with Zone 7 to support and implement water supply projects, both independently and cooperatively with other local retailers through the Tri-Valley Water Retailers Group.

Zone 7's imported water supplies have decreased in reliability over the years as SWP reliability has declined. Zone 7's 2016 Water Supply Evaluation Update (WSE) examined water supply alternatives and potential future supply projects that may increase water supply reliability and meet demand growth. Zone 7 expects that a portfolio of these alternatives will be needed to meet future supply shortfalls including the Delta Conveyance Project, potable reuse options, and desalination. Zone 7's WSE Update includes new facilities or projects that may reduce the risk of water supply shortages during drought or other temporary unplanned emergency conditions including reliability intertie with another major water agency such as EBMUD or SFPUC, Chain of Lakes pipeline from Cope Lake to the Del Valle Water Treatment Plant, Los Vaqueros Emergency / Drought storage, and Well Master Plan wells.

Tables 7-12 through 7-18 (DWR Table 7-2 through 7-4 Wholesale) of the 2020 Zone 7 Water Agency Urban Water Management Plan shows the anticipated new supply for the 2025-2045 Planning Horizons in Normal, Single-Dry and Multiple Dry years; the table has been excerpted and is shown below[3] in Section 4.8.

In addition to these new supply options, Zone 7 is also participating in efforts to develop a California Water Fix and examining policies and operational practices for local groundwater and surface water storage to protect and maximize existing supplies. Therefore, the City's Livermore Municipal Water system will meet future demands in its service area through a combination of new local water supply projects such as regional desalination and potable reuse, a statewide California Water Fix, enhanced operation of existing surface and groundwater storage, and demand reductions required by the Water Conservation Bill of 2009.

[3] 2020 Zone 7 Water Agency Urban Water Management Plan

4.8 Anticipated Water Supply Sources in Normal, Single Dry, and Multiple Dry 5-Year Droughts Years

Table 4-6, Table 4-7, and Table 4-8 present the potable water supply anticipated to be available to the City from Zone 7 in average/normal, single dry, and multiple dry years. In Chapter 7 of its 2020 UWMP, Zone 7 has indicated it can meet retailer demands during five-year droughts beginning in 2025, 2030, 2035, 2040 and 2045.

Table 4-6: 2020 Zone 7 UWMP Normal Year Supplies (DWR Table 7-2W)

	2025	2030	2035	2040	2045
SWP Table A	15,315	14,989	14,663	14,175	14,175
Yuba Accord	0	0	0	0	0
Turnback Pool	0	0	0	0	0
SWP Carryover	3,259	3,259	3,259	3,259	3,259
Arroyo Valle	1,792	1,792	1,792	1,792	1,792
Main Basin	2,998	2,998	2,998	2,998	2,998
Semitropic	0	0	0	0	0
Cawelo	0	0	0	0	0
BARDP/Potable Reuse	0	1,629	1,629	1,629	1,629
Sites Reservoir Project	0	3,259	3,259	3,259	3,259
Transfers	1,629	1,629	0	0	0
Chain of Lakes	0	0	0	0	0
Supply Totals	**24,993**	**29,555**	**27,600**	**27,111**	**27,111**

Notes:

Volumes reported in MG
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values
From Table 7-12 (DWR Table 7-2) of the 2020 Zone 7 Water Agency Urban Water Management Plan.

Table 4-7: 2020 Zone 7 UWMP Single Dry Year Supplies (DWR Table 7-3W)

	2025	2030	2035	2040	2045
SWP Table A	1,434	1,434	1,434	1,434	1,434
Yuba Accord	0	0	0	0	0
Turnback Pool	0	0	0	0	0
SWP Carryover	5,051	3,910	4,497	4,106	4,138
Arroyo Valle	0	0	0	0	0
Main Basin	8,993	9,743	10,362	10,492	10,590
Semitropic	2,118	2,151	2,151	2,118	2,118
Cawelo	2,314	2,314	2,314	2,314	2,281
BARDP/Potable Reuse	0	1,629	1,629	1,629	1,629
Sites Reservoir Project	0	4,627	5,116	4,986	4,920
Transfers	1,466	1,499	0	0	0
Chain of Lakes	0	2,705	3,193	3,063	2,965
Supply Totals	**21,376**	**30,011**	**30,695**	**30,141**	**30,076**

Notes:

Volumes reported in MG
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values
From Table 7-13 (DWR Table 7-2) of the 2020 Zone 7 Water Agency Urban Water Management Plan.

Table 4-8: 2020 Zone 7 UWMP Multiple Dry Years Supplies (DWR Table 7-3W)

First Year	2025	2030	2035	2040	2045
SWP Table A	6,484	6,354	6,354	6,354	6,322
Yuba Accord	5,051	3,910	4,497	4,106	4,138
Turnback Pool	554	554	554	554	554
SWP Carryover	8,993	9,743	10,362	10,492	10,590
Arroyo Valle	3,259	3,226	3,259	3,259	3,226
Main Basin	3,161	3,161	3,161	3,161	3,161
Semitropic	0	1,629	1,629	1,629	1,629
Cawelo	0	4,986	5,539	5,474	5,409
BARDP/Potable Reuse	1,564	1,564	0	0	0
Sites Reservoir Project	0	2,867	3,259	3,128	3,030
Transfers	29,066	37,994	38,613	38,157	38,059
Chain of Lakes	6,484	6,354	6,354	6,354	6,322
Supply Totals	**5,051**	**3,910**	**4,497**	**4,106**	**4,138**
Second Year	**2026**	**2031**	**2036**	**2041**	**2046**
SWP Table A	6,582	6,452	6,452	6,387	6,387
Yuba Accord	912	1,434	1,140	1,010	1,010
Turnback Pool	489	489	489	489	489
SWP Carryover	8,179	9,580	10,232	10,297	10,395
Arroyo Valle	3,259	3,259	3,259	3,259	3,259
Main Basin	3,161	3,161	3,161	3,161	3,161
Semitropic	0	1,629	1,629	1,629	1,629
Cawelo	0	5,898	5,963	5,768	5,800
BARDP/Potable Reuse	1,597	0	0	0	0
Sites Reservoir Project	196	2,574	2,867	2,737	2,672
Transfers	24,374	34,475	35,192	34,736	34,801
Chain of Lakes	6,582	6,452	6,452	6,387	6,387
Supply Totals	**912**	**1,434**	**1,140**	**1,010**	**1,010**

Third Year	2027	2032	2037	2042	2047
SWP Table A	6,582	6,452	6,419	6,419	6,387
Yuba Accord	587	880	815	749	749
Turnback Pool	489	489	489	489	489
SWP Carryover	6,713	9,222	9,873	9,873	10,004
Arroyo Valle	3,259	3,259	3,226	3,259	3,226
Main Basin	3,161	3,193	3,161	3,161	3,161
Semitropic	0	1,629	1,629	1,629	1,629
Cawelo	0	5,409	5,344	5,311	5,311
BARDP/Potable Reuse	1,597	0	0	0	0
Sites Reservoir Project	130	2,248	2,509	2,444	2,379
Transfers	22,516	32,781	33,465	33,335	33,335
Chain of Lakes	6,582	6,452	6,419	6,419	6,387
Supply Totals	**587**	**880**	**815**	**749**	**749**
Fourth Year	**2028**	**2033**	**2038**	**2043**	**2048**
SWP Table A	6,582	6,354	6,452	6,419	6,452
Yuba Accord	587	684	652	619	619
Turnback Pool	489	489	489	489	489
SWP Carryover	4,920	8,765	9,385	9,319	9,417
Arroyo Valle	3,291	3,259	3,259	3,259	3,259
Main Basin	3,161	3,161	3,161	3,161	3,161
Semitropic	0	1,629	1,629	1,629	1,629
Cawelo	0	5,214	5,214	5,181	5,181
BARDP/Potable Reuse	1,597	0	0	0	0
Sites Reservoir Project	98	1,955	2,183	2,151	2,118
Transfers	20,724	31,510	32,422	32,227	32,324
Chain of Lakes	6,582	6,354	6,452	6,419	6,452
Supply Totals	**587**	**684**	**652**	**619**	**619**
Fifth Year	**2029**	**2034**	**2039**	**2044**	**2049**
SWP Table A	6,582	6,452	6,419	6,387	6,387
Yuba Accord	587	619	619	619	619
Turnback Pool	489	489	489	489	489
SWP Carryover	3,161	8,211	8,798	8,635	8,765
Arroyo Valle	3,291	3,259	3,259	3,259	3,259
Main Basin	3,161	3,161	3,161	3,161	3,161
Semitropic	0	1,629	1,629	1,629	1,629
Cawelo	0	5,148	5,148	5,148	5,116
BARDP/Potable Reuse	1,597	0	0	0	0
Sites Reservoir Project	98	1,694	1,923	1,923	1,890
Transfers	18,965	30,663	31,445	31,249	31,314
Chain of Lakes	6,582	6,452	6,419	6,387	6,387
Supply Totals	**587**	**619**	**619**	**619**	**619**

Notes:
Volumes reported in MG
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values
From Table 7-14 (DWR Table 7-2) of the 2020 Zone 7 Water Agency Urban Water Management Plan.

4.9 Climate Change Impacts

Since the SWP is the main source of Zone 7's water supplies to LMW and other agencies, climate change impacts to the SWP will significantly impact Zone 7 and LMW. Supplies derived from the SWP, including Table A deliveries, groundwater (stored SWP water), and SWP carryover represent about 90% of Zone 7's 2025 supplies available to their retailers. This percentage remains high, with SWP-derived supplies compromising approximately 75% of Zone 7's total supplies in 2045. The scenarios in the 2019 SWP Delivery Capability Report that were used for Zone 7's future supply projections account for climate change impacts based on 2035 emissions level and 45 cm of sea level rise; therefore, these impacts have been incorporated into Zone 7's water supply planning efforts.

Zone 7 has also evaluated the impacts of climate change to local water supplies (Arroyo Valle) for the 2019 WSE Update, which incorporates a more conservative risk-based analysis; as downscaling of climate change data is refined further, local climate change impacts will continue to be incorporated in future UWMPs.

4.10 Embedded Energy

The energy intensity to provide water service to LMW's customers over a one-year period is presented in this section to the extent that information is available. This includes the amount of energy consumed at LMW's pump stations within their distribution system.

Water energy intensity is the total amount of energy, calculated on a whole-system basis, used to deliver water to LMW's customers for use. Energy intensity is the total amount of energy is kilowatt-hours (kWh) expended on a per MG basis to take water from source to point of delivery. Understanding the whole-system energy intensity would allow LMW to make the following water supply management and system operation strategies:

- Identifying energy saving opportunities as energy consumption is often a large portion of the cost of delivering water
- Calculating energy savings and greenhouse gas (GHG) emissions reductions associated with water conservation programs
- Identifying potential opportunities for receiving energy efficiency funding or water conservation programs
- Informing climate change mitigation strategies
- Benchmarking energy use and comparing energy use among similar agencies

Energy intensity for LMW is calculated for the time period during which Zone 7 deliveries to LMW and electricity usage from PG&E for LMW's pump stations were both available (November 2019 through October 2020). As shown in Table 4-9, the total energy intensity for LMW's water distribution system is approximately 4,629 kWh/MG.

Table 4-9: Energy Intensity – Water Supply Process Approach (DWR Table O-1A)

	Distribution System	Total Utility
Volume of Water Entering Process (MG)	2,110	2,110
Energy Consumed (kWh)	9,767,753	9,767,753
Energy Intensity (kWh/MG)	4,629	4,629

DWR's Energy Intensity spreadsheet is provided in Appendix J:.

Section 5: Recycled Water and Reuse

5.1 Recycled Water Planning

Municipal recycled water is municipal wastewater that has been treated to a specified quality to be reused for a beneficial purpose and is used to offset potable water demand. For purposes of this UWMP, "recycled water" means only the municipal recycled water, which is water that has been treated and discharged from a municipal wastewater facility.

There are currently excellent opportunities to meet significant portions of the LMW service area demands with recycled water. The Livermore Water Reclamation Plant (LWRP) has been producing and distributing recycled water that meets Title 22 disinfected tertiary recycled water requirements for beneficial use and in accordance with the Regional Water Quality Control Board (RWQCB) permit since 1966. The City has a relatively well-developed recycled water program that currently distributes an average of about 2.2 million gallons of recycled water per day (MGD), with a peak demand of almost 3.3 million MGD.

The City updated its Recycled Water Master Plan in 2013. The plan identified a number of potential projects to extend recycled water infrastructure to large water users throughout the LMW service area. Due to the high infrastructure cost associated with a dual distribution system, the City chose to continue to expand the use of recycled water in its Recycled Water Use Area (currently only Zone 1 of the LMW service area), to sell a small amount of recycled water to the City of Pleasanton, and to retain the rest of the existing recycled water production capacity for water supply uncertainty. Currently, approximately 50% of recycled water produced is used in the LMW service area or sold to the City of Pleasanton, and the remainder is used in the Livermore Water Reclamation Plant. Since the 2014/2015 drought, the Tri Valley water agencies have begun investigating water supply reliability and diversification.

Recycled Water Coordination

The Livermore Water Reclamation Plant treats all wastewater collected within the city limits of Livermore. This includes the entire LMW service area and the Cal Water service area. By agreement, the Plant also treats wastewater from the Ruby Hill area which is located in the City of Pleasanton. Treated wastewater transport out of the area is handled through the Livermore Amador Valley Water Management Agency (LAVWMA), a joint powers authority (JPA) composed of Dublin San Ramon Services District, City of Livermore, and City of Pleasanton. Since 1979 LAVWMA has owned the conveyance facilities that transport treated wastewater from the LWRP over the Dublin grade, and eventually to the East Bay Dischargers Authority, which dechlorinates the effluent and discharges it through a deep-water pipeline into the San Francisco Bay.

Recognizing that recycled water is an important part of a complete water resource management program for the Livermore-Amador Valley, water wholesaler Zone 7 is incorporating its use in future water supply planning. Plans for water recycling within the Tri-Valley is coordinated amongst Zone 7, the Retailers, the wastewater/recycled water agencies (City of Livermore, DSRSD, and Pleasanton), the regulatory agencies such as the Division of Drinking Water and the Regional Water Quality Control Board (RWQCB), and planning agencies such as the City of

Livermore Community and Economic Development Department. Zone 7, as the groundwater management agency, works to manage salt loading in the Main Basin. City of Livermore Water is currently working with Zone 7 and other Retailers to explore the feasibility of potable reuse in the Tri-Valley area.

5.2 Wastewater Collection and Treatment

The City of Livermore has approximately 300 miles of sanitary sewer lines ranging in size from 6- to 48-inches. Wastewater collected from the City of Livermore, Lawrence Livermore National Laboratory, and the City of Pleasanton's Ruby Hills housing development, is collected and treated at the City of Livermore Water Reclamation Plant (LWRP) located on the corner of West Jack London Blvd. and Isabel Ave (State Route 84) in the City of Livermore.

The LWRP receives an average daily dry weather flow of approximately 5.5 million gallons per day (MGD) and is operated and maintained by the City's Water Resources Division. Prior to the 2014-15 drought, influent flows to the LWRP were higher, and current influent flows have yet to return to pre-drought conditions. Wastewater is treated using conventional primary and secondary wastewater treatment processes, as well as tertiary treatment to produce recycled water. Table 5-1 shows the amount of wastewater collected and conveyed to the LWRP.

Conventional wastewater treatment processes consist of:

- Primary sedimentation where heavy organic solids are removed from the raw sewage and sent to the solids stabilization and dewatering facilities.
- Secondary treatment utilizing the activated sludge process which removes 85% - 95% of the remaining organic material after primary sedimentation.
- Disinfection using sodium hypochlorite to reduce the bacteria levels in the secondary effluent prior to disposal.
- Disposal of secondary effluent through the Livermore Amador Valley Water Management Agency (LAVWMA) pipeline.
- Solids stabilization using anaerobic digestion followed by belt pressing for dewatering prior to beneficial reuse as land application.

Tertiary treatment for water reclamation consists of:

- Mono-media filters where 95% - 99% of suspended material is removed from secondary effluent.
- Disinfection using ultraviolet light (UV) prior to disposal.

Tertiary treated effluent meeting California Title 22 requirements for unrestricted water reuse is recycled through landscape irrigation. An average 2.2 MGD, with peak summer flows approaching 3 MGD, is tertiary treated recycled water. The tertiary filtration capacity of the

LWRP is approximately 8 MGD; however, the UV disinfection capacity is currently limited to 6 MGD. Based on the current limitations of the UV system, the annual amount of recycled water that could be produced is approximately 2,190 MG (6,721 AF/Y). This amount is roughly equal to the 2020 actual water demand, and the projected water demands for 2025-2045 for LMW of Livermore. Based on the tertiary treatment capacity of the LWRP and the projected water demands, there is opportunity for LMW to continue to offset potable water use with Title 22 recycled water. LMW has plans to increase the capacity of the UV system to match the filter capacity (8 MGD as determined by the most recent filter study), however, since average dry weather flow is approximately 5.5 MGD, upgrades to the UV system are not an immediate need.

Table 5-1: DWR Retail: Wastewater Collected Within Service Area in 2020 (DWR Table 6-2R)

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	"Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	IS WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of Livermore	Metered	1,992	City of Livermore	Livermore Water Reclamation Plant	Yes	No
Total Wastewater Collected from Service Area in 2020:		**1,992**				

Notes:

Volumes reported in million gallons (MG).

Total volume of wastewater collected from the City's sewer service area is 1,992 MG. The City only serves water to approximately 34% of the City's population. California Water Service Company serves the rest of the customers. Therefore, the volume of wastewater collected from the UWMP service area is 676 MG (34% of 1,992 MG).

Wastewater that is not recycled is discharged out of the area through LAVWMA over the Dublin grade, and eventually to the East Bay Dischargers Authority, which dechlorinates the effluent and discharges it through a deep-water pipeline into the San Francisco Bay.

Table 5-2 (DWR Table 6-3R) summarizes the information on the collection of wastewater generated in the City's municipal water service area, discharged treated wastewater, the amount of wastewater that received tertiary treatment, and the amount recycled within and outside of the service area in 2020.

Table 5-2: DWR Retail: Wastewater Treatment and Discharge Within Service Area in 2020 (DWR Table 6-3R)

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 Volumes				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Livermore Water Reclamation Plant	**East Bay Discharge Authority**	**Bay outfall outside San Leandro**		Bay or estuary outfall	Yes	Secondary, Disinfected - 2.2	1,992	1,251	710	31	-
						Total	1,992	1,251	**710**	**31**	**0**

Notes:

Volumes reported in million gallons (MG).

Total volume of wastewater collected and discharged treated wastewater from the City's sewer service area is 1,992 MG and 1,494 MG, respectively. The City only serves water to approximately 34% of the City's population. California Water Service Company serves the rest of the customers. Therefore, the volume of wastewater collected and discharged from the UWMP Service Area is approximately at 676 MG and 508 MG, respectively. Among the 710 MG recycled within the service area, 373 MG has been used internally within the treatment plant. Technically, the internal water never leaves the plant but is accounted for in the flow balance. In other words, only 337 MG has been used by external users. In order to satisfy the flow balance, the discharged treated wastewater is instead calculated as the total wastewater treated (1,992 MG), minus the amount recycled within the service area including water reused within the treatment plant (710 MG), minus the volume recycled outside of the service area (31 MG sold to the City of Pleasanton).

Recycled Water System

The City has practiced water reuse for over 35 years. The last major identified recycled water expansion opportunities were in 2013. The 2013 Recycled Water study found over 150 potential recycled water customers in the study area which includes LMW and Cal Water service areas. However, the City chose to retain a majority of the remaining recycled water production capacity for a potential future water supply project. The City of Livermore and other Tri-Valley retailers and Zone 7 recently conducted a joint feasibility study to evaluate a potable reuse project. The 2018 Joint Tri-Valley Potable Reuse Technical Feasibility Study concluded that potable reuse for the Tri-Valley was feasible and recommended next steps that included both technical studies and institutional and public outreach to support a potential project.

The LWRP provides disinfected tertiary treated recycled water to the northwestern portion of the City. The distribution system consists of two above ground reservoirs with a holding capacity of 1.88 million gallons each. There are approximately 20 miles of distribution pipeline ranging in size from 4- to 18- inches, with 168 meter connections. There are also 100 recycled water fire hydrants available for contractors to use during construction, and for firefighting and system maintenance. Currently, recycled water is provided for several uses including landscape and agricultural irrigation, fire protection, construction, street sweeping and toilet and urinal flushing. Below is a map of the distribution system providing recycled water in 2015.

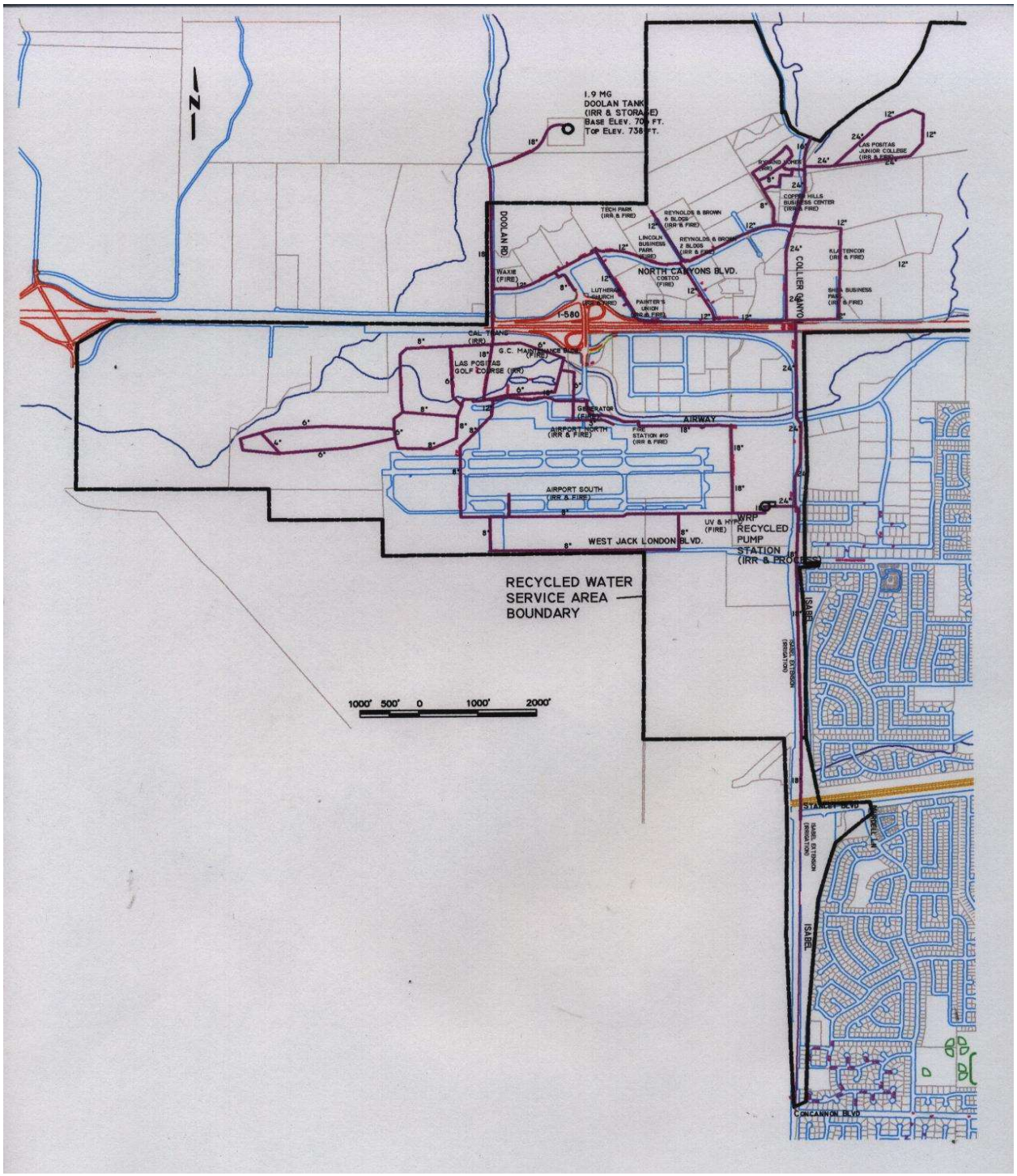

Figure 5-1: Recycled Water Distribution System

5.2.1 Current Recycled Water Uses

LMW currently uses UV-disinfected tertiary treated effluent not exceeding a median total coliform value of 2.2 MPN/100 mL for all recycled water uses.

Based on the 2015 UWMP, the projected recycled water use for 2020 was 849 MG, or approximately 11% increase from the reported 2015 Actual Recycled Water Use of 760 MG. As shown in Table 5-3 (DWR Table 6-5R), the actual 2020 recycled water use was 710 MG, approximately 1% less than the 2015 actual use. LMW saw a reduction in actual recycled water use during 2020 due to the COVID-19 pandemic. Recycled water demands are expected to return to normal once the pandemic concludes.

Approximately 26% of the recycled water supplied by LMW was used for landscape irrigation, while about 20% was used for irrigation of the Las Positas Municipal Golf Course. Approximately 52% was used as process water at the Livermore Water Reclamation Plant and the Livermore Municipal Airport. The remaining 1% was used for commercial and construction uses.

Table 5-3: DWR Retail: 2015 UWMP Recycled Water Use Projected Compared to 2020 Actual (DWR Table 6-5R)

	2015 Projection for 2020	2020 Actual Use
Agricultural irrigation		
Landscape irrigation (excludes golf courses)	201	187
Golf course irrigation	164	143
Commercial use	484	4
Industrial use		373
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Surface water augmentation (IPR)		
Direct potable reuse		
Other – Construction Water		3
Total	849	710

Notes:

Volumes reported in million gallons (MG).
Landscape irrigation usage for 2020 does not include recycled water sold to the City of Pleasanton for irrigation purposes, however, 2015 projections did include recycled water sold to the City of Pleasanton.

5.2.2 Projected Recycled Water Demand

The potential uses shown below in Table 5-4 (DWR Table 6-4) represent both the projected new facilities planned for the recycled water area as well as retrofitting existing facilities. In most cases it may not be economically feasible for existing developments that are currently using potable water for irrigation to switch to recycled water, nor would it be economically feasible to extend pipelines to serve a small number of customers with limited demands. Projected uses in Table 5-4 (DWR Table 6-4R) are based on current uses plus expected growth and do not include potential projects identified in the 2013 Recycled Water Master Plan Update or a possible potable reuse project. Recycled water provided to the City of Pleasanton is used for and reported under the landscape irrigation category.

The recycled water projections are shown in Table 5-4 (DWR Table 6-4R). Projections show an increase in the landscape irrigation category through 2040 (buildout), due to the development of the Isabel Neighborhood, where irrigation is planned to be serviced by recycled water. Industrial recycled water usage is from the Livermore Water Reclamation Plant. Future upgrades to the plant are expected to reduce its demands for recycled water by approximately 30% by 2025.

LMW is currently conducting potable reuse studies to guide upcoming recycled water efforts. Additional planning efforts regarding recycled water usage include updates to the recycled water master plan within the next five years.

Table 5-4: DWR Retail: Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4R)

Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045 (optional)
Agricultural Irrigation										
Landscape irrigation (excludes golf courses)				Tertiary	187	205	223	241	259	259
Golf course irrigation				Tertiary	143	143	143	143	143	143
Commercial use				Tertiary	4	4	4	4	4	4
Industrial use				Tertiary	373	261	261	261	261	261
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment										
Wetlands or wildlife habitat										
Groundwater recharge (IPR)*										
Surface water augmentation (IPR)*										
Direct potable reuse										
Other (Construction/Fire Protection)			Construction Water	Tertiary	3	3	3	3	3	3
				Total	**709**	**616**	**634**	**652**	**670**	**670**
			2020 Internal Reuse		373					

Notes:

Volumes reported in million gallons (MG).
The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values
In addition to recycled water provided by LMW to the service area, LMW also sells approximately 31 MGY to the City of Pleasanton. This allocation is not included in future recycled water projections since it goes outside of LMWs service area.

5.3 Methods to Encourage Recycled Water Use

The primary and most effective action to increase recycled water use in the municipal water service area is the requirement that customers in the designated recycled water use area (LMW Zone 1) must use recycled water for irrigation. This requirement ensures that 100% of new customers in that area use recycled water for irrigation unless they can demonstrate a need for potable irrigation. The City first started using recycled water in the early 1960s and was issued its first permit (Water Master Recycling Permit, Order No. 93-159) in December of 1993. Since its enactment, the recycled water system has grown to 168 meter connections. LMW plans to continue this program to expand its recycled water system with the City's natural growth.

Recycled water rates are now determined during the cost of water service study and water rate setting.

As noted above, the LMW currently requires all new development within the City's recycled water service area to use recycled water for outdoor irrigation purposes. Water Resources Division staff also encourages developers to use recycled water for toilet flushing inside certain categories of buildings, or to install dual plumbing for possible future use if the tenant is unknown at the time of construction.

LMW does not currently supply recycled water to individual customers outside of the recycled water use area. It is not feasible to evaluate the impact of the methods, such as financial incentives, used to encourage recycled water use. If LMW expands the recycled water system into areas that are not required to use recycled water it will be better able to evaluate the impact of incentives to increase recycled water use. LMW expanded the recycled water system slightly in 2016, with the installation of approximately half a mile of pipeline to connect the current service area to a new development area, however, there are no current plans to expand recycled water use infrastructure further at this time as shown below in Table 5-5 (DWR Table 6-6R).

Table 5-5: DWR Retail: Methods to Expand Future Recycled Water Use (DWR Table 6-6)

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
None planned			
		Total	

Note:

No current plans to expand the current infrastructure.

Lastly, LMW and other Tri-Valley water agencies have been jointly studying the feasibility of a potable reuse project. The 2018 Joint Tri-Valley Potable Reuse Technical Feasibility Study concluded that potable reuse for the Tri-Valley was feasible and recommended next steps that included both technical studies and institutional and public outreach to support a potential project.

The Zone 7 Water Supply Evaluation Update, which included a preliminary analysis of potable reuse, identified the potential for between 4,400 and 7,770 AF of potable reuse using recycled water in the Tri-Valley. Further study to confirm this potential supply is needed, and no additional use of recycled water for potable reuse has been included in Table 5-5 (DWR Table 6-6) at this time.

Section 6: Water Quality

Water quality is addressed in the discussions regarding each supply in Section 4. In addition, LMW prepares a consumer confidence report each year that provides the public with the results of water supply and distribution monitoring and is available at: https://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/reports_n_studies.htm#awqr.

Section 7: Reliability Planning

7.1 Overview

This chapter describes the long-term reliability and vulnerability of LMW's water supplies, as well as implemented or planned to be implemented water management tools for increasing the reliability of water supplies.

The reliability of the City's retail potable water supply is subject to its water supply contract with Zone 7 and Zone 7's water supply reliability policy. Zone 7 has worked with the Tri-Valley water retailers to develop a reliable water system with a variety of supply sources. One of the important factors in developing this system was the Zone 7 Reliability Policy. On October 17, 2012, the Zone 7 Board of Directors approved a revised Water Supply Reliability Policy (Resolution No. 13-4230, included as part of Appendix I:), which adopts the following level of service goals to guide the management of Zone 7's treated water supplies as well as its Capital Improvement Program (CIP):

- **Goal 1:** Zone 7 will meet its treated water customers' water supply needs, in accordance with Zone 7's most current Contracts for M&I Water Supply, including existing and projected demands, as specified in Zone 7's most recent Urban Water Management Plan (UWMP), during normal, average, and drought conditions, as follows:
  - At least 85% of M&I water demands 99% of the time.
  - 100% of M&I water demands 90% of the time.
- **Goal 2:** Provide sufficient treated water production capacity and infrastructure to meet at least 80% of the maximum month M&I contractual demands should any one of Zone 7's major supply, production, or transmission facilities experience an extended unplanned outage of at least one week.

In this section, the various supplies of water available to the LMW system through Zone 7 and the City's LWRP are addressed, along with their respective reliability in a normal water year, a single dry year, and multiple dry years. The base years selected for each scenario have been determined by Zone 7. Since the City's municipal water supply is directly related to Zone 7, much of the information below has been excerpted from Zone 7's 2020 UWMP.

7.2 Water Supply Projections

Chapter 7 of the 2020 Zone 7 Water Agency Urban Water Management Plan discusses projected water supplies which are presented in Section 4.8. The quantity of supply available from each of Zone 7's water supply sources varies from one year to the next depending on hydrologic conditions. Consequently, Zone 7 reviewed historical data and developed a projected yield for each water supply source under three conditions: (1) normal water year, (2) single-dry year, and (3) multiple-dry years. In accordance with DWR's 2020 UWMP Guidebook, each condition was defined as follows:

- Normal Water Year: The year in the historical sequence most closely representing average runoff or allocation levels and patterns. Zone 7 utilized 1965 as the representative normal year supply scenario.

- Single-Dry Year: The year with the lowest annual runoff or allocation in the historical sequence. Zone 7 utilized 2014 as the representative single dry year supply scenario.

- Multiple-Dry Year: The lowest runoff or allocation for a consecutive 5-year period in the historical sequence. Zone 7 utilized 1987-1991 as the representative multiple dry year supply scenario.

LMW's potable water supply reliability and vulnerability is directly related to seasonal and climatic shortages that impact Zone 7's water supplies. Therefore, Zone 7's water supply reliability is used to represent the City's available supplies during the historic average, single driest year, and driest multi-year period. The projected yield of Zone 7's water sources under these three scenarios, as reported in Chapter 7 of Zone 7's 2020 UWMP, indicate that Zone 7 can meet retailer demands during five-year droughts beginning in 2025, 2030, 2035, 2040 and 2045.

Livermore's estimated portion for Normal Years, Single Dry Years, and Multiple Dry Years are quantified in Table 7-1 below. These estimated values utilize the percentage of Livermore's demands on overall Zone 7 demands and apply this percentage to Zone 7's volume available for all of its water sources as presented in Zone 7's 2020 UWMP Tables 7-1 for 7-9 for current and future water supplies. These volumes available and % of average supply are provided for context only and are not used in the normal year, single dry year, or multiple-dry year analyses in Tables 7-2, 7-3, 7-4 and 7-5 that follow.

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

Year Type	Base Year	Volume Available	% of Average Supply
Average Year	1965	2,134	100%
Single-Dry Year	2014	1,428	67%
Consecutive Dry Years 1st Year	1987	1,771	83%
Consecutive Dry Years 2nd Year	1988	1,405	66%
Consecutive Dry Years 3rd Year	1989	1,980	93%
Consecutive Dry Years 4th Year	1990	1,220	57%
Consecutive Dry Years 5th Year	1991	1,210	57%

Notes:

Estimated supply volume available utilizes the sum of Zone 7's 2020 UWMP Tables 7-1 to 7-9 water supplies and applies a percentage based on Livermore's water demands to the baseline normal year supplies in 1965. This table uses Livermore's 2020 water use of 2,134 acre-ft as a basis for determining percentage of Zone 7 volume available. Percentages of average supply reflect the values provided by Zone 7 for the base years selected for all of the supplies available now or that will be available to Zone 7 during the planning period. Source: Zone 7 2020 UWMP, Table 7-1 through Table 7-9.

7.3 Normal Water Year

Normal Year supplies are anticipated to be as follows:

- Purchased supplies from Zone 7 are assumed to provide 100% of the LMW'S potable water demand.
- About 616 MG of recycled water within its service area in 2025 with a gradual increase to 671 MG by buildout in 2045. The net difference in recycled water supplies is expected to be due to the combined increase in recycled water used for landscape irrigation for the Isabel Neighborhood by 2045.

Normal Year demands have been provided from Zone 7's projected demands for the City of Livermore. Normal Year supplies assume Zone 7 can meet all required demands from LMW.

As shown in Table 7-2 (DWR Table 7-2R), LMW's Normal Year supplies are adequate to meet projected Normal Year demands. Surplus water will be retained by Zone 7 for storage or redistribution to other users.

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

	2025	2030	2035	2040	2045 *(Opt)*
Supply totals	2,717	2,789	2,861	2,934	2,934
Demand totals	2,717	2,789	2,861	2,934	2,934
Difference	0	0	0	0	0

Notes:

Supply totals taken from available Zone 7 supplies (Table 7-2) adjusted to reflect percentage of water demand from Livermore. Demand totals are taken from Zone 7 projected total demands adjusted to reflect percentage of water demand from Livermore during normal year scenarios. Water Year 1965 used as basis.
The values contained in this table/ are planning level estimates and there is an uncertainty associated with each of these values

7.4 Single Dry Year

The single dry year is based on 2014 critically dry conditions which is the historically lowest allocation from the State Water Project within the modeling time period of 1922 through 2003. This scenario assumes the worst local conditions with no local water available. Note that conservation is not included in the demands; any extra supply as a result of conservation would remain in storage or go towards storage. Single Dry Year supplies and demands are anticipated to be as follows:

- Purchased supplies from Zone 7 are assumed to provide 100% of LMW'S potable water demand and recycled water supplies are available to meet demand.
- Demands for a single dry year were estimated utilizing Livermore's percentage of average demand and applying this percentage to projected demand from Zone 7's DWR Table 7-3.

As shown in Table 7-3 (DWR Table 7-3R), LMW's Single Dry Year supplies are adequate to meet projected Single Dry Year demands. Surplus water will be retained by Zone 7 for storage or redistribution to other users.

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

	2025	2030	2035	2040	2045 *(Opt)*
Supply totals	2,717	2,789	2,861	2,934	2,934
Demand totals	2,717	2,789	2,861	2,934	2,934
Difference	0	0	0	0	0

Notes:

Zone 7 potable supplies and recycled water can meet Livermore demands in all scenarios. Normal demands are represented during drought conditions as a conservative measure. Water Demand shall be reduced during drought conditions in accordance with the 2020 WSCP.
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values

7.5 Multiple Dry Years (5 years)

Projected water supplies reflect average output from Zone 7's water supply risk model, which was initialized given 2020 conditions and configured to simulate a five-consecutive-dry years scenario beginning in each year required in the reliability assessment (e.g., 2025, 2030, etc). The model simulates 10,000 trials to reflect varying hydrologic conditions and estimates that Zone 7 can meet all potable water demands during the five-consecutive-dry year scenario reflecting hydrologic years 1987-1991, which are randomly shuffled throughout the 10,000 trials (e.g., hydrologic year 1988 may not follow 1987 within the five-consecutive-years sequence). Multiple Dry Year supplies and demands are anticipated to be as follows:

- Purchased supplies from Zone 7 are assumed to provide 100% of LMW'S potable water demand and recycled water will be available to meet all non potable demands during the multiple dry-year event.

- Demands for multiple dry years were estimated utilizing Livermore's percentage of average potable demand and applying this percentage to projected potable demand from Zone 7's DWR Table 7-4 and adding recycled water demands.

As shown in Table 7-4 (DWR Table 7-4R), LMW's Multiple Dry Year supplies are adequate to meet projected Multiple Dry Year demands. Surplus water will be retained by Zone 7 for storage or redistribution to other users.

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

First Year	2025	2030	2035	2040	2045 *(Opt)*
Supply totals	2,717	2,789	2,861	2,934	2,934
Demand totals	2,717	2,789	2,861	2,934	2,934
Difference	0	0	0	0	0

Second Year	2026	2031	2036	2041	2046 *(Opt)*
Supply totals	2,731	2,804	2,876	2,934	2,934
Demand totals	2,731	2,804	2,876	2,934	2,934
Difference	0	0	0	0	0
Third Year	**2027**	**2032**	**2037**	**2042**	**2047 *(Opt)***
Supply totals	2,746	2,818	2,890	2,934	2,934
Demand totals	2,746	2,818	2,890	2,934	2,934
Difference	0	0	0	0	0
Fourth Year	**2028**	**2033**	**2038**	**2043**	**2048 *(Opt)***
Supply totals	2,760	2,832	2,905	2,934	2,934
Demand totals	2,760	2,832	2,905	2,934	2,934
Difference	0	0	0	0	0
Fifth Year	**2029**	**2034**	**2039**	**2044**	**2049 *(Opt)***
Supply totals	2,775	2,847	2,919	2,934	2,934
Demand totals	2,775	2,847	2,919	2,934	2,934
Difference	0	0	0	0	0

Notes:

Zone 7 potable supplies and recycled water can meet Livermore demands in all scenarios. Normal demands are represented during drought conditions as a conservative measure. Demand shall be reduced during drought conditions in accordance with the 2020 WSCP.
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values

7.6 Regional Supply Reliability

Zone 7 promotes regional supply reliability and reduced reliance on water imports by:

- Evaluating and pursuing new water supply options, including potable reuse and brackish water desalination;
- Supporting the expansion of recycled water use for irrigation;
- Working closely with its retailers to implement an active conservation program; and
- Optimizing and expanding local storage.

In addition, Zone 7 is a member of the Bay Area Regional Reliability (BARR) partnership, which brings together eight Bay Area water agencies to improve regional water supply reliability. In addition to Zone 7, these agencies include: ACWD, SFPUC, the Bay Area Water Supply and Conservation Agency (BAWSCA), CCWD, EBMUD, Marin Municipal Water District (MMWD), and VW. The BARR partners have agreed to work cooperatively to address water supply reliability concerns and drought preparedness on a mutually beneficial and regionally focused basis. Near- and long-term joint water supply reliability projects may be evaluated through BARR, such as use of the capacity of existing facilities, changes to infrastructure (including new interties, recycled water, water conservation, expanded treatment, regional desalination, and water transfers and exchanges), and other projects or institutional arrangements that encourage a regional approach to achieving water supply reliability in the Bay Area.

7.6.1 Delta Reliability

The instability of the aging levees in the Delta (including their vulnerability to seismic events and climate change), regulatory uncertainty, water quality issues including saltwater intrusion, and the declining health of the Delta ecosystem all challenge the long-term reliability of the SWP and, more generally, the water conveyance capability of the Delta. These issues directly challenge the Tri-Valley's long-term water supply reliability since a majority of Zone 7's water supply is and will continue to be tied to the Delta and SWP system.

In 2018, DWR published their Delta Flood Emergency Management Plan, which provides strategies for responding to Delta levee failures. This plan includes a strategy to establish an emergency freshwater pathway from the central Delta along Middle River and Victoria Canal to the export pumps in the south Delta. The plan also includes the pre-positioning of emergency construction materials at existing and new stockpile and warehouse sites in the Delta. The plan has found that using pre-positioned stockpiles of rock, sheet pile and other materials, multiple earthquake-generated levee breaches and levee slumping along the freshwater pathway can be repaired in less than six months.

The DWR Delta Levees Subventions and Special Projects Programs have prioritized, funded, and implemented levee improvements along the emergency freshwater pathway and other water supply corridors in the central and south Delta. These efforts are complementary to the Delta Flood Emergency Management Plan, which, along with pre-positioned emergency flood fighting materials, ensures reasonable seismic performance of levees and timely pathway restoration after a severe earthquake.

Furthermore, Zone 7 and other SWP contractors are currently working with DWR and other key stakeholders to address the many complex issues undermining the Delta through the proposed Delta Conveyance Project (DCP). The proposed new diversion structure in the northern Delta provides alternative intakes in case the Delta is affected by an earthquake, levee failure, or some other catastrophic event that impacts water quality and prevents pumping from the Delta. The DCP would also provide alternative intakes that could be used to minimize harm to endangered and threatened species in the Delta. DWR is working closely with regulatory and natural resource agencies to address regulatory uncertainty and protect the Delta ecosystem under an adaptive management framework based on the best available science. With these benefits, the DCP is expected to significantly alleviate constraints on SWP operation and provide more water supply reliability. Zone 7 is also participating in the Los Vaqueros Reservoir Expansion (LVE) project, which includes construction of the Transfer Bethany Pipeline. This pipeline would provide an alternative means of conveying water supply to Zone 7 when the Delta is inaccessible.

In addition to capital projects to improve the Delta reliability, Livermore has also utilized water use efficiency and recycled water to limit its reliance on Delta water supplies. Appendix B: includes DWR Tables C-1 through C-4 outlining the reduction in reliance on the Delta utilizing 2010 as the base year for comparison. Projected water use efficiency and recycled water use equates to an expected 33% reduction in Delta reliance by the year 2045.

7.6.2 State Water Project Reliability

For Zone 7, the 2019 Delivery Capability Report's (DCR) existing supply condition was assumed to represent 2020 (59 percent Table A reliability, 47,600 AFY[1]), and the future condition (54 percent Table A reliability, 43,500 AFY[1]) was applied to 2040; the years in between were interpolated between these two bookends. Note that while the proposed DCP is designed to increase the SWP's reliability, the quantitative effect on SWP water supply yield is still being analyzed and has not been included at this time to allow for a more conservative analysis.

As a contractor of the SWP, Zone 7 also has access to Article 21 water (interruptible or surplus water) and Article 56d water (turnback pool water). Neither Article 21 nor Article 56d water were included in this UWMP for planning-level purposes.

Additional water is primarily available during dry years under the Yuba Accord, but the amount is relatively small: 400 AF in 2014, approximately 300 AF in 2015, and 3,000 AF in 2020. For planning purposes, Zone 7 currently does not assume any water supply yield specifically from the Yuba Accord, although Zone 7 will continue to pursue this supply when available. Water from the Yuba Accord could contribute to Zone 7's supply as a water transfer.

7.6.3 Reliability Projects

7.6.3.1 Interties

As part of its existing CIP, Zone 7 is planning to construct a reliability intertie with another major water agency (e.g., EBMUD or SFPUC) to help mitigate some of the risk during a major water supply interruption from the Delta and to create opportunities for transfers/exchanges. This intertie could allow Zone 7 to acquire emergency water supplies to help meet minimum health and safety water supply needs during a major Delta outage, assuming the partnering agency has available supply and the transmission capacity available during the emergency period. A conceptual 24- to 30-inch intertie with EBMUD could connect to the west side of Zone 7's transmission system and convey up to 10 to 15 MGD of supply. The new Chain of Lakes (COLs) Pipeline would allow for access to water stored locally in the Chain of Lakes. Water would then be accessible to the DVWTP via one of the SBA turnouts.

7.6.3.2 Groundwater Management

Zone 7 continues to study the groundwater basin and develop new tools (e.g., an improved groundwater model) to better understand the levels of groundwater extraction possible under various conditions while maintaining levels above the historical levels that have been reached in certain portions of the Main Basin ("historic lows"). Zone 7 also plans to augment its ability to recharge the Main Basin (e.g., through the COLs) to increase local storage and allow for more pumping when necessary, which will improve both water supply reliability and salt management. Zone 7 plans to build an additional demineralization facility to continue to decrease the salt content of the Main Basin.

Finally, Zone 7 plans to build additional wells to allow for improved management of groundwater levels and to increase groundwater production capacity during droughts and surface water-related outages. A new booster pump station will improve Zone 7's ability to convey groundwater throughout Zone 7's service area and increase production capacity.

7.6.3.3 Demand Management Measures

In early January 2014, Zone 7's Board of Directors learned that all pumping form the Delta could be stopped due to severe, persistent, and record drought conditions. California Governor Jerry Brown declared a Drought State of Emergency on January 17, 2014 and requested voluntary conservation of 20 percent. For the first time in its history, Zone 7 was facing a potential water supply crisis. Consequently, Zone 7's Board of Directors declared a local drought state of emergency on January 29, 2014 and requested the local water supply retailers and untreated customers reduce their water use by 25% under Stage 2 Actions defined in the Zone 7's 2015 UWMP. Governor Brown subsequently mandated water use reductions in April 2015. Through an amazing effort by the entire Tri-Valley area, Zone 7 saw a 28.6% reduction in total water demand (treated and untreated) in 2014, and a 40% reduction in total water demand through November 2015.

To minimize the need for imported water, LMW implements the Demand Management Measures (DMMs) described in Section 8 of this Urban Water Management Plan and plans to maintain its efforts to ensure that water resources are used wisely to meet the requirements of the SB X7-7.

7.6.3.4 Recycled Water

Zone 7 and LMW's source water is affected by limitations related to legal, environmental, water quality, and/or climatic issues. Recycled water supply is also limited by treatment facilities capacity and storage capacity. LMW's recycled water supply is treated at the LWRP. LMW provides supplemental recycled water as described in Section 5 of this UWMP to offset demands on Zone 7 supplies.

7.6.3.5 Surface Water Management

Zone 7 currently relies on additional incoming surface water supplies from contracts and local water rights, previously stored surface water in the local groundwater basin, and two non-local groundwater banking programs to meet its demands. Zone 7's WSE Update evaluated water supply alternatives and potential future water supply projects that could be used to make up for the decreased reliability from existing supplies and meet demands from growth.

Within Zone 7's 2020 UWMP, Zone 7 staff compared projected water supplies during normal, single dry, and multiple dry water years with its customers' demand scenarios. It should be noted that a portion of the water demand during the normal year includes the storage of water supply for use in dry years. Based on the existing and planned future water supply assumptions made by Zone 7, it is not anticipated that there will be any difficulty in meeting projected Livermore water demands under normal conditions, single dry years, and multiple-dry years. However, Zone 7 expects that a portfolio of future supply alternatives, including the Delta Conveyance Project, will be needed to meet future supply shortfalls. If the Delta Conveyance Project is delayed, alternative water supplies such as potable reuse or desalination will be needed to meet water supply needs.

7.7 Drought Risk Assessment

In accordance with CWC Section 10612, urban water suppliers must conduct a DRA, which evaluates the risk of a severe drought occurring for the next five consecutive years (2021-2025). Supply conditions for the DRA are based on the five driest consecutive years on record, with adjustments to consider plausible changes in climate, regulations, and other locally applicable criteria.

The water shortage condition for the DRA is the same as the five-consecutive-dry years drought described in Section 7.5. The DRA assumes 5, 11, 60, 13, and 25 percent SWP Table A allocations for 2021-2025, respectively. The last four years reflect the last four years of the multiple-dry year scenario previously discussed, based on 2020 values from the 2019 DCR. Data for 2021 reflect current projected available supplies. Surplus water is stored for use during subsequent years.

5-year Drought Risk Assessment LMW supplies and demands are anticipated to be as follows:

- Purchased supplies from Zone 7 are assumed to provide 100% of LMW'S potable water demand and recycled water supplies can meet all non-potable demands.
- Supplies for the 5-year Drought Risk Assessment were estimated utilizing Livermore's percentage of average demand and applying this percentage to available supply from Zone 7's DWR Table 7-5.
- Demands for the 5-year Drought Risk Assessment were provided from Zone 7's projected demands for the City of Livermore for water years 2021 through 2025.

As shown in Table 7-5, during a five-year drought beginning in 2021, Zone 7's supplies are projected to be adequate to meet projected demands through 2025, even without water conservation. Surplus water will be retained by Zone 7 for storage or redistribution to other users.

Table 7-5: DWR 5-Year Drought Risk Assessment Tables to address Water Code Section 10635(b) (DWR Table 7-5)

2021	Total
Gross Water Use	2,135
Total Supplies	2,135
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2022	Total
Gross Water Use	1,994
Total Supplies	1,994
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2023	**Total**
Gross Water Use	2,007
Total Supplies	2,007
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2024	**Total**
Gross Water Use	2,020
Total Supplies	2,020
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2025	**Total**
Gross Water Use	2,040
Total Supplies	2,040
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

Section 8: Demand Management Measures

8.1 Water Conservation Regulations

The purpose of this chapter is to provide a comprehensive description of the water conservation programs the LMW has implemented, is currently implementing, and plans to implement in the service area in order to promote conservation, reduce the demand on the water supply, and meet water use reduction targets (pursuant to Section 10608.20) set forth by SBX7-7.

LMW is committed to reducing the demand for potable water through water conservation. The 2020 Use Target is 192 GPCD and the Actual 2020 Water Use was 190 GPCD, thereby meeting the SBX-7 target as detailed in Section 3 of this UWMP.

In evaluating Demand Management Measures (DMM) implementation, staff considered the intent of the DMM as well as the size and complexity of the City's municipal water system. Staff has made a concerted effort to implement all measures in the most cost effective and practical way for a utility of LMW system's size. Also, the high reliability of the Zone 7 water supply has historically influenced the emphasis the staff has placed on implementing the Demand Management Measures prior to the 2009 Water Conservation Act.

In 2014, the California Water Code was significantly modified by Assembly Bill 2067 to simplify and update the demand management measure reporting requirements from 14 specific measures to seven (7) more general requirements. This section discusses in detail the implementation as well as any planned enhancements for each of the DMMs to promote conservation and reduce the demand on the water supply. Funding for conservation programs is provided through water rates and capital improvement projects.

LMW will continue to monitor the overall effectiveness of its water conservation activities and may implement additional demand reduction programs as appropriate, based on cost-effectiveness and certainty of reduction, should it determine that further reductions are required to maintain its 2020 urban water use target of 192 gpcd and/or requirements from other water conservation legislation.

In addition to programs planned and implemented by staff, LMW and the other three Tri-Valley water retailers, work together with water wholesaler Zone 7 to plan and implement regional programs that promote water conservation and water efficiency. The four Tri-Valley water retailers provide funding and participate in regional programs that are administered or coordinated by wholesaler Zone 7.

LMW is a retail supplier and does not provide supplies as a wholesaler. Individual DMMs contributed by Zone 7 and LMW will be discussed below; including a summary of the implementation over the past 5 years and planned implementation to achieve water use targets.

8.2 Demand Management 2015-2020

The purpose of the Demand Management Measures (DMM) section of this UWMP is to (a) provide a description of the past water conservation programs that LMW has implemented since 2015 to meet its urban water use reduction targets and (b) describe the activities and actions LMW plans to use in the future to meet its urban water use reduction targets. Listed below are those DMMs that the UWMP Act and Water Code specifically mention:

a) Water waste prevention ordinances.
b) Metering.
c) Conservation pricing.
d) Public education and outreach.
e) Programs to assess and manage distribution system real loss.
f) Water conservation program coordination and staffing support.

8.2.1 Water Waste Prohibition

A detailed description of LMW water waste prohibition plans and ordinances are provided below. Copies of the Mandatory Drought Conservation Measures Ordinance, Water Shortage Contingency Plan, and Water Conservation Ordinance are included in Appendix C:.

8.2.1.1 Water Shortage Contingency Plan

LMW first adopted a Water Shortage Contingency Plan in 1991 and updated the plan in 1996, 2005, 2011, 2015, and 2020. The Water Shortage Contingency Plan will be reviewed and updated periodically as necessary to ensure conformance with California Water Code requirements; but at least every 5 years as part of the Urban Water Management Plan update process.

LMW has developed its latest Water Shortage Contingency Plan for the City's municipal water system in accordance with California Water Code Section 10632(a). The Plan describes the following required elements for all water users in the service area:

- Water conservation stages of action in response to shortages greater than 30%.
- Estimates of the projected 5-year water supply.
- Actions taken to prepare for and implement during catastrophic supply interruptions.
- Mandatory prohibitions and consumption reduction methods.
- Penalties and charges for excessive use.
- Analysis of potential revenue impacts from Shortage Plan implementation.
- Mechanisms for determining water use reductions.

The Water Shortage Contingency Plan includes a variety of voluntary and mandatory management practices to conserve water. The majority of the mandatory conservation practices are triggered at the Stage-3 level; corresponding to an expected reduction of 30% below normal use. Some of the other mandatory prohibitions and the associated Stages are described below:

- The use of potable water for municipal activities such as street cleaning will be

suspended at the Stage 4 level. Recycled water will be used for these needs in Stage 4 water shortage events, with the exception of water used for sewer line flushing during emergency sanitary sewer blockages or overflows.

- Implementation of irrigation during specific dates and times starting from Stage 1
- The use of sprinkler irrigation will be prohibited and the requirement to irrigate by hand-watering only on Saturday or Sunday will become mandatory at the Stage 4 level.
- The use of potable water for compaction or dust control during construction activities will be prohibited at the Stage 3 level since recycled water is available for these uses.
- The use of potable water for washing buildings, vehicles, or boats except at facilities which capture and recycle the water will become a mandatory prohibition at the Stage 4 level.

Below is a table for cross referencing demand management measures from the UWMP to the associated chapter located within the WSCP.

Table 8-1: WSCP Mapping

Demand Management Measurement	Corresponding WSCP Chapter
Water Waste Prohibition	Chapter 4: Water Shortage Response Actions
Metering	Chapter 9: Monitoring and Reporting
Conservation Pricing	Chapter 8: Financial Consequences of Actions during Shortages
Public Education and Outreach	Chapter 5: Communication Protocols
Assessing System Real Loss	Chapter 9: Monitoring and Reporting
Water Conservation Program Coordination	Chapter 7: Legal Authorities

8.2.1.2 Water Conservation Ordinance

The City first adopted a Water Conservation Ordinance in September 2011 adding new Chapter 13.26, Water Conservation to the Livermore Municipal Code to enact conservation measure to address the 20% reduction in per capita water use required by the Water Conservation Bill of 2009. The Water Conservation Ordinance established voluntary and mandatory water conservation practices, best management practices, and use of penalties to encourage wise water use, minimize the effect of shortages on LMW's customers, and to address water supply shortages and required demand reductions. The Water Conservation Ordinance specifies that water waste prohibition is in effect at all times and provides the legal authority to implement water conservation measures and best management practices included in the Water Shortage Contingency Plan. A copy of the Water Conservation Ordinance is included in Appendix C:.

8.2.1.3 Mandatory Drought Conservation Measures Ordinance

The City first adopted a Mandatory Drought Conservation Measures Urgency Ordinance in May 2014 adding new Chapter 13.27, Mandatory Drought Conservation Measures to the Livermore Municipal Code to prohibit wasteful water practices and maximize the beneficial use of water for citizens within the City. The Ordinance acknowledged that there are two water retailers in

Livermore, LMW and Cal Water. Both retailers receive a majority of their water from wholesaler Zone 7 Water Agency.

8.2.1.4 Implementation Over the Past 5 Years

LMW has met the required 20% reduction in demand for 2020 water use as described in Section 3. LMW will continue to utilize the subsequent programs, outreach, and audits to maintain this overall reduction in water use from baseline values. The WSCP, as part of this UWMP, establishes new water shortage stages and associated demand management measures with each stage to assist in achieving demand reduction.

8.2.2 Metering

All water connections are fully metered. Water service in the LMW service area is not allowed without a water meter. This requirement is further strengthened by water wholesaler rules that also do not allow service connections without a meter.

Meter replacement and/or recalibration are evaluated regularly via billing software. Unusual consumption is flagged and checked for accuracy. Meters that are stuck or do not meet accuracy specifications are immediately replaced. Billing accounts with meter failures are assessed an estimated consumption rate that reflects their average usage during the period. Meters that are 3-inches and larger are proactively tested annually and recalibrated, repaired, or replaced as needed. Additionally, meters are replaced within the system based on their service length with the oldest meters receiving replacement priority as funding allows.

8.2.2.1 Implementation Over the Past 5 Years

LMW upgraded the existing water distribution system from legacy Touch Read water metering to an Automated Metering System. The purpose of this project is to encourage water savings by providing customers web access to their real time water use, working with them to identify conservation opportunities, such as ET Controllers, and better evaluating the conservation benefit from these measures.

This project uses Advanced Metering Infrastructure (AMI) to collect real-time demand data from customer meters, which is then made available to customers via a secure website. This project uses fixed network AMI technology where the meter reading transmissions will be picked up by collector towers located within the vicinity of the meters, which will then transmit the meter reads to a centrally located computer server. The water usage data collected from the meter reads can then be accessed in graphical format via a City-supported Intranet connection where it will be shared with customers for their use in identifying water conservation opportunities. Water conservation staff will then work with these customers to identify water conservation strategies, such as fixing leaks, alternative irrigation techniques, and replacing older appliances with new higher efficiency models.

8.2.3 Conservation Pricing

LMW has had tiered water rates since its inception in 1963 setting the metric to 100 cubic foot of water per unit in the monthly billing. However, between 1963 and 1989 the tiered rates were not set to encourage conservation, but instead offered lower rates for higher consumption. Inverted tier rates were established to limit water use for higher tiers by utilizing increased tier rates. However, in response to Proposition 218, LMW established water rates that were set to recover the costs of serving each specific customer class to limit the financial impacts to higher tier water users. This conservation pricing structure is always in place and is not dependent upon a water shortage for implementation, although a drought conservation rate structure (Conservation Rates) is included in the rate structure to support drought and supply shortage reductions for implementation as needed.

All connections are metered to meet the necessary condition of conservation pricing. Potable water rates provide at least 99% of the revenue for the water system and are laid out in rate tiers which account for variable and fixed costs and supplemented by financial projections establishing a nexus between volume-related system costs and volumetric commodity rates. Water customers are charged a flat monthly meter service charge and charged for water use based on their customer class to recover operating costs. Meters are read monthly, and bills are issued to customers on a monthly basis. Monthly billings display water use by unit usage with gallon conversion data per 100 cubic feet (ccf) and provide information on water use trends to customer via water bill including customers' water use compared to a standard or benchmark. The use of Conservation Rates recovers necessary revenue based on the reduced volume of water during water shortages. In addition, the conservation pricing provides economic incentives to customers to use water efficiently. The inverted tiered rates and Conservation Rate structure can be found in Resolution 2017-098 in Appendix C:.

The City of Livermore operates the LMW system as a Municipal Enterprise, fully funded through water rates and meter service charges with no General Fund support. Water rates and meter service charges were not increased in Fiscal Year (FY) 2015-16 or 2016-17 to allow staff time to investigate and understand recent legal challenges to tiered water rates in other communities. To evaluate the current rate structure and the financial stability of the Water and Sewer Enterprises, the City retained Raftelis Financial Consultants, Inc. to perform a Comprehensive Water and Wastewater Cost of Service Study. This study concluded that 2016/2017 water rates and meter service charges were sufficient, with only minor inflationary adjustments needed to fully fund operations and maintenance expenses, capital expenditures, and required transfers while maintaining prudent operating and replacement reserves.

The Raftelis Study proposed a Water Utility Financial Plan which aimed to "*strike a balance between ensuring a strong financial position and minimizing rate increases to its customers through a multi-year measured approach*." The Financial Plan recommended the City implement revenue adjustments of zero percent in the first year, followed by adjustments of 4 percent per year for 4 years. The recommendations were developed based on the following criteria:

- Maintain positive net operating cash flow in each fiscal year.
- Fully fund Capital Improvement Project (CIP) expenditures from cash on hand over the 5-year period.

- Maintain the following reserves over the 5-year period:
  - Operating Fund reserve equal to 180 days of operating expenses.
  - Replacement Fund reserve equal to or greater than one-year of expenditures based on a 10-year average of CIP expenditures.

The recommended adjustments in rate structure were developed to help ensure that the LMW's rates meet all Proposition 218 requirements, including the tier structure and recycled water rates. Previously, recycled water rates were set as a percentage of residential rates, which does not meet Proposition 218 cost-of-service requirements. Table 8-2 below includes a summary of the existing and current tiers for each customer class.

Table 8-2: Customer Tiers

Customer Class / Tiers	2016/2017 Tier Width (ccf)	Current Tier Width (ccf)
Single Family Residential		
Tier 1	(0-5)	(0-7)
Tier 2	(6-35)	(8+)
Tier 3	(35+)	N/A
Multi-Family Residential Unit		
Tier 1	(0-50)	(0-7)
Tier 2	(51+)	(8+)
Commercial		
Tier 1	(0-50)	Uniform
Tier 2	(51+)	N/A
Irrigation		
Tier 1	(0-50)	Uniform
Tier 2	(51+)	N/A
Construction		
Tier 1	(0-50)	Uniform
Tier 2	(51+)	N/A
Recycled		
Uniform	Uniform	Uniform

The recommended 5-Year smoothed rates are shown below in Table 8-3. Note that Table 8-3 includes only the City Distribution costs and customer bills include an additional charge for wholesale water costs. Information on meter service charges and pass-through rates and charges are included in the attached Cost of Service Study and all proposed City rates and charges are shown in the resolution.

Table 8-3: 5-Year Water Rates

Customer Classes	WY 2016/17	WY 2017/18	WY 2018/19	WY 2019/20	WY 2020/21	WY 2021/22
Single Family Residential						
Tier 1	$0.52	$1.00	$1.07	$1.13	$1.19	$1.25
Tier 2	$1.07	$1.40	$1.48	$1.57	$1.66	$1.74
Tier 3	$2.89	-	-	-	-	-

Customer Classes	WY 2016/17	WY 2017/18	WY 2018/19	WY 2019/20	WY 2020/21	WY 2021/22
Multi-Family Residential						
Tier 1	$1.07	$1.00	$1.07	$1.13	$1.19	$1.25
Tier 2	$2.89	$1.40	$1.48	$1.57	$1.66	$1.74
Commercial						
Tier 1	$1.07	$1.08	$1.15	$1.22	$1.29	$1.35
Tier 2	$2.89	-	-	-	-	-
Irrigation						
Tier 1	$1.07	$1.40	$1.48	$1.57	$1.66	$1.74
Tier 2	$2.89	-	-	-	-	-
Construction	$1.07	$1.08	$1.15	$1.22	$1.29	$1.35
Recycled	$3.80	$2.64	$2.81	$2.97	$3.14	$3.30

The primary driver for rate increases is the need to offset ongoing and accumulated depreciation of water system assets and to continue to provide adequate replacement funding. In addition, rate increases are partially needed to fund increasing Water Resources Division (WRD) staffing, services, and supplies costs from filling positions held vacant during the economic downturn and fully recognizing other post-employee benefits (OPEB), as well as normal inflationary increases in the cost of goods and services used by the WRD.

Adjustments to water rates and meter service charges are subject to the public notice and ballot requirements of Proposition 218, which require that customers be notified 45 days prior to any public hearing adjust property-related rates and charges. Notices are required to provide property owners an opportunity to submit written protests. If more than 50% of property owners submit protests before the end of the public hearing, a “majority protest” as defined by Proposition 218 exists, prohibiting the City Council from adopting the proposed water rates and meter service charges. Previously, in 2017, a public notice was issued for increasing water rates. Out of 9,000 customers, only 3 customers filed complaints with the City of Livermore.

8.2.3.1 Implementation Over the Past 5 Years

In February 2014 (Resolution 2014-027), Livermore City Council implemented Stage 1, 20% voluntary Conservation Rates in response to Governor Jerry Brown’s declaration of a drought State of Emergency, and the 2014 State Water Project allocation being reduced to zero. On April 15, 2014, the City Manager implemented mandatory Stage 2 conservation measures at the 30% level. On April 29, 2014 (Resolution 2014-052), Livermore City Council implemented Stage 3 Water Conservation Rates to send an economic signal for customers to conserve water. Conservation rates were initially enacted at the Stage 3, 35% level to encourage conservation to meet the 30% conservation target. Livermore City Council later reduced this to Stage 1 Water Conservation Rates on December 1, 2014 (Resolution 2014-192) due to significant reductions in water use by the City’s municipal water customers, and projections for needing slightly lower levels of expected conservation. Note that the Stages in 2014 have been modified from four to six stages in the 2020 UWMP to align with the Stages required by DWR as described in the following paragraph.

Reactivation of conservation water rates has not been issued since 2014. The WSCP, as part of the UWMP, provides mapping for tiered rates as they now correspond to the 6 water shortage stages described in the WSCP. It is intended that each Stage 1-6 has its own conservation rate

corresponding to the desired reduction in demand at each stage. An additional cost of service study is needed to align new rate values with the corresponding six water shortage stages.

8.2.4 Public Education and Outreach

Table 8-4 below briefly describes communication protocols and outreach programs already in practice by Zone 7 and LMW. These programs along with public information campaigns have successfully reduced water consumption during past drought events.

Table 8-4: Demand Management Measures Summary

Program/ Outreach	Description	Details	Date	Administrator
High Efficiency Washing Machine Rebate Program	Rebate program for installation of high-efficiency washing machines	Targeted for single-family residences	2008	Zone 7
Utility Billing Software	Billing software tracks volumetric usage by water meter type	Recently updated with a customer portal where customers can setup notification of high water consumption. Notifies utility billing staff for outreach purposes.	2010	LMW
Monthly Billings	Provides data on monthly water consumption compared to previous year	Billing stuffers are provided outlining water savings techniques	1991	LMW
Recycled Water Service Area	Requires recycled water for outdoor landscape irrigation	Recycled Water Master Plan Feasibility Study completed in 2013 to expand recycled water use	2003	LMW
Water-wise Gardening Program	Web based program helps visitors design a water efficient landscape	Assists users in designing landscapes, selecting water wise plants, and water saving tips	2005	Tri-Valley
Public Information Outreach	Livermore provides general outreach on water conservation	Examples include booths at local events, local festivals, WRP tours, paid advertising, brochures, websites, notices, etc.	2014	LMW/Zone 7
Tri-Valley Water Conservation Group	Monthly meetings to coordinate regional outreach efforts	Includes periodic advertising, water conservation info, media campaigns, website resources, PSAs, etc.	1980's	Tri-Valley
School Education Program	Education program offered to schools in the City's municipal water service area	Educational materials and course outlines developed in accordance with California curriculum standards	2002	Zone 7

Program/ Outreach	Description	Details	Date	Administrator
Water-Efficient Landscaping Lawn Conversion Rebate	Rebate for replacing lawns with drought-tolerant landscaping and capping sprinkler systems/ converting them to drip irrigation.	Rebate available to all customer types.	2016	Zone 7
Weather-Based Irrigation Controller Rebate	Rebate for replacing irrigation controller with a WaterSense weather-based irrigation controller.	Rebate available to all customer types.	2016	Zone 7
Water Supply Education Program	Websites and presentations help residents understand their water supply	Assists participants with understanding where their water comes from and the challenges that put supply at risk	2015	Zone 7/Tri-Valley

8.2.4.1 Rebate Programs

8.2.4.1.1 High Efficiency Washing Machine (HEW) Rebate Program

LMW and the other Tri-Valley water retailers support and fund the High-Efficiency Washing Machine Rebate Program (HEW) administered by Zone 7. This rebate is available for single-family residences.

From 2008 to 2016 Zone 7 partnered with Pacific Gas and Electric Company (PG&E) on a regional strategy to offer a dual energy and water rebate for high-efficiency clothes washers. However, beginning in 2017 PG&E no longer offered energy rebates for clothes washers. The water agencies continue to offer Tier 3 rebate in the amount of $75. A review of the cost of rebate re-submittal in 2013 resulted in changes to the review process for cost containment purposes allowing more rebates to be authorized.

Implementation Over the Past 5 Years
In 2019 the HEW rebate was reduced from $100 to $75 per unit replaced. Tri-Valley water retailers continue to offer the $75 per unit rebate. The number of rebates distributed over the past 5 years has dropped, which may indicate market saturation or that the maximum rebate amount as dropped too low. Zone 7 and the Tri-Valley water retailers have discussed expanding the rebate program to include multi-family residences and commercial properties.

8.2.4.1.2 Water Efficient Landscaping Lawn Conversion Rebate Program

LMW and other Tri-Valley water retailers participate in the Water Efficient Landscaping Lawn Conversion Program administered by Zone 7.

Lawn conversion rebate applications are submitted to Zone 7 for processing. Applications must include (1) a detailed list of proposed plants that are on the “Qualifying Plant List”, (2) information on any planned soil amendments, mulch, or drip irrigation that will be installed, (3) an aerial drawing of the proposed project on a grid to show measurements of lawn area that will be converted, and (4) pictures of the lawn area that will be converted.

Implementation Over the Past 5 Years
LMW continues to offer this rebate program for its customers. This rebate program is very time consuming for both staff and the applicant, so Zone 7 and LMW are working to streamline the process further.

In March 2020, LMW planned to launch a pilot rebate program called "Garden by Number" in partnership with Zone 7. The purpose of the program was to help make the lawn conversion process even easier for residents. This program has been delayed due to COVID-19 but will launch as soon as it is feasible.

8.2.4.1.3 Weather-Based Irrigation Controller (WBIC) Rebate Program

Since 2011, LMW and other Tri-Valley water retailers have participated in the Weather-Based Irrigation Controller (WBIC) Rebate Program administered by Zone 7. WBICs reduce water use and runoff from overirrigation, which can carry excess fertilizers, herbicides, and pesticides into local waterways. They accomplish this by automatically adjusting irrigation schedules in response to local weather data and soil moisture measurements.

WBIC rebate applications are submitted to Zone 7 for processing. Along with the application, participants must include (1) a copy of the WBIC receipt, (2) a copy of their most recent LMW bill, (3) a picture of the installed WBIC, and (4) a screenshot of their irrigation schedule.

Implementation Over the Past 5 Years
LMW continues to offer this rebate program for its customers.

8.2.4.2 Water Use Audit Programs

8.2.4.2.1 Residential Water Survey and Conservation Check-up Program

The LMW Residential Water Survey and Conservation Check-up Program was initiated in 2011. The program was initiated either by a call from the customer or when staff noticed an unusual increase in historic usage or a consistent pattern of excessively high usage in their daily activities through utility billing and usage reports. The customer was contacted to alert them of the elevated usage and to assist the customer in identifying areas of water savings and potential leaks. The customer was also provided a free water conservation kit.

While many customer service calls were initiated by staff, a majority of the customer service appointments were driven by calls from customers. The program included documentation of customer service calls, including standardized reports on leak repairs or recommendations, but did not include documentation and follow-up to determine if conservation measures were implemented to reduce consumption.

Implementation Over the Past 5 Years
In 2019, LMW eliminated its water meter reader positions. Due to the elimination of these positions and COVID-19, residential water use audits were not performed in 2020. Customer service staff still reach out to customers when they notice an unusual increase in historic usage or a consistent pattern of excessively high usage in their daily activities through utility billing and usage reports.

LMW no longer provides residential customers with free water conservation kits. Instead, residential customers are encouraged to create customer accounts through the web-based LMW Customer Portal to monitor their water use in real-time and set up automatic leak alerts.

8.2.4.3 Water Conservation Outreach Methods

8.2.4.3.1 Utility Billing Software

As of 2020, there are 10,578 metered connections (residential, multi- family, commercial, irrigation, recycled and institutional). Water bills are made available to customers in hard copy and electronic formats which they can pay in a variety of ways including online.

Implementation Over the Past 5 Years
Since 2016, LMW has implemented an automated meter infrastructure system by Sensus. This system takes and transmits hourly readings of consumption (in 6-hour packages) which allows customers to self-serve with alerts, usage history, and more features to help manage their water use and quickly fix leaks. This system also helps water distribution operators locate potential meter problems and address them in an efficient and prompt manner.

Tracking water savings identified through use of the utility billing software has not been conducted to date. The database to be developed as part of the Water Survey Program will be used to track savings from leaks or other use-issues identified through the billing software.

8.2.4.3.2 Monthly Billings

LMW began using its monthly water bills to educate customers about their water use and conservation in 1991. Each bill shows their water use for the month compared to their water use during the same month of the previous year. Additionally, reminders are placed on customer's bills that include, but are not limited to, resetting sprinklers in the winter or simply turning off all outdoor irrigation.

Monthly billings, along with tiered rates, are an effective way to encourage water conservation. Customers can see the impact of wasted water much sooner with monthly billings than bimonthly or flat rate billings and act more swiftly to identify and correct any problems.

Implementation Over the Past 5 Years
In 2018, LMW launched the "Love My Water" customer portal using the automated metering infrastructure system by Sensus. This portal allows customers to monitor their water use in real-time and set up automatic leak alerts. Historical water usage comparisons and water conservation reminders are still printed on water bills.

8.2.4.3.3 Websites

LMW and the other Tri-Valley water agencies administer or contribute content related to water conservation on the following websites:

City of Livermore Website (www.cityoflivermore.net)
The City of Livermore website is regularly updated with events, conservation messaging, and conservation actions.

Tri-Valley Water-Wise Gardening Website (www.trivalleywaterwise.com)
In 2005, the Tri-Valley Water Conservation Group worked with a software firm to develop a CD-ROM that provided Tri-Valley-specific information on water-wise gardening. The CD-ROM was financed by the Tri-Valley water retailers through Zone 7. The CD-ROM, distributed by Zone 7 and the Tri-Valley water retailers, provided homeowners with information on how to establish landscaping that is water efficient based on climate and other factors specific to the Tri-Valley region. Educational content that was historically available on the CD-ROM is now available on the website under the "resources" tab.

Tri-Valley Water Website (www.trivalleywater.org)
During the drought, the Tri-Valley water agencies developed a joint website (www.trivalleydrought.org). The website was transitioned to www.trivalleywater.org after the drought ended to serve as a resource to learn about the Tri-Valley's water supply.

Implementation Over the Past 5 Years
Cityoflivermore.net: LMW continues to update the website as new resources become available.

Trivalleywaterwise.com: The current design of the website went live in late December 2017. The website is still actively promoted and is updated as new resources become available.

Trivalleywater.org: During the past 5 years this website was primarily used for residents and organizations to request a "Tri-Valley 101" presentation.

8.2.4.3.4 Social Media

LMW regularly posts water conservation-related information on the following social media accounts:

- City of Livermore Facebook page (@CityofLivermore)
- City of Livermore Twitter page (@CityofLivermore)
- City of Livermore Public Works Twitter page (@LivermorePW)
- City of Livermore Nextdoor account
- City of Livermore Instagram page (@CityofLivermore)

Implementation Over the Past 5 Years
The City of Livermore has grown its social media platforms over the past 5 years in order to reach a broader section of the community. As of December 2020, this was the number of followers for each account:

- Facebook: 5,122 likes/6,804 followers
- City Twitter: 3,958 followers
- Public Works Twitter: 192 followers
- Nextdoor: 25,903 members
- Instagram: 2,389 followers

8.2.4.3.5 Print and Email Newsletters

Since 2016 the City of Livermore has mailed a community newsletter to all property addresses 2 to 4 times a year. Water conservation messaging is often included in these printed newsletters.

Implementation Over the Past 5 Years
In fall 2020 the City of Livermore purchased a Constant Contact subscription to begin sending email newsletters.

A digital version of the community newsletter was emailed for the first time in November 2020. Additionally, LMW will use the Constant Contact account to send quarterly water conservation emails to its customers. The first LMW email was sent to residential customers in October 2020.

8.2.4.4 Overall 5-Year Implementation

In 2015, the City's municipal water customers achieved a 32% reduction of water use compared to the 2013 baseline use during the drought. However, no methods of evaluating or quantifying the effect of tiered water rates on water conservation have been identified as a response separate from public outreach from the State, City of Livermore, other Tri-Valley organizations, and various other news outlets. It is inferred by LMW that a majority of water savings came from public outreach measures. The City will continue to review public outreach programs and their effects on water conservation when tiered water rates are not being utilized.

8.2.5 Programs to Assess and Manage Distribution System Real Loss

LWM conducts monthly water audits determine water loss that may be due to distribution system leaks. Since 1990, staff has routinely monitored the monthly water purchases and the monthly water sales in order to quickly detect any system irregularities or excessive water loss. Staff also tracks un-accounted for water from activities such as system flushing, fire flow testing, and water quality corrections. Over the last 20 years, staff has contracted for two leak surveys. The most recent survey was completed in 2013. Each survey found no water leaks in the areas surveyed. The average amount of unaccounted for water for the 2016 through 2020 period equaled only 8.50 percent. The DWR water audit and leak detection program of 47 California water utilities found an average of 10 percent loss of water due to leaks.

In May 2009 the American Water Works Association (AWWA) published the 3rd Edition M36 Manual Water Audits and Loss Control Programs. LMW staff currently uses the AWWA Water Audit software to complete the standard water audit and water balance to quantify current volume of apparent, real water loss, and the cost impact of these losses on utility operations annually. The economic value of real loss recovery is also reported using the AWWA software. LMW has a goal of completing a component analysis once every 4 years to analyze apparent and real losses and their causes by quantity and type to support the economic analysis and selection of intervention tools.

LMW is actively working on implementing an Asset Management Plan that will be used to proactively identify end of life sections of the water system for replacement to achieve water use and other targets. Additional activities are not planned at this time due to the reductions in water

loss achieved through improved tracking, as well as the low occurrence of system leaks, and the failure of the two previous leak detection surveys to locate any leaks. Further reductions in leaks and conservation savings estimates will vary based on water system audits, repairs as needed, and area-wide leak surveys as needed. The goal is to bring unaccounted for water percentage below 5 percent.

8.2.6 Other Demand Management Measures

8.2.6.1 Residential Recycled Water Program

In addition to the DMMs described above, the City of Livermore implemented the Residential Recycled Water Program during the drought.

In 2014, Livermore implemented a temporary Residential Recycled Water Program. Recycled water was made available so Livermore residents could supplement their potable water landscape irrigation to keep plants alive if needed during the warm summer months. In 2014, Livermore provided 73 permittees approximately one (1) AF of recycled water. In 2015, interest in the Residential Recycled Water Program increased more than 1,200% from the previous year resulting in Livermore providing 15 AF of recycled water to 898 permittees.

8.2.6.2 Water Wise Gardening Program

LMW and the other Tri-Valley water retailer's support and fund the Water-Wise Gardening Program that is administered by water wholesaler Zone 7 as detailed in Section 8.2.4.3.3.

In 2008, instead of continuing to hand out CD-ROMs, LMW supported the Tri-Valley Water Conservation Group's decision to go to a web-based format of the "Water-Wise Gardening" information as a means of reducing program costs and maintaining updated information as available. The site additionally helps visitors to design a landscape, includes photographs, a searchable plant database, and water saving tips. Water customers can access the recently updated "Water-Wise Gardening" information through the City of Livermore website at no cost.

8.2.7 Assistance Programs

LMW participates with other regional water agencies and planning groups to provide a consistent water conservation message to all users within the region. This collaboration includes but is not limited to LMW, Cal Water, Zone 7, Tri-Valley Water Conservation group, and others.

8.2.7.1 Regional Planning

8.2.7.1.1 Tri-Valley Water Conservation Group

City staff actively participates in the Tri-Valley Water Conservation Group, which consists of staff from all four Tri-Valley water retailers and water wholesaler Zone 7. The Tri-Valley Water Conservation Group (Group) was formed in the late 1980's. This group meets quarterly to coordinate regional outreach for a variety of regional public outreach efforts. Some of these efforts include periodic advertising, general water conservation information, landscape water conservation media campaigns, water conservation rebate programs, website resources, social

media campaigns, coordination of booths and displays at public events and public service announcements. Most of the advertising and materials is prepared and distributed by Zone 7 after Group review and comment. Funding is provided by the Tri-Valley water retailers.

8.2.7.1.2 Water Suppliers Council

The Water Suppliers Council was formed by Stopwaste.org. in 2010. The members included representatives from the Alameda County Water District, City of Hayward, City of Livermore, City of Pleasanton, Dublin San Ramon Services District, East Bay Municipal Utility District, Zone 7 Water Agency, and Cal Water.

The goal of the group was to encourage residential water conservation by expanding point-of-purchase awareness of comprehensive Bay-Friendly practices and related products, and to expand recycled content supply channels for compost and mulch. This is done in part by providing lawn conversion education, fact sheets, nursery displays, rebates, and signage for residents who have converted their yards.

The program goals were met, and the Water Supplier Nursery Council now meets on an annual basis. In July 2020 Stopwaste.org announced that Bay-Friendly landscaping resources will now be provided by ReScape California.

8.2.7.2 Youth Programs

The City of Livermore and the other Tri-Valley water retailers' support and fund the regional K-12th grade water education program that is administered by Zone 7's contractor. The program was implemented in 2002 and is offered to all schools in the Tri-Valley. Educational materials and course outlines used by Zone 7 in classroom presentations have been developed in accordance with California curriculum standards and are grade appropriate.

In addition to the regional program, City staff conducts additional classroom presentations on a variety of topics, including water conservation, and provides tours of the City of Livermore Water Reclamation Plant.

8.2.8 Water Conservation Program Coordination and Staffing Support

The Water Conservation Coordinator is responsible for the City's conservation program and responsibilities include management, planning, tracking, implementation, and evaluation of the program.

The Water Conservation Coordinator duties also include enacting, enforcing, supporting legislation, regulations, ordinances, or terms of service related to water waste prevention. This includes landscape and irrigation inefficiencies, non-recirculating decorative water fountains, and water shortage measures for new development and existing users. Additional duties include coordination and oversight of conservation programs, joint programs with Zone 7, Tri-Valley water retailers, and other outside agencies. This coordination and oversight include communication of water conservation issues to the public, preparation and submittal of reports to various parties, and preparation and updates of the water conservation plan. These activities are supported through coordination and execution of the Demand Management Measures.

8.3 Planned DMMs to Reach Water Use Targets

No additional DMMS are planned at this time as the DMMs currently in use are achieving current water use targets.

Section 9: Seismic Risk Assessment

As part of LMW's Water Distribution System Risk and Resilience Assessment (RRA), The City of Livermore evaluated seismic risk to water facilities and identified mitigation measures to lessen the risk. This plan meets the requirements of the federal Disaster Mitigation Act of 2000 as well as the requirements of Water Code Section 10644. A copy of the 2020 LWW Water Distribution System RRA will be submitted to DWR with the adopted Water Shortage Contingency Plan (WSCP).

From the LMW 2020 Water Distribution System RRA, Livermore is between the Calaveras and Greenville faults. Per the United States Geologic Survey's (USGS's) 2007 projections, Livermore has approximately 10-20 percent chance of sustaining a rupture with a magnitude of M≥6.7 over 30 years. From another figure in the same report, that corresponds to a 0.1-1% [0.44% for Calaveras Fault] 5-year probability of the event. The Livermore area has a chance of an earthquake with M≥6.7 of approximately 7.4% over 30 years, or an annual likelihood per year of 0.0025.

9.1 Pipelines

In order to minimize the impact of peak ground acceleration (PGA) of 0.4-1.1g during a seismic event, the LMW has a countermeasure to replace larger rigid pipes (>= 12 inches in diameter) with flexible pipes within. The pipe replacement will be carried out through the City's long-term water system renewal and replacement program. Replacing aging rigid pipes (e.g. cast-iron pipes and asbestos-cement pipes) will bring the following benefits:

- Decreases the susceptibility of the system to breaks and leaks with ground movement: Increases robustness of the system.
- Reduces susceptibility to other threats like corrosion: Increases flexibility of system to a range of threats.
- When flexible pipelines are in place, the trunk system will ensure the system is brought back online as quickly as possible: Increases the responsiveness to this threat.
- Once service is restored, flexible pipes are less likely to fail from longer-term stress brought about by minor ground movement: Recovery is enhanced.

9.2 Pump Stations

All LMW's pump stations that are in use have at least been retrofitted since 1997, bringing them up to current codes and construction for resilience around the Bay Area faults. If the PGA of the pumping equipment exceeds that of the structure, the disabled structure could continue to function, though the structure would require replacement.

9.3 Water Storage Tanks

All water tanks owned by LMW are made of steel which is a flexible material compared to concreate. Three out of four water tanks were constructed after 2002, showing compliance with current seismic code. The risk calculation shows that the events that would be sufficient to rupture the tanks were large and had a low chance of occurrence. The tanks are positioned so that even a severe rupture would destroy the tank but would be very unlikely to endanger life. The Doolan tank is about 1,800 feet from a nearby commercial/industrial area. There is adequate landscape to significantly dampen the impact of flows from the tank. One tank at the Altamont tank site was constructed in 1985. The LMW will review the initial design of the Altamont tank for seismic code compliance and conduct retrofit if necessary.

References

Livermore Municipal Code Division 1 (Water) of Title 13 (Public Services) Chapter 13.26 Water Conservation and Chapter 13.27 Mandatory Drought Conservation Measures

Urban Water Management Plan. Zone 7 Water Agency. 2020.

Urban Water Management Plan. Livermore Municipal Water. 2015.

Appendix A: UWMP Checklist

DWR CHECKLIST FOR 2020 UWMP, CITY OF LIVERMORE

Water Code Section	Subject	Summary as Applies to UWMP	2020 Guidebook Location	2020 UWMP Location (e.g. Section(s), page number(s), table/figure number(s) or briefly describe why CWC section does not apply)
10615	Introduction and Overview	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Chapter 1	Section 1.4 Structure and Organization of the Plan
10630.5	Summary	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.	Chapter 1	Section 1.1 Overview and Section 1.2 Purpose
10620(b)	Plan Preparation	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Section 2.2	Section 1.5.2 Plan Adoption
10620(d)(2)	Plan Preparation	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Section 2.6	Section 1.5.1 Joint Preparation of the Plan
10642	Plan Preparation	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Section 2.6.2	Section 1.5.3 Public Outreach
10631(h)	System Supplies	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	Section 2.6, Section 6.1	Section 2.3.6 Projected Water Use
10631(a)	System Description	Describe the water supplier service area.	Section 3.1	Section 1.6 System Description
10631(a)	System Description	Describe the climate of the service area of the supplier.	Section 3.3	Section 1.9 Climate
10631(a)	System Description	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	Section 3.4	Section 1.7 Population, Demographics, and Socioeconomics
10631(a)	System Description	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	Section 3.4.2	Section 1.7 Population, Demographics, and Socioeconomics
10631(a)	System Description and Baselines and Targets	Indicate the current population of the service area.	Sections 3.4 and 5.4	Section 1.7 Table 1-7 (DWR Table 3-1)
10631(a)	System Description	Describe the land uses within the service area.	Section 3.5	Section 1.8 Land Uses in the Service Area
10631(d)(1)	System Water Use	Quantify past, current, and projected water use, identifying the uses among water use sectors.	Section 4.2	Section 2.3 Past, Current and Projected Water Use by Sector
10631(d)(3)(C)	System Water Use	Retail suppliers shall provide data to show the distribution loss standards were met.	Section 4.2.4	Section 2.3.4 Distribution System Water Losses; Appendix E Water Loss Audit
10631(d)(4)(A)	System Water Use	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	Section 4.2.6	Section 2.3.6.3 Effects of Codes, Standards, and Ordinances
10631(d)(4)(B)	System Water Use	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	Section 4.2.6	Section 2.3.6.3 Effects of Codes, Standards, and Ordinances
10631(d)(3)(A)	System Water Use	Report the distribution system water loss for each of the 5 years preceding the plan update.	Section 4.3.2.4	Section 2.3.4 Table 2-2 (DWR 4-4R)
10631.1(a)	System Water Use	Include projected water use needed for lower income housing projected in the service area of the supplier.	Section 4.4	Section 2.3.8 Low Income Projected Water Demands
10635(b)	System Water Use	Demands under climate change considerations must be included as part of the drought risk assessment.	Section 4.5	Section 2.3.6.4 Effects of Climante Change on Water Use
10608.20(e)	Baselines and Targets	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Chapter 5	Section 3.1.2 Base Daily Per Capita Water Use
10608.24(a)	Baselines and Targets	Retail suppliers shall meet their water use target by December 31, 2020.	Chapter 5	Section 3.1.3 Compliance Water Use Targets Table 3-2 (DWR Table 5-2R)
10608.24(d)(2)	Baselines and Targets	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Section 5.2	N/A, Not needed to achieve target
10608.22	Baselines and Targets	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Section 5.5	Section 3.1.2 Base Daily per Capita Water Use Table 3-1 (DWR Table 5-1R)
10608.4	Baselines and Targets	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Section 5.5 and Appendix E	Appendix F SBx7-7 Verification Tables and DWR Population Tool Output
10631(b)(1)	System Supplies	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.	Sections 6.1 and 6.2	Section 4.8 Anticipated Water Supply Sources in Normal, Single Dry, and Multiple Dry 5-Year Drought Years
10631(b)(1)	System Supplies	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*.	Sections 6.1	Section 4.9 Climate Change Impacts
10631(b)(2)	System Supplies	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	Section 6.1	Sections 4.2 through 4.6
10631(b)(3)	System Supplies	Describe measures taken to acquire and develop planned sources of water.	Section 6.1.1	Section 4.8 Planned Water Supply Projects and Programs
10631(b)	System Supplies	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	Section 6.2.8	Section 4.8 Planned Water Supply Projects and Programs Table 4-5 (DWR Table 6-7R)
10631(b)	System Supplies	Indicate whether groundwater is an existing or planned source of water available to the supplier.	Section 6.2	Section 4.6.1.1 Groundwater
10631(b)(4)(A)	System Supplies	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	Section 6.2.2	N/A
10631(b)(4)(B)	System Supplies	Describe the groundwater basin.	Section 6.2.2	N/A
10631(b)(4)(B)	System Supplies	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.	Section 6.2.2	N/A

10631(b)(4)(B)	System Supplies	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	Section 6.2.2.1	N/A
10631(b)(4)(C)	System Supplies	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	Section 6.2.2.4	N/A
10631(b)(4)(D)	System Supplies	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	Section 6.2.2	N/A
10631(c)	System Supplies	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis.	Section 6.2.7	Section 4.6 Transfers, Exchangesm and Groundwater Banking Programs
10633(b)	System Supplies (Recycled Water)	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.	Section 6.2.5	Section 5.1.1 Wastewater Collection and Treatment Table 5-2 (DWR Table 6-3R)
10633(c)	System Supplies (Recycled Water)	Describe the recycled water currently being used in the supplier's service area.	Section 6.2.5	Section 5.1.2.1, Table 5-4, (DWR Table 6-4)
10633(d)	System Supplies (Recycled Water)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	Section 6.2.5	Section 5.1.1.1, Table 5-3, (DWR Table 6-5)
10633(e)	System Supplies (Recycled Water)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison touses previously projected.	Section 6.2.5	Section 5.1.2.1, Table 5-4, (DWR Table 6-4)
10633(f)	System Supplies (Recycled Water)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	Section 6.2.5	Section 5.1.3, Table 5-5, (DWR Table 6-6)
10633(g)	System Supplies (Recycled Water)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	Section 6.2.5	Section 5.1.3, Table 5-5, (DWR Table 6-6)
10631(g)	System Supplies	Describe desalinated water project opportunities for long-term supply.	Section 6.2.6	NA, No Desal being considered for Livermore
10633(a)	System Supplies (Recycled Water)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	Section 6.2.5	Section 5.1.1 Wastewater Collection and Treatment
10631(f)	System Supplies	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	Section 6.2.8, Section 6.3.7	Section 4.8 Planned Water Supply Projects and Programs
10631.2(a)	System Suppliers, Energy Intensity	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	Section 6.4 and Appendix O	Section 4.7; Appendix G
10634	Water Supply Reliability Assessment	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	Section 7.2	Section 4; Section 6
10620(f)	Water Supply Reliability Assessment	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Section 7.2.4	Section 5.1 Recycled Water Planning
10635(a)	Water Supply Reliability Assessment	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Section 7.3	Section 7 Reliability Planning
10635(b)	Water Supply Reliability Assessment	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Section 7.3	Section 7.7 Drought Risk Assessment
10635(b)(1)	Water Supply Reliability Assessment	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Section 7.3	Section 7.7 Drought Risk Assessment
10635(b)(2)	Water Supply Reliability Assessment	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Section 7.3	Section 7.2 Water Supply Projections Table 7-1 (DWR Table 7-1R)
10635(b)(3)	Water Supply Reliability Assessment	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Section 7.3	Tables 7-2, 7-3, 7-4 (DWR Tables 7-2R, 7-3R, 7-4R)
10635(b)(4)	Water Supply Reliability Assessment	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.	Section 7.3	Section 7.7 Drought Risk Assessment
10632(a)	Water Shortage Contingency Planning	Provide a water shortage contingency plan (WSCP) with specified elements below.	Chapter 8	See WSCP Document
10632(a)(1)	Water Shortage Contingency Planning	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Chapter 8	WSCP Section 2.3 Supply Reliability
10632(a)(10)	Water Shortage Contingency Planning	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Section 8.10	WSCP Section 10 Monitoring and Reporting
10632(a)(2)(A)	Water Shortage Contingency Planning	Provide the written decision- making process and other methods that the supplier will use each year to determine its water reliability.	Section 8.2	WSCP Section 3 Annual Water Supply and Demand Assessment Procedures
10632(a)(2)(B)	Water Shortage Contingency Planning	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.	Section 8.2	WSCP Section 2.3 Supply Reliability
10632(a)(3)(A)	Water Shortage Contingency Planning	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Section 8.3	WSCP Section 4.5 Proposed Water Shortage Levels Table 4-1 (DWR Table 8-1)
10632(a)(3)(B)	Water Shortage Contingency Planning	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Section 8.3	WSCP Section 4.5 Proposed Water Shortage Levels Figure 4-1
10632(a)(4)(A)	Water Shortage Contingency Planning	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Section 8.4	N/A, Zone 7 supplies all water to Livermore

10632(a)(4)(B)	Water Shortage Contingency Planning	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Section 8.4	WSCP Section 5.2 Demand Reduction Actions Table 5-2 (DWR Table 8-2)
10632(a)(4)(C)	Water Shortage Contingency Planning	Specify locally appropriate operational changes.	Section 8.4	WSCP Section 5.4 Operational Changes
10632(a)(4)(D)	Water Shortage Contingency Planning	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Section 8.4	WSCP Section 5.5 Additional Mandatory Prohibitions
10632(a)(4)(E)	Water Shortage Contingency Planning	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Section 8.4	WSCP Section 5.2 Demand Reduction Actions Table 5-2 (DWR Table 8-2)
10632.5	Water Shortage Contingency Plan	The plan shall include a seismic risk assessment and mitigation plan.	Section 8.4.6	WSCP Section 4.6.1 Emergency Response Plan
10632(a)(5)(A)	Water Shortage Contingency Planning	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Section 8.5	WSCP Section 8 Legal Authorities
10632(a)(5)(B) 10632(a)(5)(C)	Water Shortage Contingency Planning	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.	Section 8.5 and 8.6	WSCP Section 8 Legal Authorities
10632(a)(6)	Water Shortage Contingency Planning	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Section 8.6	WSCP Section 7 Penalties, Charges, and Other Enforcement of Prohibitions
10632(a)(7)(A)	Water Shortage Contingency Planning	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Section 8.7	WSCP Section 8 Legal Authorities
10632(a)(7)(B)	Water Shortage Contingency Planning	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Section 8.7	WSCP Section 8 Legal Authorities
10632(a)(7)(C)	Water Shortage Contingency Planning	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.	Section 8.7	WSCP Section 8 Legal Authorities
10632(a)(8)(A)	Water Shortage Contingency Planning	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Section 8.8	WSCP Section 9 Financial Consequences of Actions during Shortages
10632(a)(8)(B)	Water Shortage Contingency Planning	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Section 8.8	WSCP Section 9 Financial Consequences of Actions during Shortages
10632(a)(8)(C)	Water Shortage Contingency Planning	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Section 8.8	N/A, Cost impacts mititgated with current conservation rates
10632(a)(9)	Water Shortage Contingency Planning	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Section 8.9	WSCP Section 10 Monitoring and Reporting
10632(b)	Water Shortage Contingency Planning	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Section 8.11	WSCP Section 12 Special Water Feature Distinction
10635(c)	Plan Adoption, Submittal, and Implementation	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Sections 8.12 and 10.4	WSCP Section 13 Plan Adoption Resolution or Ordinance
10632(c)	Water Shortage Contingency Planning	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Section 8.14	WSCP Section 13 Plan Adoption Resolution or Ordinance
10631(e)(1)	Demand Management Measures	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.	Sections 9.2 and 9.3	Section 8.2 Demand Management 2015-2020
10608.26(a)	Plan Adoption, Submittal, and Implementation	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Chapter 10	Appendix F Outreach Materials
10621(b)	Plan Adoption, Submittal, and Implementation	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Section 10.2.1	Appendix B DWR Submittal Tables, Table 10-1R
10621(f)	Plan Adoption, Submittal, and Implementation	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Section 10.4	
10642	Plan Adoption, Submittal, and Implementation	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Sections 10.2.2, 10.3, and 10.5	Appendix F Outreach Materials
10642	Plan Adoption, Submittal, and Implementation	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Section 10.2.2	Appendix F Outreach Materials
10642	Plan Adoption, Submittal, and Implementation	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Section 10.3.2	Appendix E LMW Adoption of the 2020 UWMP WSCP Appendix C Adoption Resolution
10644(a)	Plan Adoption, Submittal, and Implementation	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Section 10.4	
10644(a)(1)	Plan Adoption, Submittal, and Implementation	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Section 10.4	N/A
10644(a)(2)	Plan Adoption, Submittal, and Implementation	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Sections 10.4.1 and 10.4.2	
10645(a)	Plan Adoption, Submittal, and Implementation	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Section 10.5	
10645(b)	Plan Adoption, Submittal, and Implementation	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Section 10.5	
10621(c)	Plan Adoption, Submittal, and Implementation	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Section 10.6	
10644(b)	Plan Adoption, Submittal, and Implementation	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Section 10.7.2	

Appendix B: Delta Reliance Tables (DWR Tables C-1 through C-4)

Appendix B: Delta Reliability

1.1 REDUCED DELTA RELIANCE REPORTING

The Sacramento-San Joaquin Delta Reform Act of 2009 established a certification process that requires state and local public agencies proposing a covered action in the Delta (such as importing water from the Delta, exchanges, or transfers), prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with applicable Delta Plan policies (Wat. Code, § 85225) and submit that certification to the Delta Stewardship Council.

Livermore Municipal Water (LMW), through its relationship with its wholesale water supplier Zone 7, has identified management actions which improve local reliability and reduce reliance on the Delta. Accordingly, LMW, is providing information in its 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1).

As stated in WR P1(c)(1)(C), the policy requires that, commencing in 2015, UWMPs include expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance. WR P1 further states that those outcomes shall be reported in the UWMP as the reduction in the amount of water used, or in the percentage of water used, from the Delta.

The expected outcomes for LMW's Delta reliance and regional self-reliance were developed using the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 (Guidebook Appendix C) issued in March 2021.

This analysis is provided with the 2020 UWMP and is attached hereto. As this analysis also applies to the 2015 UWMP, and as an amendment, it will be released for public review and adopted by the Agency. This action does not re-open the 2015 UWMP for additional review. It is an addendum to the 2015 UWMP made pursuant to DWR's recommendation.

As stated in the 2020 UWMP Guidebook Appendix C (Final version dated April 2021):

> *"An urban water supplier (Supplier) that anticipates participating in or receiving water supply benefits from a proposed project (covered action1) such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta) should provide information in their 2015 and 2020 Urban Water Management Plans (UWMP's) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code Reg., tit. 23, § 5003)."*

WR P1 subsection (c)(1) further defines what adequately contributing to reduced reliance on the Delta means in terms of (a)(1) above.

> *"(c)(1) Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:*

(A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;

(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and

(C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a)."

1.2 Preparation of UWMPs and Implementation of Projects from the UWMP

LMW has identified, evaluated, and implemented water use efficiency measures and recycled water programs that are locally cost effective and technically feasible which improve local water supply reliability and reduce reliance on the Delta.

1.2.1 Expected Outcomes for Measurable Reduction in Delta Reliance

The expected outcomes for LMW's Delta reliance and regional self-reliance were developed based on the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 and are summarized in DWR Table C-1 to DWR Table C-4 below. This involves setting a baseline and evaluating normal year water demands (potable and non-potable), estimating service area population and water use in gallons per capita per day, and evaluating and projecting water supply sources to meet estimated normal year demands. All water supply information is derived from Zone 7"s 2020 UWMP Appendix B Demonstration of Reduced Delta Reliance. Inputs to Tables C-1, C-2, and C-3 include:

- **Baseline**. In order to calculate the expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance, a baseline is needed to compare against. For consistency with Zone 7's 2020 UWMP, LMW is using year 2010 as the baseline year. This analysis uses a normal water year representation of 2010 as the baseline. Data for the 2010 baseline were taken from LMW's 2010 UWMP.

- **Service Area Demands**. Service area demands, including demands for non-potable water, for 2010, 2015, and 2020 were taken from previous and current (2010, 2015, and 2020) UWMPs. Service area demands 2025 to 2045 were taken from projections developed as part of the 2020 UWMP.

- **Service Area Population**. Service area population data were taken from the 2020 UWMP Table 1-7. See Section 1.7 for details on derivation of population estimates for future years.

- **Service Area Water Supply**. Service area water supplies were derived from historical water supplies (2010, 2015, and 2020) and projected water supplies from Zone 7 (2025-2045). The percentage of Zone 7's supplies from the Delta were utilized to project the water supplies for Livermore from the Delta.

The outcome of Table C-1 is a calculation of water use efficiency since the baseline year (2010). The calculation uses the change in gallons per capita per day and service area population to calculate or estimate water use efficiency in years 2015 through 2045 compared to the baseline year of 2010.

1.2.1.1 Supplies Contributing to Regional Self-Reliance

All water supplies are provided by Zone 7 as the wholesaler of the region's water. LMW water supply projections from the Delta are shown in Table C-4 and are based on the percentage of Zone 7's water supplies from the Delta for each of the planning years. Any additional reduction in Delta reliance by LMW is a product of water use efficiency measures and an increase in use of recycled water.

The outcome of Table C-4 is a calculation of the percent change in supplies from the Delta watershed relative to the 2010 Baseline. Table C-4 illustrates that from 2010 to 2015, LMW reduced reliance on the Delta by 24% and is projected to have a net reduction in reliance on the Delta from the baseline, through year 2045. The year 2020 showed an increase in per capita water use likely due to the COVID-19 pandemic and customers remaining at home during this time. However, per Zone 7's Delta Reliability tables, water supplies from the Delta watershed decreased in 2020 likely attributable to an increase in alternate water supplies and water use efficiency measures by all of Zone 7's retailers.

Overall, Livermore shows a reduction in reliance on the Delta Watershed with increasing percent of supplies contributing to regional self-reliance projecting out to 2045.

Table C-1: Optional Calculation of Water Use Efficiency -To be completed if Water Supplier does not specifically estimate Water Use Efficiency as a supply

Service Area Water Use Efficiency Demands (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	2,409	2,244	2,845	2,717	2,789	2,861	2,934	2,934
Non-Potable Water Demands	428	760	710	616	635	653	671	671
Potable Service Area Demands with Water Use Efficiency Accounted For	1,981	1,484	2,134	2,101	2,154	2,208	2,263	2,263

Total Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Population	26,400	28,782	30,830	34,965	39,101	43,236	47,371	47,371

Water Use Efficiency Since Baseline (GPCD/Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Per Capita Water Use (GPCD)	206	141	190	165	151	140	131	131
Change in Per Capita Water Use from Baseline (GPCD)		(64)	(16)	(41)	(55)	(66)	(75)	(75)
Estimated Water Use Efficiency Since Baseline (Million Gallons)		676	179	523	780	1,036	1,292	1,292

Table C-2: Calculation of Service Area Water Demands Without Water Use Efficiency

Total Service Area Water Demands (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	2,409	2,244	2,845	2,717	2,789	2,861	2,934	2,934
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline		676	179	523	780	1,036	1,292	1,292
Service Area Water Demands without Water Use Efficiency Accounted For	2,409	2,920	3,023	3,240	3,569	3,897	4,226	4,226

Table C-3: Calculation of Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Use Efficiency		676	179	523	780	1,036	1,292	1,292
Water Recycling	428	760	710	616	635	653	671	671
Stormwater Capture and Use								
Advanced Water Technologies								
Conjunctive Use Projects								
Local and Regional Water Supply and Storage Projects								
Other Programs and Projects that Contribute to Regional Self-Reliance								
Water Supplies Contributing to Regional Self-Reliance	428	1,436	889	1,139	1,415	1,689	1,963	1,963

Service Area Water Demands without Water Use Efficiency (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	2,409	2,920	3,023	3,240	3,569	3,897	4,226	4,226

Change in Regional Self Reliance (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies Contributing to Regional Self-Reliance	428	1,436	889	1,139	1,415	1,689	1,963	1,963
Change in Water Supplies Contributing to Regional Self-Reliance		1,008	461	711	987	1,261	1,535	1,535

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies Contributing to Regional Self-Reliance	17.8%	49.2%	29.4%	35.1%	39.6%	43.3%	46.4%	46.4%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		31.4%	11.6%	17.4%	21.9%	25.6%	28.7%	28.7%

Table C-4: Calculation of Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
CVP/SWP Contract Supplies	1,677	1,321	1,341	1,649	1,524	1,522	1,549	1,549
Delta/Delta Tributary Diversions								
Transfers and Exchanges of Supplies from the Delta Watershed								
Other Water Supplies from the Delta Watershed								
Total Water Supplies from the Delta Watershed	1,677	1,321	1,341	1,649	1,524	1,522	1,549	1,549

Service Area Water Demands without Water Use Efficiency (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	2,409	2,920	3,023	3,240	3,569	3,897	4,226	4,226

Change in Supplies from the Delta Watershed (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies from the Delta Watershed	1,677	1,321	1,341	1,649	1,524	1,522	1,549	1,549
Change in Water Supplies from the Delta Watershed		(357)	(336)	(28)	(153)	(155)	(128)	(128)

Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies from the Delta Watershed	70%	45%	44%	51%	43%	39%	37%	37%
Change in Percent of Water Supplies from the Delta Watershed		-24%	-25%	-19%	-27%	-31%	-33%	-33%

Appendix C: Water Shortage Contingency Plan

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415-243-2150

2020 Water Shortage Contingency Plan

18 June 2021

Prepared for

Livermore Municipal Water
101 W. Jack London Blvd.
Livermore, CA 94551

K/J Project No. 2068015.00

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Chapter 1: Introduction

This plan documents the City of Livermore's Water Shortage Contingency Plan (WSCP) per requirements of the Urban Water Management Act, Section 10632 of the California Water Code. Livermore Municipal Water (LMW) purchases all treated potable water from Zone 7 Water Agency.

The purpose of this WSCP is to provide guidance if triggering events occur — whether from reduced supply, increased demand, or an emergency declaration — and identify corresponding actions to be taken during the various shortage levels or stages of a water shortage. The plan includes a description of shortage levels or stages which are intended to be fair to all water customers and users while having the least impact on business, employment, and quality of life for residents.

Chapter 2: Water Supply Reliability Analysis

2.1 Overview

Water Code Section 10632(a) requires that every urban water supplier prepare and adopt a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan (UWMP). While the WSCP is a stand-alone document it is updated and adopted in concert with the UWMP. Contents of the WSCP are informed by the analysis of water supply reliability conducted pursuant to Water Code Section 10635 (contained in the UWMP). The reliability analysis of the UWMP considered “normal”, “single-dry”, and “5-year drought”. The analysis in the UWMP documents reflects that LMW has sufficient supply to meet normal and dry-year demands. An area of overlap between the UWMP and WSCP is a new requirement to prepare a Drought Risk Assessment (DRA) (Section 7.8 of the 2020 UWMP) to account for the significant duration of recent California droughts and the predictions about hydrological variability attributable to climate change. The DRA is detailed in Section 2.5.

2.2 Water Supplies

As noted earlier, LMW purchases all its potable water supplies from the Zone 7 Water Agency and has no other source of supply. Thus, the water supply assessment and reliability analysis focuses on historical supply from Zone 7 and demands from LMW. While LMW relies on Zone 7 as its primary water source, the Zone 7 system consists of a variety of different sources. A summary of Zone 7 supplies includes:

- Imported Surface Water
  - State Water Project
  - Byron Bethany Irrigation District
- Local Surface Water Runoff
  - Arroyo Las Positas
  - Arroyo Mocho
- Local Storage
  - Lake Del Valle
  - Chain of Lakes
- Non-Local Storage
  - Semitropic Water Storage District
  - Cawelo Water District

Therefore, Zone 7 is able to balance its supply between a variety of different sources to adapt to shortages or limitations in any one source due to legal, environmental, regulatory, or climatic factors. Traditionally, Zone 7 has been able to supply all the water demands from Livermore even during historical drought conditions. Table 2-1 below provides the Zone 7 supply projections over the planning horizon of this document.

Table 2-1 Zone 7 Normal Year Supply Projections (Volumes are in AF)

	2025	2030	2035	2040	2045
SWP Table A	47,000	46,000	45,000	43,500	43,500
SWP Carryover	10,000	10,000	10,000	10,000	10,000
Arroyo Valle	5,500	5,500	5,500	5,500	5,500
Main Basin	9,200	9,200	9,200	9,200	9,200
SWP/Other Transfer	5,000	5,000	-	-	-
BARDP or Potable Reuse	-	5,000	5,000	5,000	5,000
Sites Reservoir Project	-	10,000	10,000	10,000	10,000
Total	**76,700**	**90,700**	**84,700**	**83,200**	**83,200**

Notes:

The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values

Zone 7 projects that the water agency will have surplus treated water during normal, 1-year drought, and 5-year drought water conditions. See the Zone 7 UWMP located at (insert web link) for more information.

2.3 Supply Reliability

Zone 7 has provided water system reliability data and supply projections for Water Years 2010 through 2045. Zone 7, through the application of water use efficiency (WUE), supply exchanges, and alternate water sources projects a reduction in reliance on water from the Delta Watershed. The averaged projected reduction in watershed reliance in Years 2020 through 2045 is approximately 23%, see Table 2-2 below. This projected reliability reduction does not include the projected reduction in use from water use efficiency over that time period. Additions to supply include exchanges with local contributors, local supplies via Arroyo Del Valle and groundwater wells, and groundwater banking programs.

Table 2-2 Zone 7 Reliability on the Delta Watershed

Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies from the Delta Watershed	85%	59%	48%	73%	70%	61%	58%	58%
Change in Percent of Water Supplies from the Delta Watershed		-26%	-37%	-12%	-15%	-24%	-27%	-27%

Notes:

The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values."

In addition to diversifying water supply, Zone 7 has estimated reductions in water use due to water use efficiency measures. Projected water use efficiency figures (Water Years 2020 through 2045) showed an approximate reduction of 22% in water use when implemented. These reduction percentages can be met through implementation of WSCP shortage actions discussed further in Section 5 below. See Table 2-3 for projected water use reductions assumed by Zone 7.

Table 2-3 Zone 7 Water Use Efficiency Projections

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	66,200	47,900	57,000	70,300	71,700	73,000	74,500	74,500
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline		25,634	17,254	15,137	19,279	21,209	22,031	22,031
Service Area Water Demands without Water Use Efficiency Accounted For	66,200	73,534	74,254	85,437	90,979	94,209	96,531	96,531
Percent reduction in demand from Water Use Efficiency		**35%**	**23%**	**18%**	**21%**	**23%**	**23%**	**23%**

Note: Data per Zone 7 updated Delta Reliance Tables provided 2/22/2021
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values.

In addition to Zone 7's expected reduced reliance on the Delta, Livermore has also utilized water use efficiency measures and recycled water to limit its reliance on Delta water supplies. Appendix B of the 2020 UWMP includes DWR Tables C-1 through C-4 outlining the reduction in reliance on the Delta. Projected water use efficiency and recycled water use equates to an expected 40% reduction in Delta reliance by the year 2045.

2.4 Demand Projections

LMW Operations staff work closely with Zone 7 each year to provide up to date treated water request estimates for the next 5 years. These estimates are based on historical water use, per capita water use trends, and expected changes in land use areas and development within the service area. Water Year 2020 saw a large increase in per capita water use in comparison to previous years which can likely be attributed to increased residential water use due to the Covid-19 pandemic. Water use projections developed for Water Years 2021 through 2025 show a decrease in per capita use closer to the baseline values seen in 2017-2019 and then a linear increase to align with Zone 7 demand projections in 2025. The treated water request estimates prepared by LMW Operations may differ slightly from UWMP long-range demand projections because they are based on the historic actual water demand from the prior year. See Section 4 of the Livermore 2020 UWMP for more detailed information concerning projected demands.

2.5 Drought Risk Assessment

The DRA requires suppliers to assess water supply reliability over a 5-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five (5) consecutive dry years.

The gross water use values for 2021 -2025 presented in Table 2-4 are estimates based on Zone 7's projected water use for its entire service area. The percentage of LMW's demand during normal year conditions was utilized to project water uses from Zone 7's 2020 UWMP Table 7-5 values for the LMW service area. As noted earlier, the gross water use values may slightly differ from UWMP long-range demand projection because of a difference in methods. LMW treated water request estimates often fall below Zone 7 demand projections for the service area allowing for some conservatism in planning values for Zone 7 supplies. LMW's total water supplies were projected based on the total available supply to the entirety of Zone 7's service area adjusted for percentage of water demand from LMW.

Error! Reference source not found. provides a summary of the expected supply and demand scenarios for a 5-year drought condition from 2021-2025. It is expected that Zone 7 will be able to meet all treated water requests during this scenario. Therefore, no Water Shortage Contingency Plan actions are anticipated to be implemented. However, in the case of a shortfall in supply, the use reduction and supply augmentation measures described in Section 5 of this WSCP are available for implementation.

Table 2-4 Five-Year Drought Risk Assessment (DWR Table 7-5)

2021 (Volumes are in Million-Gallon)	Total
Gross Water Use	2,135
Total Supplies	2,135
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2022	**Total**
Gross Water Use [Use Worksheet]	1,994
Total Supplies [Supply Worksheet]	1,994
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2023	**Total**
Gross Water Use [Use Worksheet]	2,007
Total Supplies [Supply Worksheet]	2,007
Surplus/Shortfall w/o WSCP Action	0

Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2024	**Total**
Gross Water Use [Use Worksheet]	2,020
Total Supplies [Supply Worksheet]	2,020
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2025	**Total**
Gross Water Use [Use Worksheet]	2,040
Total Supplies [Supply Worksheet]	2,040
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

Notes:

The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values.

Chapter 3: Annual Water Supply and Demand Assessment Procedures

California Water Code Division 1, Section 350, states:

> "The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection."

These Annual Assessment procedures described herein are one tool to be used to determine if a water shortage is to be declared.

New provisions in Water Code Section 10632.1. require that an urban water supplier such as LMW, conduct an annual water supply and demand assessment ("Annual Assessment"), on or before July 1 of each year, to be submitted to DWR. An urban water supplier that relies on imported water from the State Water Project (SWP) or the Bureau of Reclamation shall submit its Annual Assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later. The requirement to perform the Annual Assessment begins in July 2022.

3.1 Timeline and Methodology for Conducting the Annual Assessment

As described in Section 2.4, LMW Operations staff develops a 5-year treated water request schedule using the current year's water consumption as a baseline. LMW Operations staff estimates a monthly water usage for the next 5 years based on current usage trends and expected new water connections from development within the service area. Projected conservation values are calculated at 10% of average use values for reporting purposes to Zone 7. LMW treated water requests are also compared to Zone 7's projections to ensure values are similar amongst the agencies. LMW Operations staff presents the 5-year treated water request to Zone 7 in the July timeframe each year (see Table 3-1 below for an approximate timeline). In about January, Zone 7 provides a preliminary treated water request approval by analyzing the initial SWP allocation and determines if this allocation can accommodate the needs of its retailers.

If it is determined that Zone 7 cannot provide the requested volume of water for LMW, LMW will determine the percentage difference in demand versus supply and will enact a shortage level described in Chapter 4. This can be in conjunction with any demand reductions required by the State of California and/or Zone 7.

In April of each year Zone 7 finalizes the available water supply to each of its users for the coming year based on SWP allocations and other factors. This final determination informs LMW if it is in a shortage scenario and the results will be reported by LMW to the DWR by July 1st of each year.

Table 3-1 provides targets for performing the Annual Assessment. By starting to plan in June of the previous year, Livermore Municipal Water will get a snapshot of conditions and can start lining up the resources to mitigate supply and start outreach to customers to manage demand. Major actions are proposed in January, when an initial shortage level is triggered. A final annual assessment is proposed in the May-June current year timeframe.

Table 3-1 Calendar and Methodology for Performing Annual Assessment

Target Date	Action
June	Zone 7 requests 5-year water demand projection
July	LMW Distribution Operations Manager submits demands and conservation demands
January	Zone 7 responds to demand projections with available supply and preliminary approval letter LMW determines if supply is less than demand triggering a shortage event (Shortage Level 1-6)
February	LMW issues a shortage stage resolution triggering shortage response actions if necessary
April	Zone 7 issues final supply report
February -July	Continue public outreach, if necessary
	Monitor customer response to water shortage messaging and other response actions, if necessary Report final annual assessment to DWR

A sample template for synthesizing the information is provided in Appendix A.

3.2 Current Predicted Shortages Based on Annual Water Supply and Demand Assessment

While the first Annual Assessment is not required to be submitted to DWR until July 1, 2022, Suppliers are encouraged to use the procedures documented in its WSCP to prepare and include the outcome of an Annual Assessment for 2021, and to present the results in their UWMP as an example.

Further, although the Annual Assessment must be submitted to DWR on or before July 1 of every year, an early Annual Assessment allows Suppliers and customers to identify uncertainties and prepare financially and logistically for any anticipated water supply constraints in the coming months. Therefore, Suppliers are encouraged to develop procedures, including decision-making processes, that facilitate early analysis and adoption.

LWM does not predict a water supply shortage for the current water year (2021). Anticipated demands are within the planning values presented by Zone 7. Zone 7 has traditionally been able to meet all anticipated demands even during dry conditions. No shortage levels or response actions directly associated with specific shortage levels are anticipated for the current water year.

Chapter 4: Six Standard Water Shortage Stages

4.1 Water Shortage Event

A water shortage event can be anything from a single occurrence as short as twenty-four hours to a multi-year weather condition. If water shortage event triggers identified in Table 5-1 are met the City will consider enacting voluntary and/or mandatory restrictions and other drought response actions as listed in Table 5-2 targeted primarily at reducing outdoor watering activities. Any such restrictions would be enacted with an adopted resolution passed by the Livermore City Council.

Other events, besides drought, that could trigger a water shortage event include an earthquake, water system failures, fire, contamination, regional power outage, state restrictions or other causes.

4.2 Definition of Drought

The following definition was written by the California Department of Water Resources:

> *Defining when drought occurs is a function of drought impacts to water users. Drought can best be thought of as a condition of water shortage for a particular user in a particular location. Hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users in a different part of California or for users with a different water supply. Individual water suppliers may use criteria such as rainfall/runoff, amount of water in storage, or expected supply from a water wholesaler to define their water supply conditions.*
>
> *Drought is a gradual phenomenon. Although persistent drought may be characterized as an emergency, it differs from typical emergency events. Most natural disasters, such as floods or forest fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts occur slowly, over a period of time. There is no universal definition of when a drought begins or ends. Impacts of drought are typically felt first by those most reliant on annual rainfall – ranchers engaged in dryland grazing, rural residents relying on wells in low-yield rock formations, or small water systems lacking a reliable water source. Criteria used to identify statewide drought conditions do not address these localized impacts. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline.*
>
> *Source: http://www.water.ca.gov/waterconditions/background.cfm*

4.3 Natural Disaster or Failure of Water System Facilities

In the event of a natural disaster such as an earthquake, fire, toxic spill or flood, or should a catastrophic failure occur at any of Livermore System's facilities, the City can enact restrictions as described in Table 5-2 of this WSCP. Such restrictions would be based on the varying circumstances as determined necessary and appropriate by the City Council to respond to the

emergency conditions, or by the City Manager in the event the City Council cannot act in a timely manner.

4.4 Existing Water Shortage Levels

The below definitions represent the shortage stages originally described in the 2015 Urban Water Management Plan that are consistent with the current Livermore Municipal Code. A cross-reference between the existing four Livermore shortage stage definitions to the new six shortage levels required by DWR is provided in the crosswalk table in Figure 4-1 in Section 4.5.

Normal Supply

Inclusion of "Normal Supply" in the Plan is an important level. The Water Conservation Bill of 2009 requires urban water suppliers to reduce per-capita water consumption by 20 percent by 2020. Implementing conservation during "Normal Supply" periods will play an important role in reaching the required twenty percent reduction in per-capita consumption.

- **Definition**: Water supplies are adequate to meet all the water demands of customers.
- **Message**: We can deliver all the water our customers need, recognizing that customers should practice wise water use at all times.
- **Type**: Voluntary.
- **Expected Reduction**: None targeted
- **Conservation**: Basic water conservation measures and public information promoting wise water use and Best Management Practices when using water for residential, commercial or irrigation uses.

Livermore Stage 1- Minimal Reduction

- **Definition:** There is sufficient uncertainty concerning water supplies for this year or in the next few years that it would be prudent to conserve local water supplies so that these supplies may be used to meet water demands in the future.
- **Message:** We think we can deliver all the water our customers want but request their help to conserve water to be sure local and imported supplies are adequate to meet future years' water demands – please conserve.
- **Type:** Voluntary.
- **Expected Reduction:** Up to 20%

Livermore Stage 2- Moderate Reduction

- **Definition**: There are definable events that lead to a reasonable conclusion that in the current and/or upcoming water years, water supplies may not be adequate to meet all customer water demands.
- **Message**: We may not be able to deliver all the water our customers want, and we need customers' help to conserve water.
- **Type**: Voluntary or Mandatory.
- **Expected Reduction**: up to 20%

Livermore Stage 3- Severe Reduction

- **Definition**: There are definable events that lead to a firm conclusion that in the current water year, water supplies will not be adequate to meet customers' water demands.
- **Message**: We cannot deliver all the water our customers need, and we are requiring our customers to use less water.
- **Type**: Mandatory.
- **Expected Reduction**: up to 35%

Livermore Stage 4- Critical Reduction

- **Definition**: A Stage 3 shortage has been in effect and the reduction goal is not being met or new definable events require increasing the reduction goal.
- **Message**: We cannot deliver all the water our customers need, and we have not been able to achieve targeted reductions, so we now have to enforce the use of less water.
- **Type**: Mandatory.
- **Expected Reduction**: >=35 %

4.5 Proposed Water Shortage Levels

The shortage levels are shown in the crosswalk below describing the cross-reference from LMW's four stages of shortage to the six stages of shortage as required in the DWR's 2020 guidance documents.

Livermore Water Shortage Stages				
2015 UWMP Stage	Demand Reduction Target	Crosswalk	State 2020 WSCP Standard Stage	Shortage Level
1	Up to 20% Voluntary Minimal Shortage		1	≤ 10%
2	Up to 20% Mandatory Moderate Shortage		2	10% - 20%
3	Up to 35% Mandatory Severe Shortage		3	20% - 30%
4	≥ 35% (Mandatory) Critical Shortage		4	30% - 40%
			5	40 - 50%
			6	≥ 50%

Figure 4-1 Shortage Stage Crosswalk

The shortage stages for the 2020 WSCP are shown in DWR Table 8-1 below. The mapped stage language from the 2015 WSCP with the proposed stages is reflected in **Table 5-1**. These mapped stages will help transition LMW's shortage actions in DWR Tables 8-2 and 8-3 to the proposed 2020 stages.

Table 4-1 Water Shortage Reductions DWR Table 8-1

New Shortage Level	Percent Shortage Range[1] *Numerical value as a percent*	Existing Shortage Response Actions (*Narrative description*)
Add additional rows as needed		
1	Up to 10%	Stage 1: Voluntary Minimal Reductions up to 20%
2	Up to 20%	Stage 2: Mandatory Moderate Reductions up to 20%
3	Up to 30%	Stage 3: Severe Reductions up to 35%
4	Up to 40%	Stage 3: Severe Reductions up to 35%/ Stage 4: Critical Reductions more than 35%
5	Up to 50%	Stage 4: Critical Reductions more than 35%
6	>50%	Stage 4: Critical Reductions more than 35%

[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*

4.6 Actions to Prepare for Catastrophic Interruption

4.6.1 Emergency Response Plan

This section describes actions taken by the City to prepare for and to be implemented during a catastrophic interruption of water supplies. Potential catastrophic supply interruptions include but are not limited to a regional power outage, earthquake, or other disaster causing a water supply outage such as a failure of the San Joaquin Delta levee system.

The City has developed a comprehensive Emergency Response Plan (ERP) that addresses a variety of potential emergency situations directly affecting the City's municipal water system. The goals of the ERP are to:

- Rapidly restore water service after an emergency;
- Ensure adequate water supply for fire suppression;
- Minimize water system damage;
- Minimize impacts and loss to customers;
- Minimize negative impacts on public health and employee safety;
- Provide emergency public information concerning customer service.

The ERP establishes "Action Plans" for different emergency conditions which outline the steps City staff will take to respond to, evaluate, and mitigate the emergency. Action Plans were developed for a variety of water supply interruptions including power outages; earthquakes; flooding; and terrorist events. In addition to Action Plans, the City's Emergency Response Plan includes an inventory of emergency supplies, mutual aid contacts, and lists of potential vendors of emergency supplies.

The LMW Emergency Response Plan was developed to comply with Section 1433(b) of the Safe Drinking Water Act (SDWA) as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002.

Due to the sensitive nature of the information contained in the Emergency Response Plan, the plan includes an Access Control section that limits distribution of the plan to "individuals directly involved in LMW emergency planning and response activities". Therefore, excerpts from the LMW Emergency Response Plan are not included with this UWMP.

Below is a brief summary of some of the steps staff will implement in response to specific water supply interruptions:

Regional Power Outage – Four of the City's municipal water system's five pump stations have emergency generators in the event of regional or local power outage situations. The water telemetry center at the Livermore Water Reclamation Plant also has plans to implement emergency backup power during extended outages. Backup pump station power will allow City staff to maintain water service as long as Zone 7 has available water supplies.

Water Supply Outage – After notification by Zone 7 of a regional water supply outage, City staff will immediately put one of the emergency plans into action. If the South Bay Aqueduct (part of State Water Project) were damaged, it is possible that a limited amount of water would be available in the Patterson Pass Treatment Plant forebay and additional water could be taken from Lake Del Valle. If a Zone 7 pipeline were damaged, water could be networked around the Tri-Valley and around the leak through retailer interties. If a City municipal water system pipeline were damaged or leaking, the leak or damaged section could be isolated and an alternate supply path created through the supply network.

During short-term supply outages, City staff would implement similar procedures described above for power outages. For prolonged, regional outages, City staff would consider the need and feasibility of implementing progressively more aggressive strategies to extend local reservoir supplies. These might include restricting all uses except emergency firefighting, with staff distributing drinking water and portable toilets throughout the service area to meet sanitation and drinking needs. These types of measures would only be considered in the most extreme and prolonged emergency conditions.

Seismic – As part of LMW's Water Distribution System Risk and Resilience Assessment (RRA), The City of Livermore evaluated seismic risk to water facilities and identified mitigation measures to lessen the risk. This plan meets the requirements of the federal Disaster Mitigation Act of 2000 as well as the requirements of Water Code Section 10644. A copy of the 2020 LWD Water Distribution System RRA will be submitted to DWR with the adopted Water Shortage Contingency Plan (WSCP).

From the LMW 2020 Water Distribution System RRA, Livermore is between the Calaveras and Greenville faults. Per the United States Geologic Survey's (USGS's) 2007 projections, Livermore has approximately 10-20 percent chance of sustaining a rupture with a magnitude of M≥6.7 over 30 years. From another figure in the same report, that corresponds to a 0.1-1% [0.44% for Calaveras Fault] 5-year probability of the event. The Livermore area has a chance of an earthquake with M≥6.7 of approximately 7.4% over 30 years, or an annual likelihood per year of 0.0025.

In order to minimize the impact of peak ground acceleration (PGA) of 0.4-1.1g during a seismic event, the LMW has a countermeasure to replace larger rigid pipes (>= 12 inches in diameter) with flexible pipes. The pipe replacement will be carried out through the City's long-term water system renewal and replacement program. Replacing aging rigid pipes (e.g. cast-iron pipes and asbestos-cement pipes) will bring the following benefits:

- Decreases the susceptibility of the system to breaks and leaks with ground movement: Increases robustness of the system.
- Reduces susceptibility to other threats like corrosion: Increases flexibility of system to a range of threats.
- When flexible pipelines are in place, the trunk system will ensure the system is brought back online as quickly as possible: Increases the responsiveness to this threat.
- Once service is restored, flexible pipes are less likely to fail from longer-term stress brought about by minor ground movement: Recovery is enhanced.

All LMW's pump stations that are in use have at least been retrofitted since 1997, bringing them up to current codes and construction for resilience around the Bay Area faults. If the PGA of the pumping equipment exceeds that of the structure, the disabled structure could continue to function, though the structure would require replacement.

All water tanks owned by LMW are made of steel which is a flexible material compared to concreate. Three out of four water tanks were constructed after 2002, showing compliance with current seismic code. The risk calculation shows that the events that would be sufficient to rupture the tanks were large and had a low chance of occurrence. The tanks are positioned so that even a severe rupture would destroy the tank but would be very unlikely to endanger life. The Doolan Tank is about 1,800 feet from a nearby commercial/industrial area. There is adequate landscape to significantly dampen the impact of flows from the tank. One tank at the Altamont tank site was constructed in 1985. The LMW will review the initial design of the Altamont tank for seismic code compliance and conduct retrofit if necessary.

Chapter 5: Water Shortage Response Actions (by Shortage Stage)

The LMW has adapted the four-stage plan, as outlined in Chapter 13.26 Water Conservation and Chapter 13.27 Mandatory Drought Conservation Measures of Division 1 (Water) of Title 13 (Public Services) of the Livermore Municipal Code. During the 2020 WSCP, the LMW has developed a six-stage (or shortage level) contingency plan to reduce demand up to more than 50 percent during a severe or extended water shortage event. Livermore has both voluntary and mandatory stages. References to stages from this point forward are to the six shortage levels required by DWR, unless specifically identified.

Table 5-1 Water Shortage Stages and Triggers/Demand Reduction Goals

Stage	Trigger	New Demand Reduction Goal	Existing Demand Reduction Goal
Minimal			
Stage 1	Annual Supply Projection is 10% below Demand Projection	10% Voluntary	Livermore Stage 1: Up to 20% Voluntary[1]
Moderate			
Stage 2	Annual Supply Projection is between 10% and 19% below Demand Projection	Up to 20% Voluntary or Mandatory	Livermore Stage 1: Up to 20% Voluntary or Livermore Stage 2 up to 20% Mandatory[1]
Severe			
Stage 3	Annual Supply Projection is between 20% and 29% below Demand Projection	30% Mandatory	Livermore Stage 3: up to 35% Mandatory Livermore Stage 4: >=35% Mandatory[1]
Stage 4	Annual Supply Projection is between 30% and 39% below Demand Projection	40% Mandatory	
Critical			
Stage 5	Annual Supply Projection is between 40% and 49% below Demand Projection	50% Mandatory	Livermore Stage 4: >=35 Mandatory[1]
Stage 6	Annual Supply Projection is below 50% of Demand Projection	> 50% Mandatory	

[1] % Reduction from 2015 Livermore UWMP

5.1 Shortage Response Actions

The water shortage conditions in Table 5-1 are based on the Annual Assessment. Other circumstances may also be considered, including but not limited to the time of year, weather forecasts, river flow forecast, rainfall, temperature, past experience and economic feasibility, the volume of water available from Zone 7, and quality of the water produced from each source.

While each shortage level triggers specific shortage response actions, LMW continues to implement water savings strategies year-round to achieve a baseline demand reduction to assist with desired demand reduction for Zone 7 water agencies. These actions include but are not limited to:

- Monthly meter readings – LMW staff identify higher than average water usage and provide information and outreach to customers for reducing their water bills
- Baseline public outreach – LMW provides bill stuffers, social media, and web site information pertaining to local drought conditions and local water use restrictions

5.2 Demand Reduction Actions

When a shortage level is triggered based on the Annual Assessment, shortage response actions are also triggered with the associated shortage level. Table 5-2 describes the response actions and the estimated reduction in demand associated with each action. During the recent 2014-2017 drought, public information messaging which was occurring regionally and statewide was sufficient to achieve the savings mandated by the Governor's Executive Order.

Table 5-2 Demand Reduction Actions DWR Table 8-2

Shortage Level	Demand Reduction Actions.	How much is this going to reduce the shortage gap? *Include volume units used.*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
Add additional rows as needed				
1	Landscape - Limit landscape irrigation to specific times	2%	6 PM to 9 AM	No
1	Other - Require automatic shut off hoses	<1%		No
1[a]	Expand Public Information Campaign	32%		No
1[b]	Improve Customer Billing	2%	Enhanced data review and alert	No
1	Implement or Modify Drought Rate Structure or Surcharge	10%	Livermore Stage 1/1 Rates[d]	No
2[c]	Landscape - Limit landscape irrigation to specific days	10%	Nonconsecutive days	No

2	Implement or Modify Drought Rate Structure or Surcharge	10%	Livermore Stage 2/2 Rates[d]	No
3	Pools and Spas - Require covers for pools and spas	<1%		No
3	Other - Prohibit use of potable water for construction and dust control	<1%		No
3	Implement or Modify Drought Rate Structure or Surcharge	10%	Livermore Stage 3/3 Rates[d]	No
4	CII - Commercial kitchens required to use pre-rinse spray valves	<1%	Required to use low flow rinse nozzles	Yes
4[c]	Landscape - Limit landscape irrigation to specific days	10%	Hand water Saturday or Sunday only	Yes
4	Landscape - Restrict or prohibit runoff from landscape irrigation	<1%		Yes
4	Other - Prohibit use of potable water for washing hard surfaces	<1%	Prohibit street washing or flooding	Yes
4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	2%	Only wash vehicles at recycled water wash facilities	Yes
4	Other water feature or swimming pool restriction	<1%	Must be leak proof	Yes
4	Implement or Modify Drought Rate Structure or Surcharge	15%	Livermore Stage 3/4 Rates[d]	Yes
5	Landscape - Prohibit certain types of landscape irrigation	2%	Prohibit turf or lawn irrigation	Yes
5	Water Features - Restrict water use for decorative water features, such as fountains	<1%	Prohibit potable water use	Yes
5	CII - Restaurants may only serve water upon request	<1%		Yes
5	Implement or Modify Drought Rate Structure or Surcharge	15%	Livermore Stage 4/5 Rates[d]	Yes

6	Implement or Modify Drought Rate Structure or Surcharge	15%	Livermore Stage 4/6 Rates[d]	Yes

NOTES: All response actions are cumulative i.e. action described in prior stages are also applicable in subsequent stages (e.g. actions described in Shortage Level 1 are also applicable in Shortage Levels 2-6). Drought rates are not additive.

[a]2014/2015 drought saw a 32% reduction in water use only from an expanded outreach campaign to customers

[b]Livermore's billing software allows them to increase the frequency of account usage reviews to weekly or daily if needed. Outreach is initiated when an account is flagged for high usage.

[c]A Statewide Analysis of Outdoor Water Savings Potential March 2018 Texas Living Waters Project

[d]The first water rates at different stages are for fiscal years through 2021-22. The second water rates are for fiscal years 2022-23 and onward.

Livermore's billing software currently analyzes customer water usage and bills customers on a monthly basis. This software has the ability to track water usage for customers on a weekly and daily basis if needed during drought conditions. LMW can use this tool to increase frequency of account water usage reviews and to initiate outreach to customers when a higher than normal usage is determined. Billing customers will remain on a monthly basis but this intermediate means of communication will help curtail water waste in between billing periods.

5.2.1 Customer Demand Reduction

Most of the shortage response actions taken by LMW in the near future will be focused on reducing demand as LMW cannot easily develop supplemental water supply. Each Stage of water shortage has accompanying water reduction measures.

The City will use a variety of methods to achieve up to more than 50% reduction in water demands in the event of serious supply shortages. One of the most important and earliest strategies will be an expanded public education and outreach campaign during the initial stages of any water shortage.

In addition, the City has conservation rates that correspond to each of the four Livermore Stages identified in the WSCP. The use of Conservation Rates recovers necessary revenue based on the reduced volume of water during water shortages and has the added benefit of 5% to 10% reduced consumption of water as Conservation Rates increase. For residential users, implementation of Shortage Stage Conservation Rates increases across all rate tiers to send an economic message to conserve water. Livermore Stage 4 Conservation Rates encourage water users to minimize water use by increasing the water rates for an average of 1.9 times of Normal Supply rates.

Each stage shall remain in effect until conditions indicate a more or less restrictive stage is necessary and action is taken by the City Council based on supply criteria in Table 5-1. The City Council may enact any stage and need not proceed in order through the stages.

1. Enacting water use restrictions:
   Shortage Levels 1-6 of the WSCP shall be enacted by the Livermore City Council declaring an emergency water restriction. Water supply conditions and goals for each restriction stage are outlined in Table 5-1.

2. Modifying and ending water use restrictions:
   For each month that customer water use restrictions are in effect at Shortage Level 4, 5, or 6 under this WSCP, the City Manager shall report to the City Council on the status of the shortage and water use changes in the Livermore Water system, including a recommendation to maintain, change or end the water use restrictions. A water shortage event can be terminated by the City Council upon determination that "normal year" supplies have been secured by rainfall, basin replenishment, or a new supply. A water shortage event involving sudden, unforeseen emergencies can be terminated by the City Manager or their designee upon a determination that the emergency no longer exists. As soon as practicably possible or at the next scheduled Council meeting, the City Manager or their designee shall share this termination decision with the City Council.

3. Water Rate Structure:
   Water rates will return to the rate structure prior to the water shortage event upon the termination of the event.

5.3 Supply Augmentation Actions

LMW does not contract for additional water sources other than purchasing water directly from Zone 7. Supply augmentation actions in Table 5-3 below represent additional methods to achieve lower demand within the service area to reduce overall demand on Zone 7's water supplies.

Table 5-3 Supply Augmentation and Other Actions DWR Table 8-3

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? *Volume type or percentage*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
1[a]	Expand Public Information Campaign	32%	Voluntary cutbacks requested
1[b]	Improve Customer Billing	2%	
1	Implement or Modify Drought Rate Structure	10%	Implement Livermore Stage 1/1[c] Conservation Rates
2	Implement or Modify Drought Rate Structure	10%	Implement Livermore Stage 2/2[c] Conservation Rates
3	Implement or Modify Drought Rate Structure	10%	Implement Livermore Stage 3/3[c] Conservation Rates
4	Implement or Modify Drought Rate Structure	15%	Implement Livermore Stage 4/4[c] Conservation Rates
5	Implement or Modify Drought Rate Structure	15%	Implement Livermore Stage 4/5[c] Conservation Rates

6	Implement or Modify Drought Rate Structure	15%	Implement Livermore Stage 4/6[c] Conservation Rates

NOTES: All response actions are cumulative (i.e. actions described in Shortage Level 1 are also applicable in Shortage Levels 2-6). Drought rates are not additive.

[a]2014/2015 drought saw a 32% reduction in water use only from an expanded outreach campaign to customers

[b]Livermore's billing software allows them to increase the frequency of account usage reviews to weekly or daily if needed. Outreach is initiated when an account is flagged for high usage.

[c]The first water rates at different stages are for fiscal years through 2021-22. The second water rates are for fiscal years 2022-23 and onward.

5.4 Operational Changes

LMW shall comply with the restrictions similar to those implemented for the public to the extent possible. The following actions can be used by LMW as additional measures to limit operational water use within the agency.

- Limit use of potable water to irrigate newly planted street, park and/or golf course trees, street medians, and general irrigation on all LMW properties. No new plantings shall be installed by the City during Livermore Stage 3 or higher Water Shortage Events, unless necessary for erosion control.
- In Livermore Stage 3 or higher, mandatory restrictions, ornamental fountains, and waterfalls shall not be replenished unless water recirculates.
- The use of potable water for municipal activities such as street cleaning and sewer main flushing will be suspended at the Livermore Stage 4 level. Recycled water will be used for these needs in Livermore Stage 4 water shortage events, with the exception of water used for sewer line flushing during emergency sanitary sewer blockages or overflows.

5.5 Additional Mandatory Prohibitions

The WSCP includes a variety of voluntary and mandatory management practices to conserve water. The majority of the mandatory conservation practices are triggered at the Livermore Stage 2 level; corresponding to an expected reduction of 20% below normal use as shown above in Table 5-1.

5.6 Effectiveness of Shortage Response Actions (by Water Shortage Stage)

5.6.1 Public Information

Without exception, experience has shown that a well-informed public is generally more willing to heed requests to voluntarily conserve or alter water use patterns and will be more likely to comply if mandatory water use restrictions become necessary. DWR (2008) estimates that public information campaigns have alone reduced demand in the range of 5 to 20 percent, depending on the time, money, and effort spent. Public information supports voluntary and mandatory measures by educating and convincing the public that a critical water shortage exists and provides information on how water is used and how they can help. The DWR Drought

Guidebook highlights that when the public perceives the drought to be severe, they changed behaviors (such as flushing the toilet less often).

The information provided to the public should include a description of the conditions that will trigger implementation of shortage stages as well as a description of what the plan entails (restrictions, enforcement provisions, etc.). It is also advisable to provide practical "consumer" information that will help water users comply with the plan. For example, information about restrictions on lawn watering might be accompanied with information about proper lawn watering practices.

During the 2014/2015 drought, Livermore Municipal Water customers reduced demand by about 32%, with reductions as high as 42% in many months. City customers achieved this level of reduction based on outreach efforts and warning notices alone, and staff was not forced to issue fines or penalties to achieve compliance.

5.6.2 Enforcement

A study examining the effectiveness of drought management programs in reducing residential water-use (Virginia Polytechnic Institute 2006) showed considerable variation in the effectiveness of drought management programs and highlighted the importance of public information and enforcement. Results, shown in Table 5-4, indicate that overall reductions in residential water-use ranged from 0-7 percent for voluntary restrictions and from 0-22 percent for mandatory restrictions. The observed differences were statistically attributed to information efforts for voluntary restrictions and both information and enforcement efforts for mandatory restrictions.

Table 5-4 Drought Program Management Variables Effect on Residential Water-Use

Classification	Estimated change in Water-Use	Statistically Different than no effect?
Voluntary Restrictions		
Little or no information disseminated	-2%	No
Moderate level of information	-2%	No
Aggressive information dissemination	-7%	Yes
Mandatory Restrictions		
Low information and low enforcement	-5%	No
Moderate information and low enforcement	-6%	Yes
Aggressive information and low enforcement	-12%	Yes
Low information and moderate enforcement	-4%	No
Moderate information and enforcement	-9%	Yes
Aggressive information and moderate enforcement	-15%	Yes
Moderate information and aggressive enforcement	-20%	Yes

Aggressive information and enforcement	-22%	Yes

Source: Virginia Polytechnic Institute 2006

The analysis highlights the key role that public outreach and information plays in the success of drought response actions. Voluntary restriction programs with little to moderate levels of information dissemination had no appreciable effect on water-use. Voluntary restriction programs with active promotional efforts, however, reduced water-use by an estimated 7 percent from what would have otherwise occurred without any restriction program. Thus for voluntary restrictions, only the most intense programs had even a moderate level of success in reducing water-use.

Mandatory restriction programs without a significant enforcement component broadly mirrored the outcomes achieved by the voluntary programs. Programs with mandatory restrictions that invested minimal effort in information dissemination did not appreciably reduce residential water-use. Programs with no active enforcement efforts but with moderate to high levels of informational dissemination achieved 6 and 12 percent reductions in water-use, respectively. These estimated reductions are similar to those achieved by voluntary programs with aggressive informational campaigns.

The experience LMW had implementing its WSCP and successfully reaching its reduction goals supports the importance of a strong public information program locally, regionally, and statewide. Delivering accurate and timely information to water users, news media and local governments with updates on conditions, restrictions, and helpful contact information is key.

5.6.3 Restrictions on Non-Essential Water Uses

LMW's Water Shortage Response Actions focuses on public outreach to curtail water waste and non-essential water use. Outdoor water use, including washing sidewalks and watering ornamental landscapes is targeted. These uses are typically considered to be discretionary or nonessential, are highly visible, and therefore relatively easy to monitor, and often are a substantial component of water demand, particularly during the summer months when drought conditions are likely most severe.

Given the significance and visibility of lawn watering as the predominant component of seasonal use, best management practices in WSCP typically prescribe time-of-use and other restrictions on lawn watering as described in Section 5.2. This often involves placing water users on a schedule which allows for staggered lawn watering days, as well as restrictions on the times during the day when lawns can be watered.

The American Waterworks Association estimates that voluntary outdoor water use limits can result in a water savings of up to 10 percent and mandatory outdoor water limits can achieve up to a 40 percent reduction in outdoor water use (AWWA 2008).

5.6.4 Drought Surcharge Rates

LMW does not issue drought surcharges, although a conservation rate structure is available as a tool. Zone 7 maintains a drought contingency fund, which is a rate stabilization fund that can

be utilized during declared drought events to minimize impacts on water rates as a result of drought conditions. If Zone 7 implements an additional drought surcharge the City would also pass this cost on to ratepayers.

Chapter 6: Communication Protocols

Table 6-1 below briefly describes communication protocols and outreach programs already in practice by Zone 7 and Livermore Municipal Water in coordination with Tri-Valley water retailers. These programs along with public information campaigns such as shared website, development and distribution of social media, radio advertisements, and newspaper outreach materials, and providing recycled water to residentis for watering landscape have successfully reduced water consumption during past drought events.

Table 6-1 Communication Protocols

Program/Outreach	Description	Details	Date
Public Information Outreach	Livermore provides general outreach on water conservation	Examples include booths at local events, local festivals, WRP tours, paid advertising, brochures, websites, notices, etc.	2014
Tri-Valley Water Conservation Group	Monthly meetings to coordinate regional outreach efforts	Includes periodic advertising, water conservation info, media campaigns, website resources, PSAs, etc.	1980's
High Efficiency Washing Machine Rebate Program	Rebate program for installation of high-efficiency washing machines	Targeted for single-family residences	2008
Utility Billing Software	Billing software tracks volumetric usage by water meter type	Recently updated with a customer portal where customers can setup notification of high water consumption. Notifies utility billing staff for outreach purposes.	2010
Monthly Billings	Provides data on monthly water consumption compared to previous year	Billing stuffers are provided outlining water savings techniques	1991
Recycled Water Service Area	Requires recycled water for outdoor landscape irrigation	Recycled Water Master Plan Feasibility Study completed in 2013 to expand recycled water use	2003
Water-wise Gardening Program	Web based program helps visitors design a water efficient landscape	Assists users in designing landscapes, selecting water wise plants, and water saving tips	2005
School Education Program	Education program offered to schools in the City's municipal water service area	Educational materials and course outlines developed in accordance with California curriculum standards	2002
Water-Efficient Landscaping Lawn Conversion Rebate	Rebate for replacing lawns with drought-tolerant landscaping and capping sprinkler systems/ converting them to drip irrigation.	Rebate available to all customer types.	2016

Weather-Based Irrigation Controller Rebate	Rebate for replacing irrigation controller with a WaterSense weather-based irrigation controller.	Rebate available to all customer types.	2016
Water Supply Education Program	Website and presentations help residents understand their water supply	Assists participants with understanding where their water comes from and the challenges that put supply at risk	2015

Chapter 7: Penalties, Charges, Other Enforcement of Prohibitions

7.1 Excessive Use Penalties

If customer outreach and education are not sufficient, LMW can utilize several financial disincentives or penalties to discourage excessive use, both during normal water conditions and during shortage events.

The primary financial "penalty" for excessive use is the ascending tier water rates used by LMW, with increasing rates for higher levels of use. Ascending tier rates are in-place during normal and water shortage conditions. In addition, LMW also utilizes conservation rates that have an ascending rate structure to further discourage excessive use.

LMW also has the authority to implement a penalty for excessive use by individual customers. LMW staff can develop conservation usage targets based on average per-capita consumption or a percentage of historic consumption in response to specific shortage events. These usage targets will be used to evaluate customers for potential excessive use penalties. If customers use more than the allotted usage targets for three consecutive billing periods, the City may increase the water rates to the highest conservation tier for a period of three months.

Customers will be provided with the ability to appeal excessive use penalties if they feel their use allocation was inappropriate due to factors such as:

- A higher than average number of people in residential units;
- Medical needs that demand water-consuming devices or uses;
- Water consumed in products or activities that cannot be reduced.

Customers will also have an opportunity to appeal excessive use penalties based on economic hardship or other factors. Excessive use penalties can be implemented at the Livermore Stage 4 level and above.

In addition to additional charges for excessive use through ascending tier rates and penalties for excessive use, LMW may also issue penalties for violating mandatory prohibitions. LMW staff will be able to issue administrative citations to customers violating mandatory prohibitions starting at the Livermore Stage 4 conservation level and above.

Chapter 8: Legal Authorities

The Livermore City Council may enact any stage of the Water Shortage Contingency Plan by adopting a resolution in response to local or regional water supply conditions. The Plan may be enacted based on a number of conditions, including:

- A formal water supply shortage notification by the Zone 7 Water Agency;
- A collective recommendation of the Tri-Valley Water Retailers Group;
- An actual or potential local water supply restriction or emergency affecting the LMW system;
- A proclamation from the City of Livermore of a local water supply emergency

The Livermore City Council may also enact Livermore Stage 1 or Stage 2 water restrictions and conservation rates as necessary to meet the local requirements or state requirements such as the Water Conservation Bill of 2009, which requires a reduction in baseline per capita water usage of 20% by 2020.

The Conservation Stages will normally be implemented in a progressive manner; however, it may be necessary for the City to skip Stages in the use reduction plan in response to catastrophic supply reductions. In general, conservation/use reduction levels will be set according to the anticipated reduction in available water supplies. The City of Livermore will inform the public of implementation of any water shortage stage and expected water shortages during drought conditions. Information will be disseminated via platforms discussed in Chapter 6: Communication Protocols as well as at City Council meetings when resolutions are adopted.

Actions required by each Stage of the WSCP are cumulative; therefore, if Stage 2 of the Plan is implemented, all the reduction measures in both Stage 1 and Stage 2 shall be implemented.

The priorities for use of available water during shortages, based on Chapter 3 of the California Water Code, are as follows:

1. Health & Safety – interior residential (drinking & sanitation) and fire fighting
2. Commercial, Industrial & Governmental – maintain jobs and economic base
3. Annual Crops – protect jobs
4. Existing Landscaping – especially trees and shrubs
5. New Demands – projects without permits when shortage is declared

Chapter 9: Financial Consequences of Actions during Shortages

The stages of action to be undertaken by the urban water supplier in response to water supply shortage have impacts on the LMW's water revenues and expenses. While expenses will be reduced through lower wholesale water purchases from Zone 7, the decline in expenses does not fully offset the loss in revenue from reduced sales. This is due, in part, to the fact that monthly water rates and charges do not fully recover all of the fixed costs on meter service charges, and instead allocate some fixed charges to the water rate component of the bill. This practice slightly inflates the consumption-based portion of the customer bill to encourage conservation during normal conditions. However, the downside of this practice is that net revenue can decline during water shortages or other periods of reduced water sales.

The impact to net water system revenues will vary with each stage of action and the corresponding level of water shortage and expected conservation. To offset the impacts of water shortages, LMW has developed conservation rates that may be enacted in response to water shortages. Conservation rates are updated and adopted by the Livermore City Council each time normal water rates and service charges are adjusted. By having previously adopted conservation rates, LMW can avoid the delays associated with Proposition 218 notification and ballot procedures prior to implementing conservation rates in response to a water shortage. These pre-approved rates were essential in maintaining revenues during the 2014/2015 drought and placed LMW in an excellent financial position compared to retailers without pre-approved rates in place. See Section 8 of Livermore's 2020 UWMP for more information concerning conservation water rates.

Conservation rates correspond to each Stage identified in the WSCP and are calculated to recover the necessary revenue based on the reduced volume of water expected to be sold and purchased in each Stage. Currently, Livermore maps the original four stage water rates to the update six shortage levels or stages as part of this WSCP utilizing the crosswalk described in an earlier section. LMW will prepare a cost-of-service study to evaluate these rates in preparation of future drought events and to align conservation rates with the six shortage stages.

9.1 Financial Consequences of Limiting Excessive Water Use

Per the California Water Code Section 365 et al., retail water suppliers are required to prohibit or discourage excessive water use as described in Section 7.1. Reporting this is not a required part of the UWMP; however, Water Code Section 10632(a)(8)(C) requires the financial consequences of these actions be reported as part of the UWMP.

Water Code Section 367 states that there are three types of drought emergencies:

- Declared statewide drought emergency
- When a supplier implements its mandatory reductions per their WSCP
- A declared local drought emergency

This topic is also addressed here in the WSCP because of the relationship between drought emergencies and implementation of the WSCP.

Water Code Section 366 states that a retail water supplier must prohibit excessive use through one of two strategies:

- Rate structure: A rate structure that includes block tiers, water budgets, or rate surcharges over and above base rates for excessive water use by a residential water customer.
- An excessive water use ordinance: An ordinance that includes a procedure to identify and address excessive water use by metered single-family residential customers and customers in multiunit housing complexes in which each unit is individually metered or submetered and may include a process to issue written warnings to a customer and perform a site audit of customer water usage prior to deeming the customer in violation.

In addition to penalties for excessive use described in Section 7.1, LMW also has the option to implement conservation rates that discourage excessive water use. Should a drought emergency occur, LMW would already have the necessary processes in place to discourage excessive use. As discouraging excessive use is already a part of LMW's actions and because of the conservation rates, the financial consequences of prohibiting excessive use would be minimal.

Additionally, LMW currently monitors customer water usage through its billing software. The billing software currently flags high water usage and contacts water users when usage is above average for a typical meter. This allows LMW to track water losses as well as inform customers when usage is encroaching on meeting a conservation rate threshold. LMW uses conservation rates as a method of water consumption reduction and as a method for financial recuperation from lost water sales during drought periods.

Chapter 10: Monitoring and Reporting

10.1 Metering

All water connections are fully metered. Water service in the City's municipal water service area is not allowed without a water meter. This requirement is further strengthened by water wholesaler rules that also do not allow service connections without a meter. All customer sectors are billed by volume of use at tiered rates. Original tiers had a declining cost structure with higher use. In 1991, the City implemented inverted tiered rates for all accounts as a means of encouraging water use efficiency. The inverted tiered rates can be found in Resolution 2017-098 in Appendix B.

Meter replacement and/or recalibration are evaluated regularly via billing software. Unusual consumption is flagged and checked for accuracy. Meters that are stuck or do not meet accuracy specifications are immediately replaced. Billing accounts with meter failures are assessed an estimated consumption rate that reflects their average usage during the period. Meters that are 3-inches and larger are proactively tested annually and recalibrated, repaired or replaced as needed. Additionally, meters are replaced within the system based on their service length with the oldest meters receiving replacement priority as funding allows.

10.2 Monitoring

In normal water supply conditions, purchase and sales data is checked monthly by water staff. These totals are reported to the Water Resources Manager or the Public Works Director as requested. The totals are also logged into the annual report to the Department of Water Resources.

Shortage Level 1, Shortage Level 2, and Shortage Level 3 Water Shortage:

During Shortage Levels 1-3 water shortage, weekly turnout readings are reported to the Water Distribution Operations Manager. The Operations Manager compares the weekly purchase records to the weekly target to verify that the reduction goal is being met. Weekly reports are forwarded to the Water Resources Division Manager and the Public Works Director. Monthly summary reports are also sent to the Public Works Director. If reduction goals are not met, the Operations Manager will propose additional activities or conservation measures and advise the Water Resources Division Manager. The Division Manager will notify the Public Works Director that additional corrective actions or use-reduction measures will be implemented.

Shortage Level 4, Shortage Level 5, and Shortage Level 6 Water Shortage:

During Shortage Levels 4-6 water shortage, the procedure listed above will be followed, with the addition of a daily water purchase report being submitted to the Water Resources Division Manager.

Emergency Shortage:

During an Emergency Shortage, a major focus will be on monitoring LMW storage tanks to ensure adequate fire protection and emergency storage. Water staff will review tank levels via

the Supervisor Control and Data Acquisition (SCADA) system on an hourly or continuous basis to ensure tank levels are maintained at safe levels for as long as possible. Also, meter readings of the volume of water purchased by LMW can be reported to the Water Distribution Operations Supervisor, Water Resources Division Manager or Public Works Director hourly, if needed.

Chapter 11: Refinement Procedures

Each year the WSCP will be revisited for completion of the Annual Assessment. This procedure will allow LMW to refine the treated water request estimation procedures to more closely align with the next year's projected water use. Coordination with Zone 7 will assist in providing a consistently updated document that closely monitors water supply availability.

Adoption of this document will also allow for the WSCP to be updated each year as the service area continues to change in terms of population, land use, climate factors, and other factors. During the final Annual Assessment report in June/July, any adjustments to the previous year's WSCP will be discussed and documented for future use within the WSCP.

Chapter 12: Special Water Feature Distinction

LMW defines special water features for the purposes of this plan. Features that are supplied by public water from LMW include but are not limited to pools, spas, water fountains, decorative features, and others. DWR defines special water features as those other than pools and spas that could use non-potable water such as recycled water. In LMW, natural water features that do not require public potable water for recreational use such as ponds, lakes, waterfalls, and others do not fall within the special water feature distinction and therefore are not subject to water shortage stage response actions. The intent of this definition is to provide guidance for shortage response actions directed at special water features and to not provide restrictions towards natural water features within the service area.

Chapter 13: Plan Adoption Resolution or Ordinance

Upon adoption of the WSCP, the document will be made available to all customers online via the official City of Livermore website. The resolution adopting the WSCP by the City of Livermore found in Appendix C shall serve as a record of the WSCP as a separate stand-alone document.

References

Livermore Municipal Code Division 1 (Water) of Title 13 (Public Services) Chapter 13.26 Water Conservation and Chapter 13.27 Mandatory Drought Conservation Measures

The Effectiveness of Drought Management Programs in Reducing Residential Water-Use in Virginia. Virginia Polytechnic Institute and State University. 2006.

Urban Water Management Plan. Zone 7 Water Agency. 2020.

Urban Water Management Plan. Livermore Municipal Water. 2015.

Water Conservation by the Yard: A Statewide Analysis of Outdoor Water Savings Potential. Texas Living Waters Project. March 2018.

Urban Water Management Plan. Zone 7 Water Agency. 2020.

Appendix A: Annual Assessment Template

Livermore Municipal Water
Annual Water Supply and Demand Assessment
2020 Water Year
NOTE: ADJUST DATES AS NEEDED

Section 1. Water Demand Assessment

As described in the Water Shortage Contingency Plan, Livermore Operations staff develops a 5-year treated water request schedule using the current year's water consumption as a baseline. Livermore Operations staff estimates a monthly water usage for the next 5 years based on current usage trends and expected new water connections from development within the service area. Projected conservation values are calculated at 10% of average use values for reporting purposes to Zone 7. LMW treated water requests are also compared to Zone 7's projections to ensure values are similar amongst the agencies. Livermore Operations staff presents the 5-year treated water request to Zone 7, and Zone 7 provides a preliminary treated water request response by analyzing the initial SWP allocation and determining if this allocation can accommodate the needs of its retailers.

CONTRACTOR: City of Livermore
DEMAND TYPE: Without Conservation
NOTES: Monthly Schedule Amounts will be rounded to the nearest 10 AF

CONTRACTOR	REQUEST YEAR	UNITS	YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	MAX DAY (MGD)
LIVERMORE	**ACTUAL**	**AF**	**2019**														
LIVERMORE	2019	AF	2020														
LIVERMORE	2019	AF	2021														
LIVERMORE	2019	AF	2022														
LIVERMORE	2019	AF	2023														
LIVERMORE	2019	AF	2024														
LIVERMORE	2020	AF	2021														
LIVERMORE	2020	AF	2022														
LIVERMORE	2020	AF	2023														
LIVERMORE	2020	AF	2024														
LIVERMORE	2020	AF	2025														

SUBMITTED BY:_____
TITLE:_____
DATE:_____

Section 2. Water Supply Assessment

Livermore Municipal Water relies 100 percent on Zone 7 water supplies. Thus, the water supply assessment will focus on supply from Zone 7 for the current year and projected supply for the next five (5) years.

NOTE: REPLACE WITH LETTER RECEIVED FROM ZONE 7

Water Distribution Operations Manager
City of Livermore
101 W. Jack London Blvd.
Livermore, CA 94550

[Submitted Electronically]

RE: Preliminary Approval of <*2021*> Treated Water Request

Dear Mr/Ms. XXXX:

Thank you for submitting a Preliminary Delivery Schedule for years <*2021-2025*>. Zone 7 hereby acknowledges your request for <*Treated Water Request*> acre-feet of treated water in calendar year <*2021*>. As of <*December 1, 2020*>, the initial State Water Project (SWP) Allocation is 10%. However, there are several months left of the rain season and this amount may change. In the event that the <*2021*> SWP allocation remains unchanged, a 10% voluntary conservation based on your delivery request is recommended at this time.

With regard to deliveries, Zone 7 is prepared to meet all your projected <*2021*> demands under current conditions. Enclosed you will find tables showing <*2019 – 2020*> actual deliveries and 2021 projections. Please review these and let me know if you have any comments.

We will keep you apprised of our water supply outlook as the season unfolds. As before, we plan to finalize the Annual Zone 7 Sustainability Report in April when the water supply conditions are more certain. Thank you for your attention to this matter. If you have any questions, please contact me at (925) 454-5068 or via email at ssegura@zone7water.com.

Sincerely,

Sal Segura
Associate Civil Engineer

Section 3. Water Supply Reliability Assessment

Livermore Municipal Water anticipates <*Shortage Level xx/no shortage*> restrictions within its service area **are/are not** necessary at this time per analysis in Table 3-1.

Table 3-1: Supply and Demand Comparison

	Unit	Demand	Supply	Supply/Deficit
2020	**AF**			
2021	**AF**			
2022	**AF**			
2023	**AF**			
2024	**AF**			
2025	**AF**			

Section 4. Triggered Actions

<*Shortage Level xx*> triggered the following actions according to Livermore's 2020 Water Shortage Contingency Plan (WSCP):

- <*Stage x*> *of Demand Reduction Actions*
- <*Stage x*> *of Consumption Reduction Method*
- <*Stage x*> *of Penalties, Charges, other Enforcement of Prohibitions*
- *Others (e.g. Operational Changes, Supply Augmentation Actions)*

OR

<*No actions are triggered since there is no anticipated water supply deficit.*>

Section 5. Communication Actions

Livermore will follow the communication protocols to give the notice of the assessment results to its customers and within its service area.

OR

No actions are triggered since there is no anticipated water supply deficit.

CERTIFICATION

The Annual Water Supply and Demand Assessment for <*20xx*> was prepared and certified by:

Signature: _____

Printed Name: _____

Title: Water Resources Division Manager

Date: _____

Signature: _____

Printed Name: _____

Title: City Manager

Date: _____

Appendix B: Rate Ordinance

IN THE CITY COUNCIL OF THE CITY OF LIVERMORE, CALIFORNIA

A RESOLUTION AMENDING WATER RATES AND CHARGES FOR FISCAL YEARS 2017-18 THROUGH 2021-22

The City of Livermore operates the municipal water system as an Enterprise fund, with customer rates and charges providing full funding for all water storage and distribution system costs, including capital improvement projects to renew and replace water system facilities and the cost of purchasing water from the Zone 7 Water Agency.

Water rates and charges must be adjusted to provide funding to meet normal inflationary increases in the costs of goods and services used by the water utility and to provide adequate renewal/replacement funding.

Council action is also necessary to continue to pass through all costs related to the wholesale purchase of water from the Zone 7 Water Agency and to pass through any increases in Zone 7 costs beginning in January 2018 and for the next five years upon notice to customers as required by law.

The Water Resources Division staff has completed a Comprehensive Water and Wastewater Cost of Service Study in conjunction with Raftelis Financial Consultants, Inc. which identifies the revenue necessary to fund expected expenses of the Livermore Municipal Water Enterprise.

Notices of a public hearing for increasing water rates for Fiscal Years 2018-19 through 2021-22 were mailed to all property owners within the Livermore Municipal Water service area on May 12, 2017 as required by the provisions of Proposition 218.

A public hearing on proposed increases and adjustments to water rates was held by the City Council on June 26, 2017.

The City Council determined that a majority protest to the increases to water rates did not exist at the conclusion of the public hearing.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Livermore as follows:

Section 1. Deposits, Meter Testing Fees, Service Reconnection Fees, Water Rates and Charges. Pursuant to Chapters 13.08, 13.16, and 13.20 of the Livermore Municipal Code, the City Council establishes the following deposits, meter testing fees, service reconnection fees, water rates and charges for meters and water furnished by the City of Livermore.

DEPOSITS

The amount of deposit required for water service for an applicant who is not the owner of the premises shall be as follows:

If the application is for residential service:

5/8" meter	$ 100.00
1"	100.00

If the application is for service other than residential:

5/8" or 3/4" meter	$ 100.00
1" or 1-1/2" meter	100.00
2" or 3" meter	200.00
4" or larger	400.00

The amount of deposit required for the meter provided by the City in furnishing water for construction work shall be as follows:

5/8", 3/4", and 1" meter	$ 250.00
3" and larger	1,400.00

METER TESTING FEES

The meter testing fee shall be $100.00 for meters up to 2 inches in size and $200.00 for meters larger than 2 inches.

RECONNECTION FEES

The service reconnection fee shall be $60.00 for first-time restoration and $80.00 for any subsequent restoration in a 12-month period for all restorations occurring during normal business hours of 8:00 A.M. to 5:00 P.M., Monday through Friday. The reconnection fee shall be $100.00 if the water meter is removed during normal business hours. The reconnection fee will be $250.00 if the reconnection occurs outside of normal business hours.

WATER RATES FOR SERVICE WITHIN THE CORPORATE LIMITS OF THE CITY OF LIVERMORE

Quantity Rate

For all water delivered per water meter per month:

Normal Supply - Voluntary Conservation

Residential – Single Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 1.00	$ 1.07	$ 1.13	$ 1.19	$ 1.25
Tier II	Over 7	$ 1.40	$ 1.48	$ 1.57	$ 1.66	$ 1.74

Residential – Multi Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 1.00	$ 1.07	$ 1.13	$ 1.19	$ 1.25
Tier II	Over 7	$ 1.40	$ 1.48	$ 1.57	$ 1.66	$ 1.74

Commercial, Institutional & Public Agency

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 1.08	$ 1.15	$ 1.22	$ 1.29	$ 1.35

Irrigation

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 1.40	$ 1.48	$ 1.57	$ 1.66	$ 1.74

Recycled

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 2.64	$ 2.81	$ 2.97	$ 3.14	$ 3.30

Stage I - Voluntary 10% Water Conservation

Residential – Single Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 1.16	$ 1.21	$ 1.26	$ 1.32	$ 1.38
Tier II	Over 7	$ 1.62	$ 1.69	$ 1.76	$ 1.84	$ 1.92

Residential – Multi Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 1.16	$ 1.21	$ 1.26	$ 1.32	$ 1.38
Tier II	Over 7	$ 1.62	$ 1.69	$ 1.76	$ 1.84	$ 1.92

Commercial, Institutional, & Public Agency

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 1.26	$ 1.32	$ 1.38	$ 1.44	$ 1.50

Irrigation

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 1.62	$ 1.69	$ 1.76	$ 1.84	$ 1.92

Recycled – "Normal" recycled water rates remain in effect in all stages of conservation.

Stage II – Voluntary/Mandatory 20% Water Conservation

Residential – Single Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 1.29	$ 1.35	$ 1.41	$ 1.47	$ 1.53
Tier II	Over 7	$ 1.81	$ 1.89	$ 1.97	$ 2.05	$ 2.14

Residential – Multi Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 1.29	$ 1.35	$ 1.41	$ 1.47	$ 1.53
Tier II	Over 7	$ 1.81	$ 1.89	$ 1.97	$ 2.05	$ 2.14

Commercial, Institutional & Public Agency

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 1.39	$ 1.45	$ 1.51	$ 1.58	$ 1.65

Irrigation

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 1.81	$ 1.89	$ 1.97	$ 2.05	$ 2.14

Recycled – "Normal" recycled water rates remain in effect in all stages of conservation.

Stage III - Mandatory 35% Water Conservation

Residential – Single Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 1.56	$ 1.63	$ 1.70	$ 1.77	$ 1.85
Tier II	Over 7	$ 2.19	$ 2.28	$ 2.38	$ 2.48	$ 2.58

Residential – Multi Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 1.56	$ 1.63	$ 1.70	$ 1.77	$ 1.85
Tier II	Over 7	$ 2.19	$ 2.28	$ 2.38	$ 2.48	$ 2.58

Commercial, Institutional, & Public Agency

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 1.69	$ 1.76	$ 1.84	$ 1.92	$ 2.00

Irrigation

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 2.19	$ 2.28	$ 2.38	$ 2.48	$ 2.58

Recycled – "Normal" recycled water rates remain in effect in all stages of conservation.

Stage IV - Mandatory 50% Water Conservation

Residential – Single Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 2.00	$ 2.08	$ 2.17	$ 2.26	$ 2.36
Tier II	Over 7	$ 2.81	$ 2.93	$ 3.05	$ 3.18	$ 3.31

Residential – Multi Family

Rate Tier	Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Tier I	0-7	$ 2.00	$ 2.08	$ 2.17	$ 2.26	$ 2.36
Tier II	Over 7	$ 2.81	$ 2.93	$ 3.05	$ 3.18	$ 3.31

Commercial, Institutional, & Public Agency

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 2.17	$ 2.26	$ 2.36	$ 2.46	$ 2.56

Irrigation

Rate Tier Per 100 Cu ft	August 1, 2017 City Distribution Cost per 100 Cubic Feet	July 1, 2018 City Distribution Cost per 100 Cubic Feet	July 1, 2019 City Distribution Cost per 100 Cubic Feet	July 1, 2020 City Distribution Cost per 100 Cubic Feet	July 1, 2021 City Distribution Cost Per 100 Cubic Feet
Uniform	$ 2.81	$ 2.93	$ 3.05	$ 3.18	$ 3.31

Recycled – "Normal" recycled water rates remain in effect in all stages of conservation.

Meter Service Charges: Per Meter, Per Month

Meter Size[1]	**Effective August 1, 2017**	**Effective July 1, 2018**	**Effective July 1, 2019**	**Effective July 1, 2020**	**Effective July 1, 2021**
Meter Service Charges:					
5/8 Inch - D	$18.28	$19.43	$20.57	$21.71	$22.85
3/4 inch - D	$21.05	$24.37	$25.90	$27.42	$30.46
1 inch w/ fire	$18.28	$19.43	$20.57	$21.71	$22.85
1 inch - D	$36.53	$38.82	$41.10	$43.38	$45.66
1 ½ inch D	$66.95	$71.13	$75.32	$79.50	$83.68
1 ½ inch T	$79.12	$84.06	$89.01	$93.95	$98.89
2 inch – D	$103.45	$109.92	$118.38	$122.85	$129.31
2 inch - T	$121.70	$129.31	$138.91	$144.52	$152.12
3 inch - T	$270.74	$287.66	$304.58	$321.50	$338.42
4 inch - T	$462.36	$491.26	$520.16	$549.06	$577.95
6 inch - T	$979.44	$1,040.65	$1,101.87	$1,163.08	$1,224.29
8 inch - T	$1,709.44	$1,816.28	$1,923.12	$2,029.96	$2,136.79
10 inch -T	$2,561.08	$2,721.15	$2,861.22	$3,041.29	$3,201.35
Fire-Line Meter Service Charges:					
1 inch	$2.26	$2.40	$2.54	$2.68	$2.82
1 1/2 inch	$3.39	$3.60	$3.81	$4.02	$4.23
2 inch	$4.51	$4.79	$5.07	$5.35	$5.63
3 inch	$6.76	$7.18	$7.60	$8.02	$8.44
4 inch	$9.00	$9.57	$10.13	$10.69	$11.25
6 inch	$13.49	$14.34	$15.18	$16.02	$16.86
8 inch	$17.99	$19.11	$20.24	$21.36	$22.48
10 inch	$22.47	$23.87	$25.28	$26.68	$28.08

[1] Displacement Meters are indicated by "D" and Turbine Meters indicated by "T". All 1 inch with fire meters are Displacement

Private fire protection service charges are applicable to all water service furnished for privately owned fire protection systems.

Section 2. Definitions. The following definitions and policies shall apply to the water rate increases:

a) Quantity Rate – Quantity rates are charged per unit volume of water delivered as determined by metering. The total quantity rate will be broken down into a Wholesale Water Cost, based on the rate charged by the Zone 7 Water Agency, and a City Distribution Cost based on the City's operations, maintenance and replacement costs.

b) Wholesale Water Cost – A combination of fixed charges and/or variable rates based on the City's purchased water costs from the Zone 7 Water Agency. All costs resulting from wholesale water purchases from Zone 7 will continue to be passed through to Livermore Municipal Water customers between January 2018 and January 2022. Livermore City Council resolves to pass-through without further Council action, any increase in Zone 7 Water Agency rates for the next five years by adjusting the Wholesale Water Cost upon notice to customers required by law.

c) City Distribution Cost – A quantity rate based on the City's operations, maintenance, and replacement costs. The City Distribution Costs will be adjusted by Council resolution and adjustments will take effect on July 1st of each year unless otherwise specified.

d) Meter Service Charge – The service or demand charge is a base rate per month representing the fixed costs of providing water service and is charged in addition to the quantity rate.

e) Private Fire Protection Service – The private fire protection service rate is the amount charged per month for each fire protection service lateral connected to the water system. Water is only delivered through the fire protection system for routine maintenance or fire emergencies. A bypass meter is read at regular intervals to verify that water is not being used through unauthorized connections to the fire system.

Section 3. In accordance with the City's current Water Shortage Contingency Plan, the "Normal Supply – Voluntary Conservation" water rates are implemented.

Section 4. This resolution is effective August 1, 2017.

BE IT FURTHER RESOLVED by the City Council of the City of Livermore resolves that commencing August 1, 2017, July 1, 2018, July 1, 2019, July 1, 2020, and July 1, 2021, the Water Rates and Meter Service Charges be amended as described.

On motion of Council Member Carling, seconded by Council Member Woerner, the foregoing resolution was passed and adopted on June 26, 2017, by the following vote:

AYES: Council Members Carling, Coomber, Woerner, Vice Mayor Spedowfski
NOES: None
ABSENT: Mayor Marchand
ABSTAIN: None

ATTEST:

Susan Neer
City Clerk

Date: June 27, 2017

APPROVED AS TO FORM:

Jason Alcala
City Attorney

Appendix C: Adoption Resolution

IN THE CITY COUNCIL OF THE CITY OF LIVERMORE, CALIFORNIA

A RESOLUTION APPROVING THE 2020 WATER SHORTAGE CONTINGENCY PLAN FOR THE LIVERMORE MUNICIPAL WATER SYSTEM

Water Code Section 10632 requires that every urban water supplier prepare, update, and adopt a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan (UWMP). The WSCP is a document that provides a water supplier with an action plan for a drought or catastrophic water supply shortage.

A draft 2020 WSCP for the Livermore Municipal Water System has been prepared to meet all the requirements of the Urban Water Management Act (Act) and has been made available to the public for review and comment prior to today as required by the Act. Following the requirements of the Act, a public hearing concerning the 2020 WSCP was noticed for today, has been held, and public comments about it have been taken.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Livermore, that

1. That the 2020 Water Shortage Contingency Plan has been approved and adopted and is attached as Exhibit A and is incorporated by this reference.
2. Authorizes transmittal to the California Department of Water Resources.
3. Authorizes the City Manager to take appropriate and necessary actions to carry out the purpose and intent of this Resolution and to incorporate any necessary amendments as stipulated by the State Department of Water Resources.

On motion of Council Member Bonanno, seconded by Council Member Kiick, the foregoing resolution was passed and adopted on June 14, 2021, by the following vote:

AYES:	Council Members Bonanno, Carling, Kiick, Vice Mayor Munro, and Mayor Woerner
NOES:	None
ABSENT:	None
ABSTAIN:	None

ATTEST:

DocuSigned by:
Marie Weber
80379482GBC44BB...

Marie Weber
City Clerk

APPROVED AS TO FORM:

Tara Mazzanti
Assistant City Attorney

Date: June 14, 2021

Exhibit A – 2020 Water Shortage Contingency Plan

Appendix D: DWR Standardized Tables

DRAFT Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
01-10-001	City of Livermore	10,543	2,134
	TOTAL	10,543	2,134
NOTES: Connection counts include active connections only			

DRAFT Submittal Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* *drop down list*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES:			

DRAFT Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP (select from drop down)	
Unit	MG
NOTES:	

DRAFT Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
Zone 7 Water Agency
NOTES:

DRAFT Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	30,830	34,965	39,101	43,236	47,371	47,371
Notes: The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values						

DRAFT Submittal Table 4-1 Retail: Demands for Potable and Non-Potable Water - Actual

Use Type *(Add additional rows as needed)*	2020 Actual		
Drop down list *May select each use multiple times* *These are the only Use Types that will be recognized by the WUEdata online submittal tool*	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Single Family		Drinking Water	976
Multi-Family		Drinking Water	142
Commercial		Drinking Water	311
Industrial		Drinking Water	0
Institutional/Governmental		Drinking Water	20
Landscape		Drinking Water	441
Losses		Drinking Water	218
Other	Unbilled unmetered consumption	Drinking Water	27
Other			
Other			
Other			
		TOTAL	2,134

NOTES:
Volumes reported in million gallons (MG)
Actual usage provided by the City of Livermore (2020 Meter Data)
Water losses and unbilled unmetered consumption provided in the City's 2020 AWWA Water Loss Reporting Worksheet

DRAFT Submittal Table 4-2 Retail: Use for Potable and Non-Potable Water - Projected

Use Type *(Add additional rows as needed)* ***Drop down list*** *May select each use multiple times* *These are the only Use Types that will be recognized by the WUEdata online submittal tool*	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
		2025	2030	2035	2040	2045 (opt)
Single Family		942	954	962	965	965
Multi-Family		170	216	266	320	320
Commercial		755	747	739	731	731
Losses		149	153	157	161	161
Other Potable	Unbilled Unmetered Usage	23	24	25	25	25
Other Non-Potable	Raw Water Allocation	60	60	60	60	60
Other						
TOTAL		2,100	2,155	2,209	2,263	2,263

NOTES: Volumes in MG
The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values
Commercial usage includes commercial, industrial, and institutional/governmantal (CII) usage
The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values

DRAFT Submittal Table 4-3 Retail: Total Gross Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable *From Tables 4-1R and 4-2 R*	2,134	2,100	2,155	2,209	2,263	2,263
Recycled Water Demand* *From Table 6-4*	709	616	634	652	670	670
Optional Deduction of Recycled Water Put into Long Term Storage						
TOTAL WATER USE	2,844	2,716	2,788	2,861	2,933	2,933

**Recycled water demand fields will be blank until Table 6-4 is complete.*

NOTES:
Volumes reported in million gallons (MG)
Recycled water demand excludes recycled water sold to the City of Pleasanton
The values contained in this table are planning level estimates and there is an uncertainty associated with

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2016	146
01/2017	95
01/2018	168
01/2019	179
01/2020	218
[1] *Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.* [2] ***Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*	
NOTES:	

DRAFT Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc… utilized in demand projections are found.	2.3.6.3
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

DRAFT Submittal Table 5-1 Baselines and Targets Summary *Retail Supplier or Regional Alliance Only*				
Baseline Period	Start Year*	End Year*	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	*1999*	*2008*	*240*	*192*
5 Year	*2004*	*2008*	*236*	
**All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*				
NOTES:				

DRAFT Submittal Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form

Retail Supplier or Regional Alliance Only

2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	TOTAL Adjustments*	Adjusted 2020 GPCD*		
190	*0*	*190*	*192*	*Yes*

**All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)*

NOTES:

DRAFT Submittal Table 6-1 Retail: Groundwater Volume Pumped						
☑	Supplier does not pump groundwater. The supplier will not complete the table below.					
☐	All or part of the groundwater described below is desalinated.					
Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2016	2017	2018	2019	2020
Add additional rows as needed						
TOTAL		0	0	0	0	0
NOTES:						

DRAFT Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system *(optional)*					
	Percentage of 2020 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Add additional rows as needed						
City of Livermore	Metered	1,992	City of Livermore	Livermore Water Reclamation Plant	Yes	No
Total Wastewater Collected from Service Area in 2020:		1,992				

NOTES: Total volume of wastewater collected from the City's sewer service area is 1,992 MG. The City only serves water to approximately 34% of the City's population. California Water Service Company serves the rest of the customers. Therefore, the volume of wastewater collected from the UWMP service area is 676 MG (34% of 1,992 MG).

DRAFT Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020

☐ No wastewater is treated or disposed of within the UWMP service area.
The Supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2020 volumes				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Add additional rows as needed											
Livermore Water Reclamation Plant	East Bay Discharge Authority	Bay outfall outside San Leandro		Bay or estuary outfall	Yes	Secondary, Disinfected - 2.2	1,992	1,251	710	31	0
						Total	1,992	1,251	710	31	0

NOTES:
Volumes reported in million gallons (MG).
Total volume of wastewater collected and discharged treated wastewater from the City's sewer service area is 1,992 MG and 1,494 MG, respectively. The City only serves water to approximately 34% of the City's population. California Water Service Company serves the rest of the customers. Therefore, the volume of wastewater collected and discharged from the UWMP Service Area is approximately at 676 MG and 508 MG, respectively. Among the 710 MG recycled within the service area, 373 MG has been used internally within the treatment plant. Technically, the internal water never leaves the plant but is accounted for in the flow balance. In other words, only 337 MG has been used by external users. In order to satisfy the flow balance, the discharged treated wastewater is instead calculated as the total wastewater treated (1,992 MG), minus the amount recycled within the service area including water reused within the treatment plant (710 MG), minus the volume recycled outside of the service area (31 MG sold to the City of Pleasanton).

DRAFT Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area

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

Name of Supplier Producing (Treating) the Recycled Water:	City of Livermore-Water Resources Division
Name of Supplier Operating the Recycled Water Distribution System:	City of Livermore-Water Department
Supplemental Water Added in 2020 (volume) *Include units*	0 MG
Source of 2020 Supplemental Water	N.A.

Beneficial Use Type	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Usees of Recycled Water (Quantity)	General Description of 2020 Uses	Level of Treatment *Drop down list*	2020	2025	2030	2035	2040	2045 (opt)
Agricultural irrigation										
Landscape irrigation (excludes golf courses)				Tertiary	187	205	223	241	259	259
Golf course irrigation				Tertiary	143	143	143	143	143	143
Commercial use				Tertiary	4	4	4	4	4	4
Industrial use				Tertiary	373	261	261	261	261	261
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment										
Wetlands or wildlife habitat										
Groundwater recharge (IPR)*										
Surface water augmentation (IPR)*										
Direct potable reuse										
Other *(Construction/Fire Protection)*			Construction Water	Tertiary	3	3	3	3	3	3
				Total:	709	616	634	652	670	670
				2020 Internal Reuse	373					

NOTES:
Volumes reported in million gallons (MG)
Recycled water demand excludes recycled water sold to the City of Pleasanton
The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values

DRAFT Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual			
☐	Recycled water was not used in 2015 nor projected for use in 2020.		
		2015 Projection for 2020	**2020 Actual Use**
Agricultural irrigation			
Landscape irrigation (excludes golf courses)		201	187
Golf course irrigation		164	143
Commercial use		484	4
Industrial use			373
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other (Description Required)	*Construction Water*		3
	Total	849	710

NOTES:
Volume Reported in million gallons (MG)
Landscape irrigation usage for 2020 does not include recycled water sold to the City of Pleasanton for irrigation purposes, however, 2015 projections did include recycled water sold to the City of Pleasanton.

DRAFT Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Page 5-3	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
		Total	0
NOTES:			

DRAFT Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
Page 4-7	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Supplier *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
Bay Area Regional Desalination Project	Yes	Zone 7 Water Agency, Contra Cost Water District, SFPUC, Santa Clara Valley Water District	Brackish water desalination in eastern Contra Costa County	2030	All Year Types	1,800
Delta Conveyance Project	Yes	Zone 7 Water Agency, DWR, and other SWP Contractors	Construction of new intakes and tunnel as part of the State Water Project	2040	All Year Types	TBD
Potable Reuse	Yes	Zone 7 Water Agency, DSRSD, City of Pleasanton, Cal Water Livermore	Use of purified water derived from wastewater effluent to supplemental potable water supplies	2030	All Year Types	1,300-2,300
Sites Reservoir	Yes	Zone 7 Water Agency, Sites Project Authority, and Sites Reservoir Project committee members	Construction of a new 1.5 million AF off-stream reservoir in Colusa County	2030	All Year Types	3,200
SWP Transfers	Yes	Other SWP Contractors	Temporary water transfer agreement/s until major projects are implemented	2021	All Year Types	Varies

Notes:

Volumes are in MG.

The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values.

Projects are taken from the Zone 7 2020 UWMP. These projects are in the conceptual or planning stages. Zone 7 is participated in the planning efforts of these potential future water supply and/or storage projects to evaluate their benefits, including water supply yield. Implementation of these projects has not been approved by the Zone 7 Board but it is expected that a subset of these projects will be needed to meet future water demands and increase the reliability of Zone 7's system. The partners listed above are potential partners; final participation will be determined when the project has been approved by the respective agencies' governing boards. The 'expected increase in water supply...' are estimates at this time and may need to be adjusted when a final project has been approved. The 'planned implementation year' may also vary depending on project progress.

DRAFT Submittal Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Purchased or Imported Water	Purchased from Zone 7 Water Agency	2,134	Drinking Water	
Recycled Water	From Livermore Water Reclamation Plant	709	Recycled Water	
	Total	2,844		0
NOTES: Recycled water supplies assumed to equal recycled water demands				

DRAFT Submittal Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
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*		**2025**		**2030**		**2035**		**2040**		**2045** *(opt)*	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Purchased or Imported Water	Purchased from Zone 7 Water Agency	2,100		2,155		2,209		2,263		2,263	
Recycled Water	From City of Livermore WWTF	616		634		652		670		670	
Total		2,716		2,788		2,861		2,933		2,933	

NOTES: Supply totals taken from available Zone 7 supplies (Table 7-2) adjusted to reflect percentage of water demand from Livermore.
The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values

Urban Water Supplier: *City of Livermore*

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1A: Recommended Energy Intensity - Water Supply Process Approach

Enter Start Date for Reporting Period 11/1/2019

End Date 10/30/2020

	Urban Water Supplier Operational Control							
	Water Management Process						Non-Consequential Hydropower (if applicable)	
	Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (MG)	*0*	*0*	*0*	*0*	*2110.00*	*2110*	*0*	*2110*
Energy Consumed (kWh)	*0*	*0*	*0*	*0*	*9,767,753*	*9,767,753*	*0*	*9767752.514*
Energy Intensity (kWh/MG)	*0.0*	*0.0*	*0.0*	*0.0*	*4629.3*	*4629.3*	*0.0*	*4629.3*

Quantity of Self-Generated Renewable Energy

0 kWh

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

Metered Data

Data Quality Narrative:

The volume of water entering the distribution system was determined based on the monthly volume of water delivered from Zone 7 Water Agency to LMW. The monthly volumes were lined up with the corresponding PG&E electricity bills provided by LMW, which outline electricity use at LMW's distribution system pump stations. The billing periods were aligned with the Zone 7 reported deliveries for November 2019 through October 2020.

Narrative:

LMW energy consumption is at its distribution system pump stations and metered and billed by PG&E.

DRAFT 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 2019-2020, use 2020*	**Available Supplies if Year Type Repeats**	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	1965	2,134	100%
Single-Dry Year	2014	1,428	67%
Consecutive Dry Years 1st Year	1987	1,771	83%
Consecutive Dry Years 2nd Year	1988	1,405	66%
Consecutive Dry Years 3rd Year	1989	1,980	93%
Consecutive Dry Years 4th Year	1990	1,220	57%
Consecutive Dry Years 5th Year	1991	1,210	57%

Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

NOTES: Estimated supply volume available utilizes the sum of Zone 7's 2020 UWMP Tables 7-1 to 7-9 water supplies, and applies a percentage based on Livermore's water demands to the baseline normal year supplies in 1965. This table uses Livermore's 2020 water use of 2,134 acre-ft as a basis for determining percentage of Zone 7 volume available. Percentages of average supply reflect the values provided by Zone 7 for the base years selected for all of the supplies available now or that will be available to Zone 7 during the planning period. Source: Zone 7 2020 UWMP, Table 7-1 through Table 7-9.

DRAFT Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	2,716	2,788	2,861	2,933	2,933
Demand totals *(autofill from Table 4-3)*	2,716	2,788	2,861	2,933	2,933
Difference	0	0	0	0	0
NOTES: The values contained in this table are planning level estimates and there is an uncertainty associated with each of these values					

DRAFT Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals	2,716	2,788	2,861	2,933	2,933
Demand totals	2,716	2,788	2,861	2,933	2,933
Difference	0	0	0	0	0
NOTES: Zone 7 supplies and recycled water can meet Livermore demands in all scenarios. Normal demands are represented during drought conditions as a conservative measure. Demand shall be reduced during drought conditions in accordance with the 2020 WSCP.					

DRAFT Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	2,716	2,788	2,861	2,933	2,933
	Demand totals	2,716	2,788	2,861	2,933	2,933
	Difference	0	0	0	0	0
Second year	Supply totals	2,730	2,803	2,875	2,933	2,933
	Demand totals	2,730	2,803	2,875	2,933	2,933
	Difference	0	0	0	0	0
Third year	Supply totals	2,745	2,817	2,890	2,933	2,933
	Demand totals	2,745	2,817	2,890	2,933	2,933
	Difference	0	0	0	0	0
Fourth year	Supply totals	2,759	2,832	2,904	2,933	2,933
	Demand totals	2,759	2,832	2,904	2,933	2,933
	Difference	0	0	0	0	0
Fifth year	Supply totals	2,774	2,846	2,919	2,933	2,933
	Demand totals	2,774	2,846	2,919	2,933	2,933
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

NOTES: Zone 7 potable supplies and recycled water can meet Livermore demands in all scenarios. Normal demands are represented during drought conditions as a conservative measure. Demand shall be reduced during drought conditions in accordance with the 2020 WSCP.

The values contained in this table/figure are planning level estimates and there is an uncertainty associated with each of these values

DRAFT Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

2021	Total
Gross Water Use	2,135
Total Supplies	2,135
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2022	Total
Gross Water Use [Use Worksheet]	1,994
Total Supplies [Supply Worksheet]	1,994
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2023	Total
Gross Water Use [Use Worksheet]	2,007
Total Supplies [Supply Worksheet]	2,007
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2024	Total
Gross Water Use [Use Worksheet]	2,020
Total Supplies [Supply Worksheet]	2,020
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2025	Total
Gross Water Use [Use Worksheet]	2,040
Total Supplies [Supply Worksheet]	2,040
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

DRAFT Submittal Table 8-1
Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions (*Narrative description*)
1	Up to 10%	Minimal Reductions Range: 0% - 20%
2	Up to 20%	Moderate Reductions 10% - 20%
3	Up to 30%	Severe Reductions 21% - 30%
4	Up to 40%	Severe Reductions 31% - 40%
5	Up to 50%	Critical Reductions 41% - 50%
6	>50%	Critical Reductions >50%
NOTES:		

DRAFT Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply to you.*	How much is this going to reduce the shortage gap? *Include volume units used.*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? *Drop Down List*
Add additional rows as needed				
1	Landscape - Limit landscape irrigation to specific times	2%	6 PM to 9 AM	No
1	Other - Require automatic shut off hoses	<1%		No
1[a]	Expand Public Information Campaign	32%		No
1[b]	Improve customer user data review	5%		No
1	Implement or Modify Drought Rate Structure or Surcharge	10%	Stage 1 Rates	No
2[c]	Landscape - Limit landscape irrigation to specific days	10%	Non consecutive days	No
2	Implement or Modify Drought Rate Structure or Surcharge	10%	Stage 2 Rates	No
3	Pools and Spas - Require covers for pools and spas	<1%		No
3	Other - Prohibit use of potable water for construction and dust control	<1%		No
3	Implement or Modify Drought Rate Structure or Surcharge	10%	Stage 3 Rates	No
4	CII - Commercial kitchens required to use pre-rinse spray valves	<1%	Required to use low flow rinse nozzles	Yes
4[b]	Landscape - Limit landscape irrigation to specific days	10%	Handwater Saturday or Sunday only	Yes
4	Landscape - Restrict or prohibit runoff from landscape irrigation	<1%		Yes
4	Other - Prohibit use of potable water for washing hard surfaces	<1%	Prohibit street washing or flooding	Yes
4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	2%	Only wash vehicles at recyled water wash facilities	Yes
4	Other water feature or swimming pool restriction	<1%	Must be leak proof	Yes
4	Implement or Modify Drought Rate Structure or Surcharge	15%	Stage 4 Rates	Yes
5	Landscape - Prohibit certain types of landscape irrigation	2%	Prohibit turf or lawn irrigation	Yes
5	Water Features - Restrict water use for decorative water features, such as fountains	<1%	Prohibit potable water use	Yes
5	CII - Restaurants may only serve water upon request	<1%		Yes
5	Implement or Modify Drought Rate Structure or Surcharge	15%	Stage 5 Rates	Yes
6	Implement or Modify Drought Rate Structure or Surcharge	15%	Stage 6 Rates	Yes

NOTES: All response actions are cumulative i.e. action described in prior stages are also applicable in subsequent stages (e.g. actions described

[a]2014/2015 drought saw a 32% reduction in water use only from an expanded outreach campaign to customers

[b]Livermore's billing software allows them to increase the frequency of account usage reviews to weekly or daily if needed. Outreach is initiated when an account is flagged for high usage.

[c]*A Statewide Analysis of Outdoor Water Savings Potential* March 2018 Texas Living Waters Project

Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	How much is this going to reduce the shortage gap? *Volume type or percentage*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
1[a]	Expand Public Information Campaign	32%	Voluntary cutbacks requested
1[b]	Improve Customer Billing	5%	Improve customer use data review
1	Implement or Modify Drought Rate Structure	10%	Implement Stage 1 Rates
2	Implement or Modify Drought Rate Structure	10%	Implement Stage 2 Rates
3	Implement or Modify Drought Rate Structure	10%	Implement Stage 3 Rates
4	Implement or Modify Drought Rate Structure	15%	Implement Stage 4 Rates
5	Implement or Modify Drought Rate Structure	15%	Implement Stage 5 Rates
6	Implement or Modify Drought Rate Structure	15%	Implement Stage 6 Rates

NOTES: All response actions are cumulative (i.e. actions described in Stage 1 are also applicable in Stages 2-6). Drought rates are

[a]2014/2015 drought saw a 32% reduction in water use only from an expanded outreach campaign to customers

[b]Livermore's billing software allows them to increase the frequency of account usage reviews to weekly or daily if needed. Outreach is initiated when an account is flagged for high usage.

DRAFT Submittal Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
City of Livermore	☑	☑
	☐	☐
	☐	☐
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Alameda County	☑	☑
	☐	☐

Appendix E: LMW Adoption of the 2020 UWMP

IN THE CITY COUNCIL OF THE CITY OF LIVERMORE, CALIFORNIA

A RESOLUTION APPROVING AND ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN AND THE 2015 URBAN WATER MANAGEMENT PLAN ADDENDUM FOR THE LIVERMORE MUNICIPAL WATER SYSTEM

The California Urban Water Management Plan Act at Wat. Code, Div. 6, Pt. 2.6 sections 10610-10656 requires each urban water supplier providing over 3,000 acre-feet of water annually or serving 3,000 or more connections to update and adopt an Urban Water Management Plan ("UWMP") at least once every five years.

Urban Water Management Plans are intended to provide a guide to manage urban water demands efficiently and to provide long-term water resource planning to ensure adequate and reliable water supplies over a 20-year planning horizon considering normal, dry, and multiple dry years.

An Urban Water Management Plan is necessary for water agencies to be eligible for State water management grants and loans.

The Delta Reform Act of 2009 requires water suppliers to demonstrate consistency with Delta Plan Policy WR P1 (Cal. Code Regs. tit. 23, § 5003). This can be included as the Addendum to the 2015 UWMP.

In accordance with the California Water Code and other applicable laws, a 60-day notice was provided to all applicable agencies on April 9, 2021, and the 2020 draft UWMP and 2015 UWMP Addendum for the Livermore Municipal Water System have been made available to the public for review and comment prior to today. A public hearing concerning the 2020 UWMP and a public hearing concerning the 2015 UWMP Addendum were noticed for today, have been held, and public comments about it have been taken before adoption of the UWMP.

Adoption of the 2020 Plan is exempt from the California Environmental Quality Act (CEQA) because California Water Code section 10652 provides that CEQA does not apply to the preparation and adoption of Urban Water Management Plans or to projects implementing such plans under Water Code section 10632.

The Urban Water Management Plan complies with the requirements of the Urban Water Management Planning Act.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Livermore, that

1. The City Council approves and adopts the 2020 Urban Water Management Plan in accordance with the California Water Code and authorizes its transmittal to the California Department of Water Resources, a copy of which is attached as Exhibit A and incorporated by this reference.

2. The City Council approves and adopts the 2015 UWMP Addendum which is included as Appendix B in the 2020 UWMP.
3. Adoption of the 2020 Plan is exempt for the California Environmental Quality Act pursuant to the California Water Code.
4. The City Manager is hereby authorized and directed to take all necessary actions to carry out the purpose and intent of this resolution and to incorporate any necessary amendments as stipulated by the State Department of Water Resources.

On motion of Council Member Bonanno, seconded by Council Member Kiick, the foregoing resolution was passed and adopted on June 14, 2021, by the following vote:

AYES: Council Members Bonanno, Carling, Kiick, Vice Mayor Munro, and Mayor Woerner
NOES: None
ABSENT: None
ABSTAIN: None

ATTEST:

DocuSigned by:
Marie Weber
80379482GBC44BB...

Marie Weber
City Clerk

APPROVED AS TO FORM:

Tara Mazzanti
Assistant City Attorney

Date: June 14, 2021

Exhibit A – 2020 Urban Water Management Plan with 2015 UWMP Addendum as Appendix B

IN THE CITY COUNCIL OF THE CITY OF LIVERMORE, CALIFORNIA

A RESOLUTION APPROVING THE 2020 WATER SHORTAGE CONTINGENCY PLAN FOR THE LIVERMORE MUNICIPAL WATER SYSTEM

Water Code Section 10632 requires that every urban water supplier prepare, update, and adopt a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan (UWMP). The WSCP is a document that provides a water supplier with an action plan for a drought or catastrophic water supply shortage.

A draft 2020 WSCP for the Livermore Municipal Water System has been prepared to meet all the requirements of the Urban Water Management Act (Act) and has been made available to the public for review and comment prior to today as required by the Act. Following the requirements of the Act, a public hearing concerning the 2020 WSCP was noticed for today, has been held, and public comments about it have been taken.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Livermore, that

1. That the 2020 Water Shortage Contingency Plan has been approved and adopted and is attached as Exhibit A and is incorporated by this reference.
2. Authorizes transmittal to the California Department of Water Resources.
3. Authorizes the City Manager to take appropriate and necessary actions to carry out the purpose and intent of this Resolution and to incorporate any necessary amendments as stipulated by the State Department of Water Resources.

On motion of Council Member Bonanno, seconded by Council Member Kiick, the foregoing resolution was passed and adopted on June 14, 2021, by the following vote:

AYES:	Council Members Bonanno, Carling, Kiick, Vice Mayor Munro, and Mayor Woerner
NOES:	None
ABSENT:	None
ABSTAIN:	None

ATTEST:

DocuSigned by:
Marie Weber
80379482GBC44BB...

Marie Weber
City Clerk

APPROVED AS TO FORM:

Tara Mazzanti
Assistant City Attorney

Date: June 14, 2021

Exhibit A – 2020 Water Shortage Contingency Plan

Appendix F: Outreach Materials

LIVERMORE
CALIFORNIA

PREPARATION OF 2020 URBAN WATER MANAGEMENT PLAN

In accordance with the California Urban Water Management Planning Act (UWMP Act) and the Water Conservation Act of 2009, Livermore Municipal Water is preparing its 2020 Urban Water Management Plan (UWMP). The UWMP is a guide used to ensure adequate water supplies are available to meet existing and future water demands.

This notice is to inform and encourage your agency or organization's participation in the preparation of Livermore Municipal Water's 2020 UWMP.

The UWMP will report, describe, and evaluate Livermore Municipal Water's water deliveries and uses, water supply sources, demand management measures, and the state mandated plan to achieve a reduction of potable water use of 20% by 2020.

A draft of Livermore Municipal Water's 2020 UWMP is expected to be released for public review in May. The status of the 2020 UWMP will be posted on the City of Livermore's website at www.cityoflivermore.net City of Livermore Municipal Water will notice the date and time of the public hearing to provide opportunity for comments on the draft.

Questions or comments regarding Livermore Municipal Water's UWMP should be sent to: Yanming Zhang, at yzhang@cityoflivermore.net.

LIVERMORE
CALIFORNIA

NOTICE OF AVAILABILITY
DRAFT 2020 URBAN WATER MANAGEMENT PLAN
DRAFT 2020 WATER SHORTAGE CONTINGENCY PLAN AND
DRAFT 2015 URBAN WATER MANAGEMENT PLAN ADDENDUM

The Draft Livermore Municipal Water 2020 Urban Water Management Plan (UWMP), updated Water Shortage Contingency Plan (WSCP), and 2015 UWMP addendum will be available for public comment from May 28, 2021. The copies of the draft plans can be found on https://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/service/default.htm

The City of Livermore City Council will conduct a public hearing to provide an opportunity for public comment on the draft 2020 UWMP and updated WSCP and consider adoption of the City's draft 2020 UWMP and updated WSCP at its regularly scheduled meeting on June 14, 2021, at 7:00 p.m. The hearing will be held at the location listed in the June 14 meeting agenda. The agenda and public hearing materials can be found at https://www.cityoflivermore.net/citygov/clerk/default.htm. Click "Current Agenda" on the navigation panel to the left.

This notice is to inform and encourage your agency's participation and comment on the Draft Livermore Municipal Water's 2020 UWMP, updated WSCP, and 2015 UWMP addendum.

Questions or comments regarding Livermore Municipal Water's UWMP should be sent to: Yanming Zhang, at yzhang@cityoflivermore.net.

LIVERMORE
CALIFORNIA

April 6, 2021

Albert V. Lopez, Planning Director
Alameda County Planning Department
224 W. Winton Avenue, Room 111
Hayward, CA 94544-1215

Subject: Public Notification for 2020 Urban Water Management Plan for Livermore Municipal Water

Dear Mr. Lopez:

Livermore Municipal Water (LMW) is undertaking the review, update, and revision of its Urban Water Management Plan (UWMP). LMW is located in Alameda County and provides drinking water service to approximately 1/3 of the City of Livermore. The 2020 UWMP is a planning document in which water suppliers evaluate and compare their water supply and reliability to their existing and projected demands. LMW has also revised its Water Shortage Contingency Plan (WSCP) which is now a separate document from the UWMP.

Based on new guidance from the California Department of Water Resources (DWR), LMW will also update the 2015 UWMP to incorporate data on LMW's use of imported water from the Sacramento-San Joaquin Delta through the State Water Project. This update is intended to document consistency with the Delta Reform Act and the Delta Plan. The same data will be available in the 2020 UWMP, but for completeness the 2015 UWMP will include this information as an addendum.

The draft 2015 UWMP addendum, the 2020 UWMP and the 2020 WSCP will be available for public review starting on May 28, 2021 with comments closing on June 14, 2021, at https://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/service/default.htm We would like to solicit your input during this timeframe.

LMW will hold a public hearing on June 14, 2021 at 7:00 pm, prior to adoption of the 2015 UWMP addendum, the 2020 UWMP and 2020 WSCP. The hearing will be held at the location listed in the June 14 meeting agenda. The agenda including the materials for the public hearing can be found at https://www.cityoflivermore.net/citygov/clerk/default.htm. Click "Current Agenda" on the navigation panel to the left.

If you have questions about the 2015 UWMP addendum, the 2020 UWMP and the 2020 WSCP, please contact me at (925) 960-8179 or yzhang@cityoflivermore.net no later than June 11, 2021.

Please let us know if you have any questions.

Yours truly,

Yanming Zhang
Technical Programs Manager
City of Livermore

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Albert V. Lopez, Planning Director
Alameda County Planning Department
224 W. Winton Avenue, Room 111
Hayward, CA 94544-1215

9590 9402 5874 0038 4761 12

2. Article Number *(Transfer from service label)*

7019 2970 0001 3864 8779

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☒ Agent
☐ Addressee

B. Received by *(Printed Name)* 4468 C79

C. Date of Delivery 4/9

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
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- ☐ Registered Mail Restricted Delivery
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- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

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Issue Date : 05/26/2021 Ad Number : 6579206

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Legal Notice

FILED
May 7, 2021
ALAMEDA COUNTY
MELISSA WILK
County Clerk
ALAMEDA COUNTY
By Melissa Wilk,
Deputy
File No. 578821
FICTITIOUS BUSINESS NAME STATEMENT Pursuant To Business and Professions Code Sections 17900-17930
The name of the business: DeLaLuz
located at 21228 Gary Dr Suite 214, 21228 Gary Dr Suite 214, Castro Valley, Alameda County, CA 94546
is hereby registered by the following owner(s):
Rendy Orlando
21228 Gary Dr Suite 214, Castro Valley, CA 94546
This business is conducted by: an individual
N/A
Expires May 07, 2026
/s/ Rendy Orlando
WB0213599
ATS
May 19, 26, June 2, 9 2021

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
REQUEST FOR PROPOSAL NO. 6M6150
EXTENSION OF TIME FOR RECEIPT OF PROPOSALS
NOTICE IS HEREBY GIVEN that the General Manager of the San Francisco Bay Area Rapid Transit District has extended the time for receipt of Proposals until the hour of 2:00 p.m., Tuesday, June 1, 2021 at the District Secretary's Office, 23rd Floor, 300 Lakeside Drive, Oakland, California 94612, MANAGEMENT SERVICES TO OPERATE BART'S BIKE FACILITIES, Request for Proposal No. 6M6150.
Dated at Oakland, California, this 19TH day of May 2021.
s Bernadette Lambert
Bernadette Lambert, Manager of Contract Administration
San Francisco Bay Area Rapid Transit District
5/26/21
CNS-3474331#
CONTRA COSTA TIMES
CCT 6578301
May 26, 2021

NOTICE OF PUBLIC SALE OF PERSONAL PROPERTY

Pursuant to the California Self-Service Storage Facility Act, (B & P Code 21700 et. Seq.) the undersigned will sell at Public Auction on Wednesday, June 9, 2021, at 12:45 pm, personal property including but not limited to furniture, clothing, tools, toys, and/or other household items located at:

CSI Mini Storage, LLC
51 W. Hornet Ave.
Alameda, CA 94501
Ph: (510) 748-1851
The auction will be conducted by Nor Cal Storage Auctions, Inc.
Bond No. 7900468597
Ph: (916) 604-9695

Stored by the following Person (s):

165H **McCoy, Matthew**
105B**Lawrence, Trevor**
168H **McCoy, Matthew**
43C**Jimenez, Everett**
158H **Geanekos,Tom Athanasios**
104 **Hauge, Sara**
146D **Cox, Jim**
F117 **Mcbee, Joseph**
J7 **Hurst, Errol**
F124 **Qualtieri, Joshua**
HS122 **Manawatao, Grace**
79 **Alovert, Maria**
J35 **Wentz, Austin**
51A **Hauge, Sara**
HS98 **Paradise, Wayne**
17b **Golemme, Steve**
70D **Neus, Micaela**
63B **Hauge, Sara**
HS97 **Paradise, Wayne**
69F **Hauge,Sara**
71E **Sanders, Michael**

ATS# 6577944
May 26, June 2, 2021

File No.: 17-12586 APN: 941-2765-107 NOTICE OF TRUSTEE'S SALE YOU ARE IN DEFAULT UNDER ALAMO CREEK VILLAS HOMEOWNERS ASSOCIATION (ASSOCIATION) COVENANTS, CONDITIONS AND RESTRICTIONS AND A NOTICE OF DELINQUENT ASSESSMENT (LIEN) DATED 06-16-2020. UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDINGS AGAINST YOU, YOU SHOULD CONTACT A LAWYER. On 06-09-2021 at 12:00 PM, At the Fallon Street Emergency Exit of the Alameda County Courthouse located at 1225 Fallon Street, Oakland, CA 94612, ALLIED TRUSTEE SERVICES (Trustee), 990 Reserve Drive, Suite 208, Roseville, CA 95678, (877) 282-4991, under and pursuant to Lien, recorded 06-17-2020 as Instrument 2020140038 Book - - Page - - of Official Records in the Office of the Recorder of ALAMEDA County, CA, WILL CAUSE TO BE SOLD AT PUBLIC AUCTION to the highest bidder for cash, cashier's check/cash equivalent or other form of payment authorized by 2924h(b), (payable at time of sale) the property owned by MARTHA J LOKOLLO, situated in said County, describing the land therein: APN: 941-2765-107 The street address and other common designation, if any, of the real property described above is purported to be: 7063 DUBLIN MEADOWS STREET #E , DUBLIN, CA 94568 The undersigned Trustee disclaims any liability for any incorrectness of the street address and other common designation, if any, shown herein. Said sale will be made, but without covenant or warranty, expressed or implied, regarding title, possession, or encumbrances, to satisfy the sums due under the Lien. The estimated total unpaid balance at the time of the initial publication of this Notice of Trustee's Sale is $25,695.12. THE PROPERTY WILL BE SOLD SUBJECT TO THE 90-DAY POST-SALE RIGHT OF REDEMPTION AS SET FORTH IN CALIFORNIA CIVIL CODE SECTION 5715(B). Association heretofore executed and delivered to the undersigned a written Declaration of Default. The undersigned caused a Notice of Default and Election to Sell to be recorded in the county where the real property is located and more than three months have elapsed since such recordation. NOTICE TO POTENTIAL BIDDERS: If you are considering bidding on this property lien, you should understand that there are risks involved in bidding at a trustee auction. You will be bidding on a lien, not on the property itself. Placing the highest bid at a trustee auction does not automatically entitle you to free and clear ownership of the property. You should also be aware that the lien being auctioned off may be a junior lien. If you are the highest bidder at the auction, you are or may be responsible for paying off all liens senior to the lien being auctioned off, before you can receive clear title to the property. You are encouraged to investigate the existence, priority, and size of outstanding liens that may exist on this property by contacting the county recorder's office or a title insurance company, either of which may charge you a fee for this information. If you consult either of these resources, you should be aware that the same lender may hold more than one mortgage or deed of trust on the property. NOTICE TO PROPERTY OWNER: The sale date shown on this notice of sale may be postponed one or more times by the Association, trustee, or a court, pursuant to Section 2924g of the California Civil Code. The law requires that information about trustee sale postponements be made available to you and to the public, as a courtesy to those not present at the sale. If you wish to learn whether your sale date has been postponed, and, if applicable, the rescheduled time and date for the sale of this property, you may call (844) 477-7869, or visit this Internet Web site WWW.STOXPOSTING.COM for information, using the file number assigned to this case: 17-12586. Information about postponements that are very short in duration or that occur close in time to the scheduled sale may not immediately be reflected in the telephone information or on the Internet Web site. The best way to verify postponement information is to attend the scheduled sale. NOTICE TO TENANT: You may have a right to purchase this property after the trustee auction pursuant to Section 2924m of the California Civil Code. If you are an 'eligible tenant buyer,' you can purchase the property if you match the last and highest bid placed at the trustee auction. If you are an 'eligible bidder,' you may be able to purchase the property if you exceed the last and highest bid placed at the trustee auction. There are three steps to exercising this right of purchase. First, 48 hours after the date of the trustee sale, you can call (844) 477-7869, or visit this Internet Web site WWW.STOXPOSTING.COMfor information, using the file number assigned to this case: 17-12586 to find the date on which the trustee's sale was held, the amount of the last and highest bid, and the address of the trustee. Second, you must send a written notice of intent to place a bid so that the trustee receives it no more than 15 days after the trustee's sale. Third, you must submit a bid so that the trustee receives it no more than 45 days after the trustee's sale. If you think you may qualify as an 'eligible tenant buyer' or 'eligible bidder,' you should consider contacting an attorney or appropriate real estate professional immediately for advice regarding this potential right to purchase. DATE: April 30, 2021 ALLIED TRUSTEE SERVICES, Trustee ANDREA FISK, Authorized Signature
PT/VT 6573527
May 12, 19, 26, 2021

Legal Notice

NOTICE OF PETITION TO ADMINISTER ESTATE OF:
JAMES F. GROVES
Case Number: RP 21-086894

To all heirs, beneficiaries, creditors, contingent creditors, and persons who may otherwise be interested in the will or estate, or both, of **JAMES F. GROVES aka JAMES GROVES**

A PETITION FOR PROBATE has been filed by: **LEON GROVES** in the Superior Court of California, County of **ALAMEDA**

THE PETITION FOR PROBATE requests that **LEON GROVES** be appointed as personal representative to administer the estate of the decedent.

THE PETITION requests authority to administer the estate under the Independent Administration of Estates Act. (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.

A HEARING on the petition will be held on 06/09/2021 at 9:45 a.m. in Dept. 202 located at Superior Court of California County of Alameda 2120 Martin Luther King Jr. Way Berkeley, CA 94704 Probate

MANDATORY REMOTE APPEARANCE:
The court requires all parties who wish to attend the hearing on the above date and time, including those who wish to state objections, to appear by audio or video technology. The parties should consult the court's website for the specific telephonic and video applications available. The parties may also contact the probate clerk in the respective department for information concerning remote appearance. Parties must be present at least five (5) minutes before the scheduled hearing time.

If you object to the granting of the petition, you should appear at the hearing and state your objections or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.

If you are a creditor or a contingent creditor of the decedent, you must file your claim with the court and mail a copy to the personal representative appointed by the court within the later of either (1) four months from the date of first issuance of letters to a general personal representative, as defined in section 58(b) of the California Probate Code, or (2) 60 days from the date of mailing or personal delivery to you of a notice under section 9052 of the California Probate Code.

Other California statutes and legal authority may affect your rights as a creditor. You may want to consult with an attorney knowledgeable in California law.

You may examine the file kept by the court. If you are a person interested in the estate, you may file with the court a Request for Special Notice (form DE-154) of the filing of an inventory and appraisal of estate assets or of any petition or account as provided in Probate Code section 1250. A Request for Special Notice form is available from the court clerk.

Attorney for Petitioner:
Perry Popovich, Attorney at Law
19711 Tollhouse Rd.
Clovis, CA 93619
650-86-0672
TVH# 6577376 May 22, 26, 31, 2021

T.S. No.: 210203029
Notice of Trustee's Sale
Loan No.: Athena 2 Order No. 95524631 APN: 056-073-011 You Are In Default Under A Deed Of Trust Dated 10/4/2011. Unless You Take Action To Protect Your Property, It May Be Sold At A Public Sale. If You Need An Explanation Of The Nature Of The Proceeding Against You, You Should Contact A Lawyer. A public auction sale to the highest bidder for cash, cashier's check drawn on a state or national bank, cashier's check drawn by a state or federal credit union, or a cashier's check drawn by a state or federal savings and loan association, or savings association, or savings bank specified in Section 5102 of the Financial Code and authorized to do business in this state will be held by the duly appointed trustee as shown below, of all right, title, and interest conveyed to and now held by the trustee in the hereinafter described property under and pursuant to a Deed of Trust described below. The sale will be made, but without covenant or warranty, expressed or implied, regarding title, possession, or encumbrances, to pay the remaining principal sum of the note(s) secured by the Deed of Trust, with interest and late charges thereon, as provided in the note(s), advances, under the terms of the Deed of Trust, interest thereon, fees, charges and expenses of the Trustee for the total amount (at the time of the initial publication of the Notice of Sale) reasonably estimated to be set forth below. The amount may be greater on the day of sale. Trustor: Athena Financial Enterprises, LLC Duly Appointed Trustee: Total Lender Solutions, Inc. Recorded 10/11/2011 as Instrument No. 2011-0210330-00 in book, page of Official Records in the office of the Recorder of Contra Costa County, California, Date of Sale: 6/23/2021 at 1:30 PM Place of Sale: north side of Pittsburg Civic Center near grass, 65 Civic Avenue, Pittsburg, CA Amount of unpaid balance and other charges: $117,753.75 Street Address or other common designation of real property: 4841 Lefebvre Way Antioch, CA 94531 A.P.N.: 056-073-011 The undersigned Trustee disclaims any liability for any incorrectness of the street address or other common designation, if any, shown above. If no street address or other common designation is shown, directions to the location of the property may be obtained by sending a written request to the beneficiary within 10 days of the date of first publication of this Notice of Sale. Notice To Potential Bidders: If you are considering bidding on this property lien, you should understand that there are risks involved in bidding at a trustee auction. You will be bidding on a lien, not on the property itself. Placing the highest bid at a trustee auction does not automatically entitle you to free and clear ownership of the property. You should also be aware that the lien being auctioned off may be a junior lien. If you are the highest bidder at the auction, you are or may be responsible for paying off all liens senior to the lien being auctioned off, before you can receive clear title to the property. You are encouraged to investigate the existence, priority, and size of outstanding liens that may exist on this property by contacting the county recorder's office or a title insurance company, either of which may charge you a fee for this information. If you consult either of these resources, you should be aware that the same lender may hold more than one mortgage or deed of trust on the property. Notice To Property Owner: The sale date shown on this notice of sale may be postponed one or more times by the mortgagee, beneficiary, trustee, or a court, pursuant to Section 2924g of the California Civil Code. The law requires that information about trustee sale postponements be made available to you and to the public, as a courtesy to those not present at the sale. If you wish to learn whether your sale date has been postponed, and, if applicable, the rescheduled time and date for the sale of this property, you may call (877) 440-4460 or visit this Internet Web site www.mkconsultantsinc.com, using the file number assigned to this case 210203029. Information about postponements that are very short in duration or that occur close in time to the scheduled sale may not immediately be reflected in the telephone information or on the Internet Web site. The best way to verify postponement information is to attend the scheduled sale. Notice To Tenant: You may have a right to purchase this property after the trustee auction pursuant to Section 2924m of the California Civil Code. If you are an "eligible tenant buyer," you can purchase the property if you match the last and highest bid placed at the trustee auction. If you are an "eligible bidder," you may be able to purchase the property if you exceed the last and highest bid placed at the trustee auction. There are three steps to exercising this right of purchase. First, 48 hours after the date of the trustee sale, you can call (877) 440-4460, or visit this internet website site www.tlssales.info, using the file number assigned to this case 210203029 to find the date on which the trustee's sale was held, the amount of the last and highest bid, and the address of the trustee. Second, you must send a written notice of intent to place a bid so that the trustee receives it no more than 15 days after the trustee's sale. Third, you must submit a bid so that the trustee receives it no more than 45 days after the trustee's sale. If you think you may qualify as an "eligible tenant buyer" or "eligible bidder," you should consider contacting an attorney or appropriate real estate professional immediately for advice regarding this potential right to purchase. Date: 5/20/2021 Total Lender Solutions, Inc. 10505 Sorrento Valley Road, Suite 125 San Diego, CA 92121
Phone: 866-535-3736 Sale Line: (877) 440-4460
By: /s/Max Newman, Trustee Sale Officer
ECT# 6578522 May 26, June 2, 9, 2021

Legal Notice

Warehouseman's Sale

Warehouseman's' sale for non-payment of storage related charges. Pursuant to the power of sale given to this warehouseman by law, namely in AR.S. Section 47-7210, for non-payment of charges and for the purpose of satisfying the Warehouseman's lien there on, the following property will be sold at public auction at location, 601 Stone Rd, Benicia, CA 94510. If it is determined that the goods have no value product will be disposed of. Used Household goods for the accounts of:

Nancy Ashenhart, Contract No 395311, 603 Carswell Terrace, Arlington, TX 76010

These shipments consist of various furniture, clothes and many other personal effects. This is an open auction and all items must be paid for in cash, certified funds, or Credit Card.
CCT 6576158; May 14, 15, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 2021

NOTICE OF PETITION TO ADMINISTER ESTATE OF:
RENE LOUISE OPP
Case Number: P21-00516

To all heirs, beneficiaries, creditors, contingent creditors, and persons who may otherwise be interested in the will or estate, or both, of **RENE LOUISE OPP**

A PETITION FOR PROBATE has been filed by: **LEE C. OPP** in the Superior Court of California, County of **CONTRA COSTA**

THE PETITION FOR PROBATE requests that **LEE C. OPP** be appointed as personal representative to administer the estate of the decedent.

THE PETITION requests authority to administer the estate under the Independent Administration of Estates Act. (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.

A HEARING on the petition will be held on 06/22/2021 at 9:00 a.m. in Dept. 15 located at Superior Court of California County of Contra Costa 725 Court St. Martinez, CA 94553

If you object to the granting of the petition, you should appear at the hearing and state your objections or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.

If you are a creditor or a contingent creditor of the decedent, you must file your claim with the court and mail a copy to the personal representative appointed by the court within the later of either (1) four months from the date of first issuance of letters to a general personal representative, as defined in section 58(b) of the California Probate Code, or (2) 60 days from the date of mailing or personal delivery to you of a notice under section 9052 of the California Probate Code.

Other California statutes and legal authority may affect your rights as a creditor. You may want to consult with an attorney knowledgeable in California law.

You may examine the file kept by the court. If you are a person interested in the estate, you may file with the court a Request for Special Notice (form DE-154) of the filing of an inventory and appraisal of estate assets or of any petition or account as provided in Probate Code section 1250. A Request for Special Notice form is available from the court clerk.

Petitioner:
Lee C. Opp
219 Paseo Loma
Caramillo, CA 93010
(925) 348-0139
ECT# 6577350 May 26, 31, June 4, 2021

SUMMONS (CITACION JUDICIAL)

NOTICE TO DEFENDANT: (AVISO AL DEMANDADO):
Theodore Fleming aka Ted Fleming, and Does 1 to 10

YOU ARE BEING SUED BY PLAINTIFF: (LO ESTÁ DEMANDANDO EL DEMANDANTE):
Diamond Creek Properties, LLC

CASE NUMBER: (Número del Caso): C20-01479

NOTICE! You have been sued. The court may decide against you without your being heard unless you respond within 30 days. Read the information below.

You have 30 CALENDAR DAYS after this summons and legal papers are served on you to file a written response at this court and have a copy served on the plaintiff. A letter or phone call will not protect you. Your written response must be in proper legal form if you want the court to hear your case. There may be a court form that you can use for your response. You can find these court forms and more information at the California Courts Online Self-Help Center (**www.courtinfo.ca.gov/selfhelp**), your county law library, or the courthouse nearest you. If you cannot pay the filing fee, ask the court clerk for a fee waiver form. If you do not file your response on time, you may lose the case by default, and your wages, money, and property may be taken without further warning from the court.

There are other legal requirements. You may want to call an attorney right away. If you do not know an attorney, you may want to call an attorney referral service. If you cannot afford an attorney, you may be eligible for free legal services from a nonprofit legal services program. You can locate these nonprofit groups at the California Legal Services Web site (**www.lawhelpcalifornia.org**), the California Courts Online Self-Help Center (**www.courtinfo.ca.gov/selfhelp**), or by contacting your local court or county bar association. **NOTE:** The court has a statutory lien for waived fees and costs on any settlement or arbitration award of $10,000 or more in a civil case. The court's lien must be paid before the court will dismiss the case.

¡AVISO! Lo han demandado. Si no responde dentro de 30 días, la corte puede decidir en su contra sin escuchar su versión. Lea la información a continuación.

Tiene 30 DÍAS DE CALENDARIO después de que le entreguen esta citación y papeles legales para presentar una respuesta por escrito en esta corte y hacer que se entregue una copia al demandante. Una carta o una llamada telefónica no lo protegen. Su respuesta por escrito tiene que estar en formato legal correcto si desea que procesen su caso en la corte. Es posible que haya un formulario que usted pueda usar para su respuesta. Puede encontrar estos formularios de la corte y más información en el Centro de Ayuda de las Cortes de California (**www.sucorte.ca.gov**), en la biblioteca de leyes de su condado o en la corte que le quede más cerca. Si no puede pagar la cuota de presentación, pida al secretario de la corte que le dé un formulario de exención de pago de cuotas. Si no presenta su respuesta a tiempo, puede perder el caso por incumplimiento y la corte le podrá quitar su sueldo, dinero y bienes sin más advertencia.

Hay otros requisitos legales. Es recomendable que llame a un abogado inmediatamente. Si no conoce a un abogado, puede llamar a un servicio de remisión a abogados. Si no puede pagar a un abogado, es posible que cumpla con los requisitos para obtener servicios legales gratuitos de un programa de servicios legales sin fines de lucro. Puede encontrar estos grupos sin fines de lucro en el sitio web de California Legal Services, (**www.lawhelpcalifornia.org**), en el Centro de Ayuda de las Cortes de California, (**www.sucorte.ca.gov**) o poniéndose en contacto con la corte o el colegio de abogados locales. **AVISO:** Por ley, la corte tiene derecho a reclamar las cuotas y los costos exentos por imponer un gravamen sobre cualquier recuperación de $10,000 ó más de valor recibida mediante un acuerdo o una concesión de arbitraje en un caso de derecho civil. Tiene que pagar el gravamen de la corte antes de que la corte pueda desechar el caso.

The name and address of the court is:
(El nombre y dirección de la corte son):
Contra Costa Superior Court
725 Court St.
Martinez, CA 94553

The name, address, and telephone number of plaintiff's attorney, or plaintiff without an attorney, is:
(El nombre, la dirección y el número de teléfono del abogado del demandante, o del demandante que no tiene abogado, es):
Law Offices of Daniel P. Beaver
1990 N. California Blvd. Suite 830
Walnut Creek, CA 94596
925-891-2345

DATE: (Fecha) Aug. 10, 2020 /s/ ------
Clerk, by /s/ K. Vaquerano, Deputy
(Secretario) (Adjunto)
ECT# 6567782 May 5, 12, 19, 26, 2021

Legal Notice

FILED APRIL 26, 2021
DEBORAH COOPER
County Clerk
CONTRA COSTA
COUNTY
BY: ----
DEPUTY
COUNTY CLERK
FILE#2021-2407
FICTITIOUS BUSINESS NAME STATEMENT
The following person is doing business as:
RAFCO Construction at **4350 San Pablo Dam Rd. #12 El Sobrante, Ca. 94803 Contra Costa Co.** is hereby registered by the following owner(s):
Francisco Ramirez
4350 San Pablo Dam Rd. #12
El Sobrante, Ca. 94803
This business is conducted by:
an individual
/s/Francisco Ramirez
This statement was filed with the County Clerk of Contra Costa on date indicated by file stamp above.
Business commenced on 04/19/2021
Expires 04/25/2026
WCT 6573096 May 5, 12, 19, 26, 2021

FILED MAY 14, 2021
DEBORAH COOPER
County Clerk
CONTRA COSTA
COUNTY
BY: ----
DEPUTY
COUNTY CLERK
FILE#2021-2855
FICTITIOUS BUSINESS NAME STATEMENT
The following persons are doing business as:
UVW Therapy Services located at **740 Ryan Ter San Ramon, Ca. 94583 Contra Costa Co**. is hereby registered by the following owner(s):
Christian Lim
740 Ryan Ter
San Ramon, Ca. 94583
Joy Lim
740 Ryan Ter
San Ramon, Ca. 94583
This business is conducted by:
a married couple
/s/Christian Lim
/s/Joy Lim
This statement was filed with the County Clerk of Contra Costa on date indicated by file stamp above.
Business commenced on N/A
Expires 05/13/2026
SRVT 6576760 May 19, 26;June 2, 9, 2021

NOTICE OF PETITION TO ADMINISTER ESTATE OF:
RUTH L. BARSNICK
Case Number: RP21096176

To all heirs, beneficiaries, creditors, contingent creditors, and persons who may otherwise be interested in the will or estate, or both, of: **RUTH L. BARSNICK**

A PETITION FOR PROBATE has been filed by: **LYNN A. STICKNEY** in the Superior Court of California, County of **ALAMEDA**

THE PETITION FOR PROBATE requests that **LYNN A. STICKNEY** be appointed as personal representative to administer the estate of the decedent.

THE PETITION requests the decedent's will and codicils, if any, be admitted to probate. The will and any codicils are available for examination in the file kept by the court.

THE PETITION requests authority to administer the estate under the Independent Administration of Estates Act. (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.

A HEARING on the petition will be held on June 16, 2021 at 9:45 am in Dept. 202 located at Superior Court of California County of Alameda 2120 Martin Luther King Jr. Way Berkeley, CA 94704 Probate

MANDATORY REMOTE APPEARANCE:
The court requires all parties who wish to attend the hearing on the above date and time, including those who wish to state objections, to appear by audio or video technology. The parties should consult the court's website for the specific telephonic and video applications available. The parties may also contact the probate clerk in the respective department for information concerning remote appearance. Parties must be present at least five (5) minutes before the scheduled hearing time.

If you object to the granting of the petition, you should appear at the hearing and state your objections or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.

If you are a creditor or a contingent creditor of the decedent, you must file your claim with the court and mail a copy to the personal representative appointed by the court within the later of either (1) four months from the date of first issuance of letters to a general personal representative, as defined in section 58(b) of the California Probate Code, or (2) 60 days from the date of mailing or personal delivery to you of a notice under section 9052 of the California Probate Code.

Other California statutes and legal authority may affect your rights as a creditor. You may want to consult with an attorney knowledgeable in California law.

You may examine the file kept by the court. If you are a person interested in the estate, you may file with the court a Request for Special Notice (form DE-154) of the filing of an inventory and appraisal of estate assets or of any petition or account as provided in Probate Code section 1250. A Request for Special Notice form is available from the court clerk.

Attorney for Petitioner:
Santaella Legal Group, APC
111 Deerwood Road, Suite 200
San Ramon, CA 94583
925-831-4840
TVH# 6573026 May 17, 21, 26, 2021

Legal Notice

NOTICE OF PUBLIC HEARING BEFORE THE SAN JOAQUIN REGIONAL RAIL COMMISSION

NOTICE IS GIVEN that beginning at 8:00 a.m., on June 4, 2021 (or as soon as the matter can be heard thereafter) at the San Joaquin Regional Rail Commission Office located at 949 E. Channel Street, Stockton, CA 95202, a public hearing will be held to receive oral and written statements regarding the adoption of the FY 2021-2022 Budget. All persons interested in this matter are invited to be present. If you have any questions about this matter, please contact the San Joaquin Regional Rail Commission, 949 E. Channel Street, Stockton, CA 95202 or telephone (209) 944-6220.

DATE: May 24, 25, 26, 27, 28, 29, 31 June 1, 2, 3

BY: Stacey Mortensen, Executive Director
San Joaquin Regional Rail Commission
TVH# 6577267 May 24 - June 3, 2021

File No. F-2021-0002079
FILED
APRIL 19, 2021
Deborah Cooper,
Clerk-Recorder
By: ----------,
Deputy Clerk
Expires: 4/18/2026
FICTITIOUS BUSINESS NAME STATEMENT
The following person is doing business as:
NEW HOPE HOMECARE, 1376 Rosemary Ln., Concord, CA 94518, Contra Costa County.
Registrant name & address:
Ana Lilia Flores Ortiz
1376 Rosemary Ln.
Concord, CA 94518
This business is conducted by: An Individual
Business commenced on N/A.
/s/ Ana Lilia Flores Ortiz,
General Manager-Owner
CCT 6573405; May 5, 12, 19, 26, 2021

SUMMONS (CITACION JUDICIAL)
Case number (numero de caso) HG18912725

NOTICE TO DEFENDANT (AVISO AL DEMANDADO): Eric Villegas, an individual; and DOES 1-100, inclusive

YOU ARE BEING SUED BY PLAINTIFF (LO ESTA DEMANDANDO EL DEMANDANTE): Persolve, LLC, a limited liability company

Notice! You have been sued. The court may decide against you without your being heard unless you respond within 30 days. Read the information below.

You have 30 CALENDAR DAYS after this summons and legal papers are served on you to file a written response at this court and have a copy served on the plaintiff. A letter or phone call will not protect you. Your written response must be in proper legal form if you want the court to hear your case. There may a court form that you can use for your response. You can find these court forms and more information at the California Courts Online Self-Help Center (www.courtinfo.ca.gov/selfhelp), your county law library, or the courthouse nearest you. If you cannot pay the filing fee, ask the court clerk for a fee waiver form. If you do not file your response on time, you may lose the case by default, and your wages, money and property may be taken without further warning from the court.

There are other legal requirements. You may want to call an attorney right away. If you do not know an attorney, you may want to call an attorney referral service. If you cannot afford an attorney, you may be eligible for free legal services from a nonprofit legal services program. You can locate these nonprofit groups at the California Legal Services Web site (www.lawhelpcalifornia.org), the California Courts Online Self-Help Center (www.courtinfo.ca.gov/selfhelp), or by contacting your local court or county bar association.

Aviso! Lo han demandado. Si no responde dentro de 30 dias, la corte puede decidir en su contra sin escuchar su version. Lea la informacion a continuacion.

Tiene 30 DIAS DE CALENDARIO despues de que le entreguen esta citacion y papeles legales para presentar una respuesta por escrito en esta corte y hacer que se entregue una copia al demandante. Una carta o una llamada telefonica no lo protegen. Su respuesta por escrito tiene que estar en formato legal correcto si desea que procesen su caso en la corte. Es posible que haya un formulario que usted pueda usar para su respuesta. Puede encontrar estos formularios de la corte y mas informacion en el Centro de Ayuda de las Cortes de California (www.courtinfo.ca.gov/selfhelp/espanol/), en la biblioteca de leyes de su condado o en la corte que le quede mas cerca. Si no puede pagar la cuota de presentacion, pida al secretario de la corte que le de un formulario de exencion de pago de cuotas. Si no presenta su respuesta a tiempo, puede perder el caso por incumplimiento y la corte le podra quitar su sueldo, dinero y bienes sin mas advertencia.

Hay otros requisitos legales. Es recomendable que llame a un abogado inmediatamente. Si no conoce a un abogado, puede llamar a un servicio de remision a abogados. Si no puede pagar a un abogado, es posible que cumpla con los requisitos para obtener servicios legales gratuitos de un programa de servicios legales sin fines de lucro. Puede encotrar estos grupos sin fines de lucro en el sitio web de California Legal Services, (www.lawhelpcalifornia.org), en el Centro de Ayuda de las Cortes de California, (www.sucorte.ca.gov) o poniendose en contacto con la corte o el colegio de abogados locales. AVISO: Por ley, la corte tiene derecho a reclamar las cuotas y los costos exentos por imponer un gravamen sobre cualquier recuperacion de $10,000 o mas de valor recibida mediante un acuerdo o una concesion de arbitraje en un caso de derecho civil. Tiene que pagar el gravamen de la corte antes de que la corte pueda desechar el caso.

The name and address of the court is: (El nombre y direccion de la corte es): HAYWARD HALL OF JUSTICE, 24405 Amador St, Hayward, CA 94544. The name, address and telephone number of plaintiff's attorney, or plaintiff without an attorney, is: (El nombre, la direccion y el numero de telefono del abogado del demandante, o del demandante que no tiene abogado, es): LUIS DUENAS/SBN 271873, Persolve Legal Group, LLP, 818-534-3100, 9301 Corbin Avenue, Suite 1600, Northridge, CA 91324. Date: July 6, 2018, Clerk (Secretario), by CHAD FINKE, A. Kim Deputy (Adjunto) SEAL
NOTICE TO THE PERSON SERVED: You are served as an individual defendant.
Order to Show Cause hearing set for August 12, 2021 at 9:00 a.m. in Department 512.
ATS# 6576645 May 19, 26, June 2, 9, 2021

Notice of Public Hearing on the City of Livermore
Draft 2020 Urban Water Management Plan, the Draft 2015 Urban Water Management Plan Addendum, the Draft 2020 Water Shortage Contingency Plan and Public Hearing Procedures Due To COVID-19

This is to advise the public, customers and stakeholders that the Livermore City Council will conduct public hearings at its meeting on **June 14, 2021 at 7:00 p.m.** to consider the matter listed below.

Due to the current shelter-in-place order, public hearings will be held through videoconferencing at 7:00 p.m. You may access the hearings through YouTube (view only), Zoom or phone call. Visit www.cityoflivermore.net/agenda, call (925) 960-4200, or email cityclerk@cityoflivermore.net after June 8th for Zoom links and call-in information.

Public comments can be submitted through email, Zoom (verbal comments), or e-comment (on website). Public comments submitted through email should be sent to cityclerk@cityoflivermore.net, no later than 12:00 pm noon on June 14, 2021. During the meeting, public comments can be provided verbally using Zoom and are limited to 3 minutes. The Mayor may reduce the amount of time based on the number of persons wishing to speak. E-Comments can be submitted online no later than 4:00pm the day of the meeting.

As required by the Urban Water Management Planning Act, California Water Code, section 10610, et. seq. ("UWMP Act"), this is to notify the public that at its meeting to begin at 7 p.m. on June 14, 2021, the City Council of the City of Livermore plans to conduct a public hearing on, and consider adoption of, the City's draft 2020 Urban Water Management Plan ("2020 UWMP"), the City's draft 2020 Water Shortage Contingency Plan ("2020 WSCP"), and the City's 2015 UWMP addendum. The agenda and public hearing materials can be found at https://www.cityoflivermore.net/citygov/clerk/default.htm.

The City of Livermore is required to notify cities and counties within its service area that it is preparing its 2020 UWMP, 2020 WSCP, and the Appendix of the 2015 UWMP updates at least 60 days prior to holding a public hearing.

The draft 2020 UWMP and 2015 UWMP addendum were prepared pursuant to the requirements of the UWMP Act and City of Livermore Municipal Code, Chapter 13.26, and updates the City's 2015 Urban Water Management Plan adopted pursuant to City Resolution No. 2016-066.

The draft 2020 UWMP, 2020 WSCP, and 2015 UWMP addendum will be available for review beginning May 28, 2021 on the City website at https://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/service/default.htm and can be requested by email at yzhang@cityoflivermore.net. For more information about this notice, please contact Yanming Zhang, Technical Programs Manager, Water Resources Division by email at yzhang@cityoflivermore.net or call (925) 960-8179.

Staff report and recommendation will be available for review in the City Council agenda packet from the evening of June 8, 2021, which can be found on the City of Livermore website at www.cityoflivermore.net. If you would like a copy of the agenda, please reach out to the City Clerk's Office by email at cityclerk@cityoflivermore.net, by phone at (925) 960-4200, or by mail, 1052 South Livermore Avenue, Livermore CA 94550. Written information regarding these agenda items must be received in the City Clerk's Office by 5:00 pm on June 7, 2021, to be included in the agenda packet. Materials submitted after the 5:00 pm Monday deadline will be given to the City Council the night of the meeting, provided the materials are received in the City Clerk's Office by 12:00 pm on the day of the Council meeting.

If you challenge these items in court, you may be limited to raising only those issues you or someone else raised at the public hearing, or in written correspondence delivered at, or prior to, the public hearing. Note: if these actions are subject to the Code of Civil Procedure, Section 1094.5, and you choose to challenge these actions in court, you must seek judicial review within the time specified in the Code of Civil Procedure, Section 1094.6.

All interested persons are invited to attend.

Dated: May 20, 2021 Marie Weber, City Clerk
Publish: May 26, 2021 and June 2, 2021
PT/VT #6579206; May 26; June 2, 2021

Appendix G: Water System Audit Output

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.

Click to access
Click to add a comment

Water Audit Report for: City of Livermore Water (CA0110011)
Reporting Year: 2016 | 1/2016 - 12/2016

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

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.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	n/a		MG/Yr				MG/Yr
Water imported:	7	1,569.772	MG/Yr	3	0.00%		MG/Yr
Water exported:	n/a		MG/Yr				MG/Yr

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

WATER SUPPLIED: 1,569.772 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	9	1,414.267 MG/Yr			
Billed unmetered:	n/a	MG/Yr			
Unbilled metered:	n/a	MG/Yr			
Unbilled unmetered:	7	9.716 MG/Yr		9.716	MG/Yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 1,423.983 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 145.789 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		3.924 MG/Yr	0.25%		MG/Yr
Customer metering inaccuracies:	8	21.537 MG/Yr	1.50%		MG/Yr
Systematic data handling errors:		3.536 MG/Yr	0.25%		MG/Yr

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

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

Apparent Losses: 28.997 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 116.792 MG/Yr

WATER LOSSES: 145.789 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 155.505 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	160.4	miles
Number of active AND inactive service connections:	9	10,203	
Service connection density:		64	conn./mile main
Are customer meters typically located at the curbstop or property line?		Yes	
Average length of customer service line:			(length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure:	5	68.4	psi

COST DATA

Total annual cost of operating water system:	10	$10,409,966	$/Year
Customer retail unit cost (applied to Apparent Losses):	7	$7.25	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	10	$4,443.27	$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 77 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: Water imported
2: Unauthorized consumption
3: Systematic data handling errors

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.

Click to access
Click to add a comment

Water Audit Report for: City of Livermore Water (CA0110011)
Reporting Year: 2017 | 1/2017 - 12/2017

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

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.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	n/a		MG/Yr				MG/Yr
Water imported:	7	1,735.283	MG/Yr	3	0.00%		MG/Yr
Water exported:	n/a		MG/Yr				MG/Yr

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

WATER SUPPLIED: 1,735.283 MG/Yr

AUTHORIZED CONSUMPTION

Click here: for help using option buttons below

			Pcnt:	Value:	
Billed metered:	9	1,618.456	MG/Yr			
Billed unmetered:	n/a		MG/Yr			
Unbilled metered:	n/a		MG/Yr			
Unbilled unmetered:	7	22.174	MG/Yr		22.174	MG/Yr

Unbilled Unmetered volume entered is greater than the recommended default value

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 1,640.630 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 94.653 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		4.338	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	8	24.647	MG/Yr	1.50%		MG/Yr
Systematic data handling errors:		4.046	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 33.031 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 61.622 MG/Yr

WATER LOSSES: 94.653 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 116.827 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	160.6	miles
Number of active AND inactive service connections:	9	10,249	
Service connection density:		64	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: 5 68.4 psi

COST DATA

Total annual cost of operating water system:	10	$14,818,949	$/Year
Customer retail unit cost (applied to Apparent Losses):	7	$6.17	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	10	$3,502.63	$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 77 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: Water imported
2: Unauthorized consumption
3: Systematic data handling errors

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.

Click to access
Click to add a comment

Water Audit Report for: City of Livermore Water (CA0110011)
Reporting Year: 2018 | 1/2018 - 12/2018

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

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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

					Pcnt:	Value:	
Volume from own sources:	n/a		MG/Yr				MG/Yr
Water imported:	7	1,925.658	MG/Yr	3	0.00%		MG/Yr
Water exported:	n/a		MG/Yr				MG/Yr

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

WATER SUPPLIED: 1,925.658 MG/Yr

AUTHORIZED CONSUMPTION

Click here: for help using option buttons below

			Pcnt:	Value:	
Billed metered:	9	1,733.698 MG/Yr			
Billed unmetered:	n/a	MG/Yr			
Unbilled metered:	n/a	MG/Yr			
Unbilled unmetered:		24.071 MG/Yr	1.25%		MG/Yr

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

AUTHORIZED CONSUMPTION: 1,757.769 MG/Yr

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption) 167.889 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		4.814 MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	8	26.401 MG/Yr	1.50%		MG/Yr
Systematic data handling errors:		4.334 MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 35.550 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 132.339 MG/Yr

WATER LOSSES: 167.889 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 191.960 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	160.0	miles
Number of active AND inactive service connections:	9	10,404	
Service connection density:		65	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: 5 66.8 psi

COST DATA

Total annual cost of operating water system:	10	$12,677,560	$/Year
Customer retail unit cost (applied to Apparent Losses):	7	$3.83	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	10	$2,789.04	$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 76 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: Water imported
2: Unauthorized consumption
3: Systematic data handling errors

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.

Click to access
Click to add a comment

Water Audit Report for: City of Livermore Water (CA0110011)
Reporting Year: 2019 | 1/2019 - 12/2019

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

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.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	n/a		MG/Yr				MG/Yr
Water imported:	7	1,932.258	MG/Yr	3	0.00%		MG/Yr
Water exported:	n/a		MG/Yr				MG/Yr

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

WATER SUPPLIED: 1,932.258 MG/Yr

AUTHORIZED CONSUMPTION

Click here: for help using option buttons below

			Pcnt:	Value:	
Billed metered:	9	1,728.671 MG/Yr			
Billed unmetered:	n/a	MG/Yr			
Unbilled metered:	n/a	MG/Yr			
Unbilled unmetered:		24.153 MG/Yr	1.25%		MG/Yr

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

AUTHORIZED CONSUMPTION: 1,752.824 MG/Yr

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption) 179.434 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		4.831 MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	8	26.325 MG/Yr	1.50%		MG/Yr
Systematic data handling errors:		4.322 MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 35.477 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 143.957 MG/Yr

WATER LOSSES: 179.434 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 203.587 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	160.0	miles
Number of active AND inactive service connections:	9	10,456	
Service connection density:		65	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: 5 66.8 psi

COST DATA

Total annual cost of operating water system:	10	$15,527,160	$/Year
Customer retail unit cost (applied to Apparent Losses):	7	$3.58	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	10	$4,436.28	$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 76 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: Water imported
2: Unauthorized consumption
3: Systematic data handling errors

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.

? Click to access
+ Click to add a comment

Water Audit Report for: City of Livermore Water (CA0110011)
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

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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

					Pcnt:	Value:	
Volume from own sources:	n/a		MG/Yr				MG/Yr
Water imported:	7	2,134.355	MG/Yr	3	0.00%		MG/Yr
Water exported:	n/a		MG/Yr				MG/Yr

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

WATER SUPPLIED: 2,134.355 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	9	1,889.536 MG/Yr			
Billed unmetered:	n/a	MG/Yr			
Unbilled metered:	n/a	MG/Yr			
Unbilled unmetered:		26.679 MG/Yr	1.25%		MG/Yr

Use buttons to select percentage of water supplied **OR** value

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

AUTHORIZED CONSUMPTION: 1,916.215 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 218.140 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	8	16.393 MG/Yr		16.393	MG/Yr
Customer metering inaccuracies:	8	28.775 MG/Yr	1.50%		MG/Yr
Systematic data handling errors:		4.724 MG/Yr	0.25%		MG/Yr

Unauthorized consumption volume entered is greater than the recommended default value

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

Apparent Losses: 49.891 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 168.248 MG/Yr

WATER LOSSES: 218.140 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 244.819 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	160.0	miles
Number of active AND inactive service connections:	9	10,489	
Service connection density:		66	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: 5 66.8 psi

COST DATA

Total annual cost of operating water system:	10	$17,293,860	$/Year
Customer retail unit cost (applied to Apparent Losses):	7	$3.50	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	10	$4,736.28	$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

Retail costs are less than (or equal to) production costs; please review and correct if necessary

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 78 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: Water imported
2: Systematic data handling errors
3: Customer retail unit cost (applied to Apparent Losses)

Appendix H: SB x 7-7 Verification Tables and DWR Population Tool Output

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(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 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: Population estimates received from the Zone 7 Woodard and Curran Report	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	30,830
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use							
Compliance Year 2020	**2020 Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**2020 Deductions**					**2020 Gross Water Use**
		Exported Water *	**Change in Dist. System Storage*** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use***	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	2,134	-	-	-	-	-	**2,134**
*** Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.							
NOTES:							

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Zone 7
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
	2,134	-	2,134

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES

SB X7-7 Table 4-B: 2020 Indirect Recycled Water Use Deduction *(For use only by agencies that are deducting indirect recycled water)*

2020 Compliance Year	2020 Surface Reservoir Augmentation					2020 Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System
	Volume Discharged from Reservoir for Distribution System Delivery[1]	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss[1]	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility[1,2]	Transmission/ Treatment Losses[1]	Recycled Volume Entering Distribution System from Groundwater Recharge	
	-	0%	-	-	-	-	-	-	-

[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] *Suppliers will provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.*

Livermore Municipal Water does not seek recycled water use deductions

Data from this table will not be entered into WUEdata.
Instead, the entire table will be uploaded to WUEdata as a separate upload in Excel format.

SB X7-7 Table 4-C: 2020 Process Water Deduction Eligibility (For use only by agencies that are deducting process water) Choose Only One	
☐	**Criteria 1**- Industrial water use is equal to or greater than 12% of gross water use. Complete SB X7-7 Table 4-C.1
☐	**Criteria 2** - Industrial water use is equal to or greater than 15 GPCD. Complete SB X7-7 Table 4-C.2
☐	**Criteria 3** - Non-industrial use is equal to or less than 120 GPCD. Complete SB X7-7 Table 4-C.3
☐	**Criteria 4** - Disadvantaged Community. Complete SB x7-7 Table 4-C.4
NOTES: Livermore Municipal Water does not seek process water deductions	

SB X7-7 Table 4-C.1: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 1)*

Criteria 1

Industrial water use is equal to or greater than 12% of gross water use

2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction	2020 Industrial Water Use	Percent Industrial Water	**Eligible for Exclusion Y/N**
	2,134	-	0%	NO

NOTES: Livermore Municipal Water does not seek process water deductions

SB X7-7 Table 4-C.2: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 2)*				
Criteria 2 Industrial water use is equal to or greater than 15 GPCD				
2020 Compliance Year	2020 Industrial Water Use	2020 Population	2020 Industrial GPCD	**Eligible for Exclusion Y/N**
	-	30,830	-	NO
NOTES: Livermore Municipal Water does not seek process water deductions				

SB X7-7 Table 4-C.3: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 3)*

Criteria 3
Non-industrial use is equal to or less than 120 GPCD

2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction *Fm SB X7-7 Table 4*	2020 Industrial Water Use	2020 Non-industrial Water Use	2020 Population *Fm SB X7-7 Table 3*	Non-Industrial GPCD	**Eligible for Exclusion Y/N**
	2,134	-	2,134	30,830	190	NO

NOTES: Livermore Municipal Water does not seek process water deductions

SB X7-7 Table 4-C.4: 2020 Process Water Deduction Eligibility ***(For** use only by agencies that are deducting process water using Criteria 4)*

Criteria 4

Disadvantaged Community. A "Disadvantaged Community" (DAC) is a community with a median household income less than 80 percent of the statewide average.

SELECT ONE

"Disadvantaged Community" status was determined using one of the methods listed below:

1. IRWM DAC Mapping tool https://gis.water.ca.gov/app/dacs/

☐	If using the IRWM DAC Mapping Tool, include a screen shot from the tool showing that the service area is considered a DAC.

2. 2020 Median Income

	California Median Household Income*		Service Area Median Household Income	Percentage of Statewide Average	**Eligible for Exclusion? Y/N**
☐	**2020**	**$75,235**		0%	YES

*California median household income 2015 -2019 as reported in US Census Bureau QuickFacts.

NOTES: Livermore Municipal Water does not seek process water deductions

SB X7-7 Table 4-D: 2020 Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*					
Name of Industrial Customer	*Enter Name of Industrial Customer 1*				
Compliance Year 2020	Industrial Customer's Total Water Use *	Total Volume Provided by Supplier*	% of Water Provided by Supplier	Customer's Total Process Water Use*	Volume of Process Water Eligible for Exclusion for this Customer
					-
*** 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: Livermore Municipal Water does not seek process water deductions					

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
2,134	30,830	**190**
NOTES:		

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD (Enter "0" if Adjustment Not Used)			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
190	-	-	-	-	190	192	**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 I: 2020 Zone 7 UWMP and Adoption Resolution

Documents are available on Zone 7's website at http://www.zone7water.com/reports-planning-documents, under Water Supply/Reliability.

Appendix J: Embedded Energy

Urban Water Supplier: *City of Livermore*

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1A: Recommended Energy Intensity - Water Supply Process Approach

Enter Start Date for Reporting Period 11/1/2019

End Date 10/30/2020

	Urban Water Supplier Operational Control							
	Water Management Process						Non-Consequential Hydropower (if applicable)	
	Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (MG)	*0*	*0*	*0*	*0*	*2110.00*	*2110*	*0*	*2110*
Energy Consumed (kWh)	*0*	*0*	*0*	*0*	*9,767,753*	*9,767,753*	*0*	*9767753*
Energy Intensity (kWh/MG)	*0.0*	*0.0*	*0.0*	*0.0*	*4629.3*	*4629.3*	*0.0*	*4629.3*

Quantity of Self-Generated Renewable Energy

0 kWh

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

Metered Data

Data Quality Narrative:

The volume of water entering the distribution system was determined based on the monthly volume of water delivered from Zone 7 Water Agency to LMW. The monthly volumes were lined up with the corresponding PG&E electricity bills provided by LMW, which outline electricity use at LMW's distribution system pump stations. The billing periods were aligned with the Zone 7 reported deliveries for November 2019 through October 2020.

Narrative:

LMW energy consumption is at its distribution system pump stations and metered and billed by PG&E.