

June 2021

2020 Urban Water Management Plan

for City of Tracy



eki environment
& water

Table of Contents

2020 Urban Water Management Plan

City of Tracy



TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Background and Purpose	1
1.2	Urban Water Management Planning and the California Water Code	1
1.3	Relationship to Other Planning Efforts.....	3
1.4	Plan Organization	3
1.5	Demonstration of Consistency with the Delta Plan	3
1.6	Lay Description	4
2	PLAN PREPARATION	8
2.1	Basis for Preparing Plan.....	8
2.2	UWMP Structure, Standard Units, and Basis for Reporting.....	10
2.3	Coordination and Outreach.....	11
2.3.1	Wholesale Coordination	11
2.3.2	Agency Coordination.....	12
2.3.3	Public Participation	14
3	SYSTEM DESCRIPTION	15
3.1	City Limits and Sphere of Influence.....	15
3.2	Population Within the Service Area	18
3.2.1	Future Population Growth	18
3.3	Other Social, Economic, and Demographic Factors	20
3.4	Land Uses within Service Area	21
3.4.1	Existing Land Uses	21
3.4.2	Specific Plans and Large Planned Unit Developments.....	22
3.5	Climate	26
3.6	Climate Change Considerations	28
3.7	Water Distribution System	28
3.7.1	Service Connections	28
3.7.2	Pressure Zones	29
3.7.3	Storage Facilities	29
3.7.4	Water Treatment Facilities	29

Table of Contents

2020 Urban Water Management Plan

City of Tracy



3.7.5	SCWSP Distribution System	30
3.7.6	Groundwater Wells	30
4	WATER USE CHARACTERIZATION	32
4.1	Current and Historical Total Water Demand.....	32
4.1.1	Current and Historical Potable Water Demand	33
4.1.2	Current and Historical Non-Potable Water Demand	39
4.1.3	Distribution System Water Loss	39
4.2	Projected Total Water Demand	40
4.2.1	Projected Potable Water Demand	40
4.2.2	Projected Non-Potable Water Demand	43
4.2.3	Water Use for Lower Income Households	44
4.2.4	Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans	45
4.2.5	Projected Total Water Demand	48
4.3	Water Use Sectors Not Included in the Demand Projections	48
4.4	Climate Change Impacts to Demand	49
4.5	Coordinating Water Use Projections.....	49
4.6	Urban Water Use Objectives (Future Requirements)	50
5	SB X7-7 BASELINES, TARGETS, AND 2020 COMPLIANCE	53
5.1	Service Area Population	54
5.2	Baseline Water Use	55
5.3	Water Use Targets.....	57
5.4	2020 Target Compliance.....	59
6	WATER SUPPLY CHARACTERIZATION	60
6.1	Purchased Water	60
6.1.1	Central Valley Project Water via the Delta-Mendota Canal	60
6.1.2	Stanislaus River Water	61
6.2	Groundwater	62
6.2.1	Basin Description	62
6.2.2	Non-SGMA Groundwater Management	64
6.2.3	SGMA Groundwater Management	65

Table of Contents

2020 Urban Water Management Plan

City of Tracy



6.2.4	Coordination with Groundwater Sustainability Agencies	65
6.2.5	Groundwater Production	66
6.3	Aquifer Storage and Recovery.....	67
6.4	Semitropic Groundwater Storage Bank.....	67
6.5	Surface Water.....	68
6.6	Stormwater.....	68
6.7	Wastewater and Recycled Water	69
6.7.1	Recycled Water Coordination	69
6.7.2	Wastewater Collection, Treatment, and Disposal	69
6.7.3	Recycled Water System Description	73
6.7.4	Potential, Current and Projected Recycled Water Uses	76
6.7.5	Actions to Encourage and Optimize Future Recycled Water Use	79
6.8	Desalinated Water Opportunities	80
6.9	Water Exchanges and Transfers	80
6.10	Future Water Projects	81
6.10.1	ASR Program Expansion	81
6.10.2	Recycled Water System Expansion	81
6.10.3	Recycled Water Distribution Network and Exchange Program	82
6.11	Summary of Existing and Planned Sources of Water	83
6.12	Special Conditions	89
6.12.1	Climate Change Effects	89
6.12.2	Regulatory Conditions and Project Development.....	89
6.12.3	Other Locally Applicable Criteria.....	89
6.13	Energy Use.....	90
7	WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT.....	92
7.1	Water Service Reliability Assessment	92
7.1.1	Service Reliability – Constraints on Water Sources	92
7.1.2	Service Reliability - Year Type Characterization.....	98
7.1.3	Service Reliability - Supply and Demand Assessment.....	107
7.1.4	Uncertainties in Dry Year Water Supply Projections	109
7.1.5	Description of Water Management Tools and Options	109

Table of Contents

2020 Urban Water Management Plan

City of Tracy



7.2	Drought Risk Assessment	111
7.2.1	DRA Data, Methods, and Basis for Water Shortage Conditions	111
7.2.2	DRA Individual Water Source Reliability	112
7.2.3	DRA Total Water Supply and Use Comparison	112
8	WATER SHORTAGE CONTINGENCY PLAN	115
9	DEMAND MANAGEMENT MEASURES	122
9.1	City Water Conservation	122
9.1.1	DMM 1 – Water Waste Prevention Ordinances	123
9.1.2	DMM 2 – Metering	124
9.1.3	DMM 3 – Conservation Pricing	125
9.1.4	DMM 4 – Public Education Outreach	125
9.1.5	DMM 5 – Programs to Assess and Manage Distribution System Real Loss	126
9.1.6	DMM 6 – Water Conservation Program Coordination and Staffing Support	126
9.1.7	DMM 7 – Other DMMs	127
9.2	Implementation over the Past Five Years	128
9.3	Implementation to Achieve Water Use Targets	128
10	PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION	132
10.1	Notification of UWMP Preparation	132
10.2	Notification of Public Hearing	132
10.2.1	Notice to Cities and Counties	132
10.2.2	Notice to the Public	133
10.3	Public Hearing and Adoption	133
10.4	Plan Submittal	134
10.5	Public Availability	134
10.6	Amending an Adopted UWMP or Water Shortage Contingency Plan	135
11	REFERENCES	136

Table of Contents

2020 Urban Water Management Plan

City of Tracy



TABLES

Table 2-1 Public Water Systems (DWR Table 2-1)
Table 2-2 Plan Identification Type (DWR Table 2-2)
Table 2-3 Supplier Identification (DWR Table 2-3)
Table 2-4 Water Supplier Information Exchange (DWR Table 2-4)
Table 2-5 Notification to Cities and Counties (DWR Table 10-1)
Table 3-1 Population - Current and Projected (DWR Table 3-1)
Table 3-2 Demographic and Housing Characteristics
Table 3-3 Climate Characteristics
Table 3-4 Pressure Zone Elevations and Static Pressures
Table 4-1 Demands for Potable and Non-Potable Water - Actual (DWR Table 4-1)
Table 4-2 Current and Historical Potable Water Demand and Population
Table 4-3 12 Month Water Loss Audit Reporting (DWR Table 4-4)
Table 4-4 Use for Potable and Non-Potable - Projected (DWR Table 4-2)
Table 4-5 Inclusion in Water Use Projections (DWR Table 4-5)
Table 4-6 Projected Potable Water Demand for Lower-Income Households
Table 4-7 Projected Potable Water Demand and Projected Passive and Active Water Conservation
Table 4-8 Gross Water Use (DWR Table 4-3)
Table 4-9 Current and Projected Residential Per Capita Water Use
Table 5-1 SB X7-7 Service Area Population
Table 5-2 Baselines and Targets Summary (DWR Table 5-1)
Table 5-3 2020 Compliance (DWR Table 5-2)
Table 6-1 Groundwater Volume Pumped (DWR Table 6-1)
Table 6-2 Wastewater Collected Within Area in 2020 (DWR Table 6-2)
Table 6-3 Wastewater Treatment and Discharge Within Service Area in 2020 (DWR Table 6-3)
Table 6-4 Recycled Water Direct Beneficial Uses Within Service Area Service Area (DWR Table 6-4)
Table 6-5 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual (DWR Table 6-5)
Table 6-6 Methods to Expand Future Recycled Water Use (DWR Table 6-6)
Table 6-7 Expected Future Water Supply Projects or Programs (DWR Table 6-7)
Table 6-8 Water Supplies - Actual (DWR Table 6-8)
Table 6-9 Water Supplies - Projected (DWR Table 6-9)
Table 6-10 Recommended Energy Intensity - Total Utility Approach (DWR Table O-1B)
Table 7-1 Basis of Water Year Data (Reliability Assessment) (DWR Table 7-1)
Table 7-2 Projected Water Supply in Normal Years (Responds to DWR Table 7-1)
Table 7-3 Projected Water Supply in Single Dry Years (Responds to DWR Table 7-1)
Table 7-4 Projected SCWSP Water Supply in Multiple Dry Years (Responds to DWR Table 7-1)
Table 7-5 Projected Other Water Supplies in Multiple Dry Years (Responds to DWR Table 7-1)
Table 7-6 Normal Year Supply and Demand Comparison (DWR Table 7-2)
Table 7-7 Single Dry Year Supply and Demand Comparison (DWR Table 7-3)
Table 7-8 Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4)
Table 7-9 Characteristic Five-Year Water Use
Table 7-10 Five-Year Drought Risk Assessment Tables to Address Water Code 10635(b) (DWR Table 7-5)
Table 8-1 Water Shortage Contingency Plan Levels (DWR Table 8-1)
Table 8-2 Demand Reduction Actions (DWR Table 8-2)

Table of Contents

2020 Urban Water Management Plan

City of Tracy



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

Table 9-1 Summary of DMMs and Implementation over the Past Five Years (2015-2020)

FIGURES

Figure 3-1 Regional Vicinity Map

Figure 3-2 Service Area Map

Figure 3-3 City Land Use (Adapted from the Draft 2020 WSMP, Figure 3-1)

Figure 3-4 Approved Projects (Adapted from the Draft 2020 WSMP, Figure 3-2)

Figure 3-5 Planned Unit Developments (Adapted from the Draft 2020 WSMP, Figure 3-3)

Figure 3-6 City Water System Map (Adapted from the Draft 2020 WSMP, Figure 7-2)

Figure 6-1 Regional Setting and Groundwater Basins

Figure 6-2 Existing Recycled Water System (Adapted from the Draft 2020 WSMP, Figure 9-1)

Figure 6-3 Proposed Future Recycled Water System Improvements (Adapted from the Draft 2020 WSMP, Figure 9-6)

APPENDICES

Appendix A. Completed UWMP Checklist

Appendix B. Reduced Delta Reliance

Appendix C. UWMP Agency Notification Letters

Appendix D. UWMP Public Hearing Notices

Appendix E. SBx7-7 Compliance Tables

Appendix F. Supply Reliability Information Provided by SSJID

Appendix G. Water Service Reliability and Drought Risk Assessment Assuming Implementation of Bay-Delta Plan Amendment

Appendix H. Water Shortage Contingency Plan

Appendix I. City of Tracy Responses to Written Public Comments

Appendix J. Resolution 2021-082 on UWMP and WSCP 2020 Update

Table of Contents

2020 Urban Water Management Plan

City of Tracy



ABBREVIATIONS

AB	Assembly Bill
AF	acre-foot
AFY	acre-foot per year
AMI	Advanced Metering Infrastructure
AOI	Area of Interest
ASR	Aquifer Storage and Recovery
AWWA	American Water Works Association
BBID	Byron Bethany Irrigation District
BCID	Banta-Carbona Irrigation District
BOD	biochemical oxygen demand
CASGEM	California Statewide Groundwater Elevation Monitoring
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CII	commercial, industrial, and institutional
CIMIS	California Irrigation Management Information System
CSD	Clover County Services District
CVP	Central Valley Project
CWC	California Water Code
DGWTP	Nick C. DeGroot Water Treatment Plant
DMC	Delta-Mendota Canal
DMM	demand management measures
DOF	Department of Finance
DRA	Drought Risk Assessment
DRT	Drought Response Tool
DWR	California Department of Water Resources
EO	Executive Order
ERP	Emergency Response Plan
ESJ	East San Joaquin
ET	Evapotranspiration
ETo	reference evapotranspiration
ft	foot
ft msl	feet above mean sea level
FY	fiscal year
GMO	Growth Management Ordinance
GPCD	gallons per capita per day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWMP	groundwater management plan
IPR	Indirect Potable Reuse
IWRMP	Integrated Water Resources Management Plan
JJWTP	John Jones Water Treatment Plant
kWh/AF	kilowatt hours per acre-foot
LHMP	Local Hazard Mitigation Plan

Table of Contents

2020 Urban Water Management Plan

City of Tracy



M&I	Municipal and Industrial
MCL	Maximum Contaminant Level
MFR	Multi-Family Residential
MG	million gallons
mg/L	milligram per liter
MGD	million gallons per day
MWELO	Model Water Efficient Landscape Ordinance
MWQCF	Manteca Wastewater Quality Control Facility
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
PPBP	Patterson Pass Business Park
PUD	Planned Unit Development
PWS	Public Water System
RGA	Residential Growth Allotment
R-GPCD	residential gallons per capita per day
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCWSP	South County Water Supply Project
SFR	Single Family Residential
SGMA	Sustainable Groundwater Management Act
SLWD	San Luis Water District
SOI	Sphere of Influence
SSJID	South San Joaquin Irrigation District
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
TMC	Tracy Municipal Code
UAW	unaccounted-for water
ULFT	Ultra Low Flush Toilet
USBR	United States Bureau of Reclamation
USEPA	United States Environmental Protection Agency
UV	ultraviolet
UWMP	Urban Water Management Plan
WDO	Water Demand Offset
WRCM	Water Resources and Compliance Manager
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan
WSD	Water Storage District
WSID	West Side Irrigation District
WSMP	Water System Master Plan
WTF	Water Treatment Plant
WUE	Water Use Efficiency
WWTP	Wastewater Treatment Plant



1 INTRODUCTION

CWC § 10630.5

Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

This chapter discusses the importance and uses of this Urban Water Management Plan (UWMP or Plan), the relationship of this Plan to the California Water Code (CWC), the relationship of this Plan to other local and regional planning efforts, and how this Plan is organized and developed in general accordance with the *Urban Water Management Plan Guidebook 2020* (UWMP Guidebook 2020; DWR, 2021).¹

1.1 Background and Purpose

The City of Tracy (referred to herein as the “City”) is a growing community located in southwestern San Joaquin County. The City supplies a combination of surface water and groundwater to approximately 24,692 residential, commercial, industrial, institutional/governmental², and landscape accounts.

This UWMP is a foundational document and source of information about the City’s historical and projected water demands, water supplies, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs.

The City’s last UWMP was completed in 2016, referred to herein as the “2015 UWMP.” This Plan is an update to the 2015 UWMP and carries forward information from that plan that remains current and is relevant to this Plan, and provides additional information as required by amendments to the UWMP Act (CWC §10610 – 10657). Although this Plan is an update to the 2015 UWMP, it was developed to be a self-contained, stand-alone document and does not require readers to reference information contained in previous plans.

1.2 Urban Water Management Planning and the California Water Code

The UWMP Act requires urban water suppliers to prepare an UWMP every five years and to submit this plan to the California Department of Water Resources (DWR), the California State Library, and any city or county within which the supplier provides water supplies. All urban water suppliers, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet annually are required to prepare an UWMP (CWC §10617).

¹ The UWMP Guidebook 2020 is available at: <https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans>

² The City grouped the institutional/governmental sector under the commercial sector in the 2020 Water System Master Plan (WSMP).



The UWMP Act was enacted in 1983. Over the years it has been amended in response to water resource challenges and planning imperatives confronting California. A significant amendment was made in 2009 as a result of the governor's call for a statewide 20% reduction in urban water use by 2020, referred to as "20x2020," the Water Conservation Act of 2009, and "SB X7-7." This amendment required urban retail water suppliers to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20% by 2020. Beginning in 2016, urban retail water suppliers were required to comply with the water conservation requirements in SB X7-7 in order to be eligible for state water grants or loans. Chapter 5 of this plan contains the data and calculations used to determine compliance with these requirements.

A subsequent substantial revision to the UWMP Act was made in 2018 through a pair of bills (i.e., Assembly Bill 1668 and Senate Bill 606), referred to as "Making Water Conservation a California Way of Life" or the "2018 Water Conservation Legislation." These changes include significant revisions and additions to the required content for an UWMP and its associated Water Shortage Contingency Plan (WSCP). As applicable, the City's 2020 UWMP reflects the following significant revisions to the UWMP Act that have been made since 2015.

- **Five Consecutive Dry-Year Water Reliability Assessment.** The Legislature modified the dry-year water reliability planning from a "multiyear" time period to a "drought lasting five consecutive water years."
- **Drought Risk Assessment.** The Drought Risk Assessment (DRA) requires a supplier to assess water supply reliability over a five-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years.
- **Energy Intensity Analysis.** UWMPs are now required to include water system energy usage information that can be readily obtained.
- **Seismic Risk.** The Water Code now requires suppliers to specifically address seismic risk to various water system facilities and to have a mitigation plan, and for this to be described in their WSCPs.
- **Water Shortage Contingency Plan.** In 2018, the UWMP Act was modified to require a WSCP with specific elements, including developing procedures to perform an annual water supply and demand assessment.
- **Groundwater Supplies Coordination.** The Water Code now requires that the 2020 UWMPs, for suppliers that utilize groundwater as a supply source, be consistent with Groundwater Sustainability Plans, in areas where those plans have been completed by the Groundwater Sustainability Agencies.
- **Lay Description.** The Legislature included a new statutory requirement for suppliers to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks.

The UWMP Act contains numerous other requirements that an UWMP must satisfy as seen in **Appendix A** of this Plan which lists each of these requirements and where in the Plan they are addressed.



1.3 Relationship to Other Planning Efforts

This Plan provides information specific to water management and planning by the City. However, water management does not happen in isolation; there are other planning processes that integrate with the UWMP to accomplish urban planning. Some of these relevant planning documents include the City's Local Hazard Mitigation Plan, Water Master Plan, draft Groundwater Sustainability Plan chapters for the Tracy Subbasin, and others. This Plan is informed by and helps to inform these other planning efforts.

1.4 Plan Organization

The organization of this Plan follows the same sequence as outlined in the UWMP Guidebook 2020.

- Chapter 1 Introduction
- Chapter 2 Plan Preparation
- Chapter 3 System Description
- Chapter 4 Water Use Characterization
- Chapter 5 SB X7-7 Baselines, Targets, and 2020 Compliance
- Chapter 6 Water Supply Characterization
- Chapter 7 Water Service Reliability and Drought Risk Assessment
- Chapter 8 Water Shortage Contingency Plan
- Chapter 9 Demand Management Measures
- Chapter 10 Plan Adoption, Submittal, and Implementation
- Chapter 11 References

In addition to these 11 chapters, this Plan includes a number of appendices providing supporting documentation and supplemental information. Pursuant to CWC §10644(a)(2), this Plan utilizes the standardized forms, tables, and displays developed by DWR for the reporting of water use and supply information required by the UWMP Act. This Plan also includes additional tables, figures, and maps to augment the set developed by DWR, as appropriate. The table headers indicate if the table is part of DWR's standardized set of submittal tables.

1.5 Demonstration of Consistency with the Delta Plan

The Sacramento-San Joaquin Delta Reform Act of 2009 (Delta Reform Act) (CWC § 85000 et seq), established the coequal goals for the Sacramento-San Joaquin Delta (Delta) of "providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem." The Delta Reform Act also includes a state policy to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency.

In addition to establishing the coequal goals, the Delta Reform Act created the Delta Stewardship Council, which is tasked with furthering the state's coequal goals for the Delta through development of a Delta



Plan. Delta Stewardship Council released the Delta Plan in 2013, which adopted 14 recommendations to achieve the coequal goals of water supply and reliability.

Although not required by the UWMP Act, in the UWMP Guidebook 2020, DWR recommends that all suppliers that are participating in, or may participate in, receiving water from a proposed project that is considered a “covered action” under the Delta Plan—such as a (1) multiyear water transfer; (2) conveyance facility; or (3) new diversion that involves transferring water through, exporting water from, or using water in the Delta—provide information in their UWMP to demonstrate consistency with the Delta Plan policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code of Regulations, Title 23, Section 5003).

The City has determined that it does receive water from a “covered action” under the Delta Plan. As such, these requirements do apply. These requirements are addressed in **Appendix B**.

1.6 Lay Description

CWC § 10630.5

Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

This Plan is prepared for the City of Tracy (also referred to as the City), which serves drinking water to a population of approximately 96,345 in San Joaquin County. The City is located approximately 68 miles south of Sacramento and 60 miles east of San Francisco. This Urban Water Management Plan (UWMP) serves as a foundational planning document and includes descriptions of historical and projected water demands and the City's water supplies and their associated reliability over a more than 20-year planning horizon. This document also describes the actions the City is taking to promote water conservation, both by the City itself and by its customers (referred to as “demand management measures”), and includes a plan to address potential water supply shortages such as drought or other impacts to supply availability (the Water Shortage Contingency Plan [WSCP]). This UWMP is updated every five years in accordance with state requirements under the Urban Water Management Planning Act and amendments (Division 6 Part 2.6 of the California Water Code [CWC] §§10610 – 10656). Past plans developed for the City are available on the California Department of Water Resources (DWR) Water Use Efficiency Data Portal website: <https://wuedata.water.ca.gov/>. This document includes 11 chapters, which are summarized below.

Chapter 1 Introduction

This chapter presents the background and purpose of the UWMP, identifies the Plan organization, and provides this lay description overview of the document. Because the City relies on water from the Sacramento-San Joaquin Delta, this section also discusses consistency with the Delta Plan.

Chapter 2 Plan Preparation

This chapter discusses key structural aspects related to the preparation of the UWMP, and describes the coordination and outreach conducted as part of the preparation of the Plan, including coordination with local agencies (i.e., Delta-Mendota Canal/Central Valley Project [DMC/CVP] Agencies and South County



Water Supply Project [SCWSP] Agencies, relevant Groundwater Sustainability Agencies [GSAs]) and the public.

Chapter 3 System Description

This chapter provides a description of the City's water system and the service area, including information related to the climate, population, and demographics. The City has a population of approximately 96,345 and has a climate characterized by hot springs, summers, and falls and mild winters with dense "Tule fog" can last for weeks. The majority of precipitation falls in the months of November through April, averaging 9.9 inches of rainfall annually.

Chapter 4 Water Use Characterization

This chapter provides a description and quantifies the City's current and projected demands through the year 2045. The City provides drinking water (also referred to as "potable water") to its customers. Water demands refer not only to the water used by customers, but also includes the water used as part of the system maintenance and operation, as well as unavoidable losses inherent in the operation of a water distribution system.

Water demand within the City was 17,628 acre-feet per year (AFY) on average between 2016 and 2020. Taking into account historical water use, expected population increase and other growth, climatic variability, and other assumptions, water demand within the City is projected to increase to 33,079 AFY by 2045, a change of 88% compared to the 2016-2020 average.

Chapter 5 SB X7-7 Baselines, Targets, and 2020 Compliance

In this chapter, the City demonstrates compliance with its per capita water use target for the year 2020. The Water Conservation Act of 2009 (Senate Bill X7-7) was enacted in November 2009 and requires the state of California to achieve a 20% reduction in urban per capita water use by December 31, 2020. In order to achieve this, each urban retail water supplier was required to establish water use targets for 2015 and 2020 using methodologies established by DWR. The City is in compliance with its 2020 water use target of 181 gallons per capita per day (GPCD).

Chapter 6 Water Supply

This chapter presents an analysis of the City's water supplies, as well as an estimate of water-related energy-consumption. The intent of this chapter is to present a comprehensive overview of the City's water supplies, estimate the volume of available supplies over the UWMP planning horizon, and assess the sufficiency of the City's supplies to meet projected demands under a variety of hydrologic conditions.

The City mainly relies on imported surface water from the United States Bureau of Reclamation (USBR), which supplies the City with DMC/CVP water, and the South San Joaquin Irrigation District (SSJID), which supplies Stanislaus River water through the SCWSP. In addition, a small portion of the City's water supply comes from groundwater extracted from the 373-square-mile Tracy Subbasin (DWR 5-22.15), part of the larger San Joaquin Valley Groundwater Basin. The Tracy Subbasin is not adjudicated and has not been designated by DWR as being in a condition of critical overdraft. However, as a medium priority basin, it is subject to the requirements of the Sustainable Groundwater Management Act (SGMA). Tracy is one of the seven Groundwater Sustainability Agencies (GSAs) that are cooperatively developing the Tracy Subbasin Groundwater Sustainability Plan (GSP), which must be completed by January 2022. The City also

Introduction

2020 Urban Water Management Plan

City of Tracy



receives water from its Aquifer Storage and Recovery (ASR) program and Semitropic Groundwater Storage Bank.

The City has been making significant efforts to augment its supplies, including expansion of the recycled water system, expansion of the ASR program, and development of the Recycled Water Distribution Network and Exchange project. Based on all available information, available supplies are expected to be sufficient to support the City's projected water demand through 2045 in normal years.

Calculation and reporting of water system energy intensity is a new requirement for the 2020 UWMPs. Energy intensity is defined as the net energy used for water treatment, conveyance, and distribution for all water entering the City's distribution system, and does not include the energy used to convey or treat wastewater. The energy intensity for the City is estimated to be 108 kilowatt hours per acre-foot of water (kWh/AF).

Chapter 7 Water Service Reliability and Drought Risk Assessment

This chapter assesses the reliability of the City's water supplies, with a specific focus on potential constraints such as supply availability, water quality, and climate change. The intent of this chapter is to identify any potential constraints that could affect the reliability of the City's supply (such as drought conditions) to support the City's planning efforts. Water service reliability is assessed during normal, single dry-year, and multiple dry-year hydrologic conditions.

The reliability analysis was performed based on SSJID's water reliability analysis, which assumes that the State Water Resources Control Board's (SWRCB's) released amendments to the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) will not be implemented. If the Bay-Delta Plan Amendment is implemented, significant surface water cutbacks would likely be experienced, as presented in **Appendix G** of the UWMP.

Based on service reliability analysis, the City is expected to have adequate water supplies during normal years to meet projected demands through 2045. However, supply shortfalls are projected during single dry years and multiple dry years.

A Drought Risk Assessment (DRA) was also conducted during this analysis which evaluates the effects on available water supply sources of an assumed five-year drought commencing the year after the assessment is completed (i.e., from 2021 through 2025). Based on the DRA, the City is expected to have sufficient water supply in 2021, 2022, and 2025. However, supply shortfalls are projected in 2023 and 2024.

Chapter 8 Water Shortage Contingency Plan

This chapter describes the Water Shortage Contingency Plan (WSCP) for the City. The WSCP serves as a standalone document to be engaged in the case of a water shortage event, such as a drought or supply interruption. The WSCP defines specific policies and actions that will be implemented at various shortage level scenarios (e.g., implementing customer water budgets and surcharges, or restricting landscape irrigation to specific days and/or times). Consistent with DWR requirements, the WSCP includes six "stages of action" to address shortage conditions ranging from up to 10% to greater than 50% shortage.

Chapter 9 Demand Management Measures

This chapter includes descriptions of past and planned conservation programs that the City implements within each demand management measure (DMM) category outlined in the UWMP Act, specifically: (1)

Introduction

2020 Urban Water Management Plan

City of Tracy



water waste prevention ordinances, (2) metering, (3) conservation pricing, (4) public education and outreach, (5) distribution system water loss management, (6) water conservation program coordination and staffing support, and (7) “other” DMMs. The City has developed a suite of conservation programs and policies, which address each DMM category. The City intends to continue implementing these DMMs and will evaluate potential adjustments needed.

Chapter 10 Plan Adoption, Submittal, and Implementation

This chapter provides information on a public hearing, the adoption process for the 2020 UWMP and WSCP, the adopted UWMP and WSCP submittal process, UWMP and WSCP implementation, and the process for amending the adopted UWMP and WSCP. Prior to adopting the Plan, the City held a formal public hearing to present information on its UWMP and WSCP on 1 June 2021 at 7:00 PM. This UWMP and WSCP were submitted to DWR within 30 days of adoption and by the 1 July 2021 deadline.

Chapter 11 References

This chapter contains key references and sources used throughout the document.



2 PLAN PREPARATION

This chapter discusses the type of Urban Water Management Plan (UWMP or Plan) the City has prepared and includes information that will apply throughout the Plan. Coordination and outreach during the development of the Plan is also discussed.

Text from the UWMP Act has been included in grey text boxes with italicized font at beginning of relevant sections of this UWMP. The information presented in the respective UWMP sections and the associated text, figures, and tables are collectively intended to fulfill the requirements of that sub-section of the UWMP Act. To the extent practicable, supporting documentation has also been provided in the appendices. Other sources for the information contained herein are provided in the references section of this document.

Per California Water Code (CWC) §10644(a)(2), selected information for the 2020 UWMP updates must be presented in standardized tables for electronic submittal to DWR. The tables presented in this UWMP have been re-numbered, but the content has been preserved and the original DWR table numbers are included in parentheses in the table titles.

2.1 Basis for Preparing Plan

CWC § 10617

“Urban water supplier” means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

CWC § 10620

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.

CWC § 10621 (a)

Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.

CWC § 10621 (f)(1)

Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

CWC § 10644 (a)(2)

The plan, or amendments to the plan, submitted to the department ... shall include any standardized forms, tables, or displays specified by the department.

In 1983, the California Legislature enacted the Urban Water Management Planning Act (UWMP Act) (California Water Code [CWC] §10610 - §10657). The UWMP Act states that every urban water supplier that provides water to 3,000 or more connections, or that provides over 3,000 acre-feet of water per year



(AFY) should make every effort to ensure the appropriate level of water service reliability to meet the needs of its customers during normal, dry, and multiple dry years.

As a water system that provides drinking water for human consumption, the City is regulated as a Public Water System (PWS) by the State Water Resources Control Board (SWRCB), Division of Drinking Water. **Table 2-1** lists the City's PWS identification number. The SWRCB requires that water agencies report water usage and other relevant PWS information via the electronic Annual Reports to the Drinking Water Program (eARDWP). These data are used by the state to determine, among other things, whether an urban retail water supplier has reached the threshold (3,000 or more connections or 3,000 AFY of water supplied) for submitting an UWMP.

As shown in **Table 2-1**, the City served 24,692 connections and 19,527 AFY in 2020 and is therefore subject to the requirements of the UWMP Act.

Table 2-1 Public Water Systems (DWR Table 2-1)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
CA3910011	City of Tracy	24,692	19,527
TOTAL		24,692	19,527
NOTES:			
(a) Volumes are in units of AF.			

As indicated in **Table 2-2**, the City's 2020 UWMP has been prepared individually for the City in general accordance with the format suggested in DWR's *Urban Water Management Plan Guidebook 2020*, dated March 2021 (Guidebook; DWR, 2021). Some sections of the outline presented in the Guidebook have been combined or arranged in a different order, but all the information requested in the UWMP Guidebook and Act is provided within this document. To the extent practicable, supporting documentation has also been provided in the appendices. Other sources for the information contained herein are provided in the references section of the document.

Per the Guidebook, the UWMP preparer is requested to complete a checklist of specific UWMP requirements to assist the DWR review of the submitted UWMP. The completed checklist is included in **Appendix A**.

**Table 2-2 Plan Identification Type (DWR Table 2-2)**

Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable</i>
X	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:		

2.2 UWMP Structure, Standard Units, and Basis for Reporting

The City is a retail water supplier. As further summarized in **Table 2-3**, unless otherwise indicated, the data included in the following sections is presented in units of acre-foot (AF) or AFY and annual values represent calendar years.

Further, consistent with the Guidebook, the terms “water use”, “water consumption”, and “water demand” are used interchangeably in this UWMP.

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

Type of Supplier	
	Supplier is a wholesaler
X	Supplier is a retailer
Fiscal or Calendar Year	
X	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	AF
NOTES:	



2.3 Coordination and Outreach

Coordination with other water suppliers, cities, counties, and other community organizations in the region is an important part of preparing a UWMP and Water Shortage Contingency Plan (WSCP). This section identifies the agencies and organizations the City sought to coordinate with during preparation of this Plan.

2.3.1 Wholesale Coordination

CWC § 10631 (h)

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

As shown in **Table 2-4**, the City's two wholesale surface water suppliers are: (1) the United States Bureau of Reclamation (USBR), and (2) the South San Joaquin Irrigation District (SSJID). As described in detail in Section 6.1.1, the City has a Municipal and Industrial (M&I) contract with the USBR for delivery of Central Valley Project (CVP) water conveyed via the Delta-Mendota Canal (DMC) (conjunctively referred to as DMC/CVP water). The City has acquired additional assignments of DMC/CVP Agricultural reliability (Ag-reliability) water through agreements with local irrigation districts (see Section 6.1.1). As stipulated by its contract terms, and as part of regular operations, the USBR notifies Tracy each year of the deliveries that it can expect to receive from the USBR. This notification process occurs regardless of whether it is a normal or dry year. The City in turn notifies the USBR each year of the deliveries that it expects to receive from the USBR during the following year.

As discussed in detail in Section 6.1.2, the City also purchases Stanislaus River water from SSJID, as provided by the South County Water Supply Project (SCWSP). The SSJID notifies the City of the deliveries that it can expect to receive from the SCWSP on an annual basis. The City in turn notifies the SSJID each year of the deliveries that it expects to receive over the next three years.

As part of the coordination effort for the 2020 UWMP, and in compliance with CWC §10631(h), the City provided USBR and SSJID with its water demand projections through 2045. As described in Section 7, the City relied on allocations from USBR and SSJID for the purposes of analyzing the reliability of its surface water supplies during normal and dry years through 2045.

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

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
South San Joaquin Irrigation District
United States Bureau of Reclamation
NOTES:

2.3.2 Agency Coordination

CWC § 10620 (d) (2)

Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

On 4 February 2021, the City sent a letter, either by email or mail, to the agencies identified in **Table 2-5** to inform them that the City was in the process of updating its UWMP and WSCP and was soliciting their input. The letter sent to each of the above-mentioned agencies also informed them that the document would be available for review in May 2021 and welcomed their input and comments on the document. The Draft 2020 UWMP and WSCP were available for public review at the Tracy Public Library, the Tracy Wastewater Treatment Plant, as well as online at the City's website (<https://www.cityoftracy.org/?navid=697>). An email was also sent to these agencies informing them that the UWMP public hearing would be occurring at City Hall on 1 June 2021. A sample copy of the notification letters described above is included in **Appendix C**.



Table 2-5 Notification to Cities and Counties (DWR Table 10-1)

City Name	60 Day Notice	Notice of Public Hearing
City of Lathrop	X	X
City of Manteca	X	X
City of Escalon	X	X
County Name	60 Day Notice	Notice of Public Hearing
San Joaquin County	X	X
Other Agency Name	60 Day Notice	Notice of Public Hearing
Banta-Carbona Irrigation District	X	X
Byron-Bethany Irrigation District	X	X
Pescadero Reclamation District	X	X
San Luis & Delta-Mendota Water Authority	X	X
South San Joaquin Irrigation District	X	X
NOTES:		



2.3.3 Public Participation

CWC § 10642

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

Water suppliers are required by the UWMP Act to encourage active involvement of the community within the service area prior to and during the preparation of its UWMP and WSCP. The UWMP Act also requires water suppliers to make a draft of the UWMP and WSCP available for public review and to hold a public hearing regarding the findings of the UWMP and WSCP prior to its adoption. In addition to sending notices of the City's intent to prepare its UWMP and WSCP to the various agencies listed in **Table 2-5**, the City also included a public notice in the local newspaper (i.e., Tracy Press) notifying the public that the draft UWMP and WSCP were available for review and that the City was seeking public input and comments, including during the public hearing. Public participation in the development of the City's 2020 UWMP and WSCP is summarized in **Appendix D**.

The Public Review Draft 2020 UWMP and WSCP was available for public review at the Tracy Public Library, the Tracy Wastewater Treatment Plant, as well as online at the City's website (<https://www.cityoftracy.org/?navid=697>).



3 SYSTEM DESCRIPTION

CWC § 10631 (a) *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

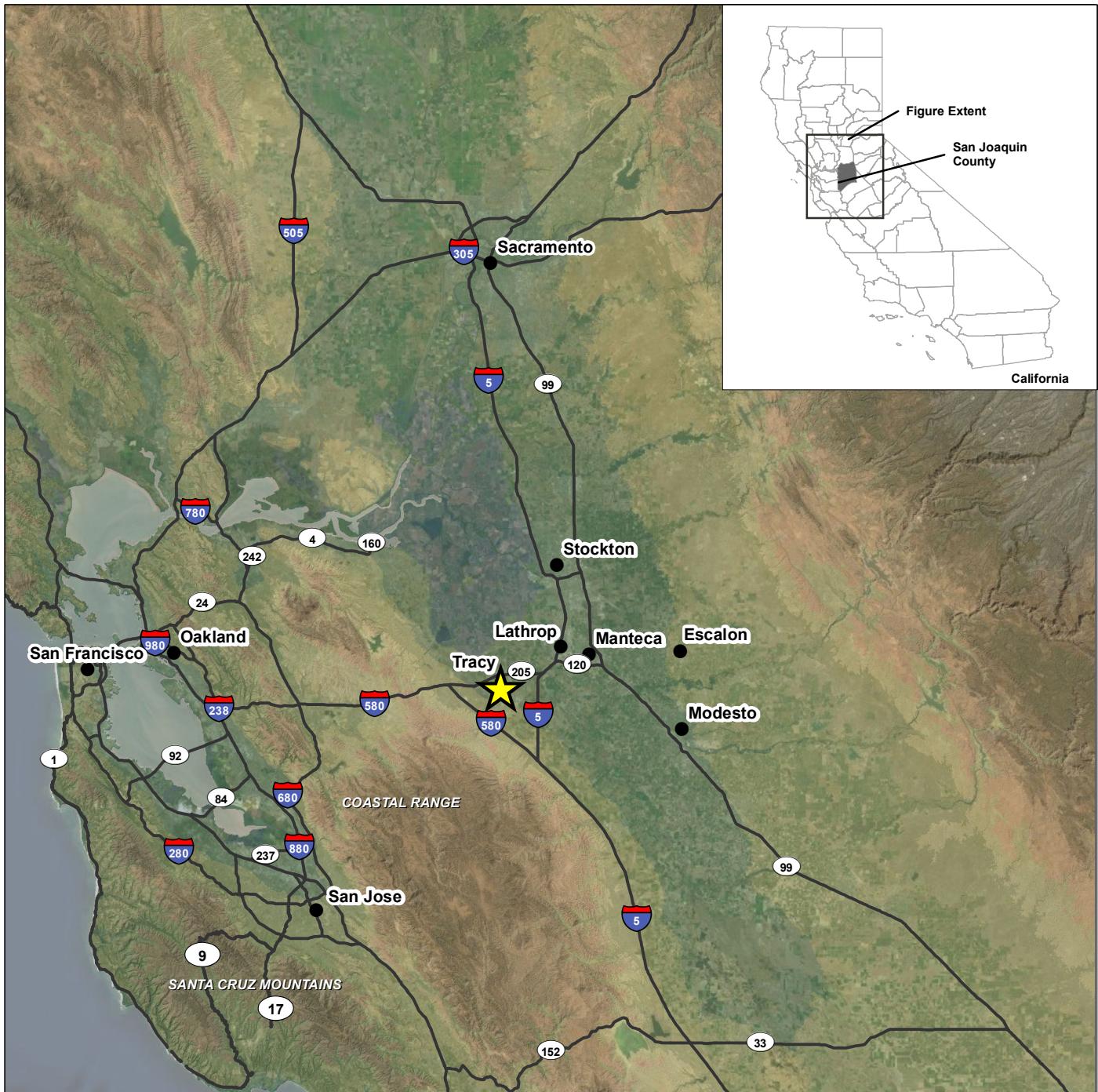
Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

This section provides an overview of the City of Tracy's (City's) service area and water system, including discussions of the City's service boundaries, planned developments, population, climate, and water system infrastructure.

3.1 City Limits and Sphere of Influence

The City's service area is located in San Joaquin County, 68 miles south of Sacramento and 60 miles east of San Francisco (**Figure 3-1**). The City lies east of the Coastal Range that separates California's Central Valley from the San Francisco Bay Area. Interstate 205 runs through the northernmost part of the City and connects Interstate 580 to Interstate 5, a major north-south interstate corridor east of Tracy. Ground surface elevations in Tracy range from 600 feet above mean sea level (ft msl) in the foothills along the southwestern boundary of the City to 9 ft msl at the northern boundary (Kennedy/Jenks, 1994). Tracy lies adjacent to the State Water Project's (SWP) California Aqueduct, the Delta-Mendota Canal (DMC), and the Old River. The Old River flows east to west just north of Tracy.

The existing incorporated area of the City encompasses approximately 22 square miles (Tracy, 2011). The Sphere of Influence (SOI) is the area outside of the City limits that Tracy expects to annex and urbanize in the future, including the expected physical limit of the City based on the most current available information (**Figure 3-2**). During the City's most recent General Plan update process, revisions to the SOI were made to more accurately reflect the areas where Tracy may grow in the future and locations where no urban growth is expected. The revised SOI is approximately 42 square miles, or 20 square miles larger than the City limits.



Legend

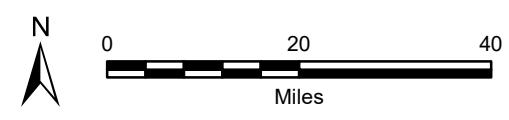
- ★ City of Tracy
- Other City
- Highway

Notes

1. All locations are approximate.

Sources

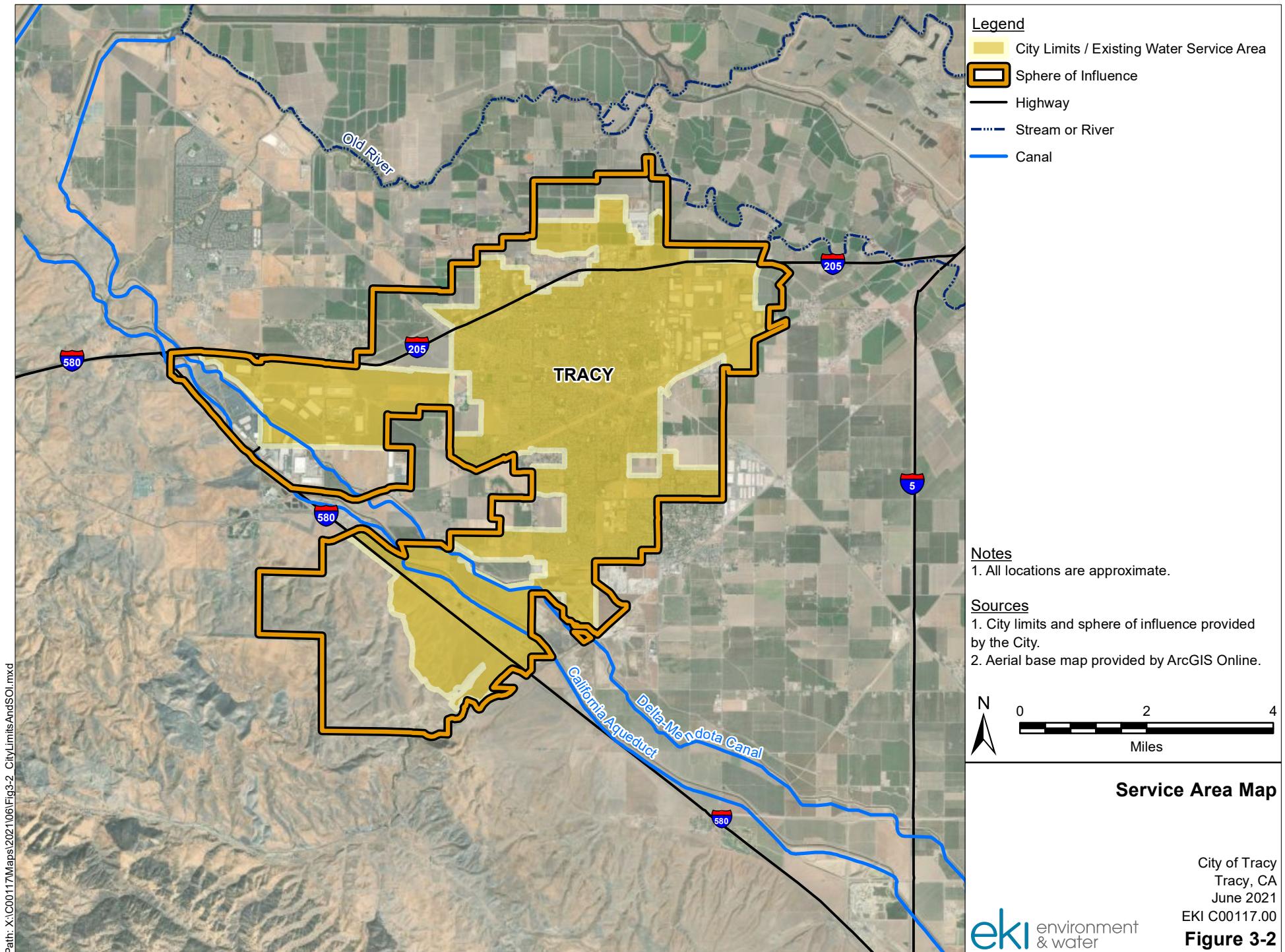
1. Aerial basemap provided by ArcGIS Online.



Regional Vicinity Map

Path: X:\C00117\Maps\202106\Fg3-1_RegionalVicinityMap.mxd
 City of Tracy
 Tracy, CA
 June 2021
 EKI C00117.00

Figure 3-1





3.2 Population Within the Service Area

The City currently provides water service to approximately 24,692 residential, commercial (including institutional/governmental), industrial, and landscape service connections. The historical and current population within the City's water service area is calculated by adding the population within the City limits, as reported by the California Department of Finance (DOF), and the population within Larch Clover County Services District (CSD), a small community located outside of the City limits but served by the City (see **Figure 3-2**). The Larch Clover CSD population is calculated by multiplying the number of residences in the community, as provided by the City's Finance Department, by the persons-per-household factor from the California DOF.

As of 1 January 2020, the population estimate for Tracy was 95,931 (DOF, 2020a). In 2020, the City also served 118 residential accounts in the Larch Clover CSD and the persons-per-household factor was 3.51 (DOF, 2020b). Using the methodology described above, the City's 2020 population was estimated to be 96,345. The historical and current population within the City's water service area is presented in **Table 3-1**.

Population growth was rapid in the City over the 15-year period 1990 through 2005, with the City growing by 139% (DOF, 2007; DOF, 2012). Between 2005 and 2020, however, growth has slowed relative to historical rates; population increased approximately 68% over this 15-year period. The reduction in growth rate has likely been caused by a combination of economic forces, such as the economic downturn of 2008 through 2011, and measures taken by the City to limit growth. In 1987, the City adopted a residential Growth Management Ordinance (GMO), which was amended in 2000 by the voter-initiated Measure A. The objective of the GMO and Measure A is to achieve a steady and orderly growth rate that allows for the adequate provision of services and community facilities, and includes a balance of housing opportunities. Under the GMO, builders must obtain a Residential Growth Allotment (RGA) to secure a residential building permit. The GMO limits the number of RGAs and building permits to an average of 600 housing units per year for market rate housing, with a maximum of 750 units in any single year, although there are exceptions for affordable housing (Tracy, 2011).

3.2.1 Future Population Growth

The population estimates for 2025 through 2045 are projected using the methodology presented in the City's 2020 Water System Master Plan (WSMP) (Tracy, 2020), which is currently in draft form and has not yet been adopted by City Council. The population projection in the WSMP from 2025 to 2040 is based on the Tracy Municipal Services Review (June 2019). The projected population at buildout was based on: (1) assumptions about the number of dwelling units for each development and planning area at buildout, and (2) an assumed number of people per dwelling unit (people/du). Separate people/du factors were developed for five categories of residential housing densities that reflect varying ranges of dwelling units per acre (du/acre). The people/du factors utilized in the 2020 WSMP are summarized below:

- The Very Low Density category encompasses a range of densities from 0.1 to 2.0 du/acre and is assigned a factor of 3.3 people/du.
- The Low Density category encompasses a range of densities from 2.1 to 5.8 du/acre and is assigned a factor of 3.3 people/du.



- The Medium Density category encompasses a range of densities from 5.9 to 12.0 du/acre and is assigned a factor of 2.7 people/du.
- The High Density category encompasses a range of densities from 12.1 to 25 du/acre and is assigned a factor of 2.2 people/du.
- The Very High Density category encompasses densities up to 40 du/acre and is assigned a factor of 1.5 people/du.

The 2020 WSMP applied these people/du factors to an assumed number of dwelling units at Buildout, which is assumed to occur in 2045 for the purpose of the UWMP. The 2020 WSMP Buildout accounts for growth in employment in addition to the residential growth.

The City's projected population is presented in **Table 3-1** and the associated chart. Using the methodology described above, the City is projected to have a total population of approximately 166,700 people by the year 2045, which represents a 73% increase over the 2020 population.



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

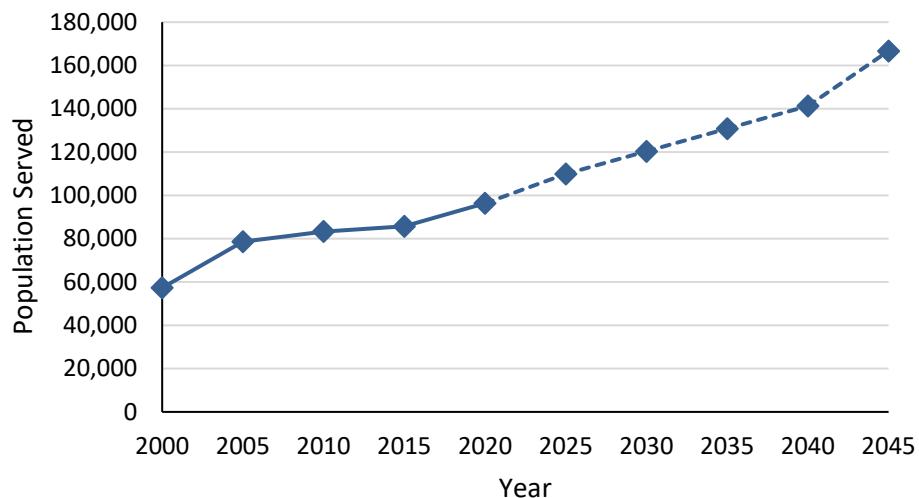
Population Served	2020	2025	2030	2035	2040	2045
	96,345	109,900	120,367	130,833	141,300	166,700

NOTES:

(a) Current population is estimated from Department of Finance, Population Estimates for Cities, Counties, and the State, 2011-2020, with 2010 Benchmark, released 1 May 2020, adjusting for the population in Larch Clover CSD which is located outside the City Boundary. The Larch Creek Clover CSD population was estimated based on the total number of accounts (118) and a person per household factor of 3.51.

(b) Projected population are obtained from the City's 2020 WSMP. Population is assumed to increase linearly between 2025 and 2040, and population in 2045 is assumed to be the projected population at buildout.

Chart 3-1 Current and Projected Population



3.3 Other Social, Economic, and Demographic Factors

Demographics for the City are summarized in **Table 3-2**, which were obtained from the U.S. Census Bureau QuickFacts website. The same data are also provided for the State of California as a whole. Relative to the whole State, the City's population is slightly younger and more racially diverse. Attainment of higher education in the City are lower than the rest of California. Median household income is higher than for the State.



Table 3-2 Demographic and Housing Characteristics

Demographics (a)	City of Tracy	California
Age and Sex		
Persons under 5 years	6.1%	6.0%
Persons under 18 years	28.1%	22.5%
Persons 65 years and older	8.9%	14.8%
Female persons	50.2%	50.3%
Race and Hispanic Origin		
White alone	58.5%	71.9%
Black or African American alone	4.5%	6.5%
American Indian and Alaska Native alone	0.4%	1.6%
Asian alone	16.3%	15.5%
Native Hawaiian and Other Pacific Islander alone	1.2%	0.5%
Two or More Races	9.3%	4.0%
Hispanic or Latino	39.6%	39.4%
White alone, not Hispanic or Latino	33.1%	36.5%
Families & Living Arrangements		
Persons per household	3.50	2.95
Living in same house 1 year ago, percent of persons age 1 year+	86.6%	87.1%
Language other than English spoken at home, age 5 years+	43.3%	44.2%
Education		
High school graduate or higher, persons age 25 years+	85.4%	83.3%
Bachelor's degree or higher, persons age 25 years+	22.0%	33.9%
Income & Poverty		
Median Household Income (2019 dollars)	\$92,046	\$75,235
Per capita income in past 12 months (2019 dollars)	\$31,540	\$36,955
Persons in poverty	8.1%	11.8%
NOTES:		
(a) Demographic data per the U.S. Census Bureau QuickFacts website, https://www.census.gov/quickfacts/fact/table/tracycitycalifornia,CA/PST045219 .		

3.4 Land Uses within Service Area

3.4.1 Existing Land Uses

Existing developed land use within the City consists primarily of low-density residential land use. With some exceptions, existing developed land use within the City limits conforms to the General Plan. **Figure**



3-3 shows the existing land uses of the City, while **Figure 3-4** shows the approved projects that are planned to be developed within the City.

3.4.2 Specific Plans and Large Planned Unit Developments

Numerous Specific Plans and large-scale Planned Unit Developments (PUDs) have been adopted within the City limits and SOI to accommodate anticipated future growth. General information regarding the City's major Specific Plans and PUDs could be found in the City's General Plan³ (Tracy, 2011) and the 2020 WSMP⁴ (Tracy, 2020). The locations of the City's planning areas are presented in **Figure 3-5**.

³ The City's General Plan could be found in the City's website:
https://www.ci.tracy.ca.us/documents/2011_General_Plan.pdf.

⁴ The City's WSMP could be found in the City's website:
https://www.ci.tracy.ca.us/documents/Water_System_Master_Plan_Update_Nov_2020.pdf.

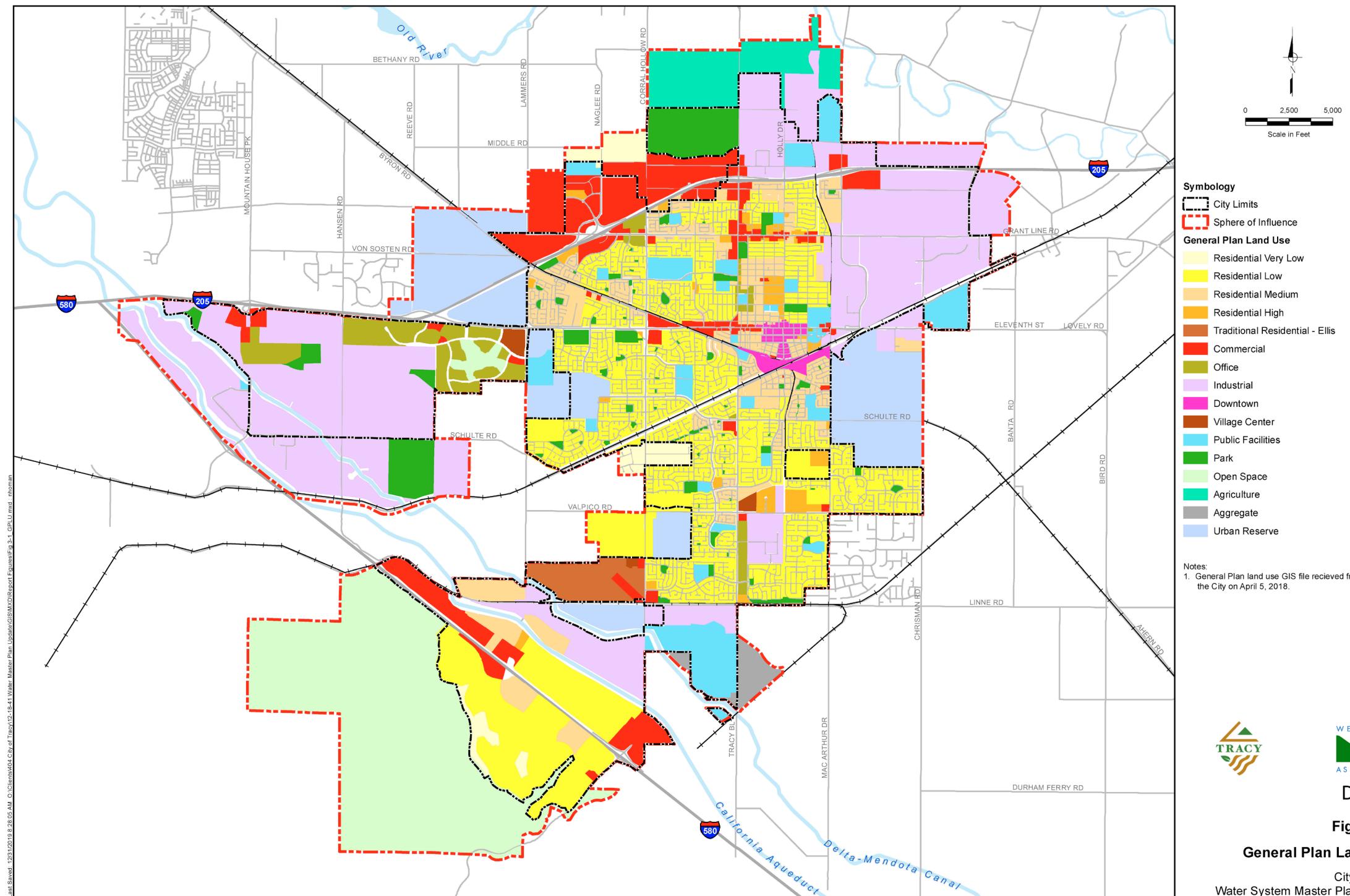


Figure 3-3 City Land Use (Adapted from the Draft 2020 WSMP, Figure 3-1)

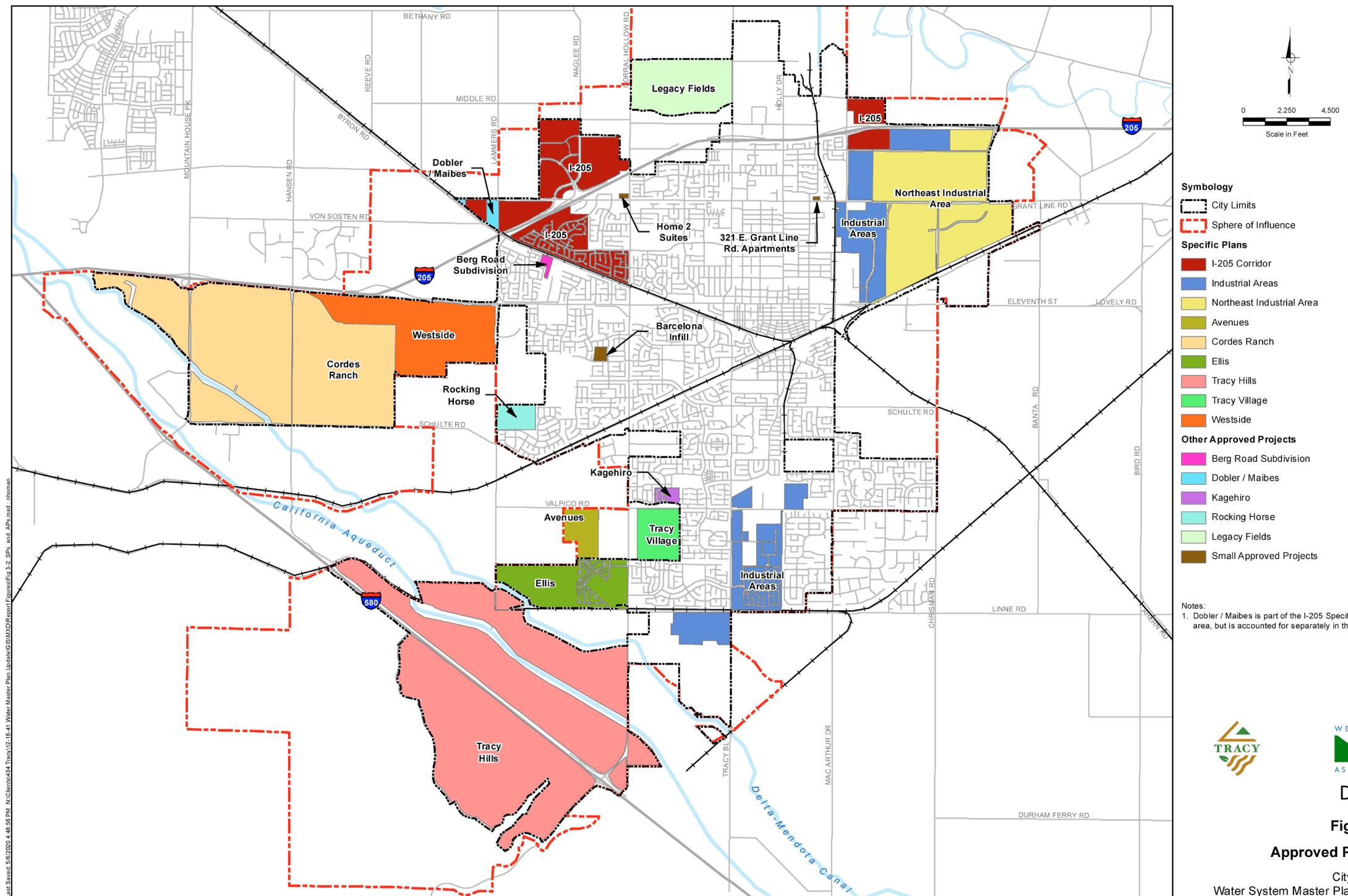


Figure 3-4 Approved Projects (Adapted from the Draft 2020 WSMP, Figure 3-2)

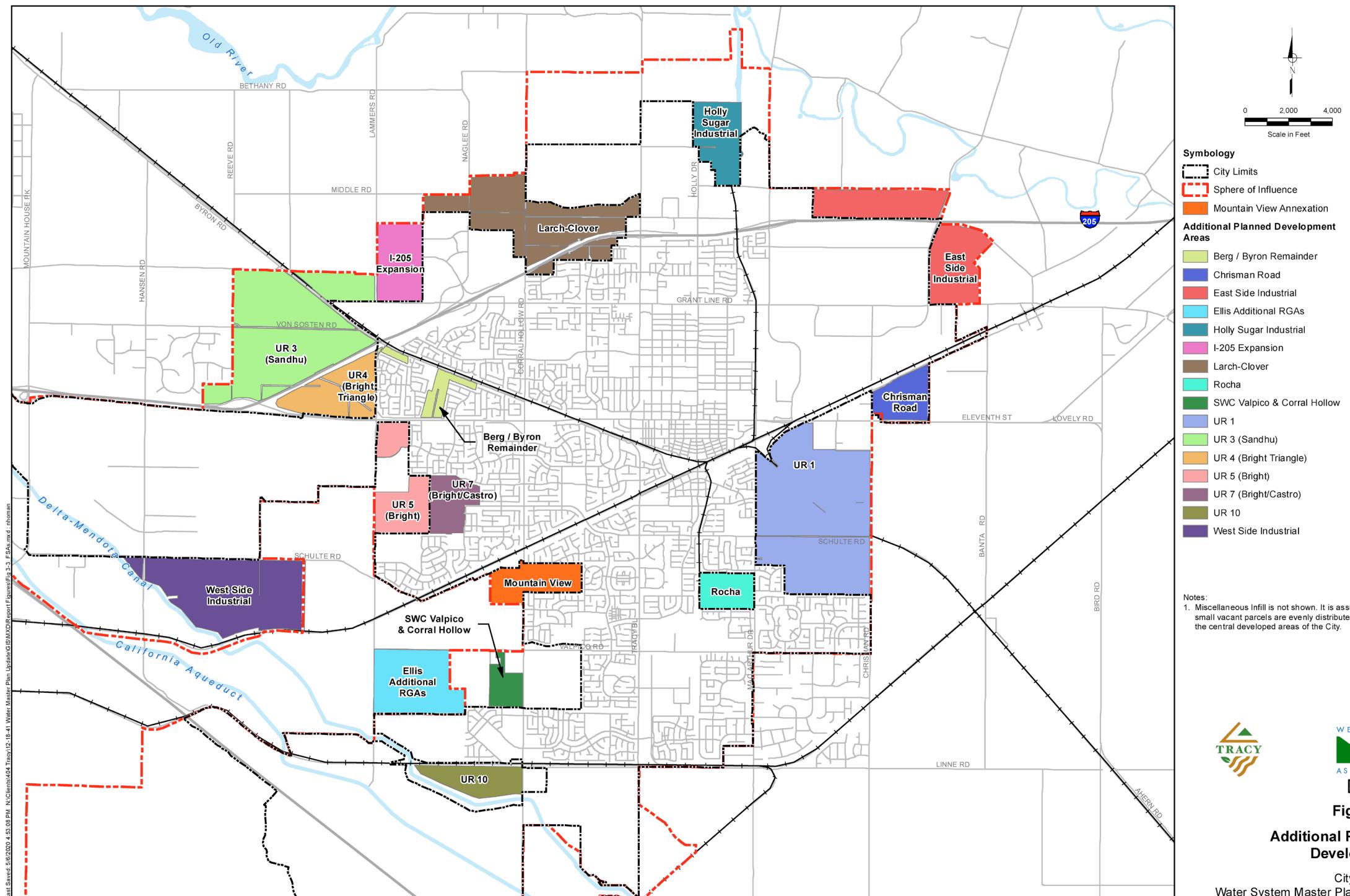


Figure 3-5 Planned Unit Developments (Adapted from the Draft 2020 WSMP, Figure 3-3)



3.5 Climate

Spring, summer, and fall are generally hot in Tracy, with temperatures often reaching over 100 degrees Fahrenheit (°F) on summer days. Tracy's winters are usually mild, although the dense "tule fog" can last for weeks. As shown in **Table 3-3** and the associated chart, rainfall in the area averages 9.9 inches per year and is generally confined to the wet season from late October to early May. The average reference evapotranspiration (ETo) for the region is 48.4 inches per year.

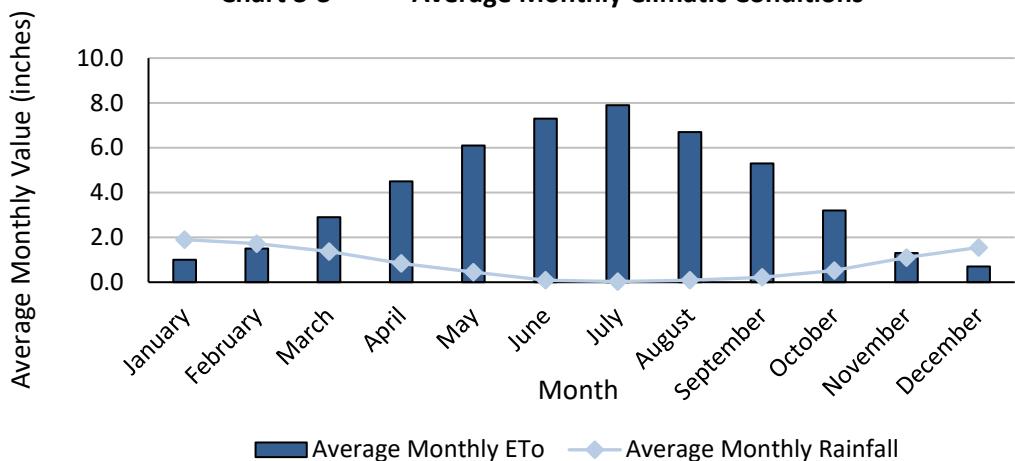
Since the average annual ETo is approximately 38.5 inches more than the average annual precipitation, and because more than 85% of the annual precipitation occurs between the months of November and April, growing turf or other plantings in this region requires a significant amount of irrigation during the dry season. This irrigation demand contributes to the overall and observed seasonal variation in water demand throughout the City's service area (see Section 4.1.1).

**Table 3-3** Climate Characteristics

Month	Average Temperature		Standard Average ETo (inches)	Average Rainfall (inches)
	Min (°F)	Max (°F)		
January	36.7	54.1	1.0	1.9
February	40.0	61.0	1.5	1.7
March	42.6	66.7	2.9	1.4
April	45.5	73.1	4.5	0.8
May	50.4	80.7	6.1	0.5
June	55.2	88.0	7.3	0.1
July	57.1	93.6	7.9	0.0
August	55.7	92.1	6.7	0.1
September	53.9	87.9	5.3	0.2
October	48.7	78.5	3.2	0.5
November	42.1	64.9	1.3	1.1
December	36.6	54.7	0.7	1.6
Annual	47.0	74.6	48.4	9.9

NOTES:

- (a) Temperature and precipitation data from Western Regional Climate Center Tracy Carbona Station (048999).
- (b) Reference evapotranspiration data from California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.
- (c) Totals may not add exactly due to rounding.

Chart 3-3 Average Monthly Climatic Conditions



3.6 Climate Change Considerations

CWC § 10630

It is the intention of the Legislature, in enacting this part, to permit levels of water management planning... while accounting for impacts of climate change.

Projections of climate change in California indicate a further intensification of wet and dry extremes and shifting temperature. Changing climate can affect both water uses and supplies. For example, extreme and higher temperatures can lead to increases in water use; declining snowpack and earlier runoff patterns could result in changes in stream flows and reservoir operations; projection of frequent, severe, prolonged droughts could lead to not only less surface water available, but also exacerbating ongoing stressors in groundwater basins. Some of these pressures are already apparent in California as of 2021.

Several sections in the California Water Code (CWC) relevant to UWMPs refer to climate change. Pursuant to CWC requirements and the UWMP Guidebook, this Plan incorporates climate change considerations into following relevant sections:

- Chapter 3 – System Description,
- Chapter 4 – Water Use Characterization,
- Chapter 6 – Water Supply Characterization, and
- Chapter 7 – Water Service Reliability and Drought Risk Assessment.

Issues associated with climate change are discussed in the City's *Local Hazard Mitigation Plan*, dated September 2019, which is incorporated into this UWMP by reference (City LHMP; Tracy, 2019a). The City LHMP assesses the City's vulnerabilities to various hazards and presents mitigation strategies that are planned over the next five years. Impacts of climate change that are considered in the LHMP include water supply shortages, more frequent and intense drought and extreme heat events, flooding, and increased temperatures.

Climate change impacts on the City's water demands are discussed in Section 4.4, while climate change impacts on the City's water supply are discussed in Section 6.12.1.

3.7 Water Distribution System

The City serves water within the City limits and portions of the SOI. The existing potable water system infrastructure is presented on **Figure 3-6** and details of the potable water supply system are provided below.

3.7.1 Service Connections

Tracy provides water service to all water users within the City Limits, plus approximately 118 residences of the Larch-Clover CSD. All connections are metered. In 2020, the City served 24,692 metered service connections. The majority of service connections in the City are associated with single-family residential accounts.



3.7.2 Pressure Zones

Due to the several hundred-foot difference in elevation throughout its service area, Tracy has established different pressure zones for its treated water distribution system. **Figure 3-6** shows the area encompassed by the four existing pressure zones (Zones 1, 2, and 3 and Ellis Reduced Zone), as well as the water distribution infrastructure. To support the development planned in the foothills, a fifth pressure zone (Zone 4) is in development and two additional zones (Zones 5 and 6) have been proposed for future use. The elevations and pressures within each of the existing and proposed pressure zones are summarized in **Table 3-4**.

Table 3-4 Pressure Zone Elevations and Static Pressures

Pressure Zones	Service Elevation Range (feet)	Static Pressure Range (psi)
Zone 1	0-75	40-75
Zone 2	75-150	40-85
Zone 3	150 - 245	55 - 95
Ellis Reduced Zone	140 - 185	60 - 80
Zone 4	209 - 325	43 - 93
Zone 5	305 - 470	47 - 118
Zone 6	460 - 630	45 - 118
NOTES:		
(a) Data from the City's Water System Master Plan (Tracy, 2020).		
(b) Zones 4, 5, and 6 are specifically for Tracy Hills. Zone 4 is in development. Zones 5 and 6 are planned for future.		

3.7.3 Storage Facilities

Tracy has five treated water storage reservoirs, including two clearwells and three storage tanks. Clearwell #1 and Clearwell #2 are located adjacent to the John Jones Water Treatment Plant (JJWTP), with storage capacities of approximately 0.66 million gallons (MG) and 4.0 MG, respectively. Additional storage is provided by the 2.4 MG Northeast Industrial (NEI) Tank, the 7.1 MG Linne Tank, and the 2.0 MG Cordes Tank. Since Clearwell #1 is operated as a chlorine contact basin, it is no longer considered to provide available storage capacity. The total available storage capacity is 15.5 MG (Tracy, 2020).

3.7.4 Water Treatment Facilities

The City's DMC surface water supplies are treated at the JJWTP, located at the southern end of the City just east of the DMC and the California Aqueduct. The JJWTP was constructed in 1979, expanded in 1988, and expanded and upgraded again in 2008. The permitted treatment capacity is 30 million gallons per day



(MGD), with a potential future expansion to 45 MGD. Groundwater is either treated at the wellhead or at the JJWTP.

Stanislaus River water, provided by the South County Water Supply Project (SCWSP), is treated at the Nick C. DeGroot Water Treatment Plant (DGWTP), located near Woodward Reservoir in San Joaquin County. The DGWTP, completed in 2005, has a current capacity of approximately 40 MGD and a final build-out capacity of 60 MGD.

3.7.5 SCWSP Distribution System

As described in Section 6.1, the SCWSP is a partnership between the cities of Tracy, Manteca, Lathrop, and Escalon and the South San Joaquin Irrigation District (SSJID), which developed a surface water treatment plant and pipeline system to deliver water from the Stanislaus River to each participating agency. Treated Stanislaus River water is conveyed from the DGWTP to the City through a 36-inch transmission main, where it is pumped to the City by the Mossdale Pump Station, which is operated by SSJID and located at the intersection of Manthey and Stewart Roads. Water from the Mossdale Pump Station first fills the Linne and NEI storage tanks before being pumped into the City's distribution system.

3.7.6 Groundwater Wells

The City currently owns and operates nine groundwater production wells: the Lincoln Well, Production Wells 1, 2, 3, 4, 5 (Lewis Manor Well, currently inactive), 6 (Park & Ride), 7 (Ball Park), and ASR Well 8 (see Section 6.3). The pumping capacity of the City's production wells ranges from 1,500 gallons per minute (gpm) to 2,500 gpm. All production wells are screened below the confining Corcoran Clay with sanitary seals that entirely seal the wells from the upper, unconfined aquifer.

Additionally, the City owns nested and clustered monitoring wells throughout its service area. These wells are screened over short intervals (i.e., less than 40 feet) and are designed to measure the properties of a specific aquifer.

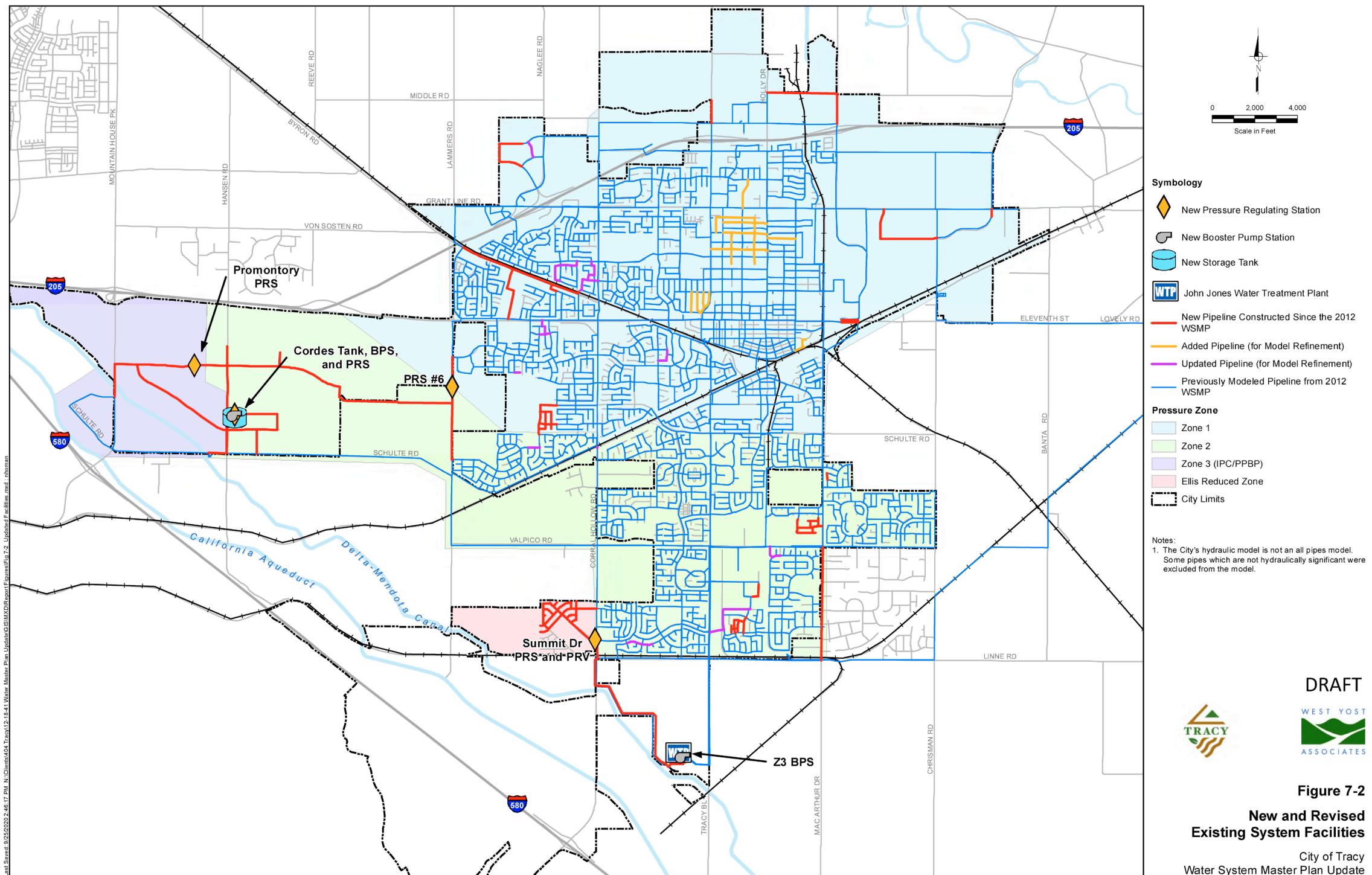


Figure 3-6 City Water System Map (Adapted from the Draft 2020 WSMP, Figure 7-2)



4 WATER USE CHARACTERIZATION

CWC § 10631 (d) (1) *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

- (A) Single-family residential.*
- (B) Multifamily.*
- (C) Commercial.*
- (D) Industrial.*
- (E) Institutional and governmental.*
- (F) Landscape.*
- (G) Sales to other agencies.*
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.*
- (I) Agricultural.*
- (J) Distribution system water loss.*

(2) *The water use projections shall be in the same five-year increments described in subdivision (a).*

This chapter provides a description and quantifies the City of Tracy's (City) past, current, and projected water uses through 2045. For the purposes of the Urban Water Management Plan (UWMP or Plan), the terms "water use" and "water demand" are used interchangeably. Recycled water is addressed comprehensively in Chapter 6, but a summary of recycled water demand is included in Section 4.2.2 of this chapter. The primary focus of this chapter is the historical and projected potable water uses in the City.

4.1 Current and Historical Total Water Demand

Among other factors, water demand is dependent on climate, population, industry, and the types of development present in a community. The following section of the UWMP presents the City's historical and current water demands, as well as the projected future demand in five-year increments between 2025 and 2045.

Sections 4.1 and 4.2 describe City's historical and projected residential, commercial, industrial, institutional, and landscape irrigation purposes within the City (water use sectors A through F, as defined in California Water Code (CWC) §10631(e)(1)). Distribution system water loss (water use sector J) is discussed in Section 4.1.3. As described in Section 4.3, this discussion does not include demands for water use sectors G through I as they are not applicable or present within the City's service area. Note that the water demand projections are presented based on the current best available information and are subject to review and revision every five years as part of the UWMP update process.



4.1.1 Current and Historical Potable Water Demand

Current and historical potable water use over the five-year period 2016 through 2020, including water use by individual customer sectors, is presented in **Table 4-1** and the associated charts.

Water demand within the City's service area is measured using water meters that are installed at each customer account. Records of current and historical water use at each account are maintained by the City and are based on billing data. Water demand within the City's service area is tracked and reported on a bi-monthly basis for the following sectors:

- The Single Family Residential (SFR) and Multi-Family Residential (MFR) sectors include all residences, including low-income residences, within the City's SOI.
- The Commercial sector includes food-related businesses, such as bakeries and restaurants, and non-food related businesses such as laundromats and car washes.
- The Industrial sector includes hotels, mortuaries, dry cleaners, and larger businesses such as Leprino Foods.
- The Institutional sector primarily includes government-related services, such as the police and fire departments and City Hall, as well as religious and educational buildings.
- The Dedicated Irrigation sector includes all dedicated irrigation meters at City parks, commercial property landscapes, park strips, medians, and schoolyards.

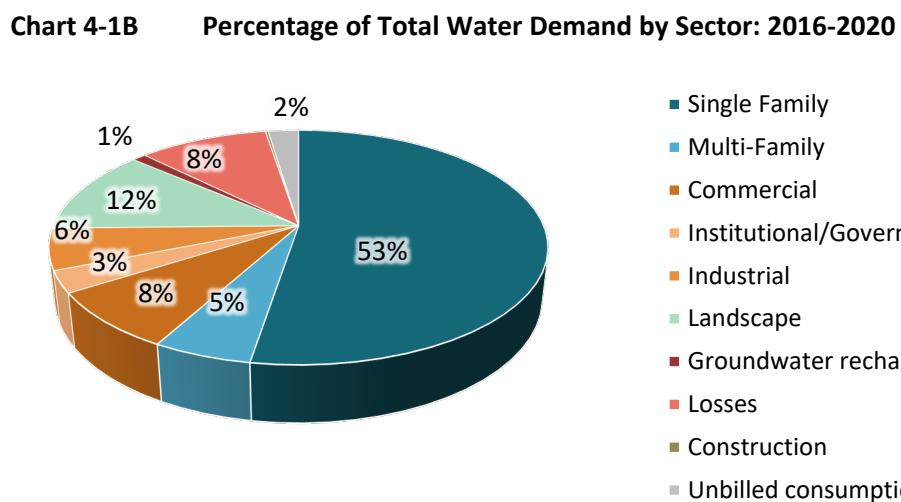
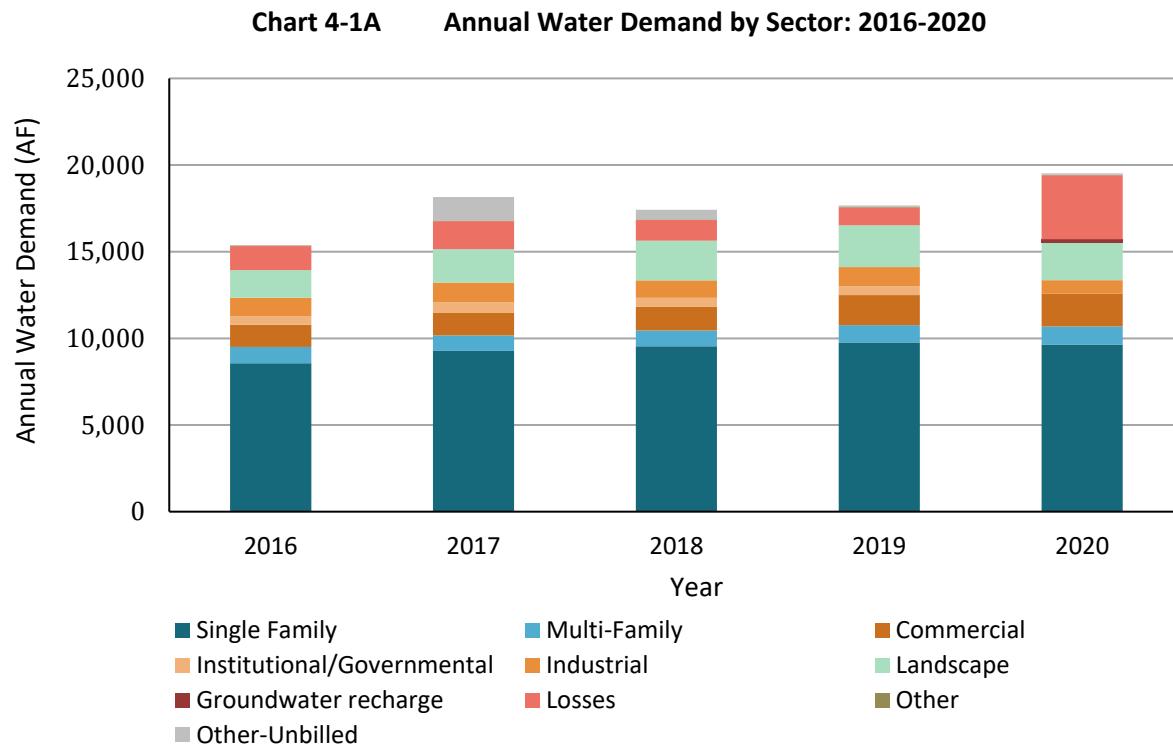


Table 4-1 Demands for Potable and Non-Potable Water - Actual (DWR Table 4-1)

Use Type	Additional Description (as needed)	Level of Treatment When Delivered	Volume				
			2016	2017	2018	2019	2020
Single Family	(a)	Drinking Water	8,568	9,271	9,543	9,762	9,640
Multi-Family	(a)	Drinking Water	940	903	915	1,002	1,052
Commercial	(a)	Drinking Water	1,281	1,314	1,356	1,729	
Institutional/Governmental	(a) (b)	Drinking Water	485	594	531	511	1,893
Industrial	(a)	Drinking Water	1,066	1,134	1,005	1,110	769
Landscape	(a)	Drinking Water	1,597	1,934	2,289	2,407	2,177
Groundwater recharge	(c)	Drinking Water	--	--	--	--	190
Losses	(a)	Drinking Water	1,385	1,609	1,184	1,025	3,689
Other	Construction (a)	Drinking Water	38	38	39	39	30
Other	Other Authorized Consumption (d)	Drinking Water	0	1,363	558	87	86
TOTAL			15,360	18,160	17,420	17,672	19,527

NOTES:

- (a) Water demand data were provided by the City. Losses were obtained from the AWWA Water Audit Reports.
- (b) Commercial and Institutional/Governmental water uses were combined in 2020 data.
- (c) Groundwater recharge is reported as the volume banked for the following year. 2016 to 2019 data are not available.
- (d) The “other authorized consumption” was the difference between water supply and water consumption including losses. It represents consumption that was captured in the AWWA water audit but where the sector is unknown.
- (e) Totals may not sum due to rounding.
- (f) Volumes are in units of AF.





Total potable water demand in 2020 was 19,527 acre feet (AF). Between 2016 and 2020, water demand ranged from 15,360 AF in 2016 to 19,527 AF in 2020. As shown in **Table 4-1** and the associated charts, the City's potable water use is largely associated with residential accounts. Over the last five years, the single family and multi-family residential sectors together accounted for an average of 61% of the potable water demand in the City's service area; the single family sector has accounted for over 53% of the City's potable water demand over the last five years. The commercial, institutional/governmental, and industrial sectors collectively accounted for approximately 18%, the landscape sector accounted for 12%, while groundwater recharge and other uses accounted for 1% or less over the last five years.

Since California's precipitation patterns vary from one year to the next, Tracy's water demand fluctuates annually based on local rainfall. In hotter, drier years, irrigation and cooling needs can increase the City's potable water demand above what is needed during cooler or wetter years. Additionally, economic fluctuations can influence demand, as poor economic conditions can stall development projects and result in more vacant homes. Notably, water demands were largely influenced by behavioral changes and regulatory mandates during the historic drought.

As shown in **Table 4-1** and **Table 4-2** and their associated charts, the City water demand increased in 2012 and 2013 as economic conditions improved, before decreasing dramatically in 2014 and 2015 due to the voluntary and mandatory water conservation efforts that were implemented by the City's water customers during the extended drought. Water production has begun to rebound again in recent years (2016-2020) as water use restrictions were lifted and new development projects were constructed.



Table 4-2 Current and Historical Potable Water Demand and Population

Year	Potable Water Demand	Service Area Population	Per Capita Potable Water Use (GPCD)
2010	16,603	83,312	178
2011	16,882	83,648	180
2012	18,052	84,388	191
2013	18,587	84,883	195
2014	16,213	85,346	170
2015	14,041	85,707	146
2016	15,360	89,174	154
2017	18,160	90,980	178
2018	17,420	93,045	167
2019	17,672	95,000	166
2020	19,527	96,345	181

NOTES:

(a) 2010 to 2015 demand data are obtained from the 2015 UWMP. Detailed demand data from 2016 through 2020 are documented in Table 4-1.

(b) The population from 2010 to 2015 are obtained from the 2015 UWMP. The population from 2016 to 2020 are estimated from Department of Finance, Population Estimates for Cities, Counties, and the State, 2011-2020, with 2010 Benchmark, released 1 May 2020, adjusting for the population in Larch Clover CSD which is located outside the City Boundary. The Larch Creek Clover CSD population was estimated based on the total number of accounts (118) and a person per household factor of 3.51.

(c) Per capita potable water use is calculated by dividing the total annual potable water demand by service area population and the number of days in a year.

(d) Unless otherwise noted, volumes are in units of AF.

Chart 4-2A Current and Historical Water Demand and Population

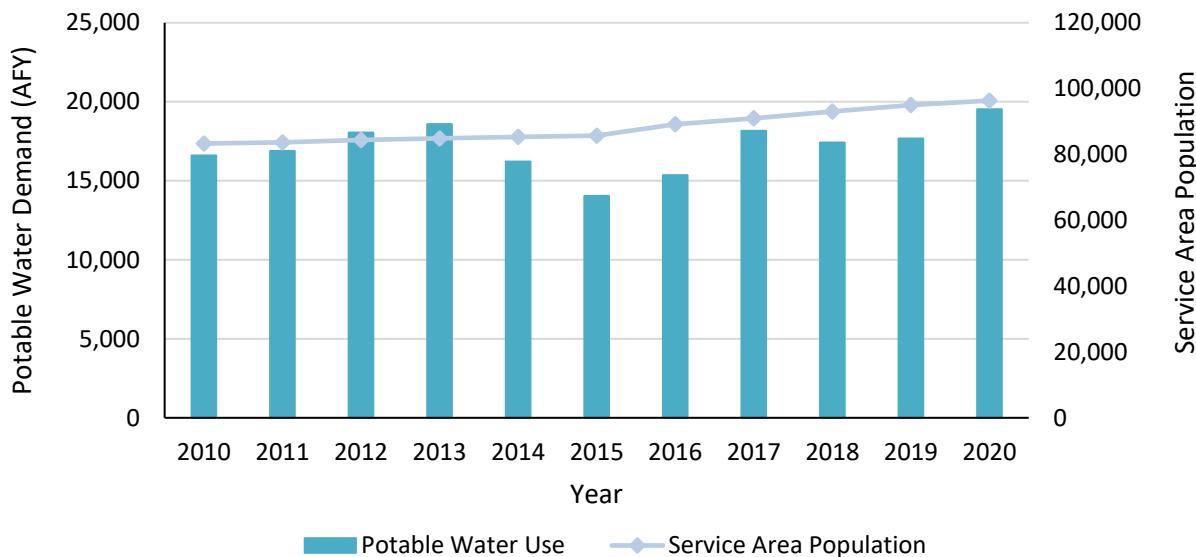
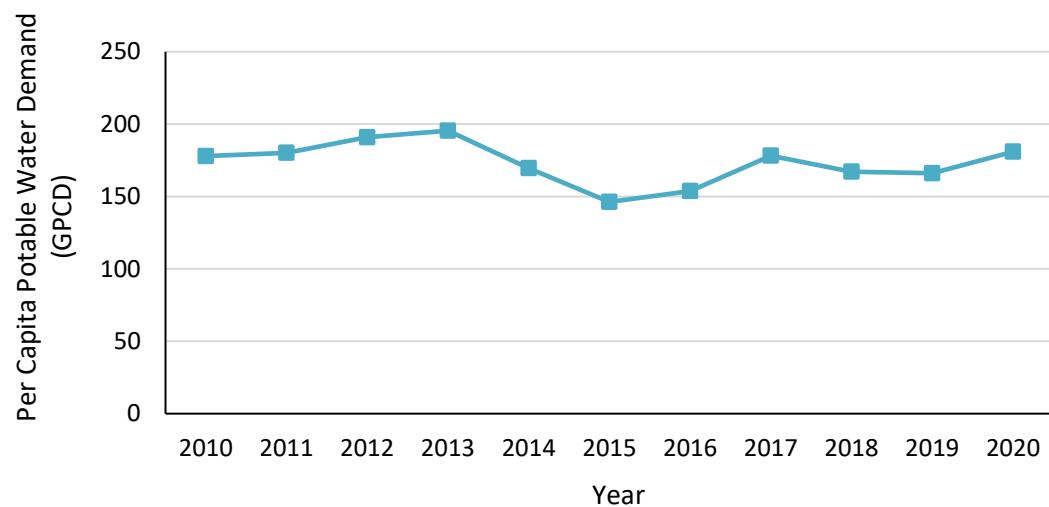


Chart 4-2B Current and Historical Per Capita Potable Water Use





4.1.2 Current and Historical Non-Potable Water Demand

The City anticipates using recycled water for landscape irrigation to offset potable water demands. The City's Wastewater Treatment Plant can currently produce up to approximately 9 million gallons per day (MGD) of tertiary-treated wastewater meeting Title 22 requirements, which can be used for landscape irrigation and other non-potable uses. Initially, the City intends to irrigate using recycled water at the Legacy Fields sports complex prior to 2025. Recycled water is discussed further in Chapter 6.

4.1.3 Distribution System Water Loss

CWC § 10631 (3)

(A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

Distribution system water losses for the previous five years are summarized in **Table 4-3**. Water loss is the sum of apparent and real losses. Apparent loss is associated with metering inaccuracies, billing, and administrative errors, authorized unmetered uses (e.g., system flushing and firefighting), and unauthorized uses. Real loss is associated with physical water lost through line breaks, leaks and seeps, and overflows of storage tanks. Since 2016, urban retail water suppliers have been required under CWC § 10608.34 and California Code of Regulations (CCR) § 638.1 et seq to quantify distribution system water losses using the American Water Works Association (AWWA) Free Water Audit Software (referred to as the "AWWA Water Loss Worksheet"). The City's Water Loss Worksheets are available through DWR's Water Use Efficiency Data Portal.⁵

In 2020⁶, the City's water losses were estimated to be 3,689 AF, approximately 19% of the total volume of water supplied. The City actively manages its distribution system to minimize leakage through actions such as managing system-wide pressures to prevent pressure spikes, installing permanent acoustic leak sensors, and repairing all known leaks immediately. CWC §10631(3)(c) requires that this UWMP demonstrate whether the distribution loss standards enacted by the State Water Resources Control Board (SWRCB) pursuant to §10608.34 have been met. However, the SWRCB has yet to establish these standards, and thus consistency with these standards cannot be demonstrated herein.

⁵ DWR's Water Use Efficiency Data Portal: https://wuedata.water.ca.gov/awwa_plans

⁶ The City's 2020 water loss audit report has yet to be validated and is currently in draft form.



Table 4-3 12 Month Water Loss Audit Reporting (DWR Table 4-4)

Reporting Period Start Date	Volume of Water Loss
01/2016	1,385
01/2017	1,609
01/2018	1,184
01/2019	1,025
01/2020	3,689

NOTES:

(a) Volumes are in units of AF.

(b) 2020 losses were obtained from the draft 2020 AWWA audit report, while losses from other years were from validated audit reports. Water losses from 2020 may be modified during the validation process which the City will undergo during June 2021.

4.2 Projected Total Water Demand

The City's water demand projections were prepared based on the methodology described in the City's 2020 Water System Master Plan (WSMP; Tracy, 2020). Projected total water demand is discussed in detail in the following subsections.

4.2.1 Projected Potable Water Demand

As described in more detail below and in the 2020 WSMP, the potable water demand projections were calculated as the sum of the two major components of future water demands: (1) the volume of potable water demand that best represents current water demands within the City (i.e., a "baseline" demand), and (2) the anticipated potable water demands associated with the future development projects and planning areas. In addition, this Plan includes assumptions regarding passive conservation savings.

The future water demands for buildout of the City's General Plan were projected based on unit water demand factors reflecting recent water use patterns and trends for the City's various land uses, consistency with the Model Water Efficient Landscape Ordinance (MWELO) for landscape irrigation water use and the use of recycled water for landscape irrigation for selected land use designations.

The assumptions used as the bases for demand projections were developed in close coordination with the City and reflect a land-use based approach consistent with the City's community planning. As described in Section 4.2.4, the methodology was modified slightly to be consistent with CWC §10631(d)(4)(A), which requires that "water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." Because the 2020 WSMP did not account for water savings associated with passive conservation, a county-specific multiplier from the DWR 2016 Projected Statewide and County-Level Effects of Plumbing Codes and



Appliance Standards (M.Cubed, 2016) was used to estimate passive savings, and the resulting volumes were subtracted from the demands shown in the WSMP.

Projected customer water demands for years 2025 through 2045 are presented in **Table 4-4**. These projected demands are broken down by sector, including water loss. As indicated in **Table 4-5**, the water use projections presented in **Table 4-4** include assumptions about future water savings due to passive conservation (see Section 4.2.4) and water use by lower income households (see Section 4.2.3).

Table 4-4 Use for Potable and Non-Potable - Projected (DWR Table 4-2)

Use Type	Additional Description (as needed)	Projected Water Use (a)				
		2025	2030	2035	2040	2045
Single Family		10,753	11,870	13,014	14,174	16,221
Multi-Family		1,409	1,509	1,614	1,720	2,479
Commercial	Note (b)	2,503	2,854	3,210	3,569	4,152
Industrial		1,724	2,521	3,315	4,108	5,138
Landscape		2,151	2,128	2,115	2,105	1,912
Losses	Note (c)	1,969	2,218	2,471	2,727	3,176
TOTAL		20,509	23,100	25,738	28,403	33,079

NOTES:

(a) Projected demands are obtained from the City's 2020 WSMP. Demands are assumed to increase linearly between 2025 and 2040, and demand in 2045 is assumed to be the projected demand at buildout. Projected demands are inclusive of passive savings, where the passive savings in 2025, 2030, 2035, 2040, and 2045 are 291, 566, 795, 997, and 1,155 AFY, respectively. These passive savings were distributed amongst the sectors based on their proportional water demands. These adjustments to the demands to include passive savings were performed after the preparation of the Public Draft of this UWMP, as a workaround to an issue with the DWR UWMP tool's inability to accept the negative number entries that were in the Public Draft version of this table. For further details on the passive savings, refer to Table 4-7 and Section 4.2.4.

(b) Sector Institutional/Governmental is grouped under Commercial in the projected water demand.

(c) Losses represent all the non-revenue water, which includes apparent loss, real loss, and unbilled authorized consumption. Losses were estimated to be 9.6% of the total consumption based on the 2020 WSMP.

(d) Passive savings were estimated using county specific multiplier from DWR 2016 Projected Statewide and County-Level Effects of Plumbing Codes and Appliance Standards on Indoor gallon per capita per day.

(e) The water served to PPBP is purchased by PPBP from the Byron Bethany Irrigation District. The City only provides treatment and delivery services for this water in accordance with a "treat and wheel" agreement. Therefore, the water demand associated with PPBP is not included herein.

(f) Volumes are in units of AF.



Chart 4-4 Current and Projected Potable Water Demand by Sector

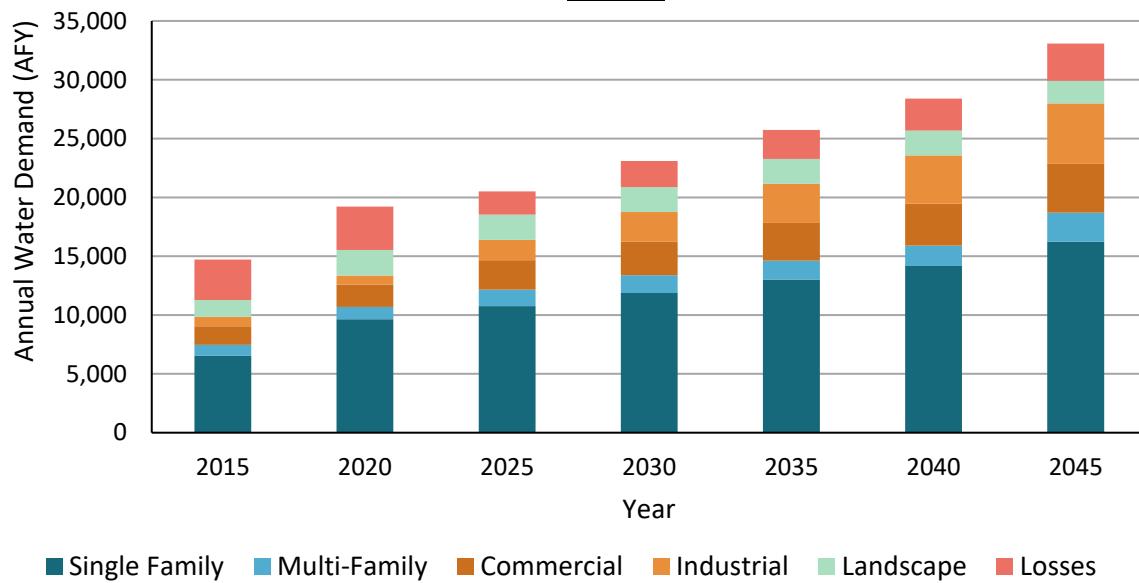




Table 4-5 Inclusion in Water Use Projections (DWR Table 4-5)

Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Section 4.2.4
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES:	

4.2.2 Projected Non-Potable Water Demand

As discussed in Section 4.1.2 and discussed further in Section 6.7, the City is relying on recycled water use to offset potable water demands for future developments. Consistent with the 2020 WSMP, the demand projections in the 2020 UWMP assume that 15% of total gross acres will be landscaped and irrigated with recycled water for the following land use categories: Residential – Medium, Residential – High, Residential – Very High, Commercial, Office, Industrial, and Public Facilities. Future parks are assumed to be irrigated solely with recycled water. Since recycled water is to be used for irrigation, the unit water demand factor for parks (4.0 AFY/acre; Tracy, 2020) is applied to the irrigated portion of the above land use categories for the purposes of recycled water demand projections. To account for distribution system losses, the City has built in an assumed 5% water loss to its recycled water demand projections (Tracy, 2020).

The City's total water demand, including potable and non-potable demands, is summarized in Section 4.2.5 in five-year increments between 2025 and 2045 (buildout). By 2040, the City is projecting a recycled water demand of 4,200 AF, which will comprise approximately 13% of total water demand. By buildout or 2045, the City is projecting a recycled water demand of 6,300 AF, or approximately 16% of total demand. A full discussion of the City's recycled water supplies and projected use of recycled water within the City is presented in Section 6.7.



4.2.3 Water Use for Lower Income Households

CWC § 10631.1

(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirements under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

As indicated in **Table 4-5**, water use projections presented in Section 4.2.1 and **Table 4-4** include projected water use by lower income households. A lower income household is defined under California Health and Safety Code §50079.5(a) to be 80% of median income, adjusted for family size. Approximately 24% of households in the City were classified as extremely low, very low, and low income households per the 2015-2023 Housing Element (Tracy, 2016). Thus, as shown in **Table 4-6**, the projected water demands for lower income households are estimated to be 24% of the total single-family and multi-family residential projected water uses included in **Table 4-4**. The resulting estimated water use for lower income households is expected to grow from 2,936 AF in 2025 to 4,606 AF at buildout, or 2045.

Table 4-6 **Projected Potable Water Demand for Lower-Income Households**

Lower-Income Water Demand Sector	Projected Water Use (AF)				
	2025	2030	2035	2040	2045
Single Family	2,596	2,894	3,193	3,492	3,996
Multi-Family	340	368	396	424	611
TOTAL	2,936	3,262	3,589	3,915	4,606

NOTES:

(a) Per the City's 2015-2023 Housing Element, in 2011, 24% of housing units served lower income households. It is assumed that approximately 24% of the future residential water demand will be associated with lower income households.



4.2.4 Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans

CWC § 10631 (d) (4)

(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

“Passive conservation” refers to water savings resulting from actions and activities that do not depend on direct financial assistance or educational programs from the City. These savings result primarily from: (1) the natural replacement of existing plumbing fixtures with water-efficient models required under current plumbing code standards, and (2) the installation of water-efficient fixtures and equipment in new buildings and retrofits as required under CALGreen Building Code Standards. The projected water savings associated with passive savings, as summarized in **Table 4-7**, were estimated using county specific multiplier from DWR 2016 Projected Statewide and County-Level Effects of Plumbing Codes and Appliance Standards on Indoor gallon per capita per day (GPCD; M.Cubed, 2016)⁷. The projected water savings due to passive conservation are estimated to be 1,155 AFY by 2045. The water savings estimates incorporate the effects of the following codes and regulations:

- Assembly Bill (AB) 715, enacted in 2007, requires that any toilet or urinal sold or installed in California on or after January 1, 2014 cannot have a flush rating exceeding 1.28 and 0.5 gallons per flush, respectively. AB 715 superseded the state’s previous standards for toilet and urinal water use set in 1991 of 1.6 and 1.0 gallons per flush, respectively. On April 8, 2015, in response to the Governor’s Emergency Drought Response Executive Order (EO B-29-15), the California Energy Commission approved new standards for urinals requiring that they not consume more than 0.125 gallons per flush, 75% less than the standard set by AB 715.
- Water use standards for residential and commercial clothes washers and dishwashers are established by the U.S. Department of Energy through its authority under the federal Energy Policy and Conservation Act. Water use efficiency is summarized by the water factor for the appliance which measures the gallons of water used per cycle per cubic foot of capacity. A typical top-loading residential clothes washer manufactured in the 1990s had a water factor of around 12. In 2015, the allowable water factor for top- and front-loading residential clothes was reduced

⁷ GPCD reduction factor is obtained from the “Total Effects, including Common Area and Coin-Op Clothes Washers and Non-Residential Toilets and Urinals” table from Attachment 3, which estimated passive savings associated with indoor fixtures from all sectors. The reduction factor is adjusted to reflect reduction relative to 2020.



to 8.4 and 4.7, respectively. In 2018, the water factor standard for top-loading residential clothes washers was reduced to 6.5. In 2010, the allowable water factor for top- and front-loading commercial clothes washers were reduced to 8.5 and 5.5, respectively. The maximum water factors for Energy Star compliant top- and front-loading washers are 3.7 and 4.3, respectively. The U.S. Environmental Protection Agency estimates that Energy Star washers comprised at least 60% of the residential market and 30% of the commercial market in 2011. An Energy Star compliant washer uses about two-thirds less water per cycle than a washer manufactured in the 1990s. Federal dishwasher water use efficiency standards were last updated in 2013. The maximum water uses for standard and compact sized dishwashers are 5.0 and 3.5 gallons per cycle, respectively.

- New construction and renovations in California are now subject to CALGreen Code requirements. CALGreen includes prescriptive indoor provisions for maximum water consumption of plumbing fixtures and fittings in new and renovated properties. CALGreen also allows for an optional performance path to compliance, which requires an overall aggregate 20% reduction in indoor water use from a calculated baseline using a set of worksheets provided with the CALGreen guidelines.
- Senate Bill (SB) 407, enacted in 2009, mandates that all buildings in California come up to current State plumbing fixture standards within this decade. This law establishes requirements that residential and commercial property built and available for use on or before January 1, 1994 replace plumbing fixtures that are not water conserving, defined as “noncompliant plumbing fixtures.” This law also requires that effective January 1, 2017, a seller or transferor of single-family residential property must disclose to the purchaser or transferee, in writing, the specified requirements for replacing plumbing fixtures and whether the real property includes noncompliant plumbing. Similar disclosure requirements went into effect for multi-family and commercial transactions on January 1, 2019. Senate Bill (SB) 837, passed in 2011, reinforces the disclosure requirement by amending the statutorily-required transfer disclosure statement to include a disclosure on whether the property is in compliance with SB 407 requirements.

In addition, following the 2014-2016 drought, the State of California (State) developed the “Making Water Conservation a California Way of Life” framework to address the long-term water use efficiency requirements called for in executive orders issued by Governor Brown. In May of 2018, Assembly Bill (AB) 1668 and SB 606 (collectively referred to as the efficiency legislation) went into effect, which built upon the executive orders implementing new urban water use objectives for urban retail water suppliers. These new urban water use objectives are discussed in Section 4.6.

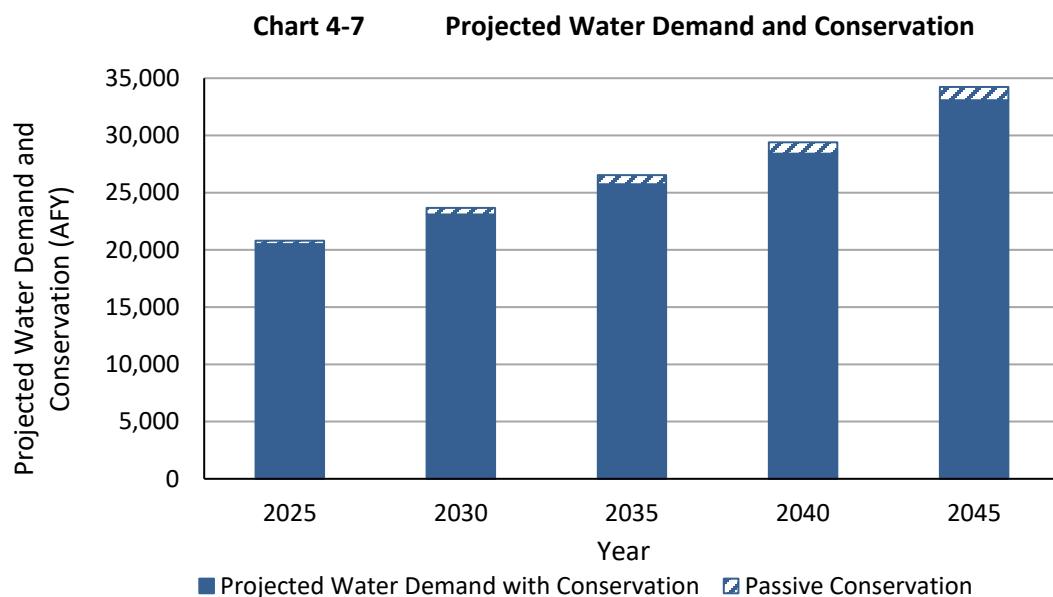


Table 4-7 Projected Potable Water Demand and Projected Passive and Active Water Conservation

Water Conservation Type	Projected Potable Water Demand (AF)				
	2025	2030	2035	2040	2045
Projected Water Demand	20,800	23,667	26,533	29,400	34,234
Projected Passive Conservation	291	566	795	997	1,155
Projected Water Demand after Passive Conservation Savings	20,509	23,100	25,738	28,403	33,079

NOTES:

(a) Passive savings were estimated using county specific multiplier from DWR 2016 Projected Statewide and County-Level Effects of Plumbing Codes and Appliance Standards on Indoor gallon per capita per day.





4.2.5 Projected Total Water Demand

The City's total projected water demands are summarized in **Table 4-8**.

Table 4-8 Gross Water Use (DWR Table 4-3)

	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable <i>From Tables 4-1R and 4-2 R</i>	19,527	20,509	23,100	25,738	28,403	33,079
Recycled Water Demand* <i>From Table 6-4</i>	0	1,000	2,067	3,133	4,200	6,300
TOTAL WATER USE	19,527	21,509	25,167	28,871	32,603	39,379
<i>*Recycled water demand fields will be blank until Table 6-4 is complete.</i>						
NOTES: (a) Volumes are in units of AF.						

4.3 Water Use Sectors Not Included in the Demand Projections

Several water use sectors listed in CWC §10631(d)(1) are not included in the water demand projections described in Sections 4.2.1 and 4.2.2 because they are not applicable to the City. The following sectors were not included in the demand projections in this Plan:

- Sales to Other Agencies (CWC §10631(d)(1)(G)) – The City does not regularly sell water to other agencies.
- Saline Water Intrusion Barriers, Groundwater Recharge, or Conjunctive Use (CWC §10631(d)(1)(H)) – The City does not currently use, nor does it plan to use, water for saline water intrusion barriers. While the City has groundwater recharge and conjunctive use programs (see Section 6), the associated volumes are reported as net extractions in Section 6 and are not explicitly included as a water use sector in the demand projections.
- Agricultural (CWC §10631(d)(1)(I)) – The City does not currently, nor does it plan to, provide water for agricultural uses.



4.4 Climate Change Impacts to Demand

CWC § 10635(b)

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

The methodology used to develop demand projections herein considers the impacts of climate change on projected demands. California experienced a historic drought between 2011-2017. In 2014, Governor Brown issued Executive Order B-26-14 declaring a Drought State of Emergency and requested all Californians to voluntarily reduce water use by 20%. In 2015, the State Water Resources Control Board implemented emergency conservation regulations that, among other things, required water agencies to reduce their water use and prohibited certain types of water uses. As a result, the City experienced an overall decrease in demands during the historic drought, most significantly during 2015. As explained further in the 2020 WSMP, the demand projections are based on a baseline water demand established based on the 2005-2013 period, during which customers increased their water use (in part due to the drought conditions, prior to the imposed restrictions). Thus, the periods used to develop the demand projections reflect conditions representative of the hotter, drier weather expected as a result of climate change.

4.5 Coordinating Water Use Projections

CWC § 10631 (h)

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available.

As discussed in Sections 2.2 and 4.4, the City has been closely communicating with the United States Bureau of Reclamation (USBR) and South San Joaquin Irrigation District (SSJD). The City notifies the USBR each year of the deliveries that it expects to receive from the USBR during the following year. The City also notifies the SSJD each year of the deliveries that it expects to receive over the next three years. As part of the coordination effort for the 2020 UWMP, and in compliance with CWC §10631(j), the City supplied the USBR and SSJD with its water demand projections through 2045.



4.6 Urban Water Use Objectives (Future Requirements)

CWC § 10609.20

(a) Each urban retail water supplier shall calculate its urban water use objective no later than January 1, 2024, and by January 1 every year thereafter.

(b) The calculation shall be based on the urban retail water supplier's water use conditions for the previous calendar or fiscal year.

CWC § 10609.22

(a) An urban retail water supplier shall calculate its actual urban water use no later than January 1, 2024, and by January 1 every year thereafter.

(b) The calculation shall be based on the urban retail water supplier's water use for the previous calendar or fiscal year.

CWC § 10609.24

(a) An urban retail water supplier shall submit a report to the department no later than January 1, 2024, and by January 1 every year thereafter. The report shall include all of the following:

(1) The urban water use objective calculated pursuant to Section 10609.20 along with relevant supporting data.

(2) The actual urban water use calculated pursuant to Section 10609.22 along with relevant supporting data.

(3) Documentation of the implementation of the performance measures for CII water use.

(4) A description of the progress made towards meeting the urban water use objective.

(5) The validated water loss audit report conducted pursuant to Section 10608.34.

(b) The department shall post the reports and information on its internet website.

(c) The board may issue an information order or conservation order to, or impose civil liability on, an entity or individual for failure to submit a report required by this section.

Beginning in 2023, urban water retailers will be required to report on “annual water use objectives” by November 1 of each year and to achieve these objectives by 1 January 2027 (per CWC § 10609). The annual water use objectives will be calculated based on standards for indoor residential water use, outdoor residential water use, and distribution system water loss. Additionally, it is anticipated that performance-based standards for the commercial, industrial, and institutional sectors, separate from the annual water use objectives, will also be developed by Department of Water Resources (DWR) and implemented in the future. However, the specific standards that will be used to determine a retailer’s annual urban water use objectives are currently under development by DWR, and thus, the annual urban water use objectives for the City cannot be calculated or estimated. Once the urban water use objectives are released, the City will evaluate its historical and current water use compared to the new objectives, and will evaluate the need to adjust its conservation and water loss management measures to meet the new objectives.

One of the components for calculating the future water use objectives is provided for in CWC §10609.4.(a), which states “(1) Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily. (2) Beginning January 1, 2025, and until January 1, 2030, the standard for indoor



residential water use shall be the greater of 52.5 gallons per capita daily or a standard recommended pursuant to subdivision (b). (3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b)." **Table 4-9** shows an estimate of future per capita residential water use, broken out by estimated indoor and outdoor water use⁸. Based on these estimates, per capita indoor residential potable water use is expected to be higher than the indoor use standards presented in the legislation. Although indoor residential water use is not expected to be within the indoor residential water use standard, it should be noted that because standards have not yet been developed for the outdoor water use or water loss components of the future water use objectives, it cannot be known whether projected demands for the City will be in compliance with the pending requirements.

⁸ Indoor water use was estimated to be the lowest monthly water use for the residential sector from 2016 to 2020, accounting for the number of days in each month. Outdoor water use for each sector was estimated to be the difference between the total water use and the estimated indoor water use. The residential indoor water use was estimated to be 66% of the total residential water use.



Table 4-9 Current and Projected Residential Per Capita Water Use

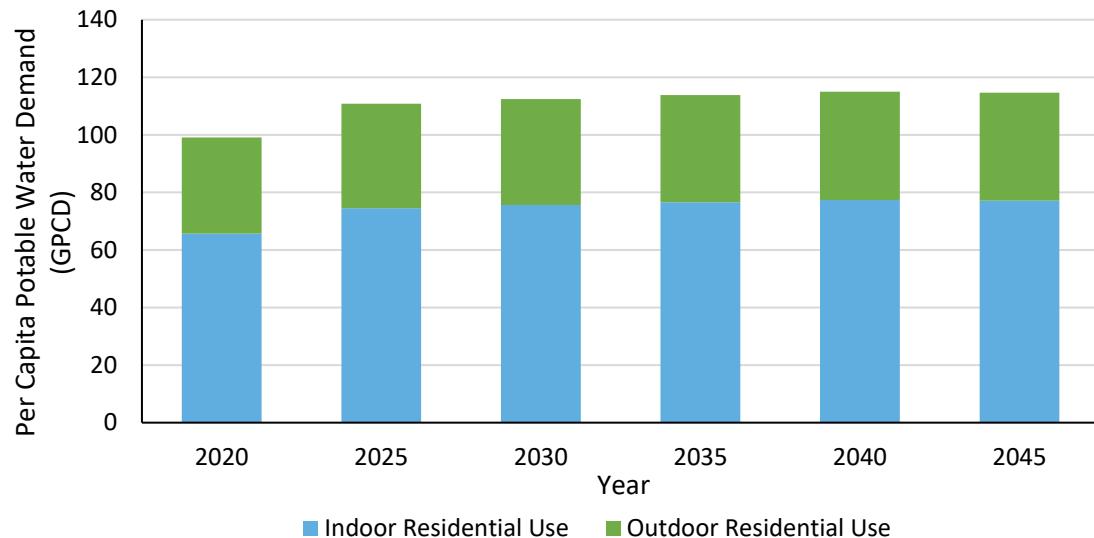
Year	Residential Potable Water Demand	Service Area Population	Per Capita Residential Potable Water Use (GPCD)	Approximate Per Capita Indoor Residential Potable Water Use (GPCD)	Approximate Per Capita Outdoor Residential Potable Water Use (GPCD)
2020	10,692	96,345	99	66	33
2025	12,335	109,900	100	66	34
2030	13,707	120,367	102	67	34
2035	15,079	130,833	103	68	35
2040	16,452	141,300	104	69	35
2045	19,354	166,700	104	69	35

NOTES:

(a) Indoor water use was estimated to be the lowest monthly water use for the residential sector from 2016 to 2020, accounting for the number of days in each month. Outdoor water use for each sector was estimated to be the difference between the total water use and the estimated indoor water use. The residential indoor water use was estimated to be 66% of the total residential water use.

(b) Unless otherwise noted, volumes are in units of AF.

Chart 4-9 Current and Projected Indoor and Outdoor Residential Per Capita Potable Water Use





5 SB X7-7 BASELINES, TARGETS, AND 2020 COMPLIANCE

CWC § 10608.24 (b)

Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

CWC § 10608.28

(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

With the adoption of the Water Conservation Act of 2009, also known as Senate Bill (SB) X7-7, the state is required to reduce urban water use by 20% by the year 2020. Each urban retail water supplier was required to develop a baseline daily per capita water use (“baseline water use”) in their 2010 Urban Water Management Plan (UWMP or Plan) and establish per capita water use targets for 2015 and 2020 in order to help the state achieve the 20% reduction.

In support of implementing the requirements of SB X7-7, the California Department of Water Resources (DWR) produced a set of methodologies for developing baseline and compliance water use and targets, which are included in Methodologies for Calculating Baseline and Compliance Urban Per Capita Water, California Department of Water Resources Division of Statewide Integrated Water Management Water Use and Efficiency Branch (Methodologies; DWR, 2016). As required by DWR, the City of Tracy (City) updated its baseline and target water use information in its 2015 UWMP and has not made any changes since then.

In this chapter, the City demonstrates compliance with its 2020 per capita water use target. As part of the compliance reporting for SB X7-7, water suppliers are required to complete and submit a set of standardized verification tables in their 2020 UWMPs. The information in these tables is discussed and summarized in the following subsections, and the complete set of SB X7-7 standardized tables is included in **Appendix E**.



5.1 Service Area Population

CWC § 10608.20 (e)

An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

CWC § 10608.20 (g)

An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

Methodology 2 Service Area Population.

DWR will examine discrepancy between the actual population estimate and DOF's projections for 2010; if significant discrepancies are discovered, DWR may require some or all suppliers to update their baseline population estimates. (DWR, 2016)

Table 5-1 provides estimates of the City's service area population for each of the baseline years and the 2020 compliance year. Per the Methodologies, DWR required that water suppliers calculate their baseline population using 2010 Census data. The population data presented in **Table 5-1** were based on data from the California Department of Finance (DOF) that incorporated 2010 Census data as a benchmark, and thus satisfies this requirement. The population calculation methodology is described in Section 3.2. The 2020 compliance year population for the City is 96,345.


Table 5-1 SB X7-7 Service Area Population

Year	Population	
10 to 15 Year Baseline Population		
Year 1	1995	44,906
Year 2	1996	46,311
Year 3	1997	47,791
Year 4	1998	49,327
Year 5	1999	52,326
Year 6	2000	57,298
Year 7	2001	61,423
Year 8	2002	66,372
Year 9	2003	70,444
Year 10	2004	75,131
5 Year Baseline Population		
Year 1	2003	70,444
Year 2	2004	75,131
Year 3	2005	78,613
Year 4	2006	80,535
Year 5	2007	81,082
2020 Compliance Year Population		
2020		96,345
NOTES:		

5.2 Baseline Water Use

The baseline water use is the water supplier's average gross daily water use per capita measured in gallons. This baseline includes all water entering the delivery system, including water losses. A water supplier may deduct from its gross water use water conveyed to other urban water suppliers, water placed into long-term storage, recycled water delivered within the supplier's service area, water delivered for agricultural use, water conveyed to other urban water suppliers, and water used for industrial processes.

Water suppliers must define a 10- or 15-year base (or baseline) period for water use that is then used to develop their future target per capita water use. Water suppliers must also calculate water use over a 5-year baseline period and use that value to determine a minimum required reduction in water use by 2020. Utilizing a 15-year baseline period is only allowed for water suppliers that meet at least 10% of their 2008 measured retail water demand through recycled water; the City does not meet this criterion and thus selected a 10-year baseline.

The 10-year baseline water use for the City was calculated as 226 gallons per capita per day (GPCD) using gross per capita water usage data (calculated as total water entering the City's water distribution system divided by total population) for the 10-year period between 1995 and 2004. The 5-year baseline water



use was calculated as 209 GPCD using per capita water usage data for the 5-year period between 2003 and 2007. No deductions were made to the City's gross water use. The 5- and 10-year baseline water uses are shown in **Table 5-2**.

Table 5-2 Baselines and Targets Summary (DWR Table 5-1)

Baseline Period	Start Year	End Year	Average Baseline GPCD	Confirmed 2020 Target GPCD
10-15 year	1995	2004	226	
5 Year	2003	2007	209	181
NOTES:				



5.3 Water Use Targets

CWC § 10608.20 (b)

An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

CWC § 10608.22

Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.



The Water Conservation Act requires that agencies calculate their 2020 water use targets (2020 Targets) using one of the following four methods:

- Method 1: 80% of the water supplier's baseline per capita water use;
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use, landscaped area water use, and commercial, industrial, and institutional uses;
- Method 3: 95% of the applicable state hydrologic region target as stated in the State's 20x2020 Water Conservation Plan, dated February 2010; or
- Method 4: Total savings subtracted from baseline water use. Savings include metering savings, residential savings, commercial, industrial, and institutional savings, and landscape and water loss savings.

The City's 2020 Target was calculated to be 181 GPCD using Method 1, as presented in **Table 5-2**. Under CWC §10608.22, water suppliers must confirm that the 2020 Target will reduce 2020 water use by a minimum of 5% from the 5-year base daily per capita water use. As discussed in Section 5.2, the City's 5-year baseline water use is 209 GPCD. The 2020 Target (181 GPCD) is less than 95% of the 5-year baseline water use, so the selected 2020 Target is in compliance with the UWMP Act.



5.4 2020 Target Compliance

CWC § 10608.24 (b)

Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

CWC § 10608.24 (d)

(1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

CWC § 10608.40

Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

The City's 2020 population was 96,345 and its 2020 water demand was 19,527 acre-feet, which results in a daily gross per capita water use estimate of 181 GPCD. As shown in **Table 5-3**, this 2020 actual water demand meets the target of 181 GPCD.

It should be noted that the 2020 water demand was higher than demands in 2018 and 2019, due to the fact that water losses in 2020 were almost three times higher than previous years. The City is currently investigating the causes of the increase in water losses during 2020, including performing calibration of flow meters and evaluating potential unauthorized water uses in the City. If 2020 water losses had been similar to 2018 and 2019 levels, the City's GPCD would have been significantly lower than the 2020 confirmed target.

Table 5-3 2020 Compliance (DWR Table 5-2)

2020 GPCD			2020 Confirmed Target GPCD	Did Supplier Achieve Targeted Reduction for 2020?
Actual 2020 GPCD	2020 TOTAL Adjustments	Adjusted 2020 GPCD (Adjusted if applicable)		
181	0	0	181	Yes
NOTES:				



6 WATER SUPPLY CHARACTERIZATION

CWC § 10631 (b) *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

The City of Tracy (City or Tracy) obtains water from both surface water and groundwater sources. The amount of water that Tracy uses from each of its water supply sources varies from year to year based on contractual agreements, annual precipitation, and City policy about how to expand, utilize, and manage its water resources. The City's current and potential future water supplies are described in the following sections.

6.1 Purchased Water

The City purchases imported surface water from two wholesale water suppliers: (1) the United States Bureau of Reclamation (USBR), which supplies the City with Central Valley Project (CVP) water via the Delta-Mendota Canal (DMC; conjunctively referred to as DMC/CVP water), and (2) the South San Joaquin Irrigation District (SSJD), which supplies Stanislaus River water through the South County Water Supply Project (SCWSP). Information on these purchased water sources is provided below.

6.1.1 Central Valley Project Water via the Delta-Mendota Canal

The City has the following contractual entitlements for the DMC/CVP water supply:

- The City entered into a 40-year Municipal and Industrial (M&I) contract with the USBR in 1974 for an entitlement of 10,000 acre-feet per year (AFY) of surface water from the CVP via the DMC.⁹ Though this contract expired in 2014, there have been a series of interim contract renewals to provide water service to the City while the USBR and the City negotiate the long-term contract and complete the required environmental documentation. The most recent interim renewal contract term began on 1 March 2020 and ends on 28 February 2022. The City anticipates ongoing contract renewals for this source.
- In February 2004, the City entered into two contracts with the USBR for 5,000 AFY of agricultural (Ag) reliability water from the Banta-Carbona Irrigation District (BCID)¹⁰ and 2,500 AFY of Ag-reliability water from the West Side Irrigation District (WSID).¹¹ In December 2013, the City and

⁹ Contract No. 14-06-200-7858A, dated 22 July 1974.

¹⁰ The “Agreement for Assignment of Entitlement to CVP Water Between the City of Tracy and the Banta-Carbona Irrigation District,” dated 5 June 2001, assigned water to the City from BCID’s contract with the USBR (Contract No. 14-06-200-4305A-IR7).

¹¹ The “Agreement for Assignment of Entitlement to CVP Water Between the City of Tracy and The West Side Irrigation District,” dated 21 August 2001, assigned water to the City from WSID’s contract with the USBR (Contract No. 7-07-20-W0045-IR7). The agreement was amended on 11 September 2002.



the WSID approved an additional assignment of 2,500 AFY of water, increasing the City's total assignment of WSID water to 5,000 AFY.

- A portion of the Tracy Hills Specific Plan area was annexed into the Byron Bethany Irrigation District (BBID) and is entitled to water service from BBID as part of its pre-1914 appropriative water rights. This water is delivered to the City via the DMC and is treated at the City's John Jones Water Treatment Plant (JJWTP) before delivery to Tracy Hills. The City anticipates that up to 4,500 AFY of the BBID pre-1914 water will be available to serve the Tracy Hills as it is built. However, the volume of water available is restricted to the actual demand in the portion of Tracy Hills within the BBID's service area. The projected potable water demand in this area is estimated to be 3,330 AFY at buildout (Tracy, 2020).
- The City also treats and serves small amounts of DMC/CVP water purchased by the Patterson Pass Business Park (PPBP) from BBID for use at the PPBP only. This water is not considered as part of the City's supply or demand because the City solely provides water treatment, delivery, and billing services in accordance with a "treatment and wheeling" agreement; the City does not manage either the supply or the demand.

Tracy's DMC/CVP water is treated at the JJWTP, which is located at the southern end of the City, just east of the DMC and the California Aqueduct. The JJWTP was constructed in 1979, expanded in 1988, and expanded and upgraded again in 2008. The current permitted treatment capacity of the JJWTP is 30 million gallons per day (MGD)¹² which is sufficient to treat all of Tracy's DMC/CVP water supplies. The treatment process at the JJWTP includes chemical oxidation, temperature equalization, coagulation, flocculation, filtration, granulated activated carbon adsorption, and ultraviolet (UV) light and chlorine/chloramine disinfection.

6.1.2 Stanislaus River Water

The City's SCWSP water supply is based on SSJID's senior, pre-1914 appropriative water rights to the Stanislaus River, coupled with an agreement with the USBR to store water in the New Melones Reservoir. The City purchases water from SSJID through the SCWSP. The SCWSP is a partnership between the City, SSJID, and the cities of Manteca, Lathrop, and Escalon. As part of the SCWSP, Tracy was initially allocated up to 10,000 AFY of water. In 2006, the City entered into a temporary contract with Escalon to purchase Escalon's allocation of 2,015 AFY of SCWSP supply until Escalon constructs the necessary infrastructure to convey the SCWSP water.¹³ In 2013, the City acquired an additional 1,120 AFY of SCWSP water from the City of Lathrop.¹⁴ The City's current contractual amount of SCWSP water is 13,135 AFY in total. Once the agreement with Escalon sunsets (anticipated to occur in 2025), the City's contractual allocation will be reduced to 11,120 AFY.

¹² The plant is designed for an ultimate capacity of 45 MGD. The piping, UV equipment, and other common components are hydraulically designed for the future expanded plant capacity.

¹³ Escalon Amendment to Tracy- SSJID Water Supply Development Agreement, March 2006.

¹⁴ Lathrop-Tracy Purchase, Sale and Amendment Agreement, dated 6 August 2013.



The Stanislaus River water is treated at the Nick C. DeGroot Water Treatment Plant (DGWTP), located near Woodward Reservoir in San Joaquin County. The DGWTP currently has a treatment capacity of 36 MGD. The treatment process at the DGWTP involves pre-chlorination, coagulation, dissolved air flotation pretreatment for removal of solids and dissolved material, chemical stabilization to minimize internal pipe corrosion, membrane filtration, and chlorination for disinfection.

The next phase of the SCWSP (Phase II) is anticipated to expand the treatment capacity of the DGWTP to approximately 60 MGD. The City will not be participating in Phase II of the SCWSP.

6.2 Groundwater

CWC § 10631

(b) (4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:

(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.

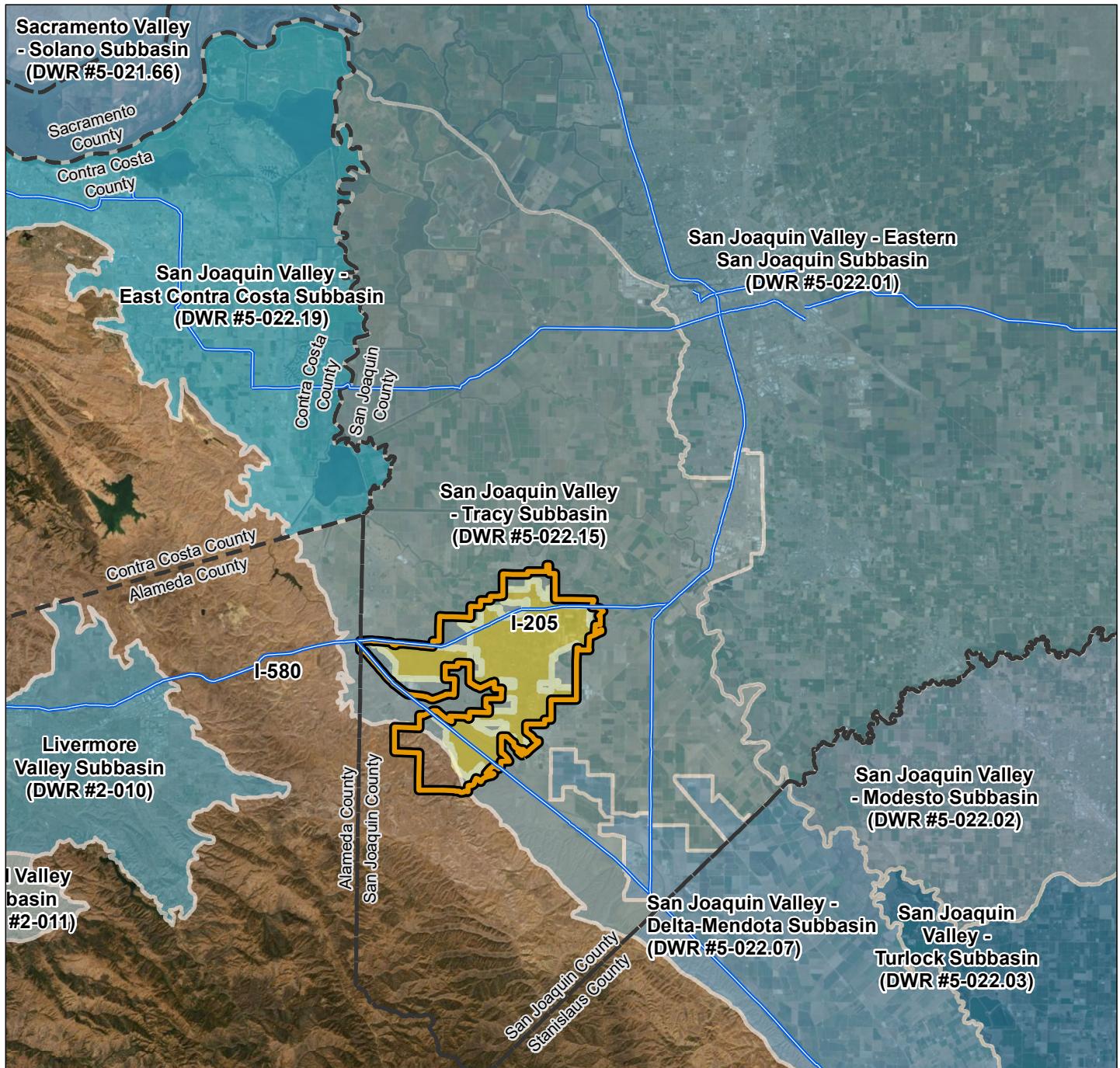
(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

The City's purchases of surface water are supplemented by local groundwater. Approximately 6% of the City's water supply was from local groundwater supply wells during 2020. This section includes information regarding the basin description, groundwater management, and the City's role as one of the six Groundwater Sustainability Agencies (GSAs) in the Groundwater Sustainability Plan (GSP) development process, followed by a discussion of the City's groundwater production.

6.2.1 Basin Description

The City overlies the Tracy Subbasin (Basin; Department of Water Resources [DWR] 5-22.15) of the San Joaquin Valley Groundwater Basin (DWR 5-22). The Tracy Subbasin is not adjudicated, and it is not in a condition of critical overdraft. **Figure 6-1** shows the City in relation to the Basin and adjacent basins.



Legend

Groundwater Basins and Subbasin

- Livermore Valley
- Sacramento Valley - Solano
- San Joaquin Valley - Delta-Mendota
- San Joaquin Valley - East Contra Costa
- San Joaquin Valley - Eastern San Joaquin
- San Joaquin Valley - Modesto
- San Joaquin Valley - Tracy
- San Joaquin Valley - Turlock
- Sunol Valley

County Boundary

Sphere of Influence

City Limits / Existing Water Service Area

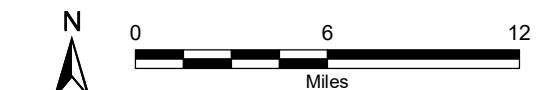
Highways

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.



Regional Setting and Groundwater Basins

Sources

1. Basemap is ESRI's ArcGIS Online world aerial map, obtained 9 June 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118-2016 Update.



The Tracy Subbasin is designated as a medium priority basin under DWR's 2019 Phase 2 Basin Prioritization (DWR, 2019a). Under this prioritization process, basins are ranked on eight components, and if a basin is assigned between 15 and 21 total points, it is defined as "medium priority." The main factors driving the Tracy Subbasin's designation include population growth (5 out of 5 possible points), irrigated acres (5 out of 5 possible points), number of public supply wells (3 out of 5 possible points), number of total wells (3 out of 5 possible points), and documented impacts including water quality (3 out of 5 possible points).¹⁵

As a DWR-designated medium priority basin, the Tracy Subbasin is subject to the requirements of the Sustainable Groundwater Management Act (SGMA), including the requirement to be covered by one or more GSAs and to prepare and submit to DWR one or more GSPs by 31 January 2022.

The Tracy Subbasin covers an area of approximately 373 square miles (DWR, 2019b). As shown on **Figure 6-1**, It is bounded on the northwest by the Old River south to the tri-county confluence point and on the south by the Clifton Forebay where it then follows the Contra Costa-Alameda County line to the foothills of the Coastal Range mountains. The northeast boundary follows the San Joaquin River south to the San Joaquin County Line with a slight jog to include the City of Lathrop on the west side of the river. The southern border of the Basin generally follows the San Joaquin-Stanislaus County line, with some irregular areas belonging to the Delta-Mendota Subbasin to the south. The western border follows the Coastal Range foothills from the San Joaquin-Stanislaus County line; north to the Contra Costa-Alameda County line. The Basin is a mix of Delta islands (mostly agriculture) and waterways along with urban and agricultural communities on the southern edge (GEI, 2020).

Further description of the Basin is included in the draft Basin Setting chapter of the GSP for the Tracy Subbasin, including the hydrogeologic conceptual model, and current and historical groundwater conditions. Draft GSP chapters are available on the Tracy GSP website: <https://tracysubbasin.org/gsp-chapters/>. Once the GSP has been submitted to DWR, the GSP is expected to be available on the DWR SGMA portal website: <https://sgma.water.ca.gov/portal/gsp/all>.

6.2.2 Non-SGMA Groundwater Management

Prior to the passage of SGMA, the City, BBID, Banta-Carbona Irrigation District (BCID), and San Joaquin County formed a Groundwater Advisory Committee to facilitate the development of a regional groundwater management plan (GWMP) for the Tracy Subbasin. The planning area of the Tracy GWMP encompassed the portion of the Tracy Subbasin underlying San Joaquin County. The Tracy GWMP was adopted in 2007 (GEI, 2007).

The key results of the Tracy GWMP include the following:

- Developing a general consensus among stakeholders regarding the characterization of the area's water problems, current and future demands, and groundwater conditions;

¹⁵ DWR's 2019 Phase 2 Basin Prioritization used the basin's total possible ranking points assigned to each of the eight components to determine the priority. A basin is defined as Medium Priority if it has 15 to 21 total ranking points.



- Documenting the region's groundwater management goals and establishing basin management objectives to help measure progress in attaining the goals;
- Developing specific solutions and common programs for the basin; and
- Providing an implementation plan to direct future groundwater management activities.

The Tracy GWMP concluded that the Tracy Subbasin is full, but experiences groundwater quality issues in portions of the basin associated with nitrate, boron, sulfate, chloride, and total dissolved solids (TDS). As such, many of the groundwater management options that were recommended focused on creating available storage and managing pumping in order to increase water quality within the Tracy Subbasin.

San Joaquin County is the designated Monitoring Entity under California Statewide Groundwater Elevation Monitoring (CASGEM) for the portion of the Tracy Subbasin underlying the county. However, upon submission of the GSP, the CASGEM program will be superseded by the SGMA monitoring efforts.

6.2.3 SGMA Groundwater Management

As discussed in Section 6.2.1, the Tracy Subbasin is designated by DWR as a medium priority basin (DWR, 2019a). As such, the Tracy Subbasin is subject to the requirements of SGMA, which include the formation of a one or more GSAs and the development and implementation of one or more GSPs.

The City, BCID, BBID¹⁶, City of Lathrop, San Joaquin County, and Stewart Tract are the six GSAs formed in the Tracy Subbasin and are working cooperatively to develop a single GSP. The Tracy Subbasin GSAs were awarded a DWR grant to develop the GSP. Pursuant to the Grant Agreement¹⁷, each GSA designated an appointee to form the GSP Coordination Committee, and the San Joaquin County was appointed as the Grant Administrator. The Grant Administrator or any two appointees may call meetings of the GSP Coordination Committee as needed to in the GSP development process.

The GSP for the Tracy Subbasin is currently under preparation and is anticipated to be complete and submitted to DWR by the statutory deadline of 31 January 2022. As of March 2021, initial drafts of sections describing the plan area, hydrogeologic conceptual model and groundwater conditions have been prepared and are available for public review on the Tracy Subbasin website: <https://tracysubbasin.org/gsp-chapters/>.

6.2.4 Coordination with Groundwater Sustainability Agencies

As discussed in the previous section, the City is one of the six GSAs that are managing the Tracy Subbasin. The City has been actively involved in GSP development activities and will continue to be involved throughout SGMA implementation. The City has one appointee (and an alternate) on the Tracy Subbasin GSP Coordination Committee and the Technical Committee. The Coordination Committee meets quarterly from 1:00 p.m. to 3:00 p.m. on the third Thursday of the month. The Technical Committee meets from

¹⁶ West Side Irrigation District has officially merged with Byron-Bethany Irrigation District in September 2020, which occurred later than the release of the draft GSP chapters.

¹⁷ The Grant Agreement can be found in the Tracy Subbasin website: <https://tracysubbasin.org/resources/>.



1:00 p.m. to 3:00 p.m. on the third Thursday of every month, with the exception of the months when the Coordination Committee meets.

6.2.5 Groundwater Production

As discussed in Section 3.7.6, the City owns and operates a total of nine active municipal wells, with one of the active wells being an aquifer storage and recovery (ASR) well as further discussed in Section 6.3. The pumping capacity of the City's production wells ranges from 1,400 gallons per minute (gpm) to 2,500 gpm. The production wells draw groundwater solely from the confined portion of the Lower Tulare Formation aquifer.¹⁸

The City's groundwater production over the period of 2016 through 2020 is presented in **Table 6-1**. Over this timeframe, the average groundwater production was 857 AFY. The maximum groundwater production occurred in 2020 (1,181 AFY) and the minimum production occurred in 2019 (645 AFY).

Groundwater use is expected to increase in the future. As shown in **Table 6-9**, the City projects to withdraw up to 2,500 AFY in normal years.

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

	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	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Tracy Subbasin of the San Joaquin Valley Groundwater Basin (DWR 5-022.15)	648	995	817	645	1,181
	TOTAL	648	995	817	645	1,181
NOTES: (a) Volumes are in units of AF. (b) Data provided by the City. Groundwater production is the sum of water extracted from the City's production wells and the net injection or extraction from the City's ASR well. 2020 production does not include the ASR well.						

¹⁸ The Tracy Subbasin has two principal aquifers: an Upper unconfined to semi-confined aquifer and a Lower confined aquifer that are separated by the Corcoran Clay.



6.3 Aquifer Storage and Recovery

The City has been implementing an ASR Program to store surplus treated surface water in the confined aquifer beneath Tracy and extract that water to meet peak demands or supplement surface water sources during dry years. The City has one former groundwater extraction well, Well 8, which has been operated as an ASR well since 2013 after the successful demonstration of ASR feasibility.¹⁹ Well 8 is located near the intersection of Tracy Boulevard and 6th Street and penetrates the Lower Tulare Formation.

The recharge water source of the City's ASR Program is treated SCWSP water.²⁰ The City's SCWSP water supply is of exceptionally high water quality, with a TDS concentration of approximately 64 milligrams per liter (mg/L).²¹ Since the TDS concentration of the recharge water source is much lower than that of the Lower Tulare Formation aquifer's native groundwater, operation of the City's ASR Program reduces the localized salinity of the aquifer, resulting in lower TDS content in water supplies extracted from Well 8 than would be expected in the absence of the ASR Program. Additionally, the reduced salinity in groundwater recovered from Well 8 results in lower salt loading at the City's wastewater treatment plant (WWTP), which eventually reduces the salinity of effluent from the WWTP. This helps the City meet its Regional Water Quality Control Board (RWQCB) effluent salinity requirements and provides environmental benefits to the river ecosystems.

Injection of SCWSP water into the ASR well occurs during the winter months (i.e., November through April), when City demands are low. Extraction occurs primarily in the summer months to meet increased demands associated with irrigation needs, and as needed during droughts and water shortage emergencies. It is estimated that between 685 and 915 AFY of potable water could be injected into the aquifer, assuming a 5-month continuous injection rate of 1.5 to 2.0 MGD at Well 8 (Tracy, 2020). The City's strategic plan for ASR operations at Well 8 involves injecting up to 1,000 AFY over six months during the winter and extracting 75% of the injection volume during the following summer. These operations would result in net injection into the Lower Tulare Formation aquifer, which will gradually create a "buffer supply" that the City can utilize in dry years or during water shortage emergencies. In 2020, a net volume of approximately 190 AF was injected and stored at Well 8 for the following year (Table 4-1).

As further discussed in Section 6.10, the ASR Program will be implemented in stages as new ASR wells are constructed. The ASR supply will be available to meet demands in dry years, thereby increasing the reliability of the City's water supply during drought conditions or water shortage emergencies.

6.4 Semitropic Groundwater Storage Bank

The City has acquired the rights to store and recover water in the Semitropic Groundwater Storage Bank (Semitropic) operated by the Semitropic Water Storage District (Semitropic WSD). The Semitropic facilities are located in Kern County alongside the California Aqueduct. The first phase of Semitropic was initiated

¹⁹ Notice of Applicability for General Water Quality Order 2012-0010-DWQ-RB5S-0002, Aquifer Storage and Recovery Program, City of Tracy (Well No. 8), San Joaquin County, dated 13 November 2013.

²⁰ Per the terms of its agreement with the RWQCB, the City is not permitted to inject treated DMC/CVP at Well 8.

²¹ City of Tracy 2019 Water Quality Report,
https://www.ci.tracy.ca.us/documents/2019_City_of_Tracy_Water_Quality_Report.pdf.



in the early 1990s and established one million AF of storage for a group of agencies referred to as the Original Banking Partners. In response to increased demand for banking capacity, up to 650,000 AF of additional storage was created for the Stored Water Recovery Unit (SWRU). When an agency purchases storage capacity in Semitropic, the agency is able to recover the volume of water it has banked over a period of three consecutive years (i.e., 3,000 AF equates to a maximum recovery rate of 1,000 AFY for three years).

The City originally entered into a pilot agreement with Semitropic WSD in June 2006 for 1,000 AF of water storage in Semitropic's SWRU. The pilot agreement was intended to establish the procedures for water deposits and withdrawals by the City and was terminated when the permanent agreement was implemented. In 2012, the City entered into a long-term agreement with Semitropic WSD for up to 10,500 AF of storage volume.²² This storage agreement allows the City to withdraw up to 3,500 AF of water annually for three years. To store water in Semitropic, the City withdraws less than its available allocation of CVP water from the DMC. This water travels through the DMC and the California Aqueduct where it is diverted by Semitropic and used for local groundwater recharge. When the City wishes to withdraw water that it has banked previously, Semitropic arranges for the City to divert CVP water beyond its allocation from the DMC. This source of water is provided through either an exchange of Semitropic WSD's contractual entitlement to State Water Project (SWP) water or through direct "pumpback" of stored groundwater into the California Aqueduct by Semitropic WSD.

Though the City could utilize this supply in any year, it is most valuable during extended drought years when the City's surface water supplies are reduced. As described in Section 7, the City anticipates that banking water at Semitropic will increase the reliability of the City's water supply and help to close the potential future gap between supply and demand during extended drought conditions. The City plans to actively maintain storage in Semitropic as feasible.

As of December 2020, the City had 6,887 AF of water in storage at Semitropic.

6.5 Surface Water

The City does not currently, nor does it plan to in the near future, use self-supplied surface water as part of its water supply portfolio.

6.6 Stormwater

The City does not currently, nor does it currently plan to in the near future, use diverted stormwater as part of its water supply portfolio. It is possible that the City could consider the future use of diverted stormwater if a regional project is identified.

²² "Agreement Between City of Tracy and Semitropic Water Storage District and Its Improvement Districts for Participation in the Stored Water Recovery Unit of the Semitropic Water Banking and Exchange Program," dated November 2012.



6.7 Wastewater and Recycled Water

CWC § 10633

The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.

This section provides information on the amount of generated wastewater, disposal of wastewater, and water recycling. Water recycling involves treating wastewater to an acceptable level such that it can be reused for irrigation, cooling, and other non-potable applications. Recycled water can offset the use of potable supplies and reduce the quantity of discharged wastewater. The regulatory requirements for recycled water are defined in the California Code of Regulations (CCR), Title 22, Article 3. Because recycled water is treated wastewater, its availability is closely linked to the treatment capability of the City's WWTP. The following sections describe Tracy's existing and planned wastewater treatment and water recycling facilities and discuss existing and projected uses of recycled water. A description of Tracy's efforts to promote recycled water use in existing and proposed development is also included. More details on the City's recycled water system can be found in the City's Water System Master Plan (WSMP; Tracy, 2020).

6.7.1 Recycled Water Coordination

The City is the sole agency responsible for water, wastewater, and groundwater management and planning within the City's service area. However, the City's efforts to increase recycled water use have required coordination between the City and stakeholders. To commence recycled water use within existing and new development, the City's Department of Utilities and Development Services have been and will continue coordinating planning efforts with proponents of the various development projects in the City.

6.7.2 Wastewater Collection, Treatment, and Disposal

CWC § 10633 (a)

A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

CWC § 10633 (b)

A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

The City's WWTP is located north of Interstate 205, between MacArthur Drive and Holly Drive. The City maintains and operates the wastewater collection system that conveys wastewater to the WWTP. The collection system consists of pipelines and lift stations.

The WWTP provides disinfected tertiary level treatment meeting Title 22 requirements. The City's major industrial wastewater producer, Leprino Foods, conveys its wastewater through a separate force main to



pre-treatment ponds which remove a significant portion of the biochemical oxygen demand (BOD) before the food process wastewater is conveyed to the WWTP. The main treatment processes at the WWTP are described below:

- Aerated holding ponds partially treat the Leprino Foods industrial flows before treatment;
- Pre-treatment removes coarse solids;
- Primary treatment removes most settleable and floatable material;
- Secondary treatment with activated sludge reduces levels of soluble organic material, suspended solids, as well as nitrogenous compounds;
- Secondary clarification;
- Flocculation and tertiary filtration; and
- Chlorination disinfects treated wastewater, followed by sulfonation for dechlorination.

After treatment, wastewater is discharged into the Old River through an existing outfall. The City's National Pollutant Discharge Elimination System (NPDES) permit CA0079154 currently allows for discharge of 10.8 MGD of average dry weather flow and up to 16 MGD if applicable permit requirements are met. Waste solids produced in the primary processing and treatment processes are collected and combined. The treatment process for solids includes thickening, digestion, and dewatering. Dried biosolids are hauled off-site and land applied or sent to a suitable landfill. This off-site hauling and disposal practice is expected to continue in the future.

As shown in **Table 6-2** and **Table 6-3**, in 2020, approximately 11,277 AF of wastewater was collected and treated at the City's WWTP. Approximately 10,740 AF of which was discharged into the Old River.



Water Supply Characterization

2020 Urban Water Management Plan

City of Tracy

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

	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system <i>(optional)</i>					
	Percentage of 2020 service area population covered by wastewater collection system <i>(optional)</i>					
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? <i>(optional)</i>
City of Tracy	Estimated	11,277	City of Tracy	City of Tracy Wastewater Treatment Plant	Yes	No
Total Wastewater Collected from Service Area in 2020:	11,277					
NOTES:						
(a) Volumes are in units of AF.						



Water Supply Characterization

2020 Urban Water Management Plan

City of Tracy

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

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	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
City of Tracy Wastewater Treatment Plant	Old River	Existing outfall	--	River or creek outfall	No	Tertiary	11,277	10,740	0	0	0
						Total	11,277	10,740	0	0	0

NOTES:
(a) Volumes are in units of AF.



6.7.3 Recycled Water System Description

The City's current recycled water system consists of a pump station at the WWTP and approximately 7.6 miles of recycled water transmission line from the WWTP west to Lammers Road and south to W. Schulte Road (**Figure 6-2**; Tracy, 2020). Currently the only service connection is for the Legacy Fields Sports Complex.

The City is planning to expand the existing recycled water system to serve future development areas, as well as a small number of existing parks and irrigated areas. The City's 2020 WSMP identifies the improvements necessary to support the projected recycled water demands and the Recycled Water Distribution Network and Exchange Program (Tracy, 2020). The recommended improvements include additional booster pump stations, new recycled water pipelines, and storage reservoirs, and are shown on **Figure 6-3**.

Several future service areas already have recycled water distribution pipelines installed by developers, including Cordes Ranch, Ellis Specific Plan Phase 1, and Tracy Hills Phase 1. These pipelines are not yet connected to the recycled water mains, but instead are temporarily connected to the potable water system via backflow prevention devices to meet irrigation demands. Once recycled water system construction is complete and the appropriate permitting is completed, the pipelines will be connected to the recycled water system and the temporary connections to the potable water system will be removed.

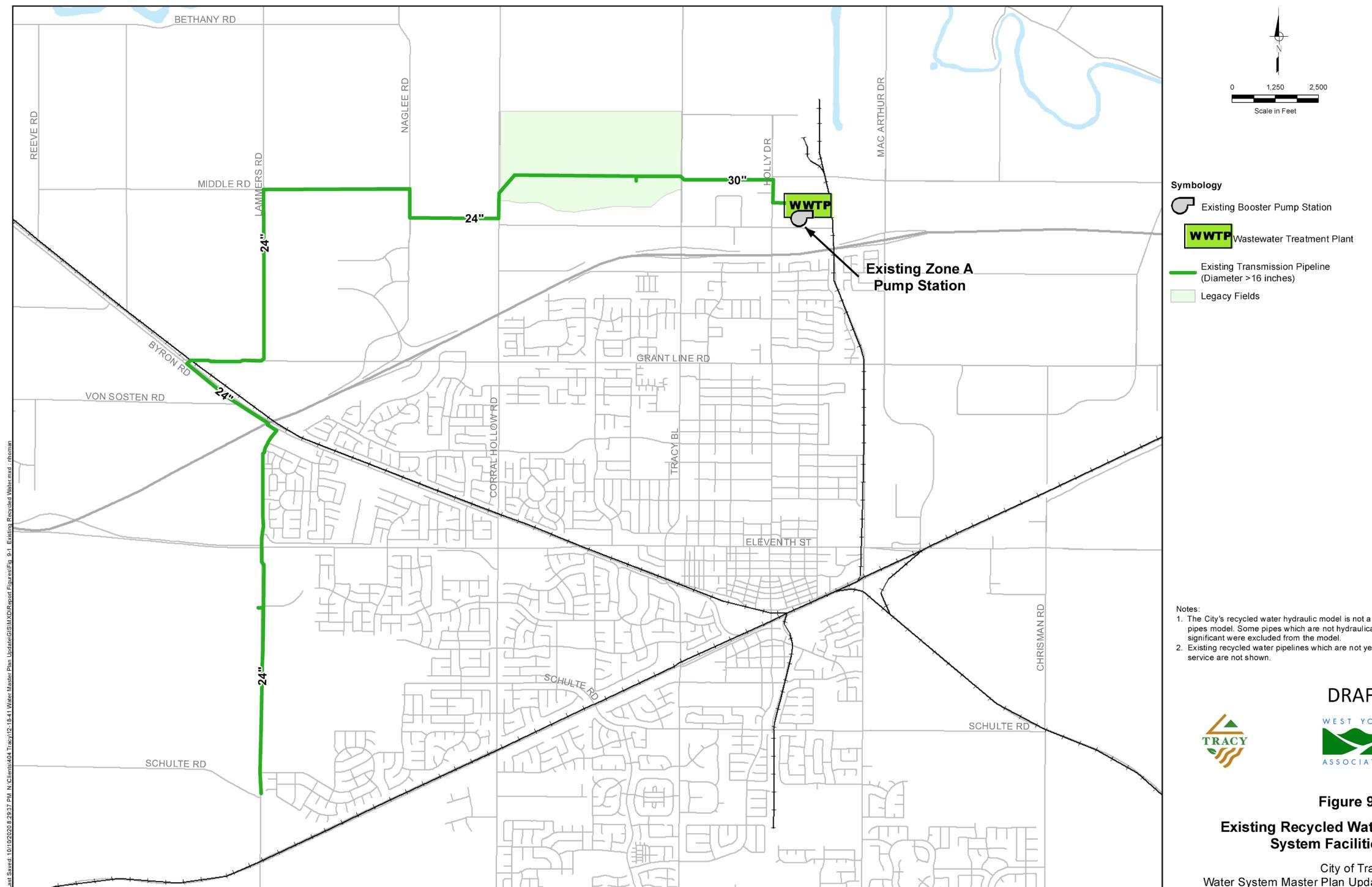


Figure 6-2 Existing Recycled Water System (Adapted from the Draft 2020 WSMP, Figure 9-1)

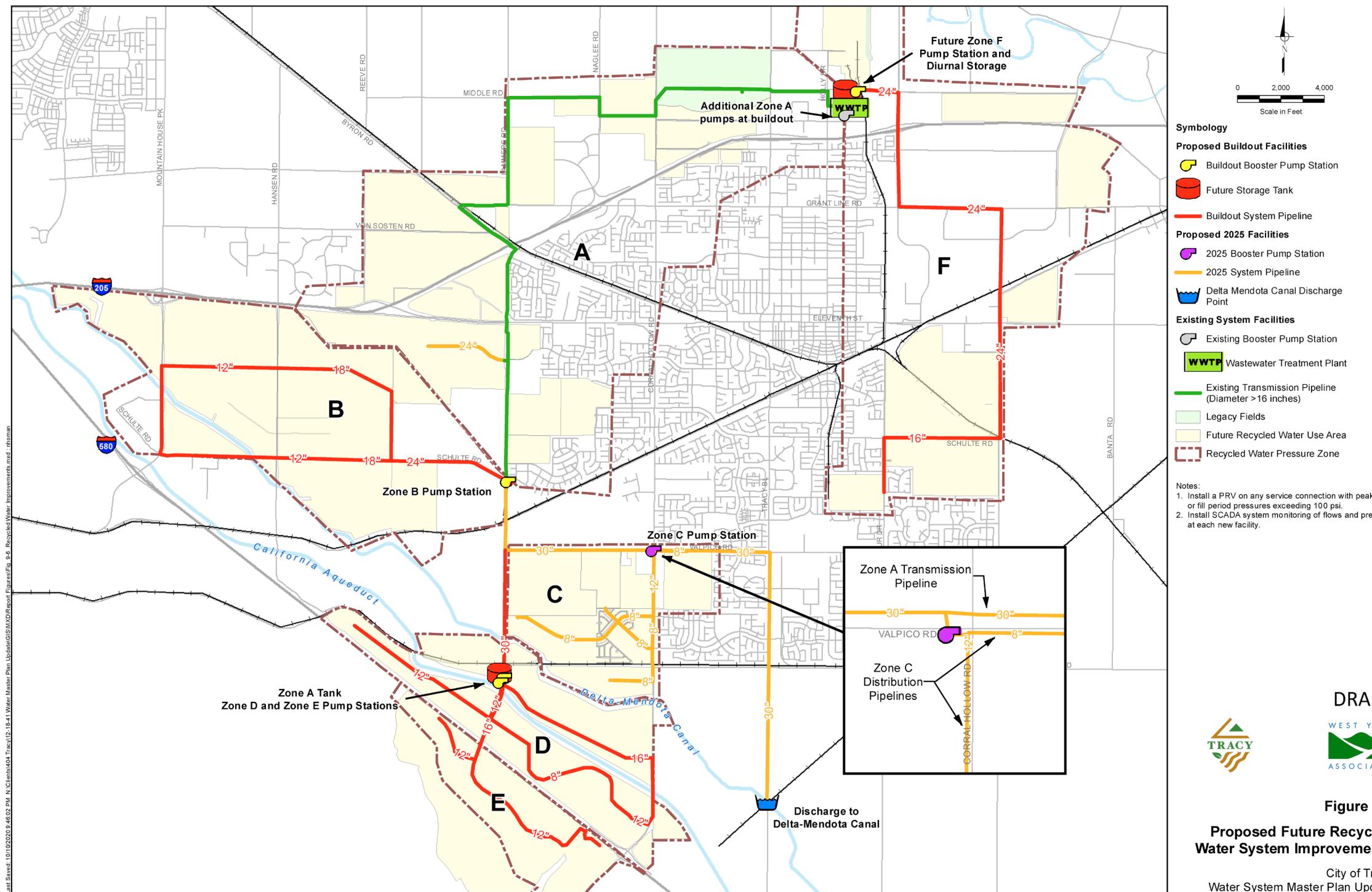


Figure 6-3 Proposed Future Recycled Water System Improvements (Adapted from the Draft 2020 WSMP, Figure 9-6)



6.7.4 Potential, Current and Projected Recycled Water Uses

CWC § 10633 (c)

A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

CWC § 10633 (d)

A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

CWC § 10633 (e)

The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

6.7.4.1 Current Recycled Water Uses

The City's WWTP has sufficient treatment capacity to produce approximately 9.0 MGD of tertiary-treated recycled water meeting the Title 22 requirements, which can be reused for landscape irrigation and other non-potable uses. As indicated in **Table 6-4**, there is currently no recycled water use within the City's service area, as the site improvements and permitting process are still ongoing.



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

	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 Tracy									
Name of Supplier Operating the Recycled Water Distribution System:	City of Tracy									
Supplemental Water Added in 2020 (volume)	--									
Source of 2020 Supplemental Water	--									
Beneficial Use Type	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity)	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Landscape irrigation (excludes golf courses)	Irrigation at Legacy Fields Sports Complex, Tracy Sports Complex, Plasencia Fields, etc.	2,448 AF by 2045	--	Tertiary	0	389	803	1,218	1,632	2,448
Commercial use	Cordes Ranch Development, etc.	3,654 AF by 2045	--	Tertiary	0	580	1,199	1,817	2,436	3,654
Industrial use	Tracy Power Plant, AltaGas, etc.	197 AF by 2045	--	Tertiary	0	31	65	98	132	197
				Total:	0	1,000	2,067	3,133	4,200	6,300
2020 Internal Reuse					0					
NOTES: (a) Volumes are in units of AF. (b) The recycled water projections were obtained from the 2020 WSMP, and the proportion by use type was based on the Title 22 Engineering Report for the Production and Distribution of Recycled Water, Table 5-1.										



6.7.4.2 Comparison of Previously Projected Use and Actual Use

The 2015 Urban Water Management Plan (UWMP) projected 963 AFY of recycled water use for landscape irrigation (**Table 6-5**). However, no recycled water was actually used in 2020 because permitting was not completed on the previously anticipated schedule. The recycled water system is ready to serve Legacy Fields Sports Complex once the site improvements are complete and all permits are approved.

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

Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below.		
Beneficial Use Type	2015 Projection for 2020	2020 Actual Use
Landscape irrigation (excludes golf courses)	963	0
Total	963	0
NOTES: (a) Volumes are in units of AF.		

6.7.4.3 Projected Recycled Water Use

The City intends to expand the existing recycled water system to serve non-potable water demands in most of the new development areas. Recycled water is planned to be used at: (a) parks, sports fields, and other landscape areas; (b) industrial facilities such as the Tracy Power Plant; (c) fill stations for dust control during construction, street sweeping, and residential emergency landscape irrigation; and (d) the proposed lakes at Tracy Village (Tracy, 2019b). The future recycled water use was estimated in the WSMP (Tracy, 2020) based on the adopted unit water demand factors and the future dwelling units or gross acreage and is described in Section 4.2.2. The recycled water use is estimated to be 1,000 AFY in 2025, increasing to 6,300 AFY in 2045 as new development areas build out. Projected recycled water use by major beneficial use type is shown in **Table 6-4**.

In addition, the City plans to use recycled water in exchange for additional CVP supply through the proposed Recycled Water Distribution Network and Exchange Program, which is further described in Section 6.10.3. The amount of recycled water used for exchange is considered separately and is not included as part of the projected recycled water use in **Table 6-4**.

The City is also considering investigating the potential for direct potable reuse of recycled water in the future. With direct potable reuse, recycled water would be discharged directly into the DMC and then conveyed to downstream users, including the City. However, the project is in the conceptual evaluation stage and therefore the future recycled water use associated with this potential approach is not quantified in **Table 6-4**.



6.7.5 Actions to Encourage and Optimize Future Recycled Water Use

CWC § 10633 (f-g)

(f) A description of actions, including financial incentives, 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.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

As described above, the City has taken numerous steps to encourage the use of recycled water within and around Tracy.

New developments in the City are required to include recycled water distribution systems in accordance with the City's Recycled and Non-Potable Water Ordinance (Tracy Municipal Code [TMC] Chapter 11.30; **Table 6-6**). The requirements of the Recycled and Non-Potable Water Ordinance facilitate the future use of recycled or other non-potable water for irrigation purposes within the new development.

The City does not have current plans to provide financial incentives to encourage the use of recycled water because the City is not currently serving recycled water to its customers. However, financial incentives to encourage the use of recycled water will be evaluated and potentially implemented as part of future City policies when the City does begin to serve recycled water to its customers.

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

	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Recycled and Non-Potable Water Ordinance	New developments are required to include recycled water distribution systems.	Ongoing	NA
Total			NA
NOTES:			



6.8 Desalinated Water Opportunities

CWC § 10631 (g) *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

As mentioned in Section 6.2.5, the City's production wells draw groundwater solely from the confined portion of the Lower Tulare Formation aquifer. Above the confining Corcoran Clay is shallow groundwater that is not currently used for groundwater production. The water quality is considered to be not suitable for direct use due to the poor water quality (Tracy, 2020). While there is potential for brackish groundwater to be treated using membrane treatment technology, the cost of brine disposal and energy usage associated with membrane treatment is currently believed to be prohibitive. Although the opportunity exists to explore this option further in the future, it is currently not included in this UWMP as a future supply source.

6.9 Water Exchanges and Transfers

CWC § 10631 (c) *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

A water market exists so that, subject to USBR approval, water agencies can sell to or buy water from other water users that have an excess supply of CVP water or may need additional water to support demand. These annual transfers are subject to USBR approval and are for one year only. The City exercises its options to purchase and sell DMC/CVP surface water on this water market. Historically, the City has sold its surplus USBR water to San Luis Water District (SLWD) and Del Puerto Water District (DPWD) through this annual transfer process. During drought periods, the City also has the ability to purchase water on the spot market as necessary.



6.10 Future Water Projects

CWC § 10631 *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

(b) (3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

(f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

Planned and potential future sources of Tracy's water supplies are discussed in the following sections and summarized in **Table 6-7**.

6.10.1 ASR Program Expansion

As described in Section 6.3, the City currently has one ASR well (Well 8) which allows the City to inject excess SCWSP water supplies into the groundwater basin for later extraction when needed. The current injection and extraction capacity is 700 AFY. The City is planning to expand the ASR program with the installation of additional ASR wells. According to the WSMP, the City's ASR Program will be expanded to provide up to 1,000 AFY of water supplies from the existing and new ASR wells by 2040 (Tracy, 2020). The ASR supply will be used to meet demands during dry years, thereby increasing the reliability of the City's water supply and helping to close the potential gap between supply and demand during drought conditions or water shortage emergencies.

As mentioned in Section 6.3, one constraint with the City's ASR Program is that the permit only allows for SCWSP water to be injected. This means that the City has to shut down the JJWTP and the groundwater wells during the injection period so that only SCWSP supplies are being utilized. A potential alternative to avoid this operational restriction, if the City's ASR permit cannot be modified to allow for other water supplies to be injected, would be to construct a dedicated SCWSP water pipeline to the ASR well(s). Future expansion of the ASR program will need to fully evaluate these operational restrictions and potential alternatives.

6.10.2 Recycled Water System Expansion

As discussed in Section 6.7, the City is planning to expand the recycled water system to serve future development areas. Pursuant to the City's Recycled and Non-Potable Water Ordinance (TMC Chapter 11.30), all new subdivisions are required, to the extent practicable, to install the required infrastructure (such as dual-distribution pipelines) to provide recycled water to meet non-potable water demands at parks, golf courses, sports fields, schools, median island landscapes, and industrial sites. The WSMP estimated that most large development projects on the west side of the City will be connected to the recycled water system by 2025 (Tracy, 2020). Recycled water service will be further extended to Cordes



Ranch, West Side Industrial, and Tracy Hills by 2040. A separate recycled water transmission main will be constructed on the east side of the City afterwards. The City intends to fund the future system expansion by fees collected from the new development projects.

It is estimated that the expanded recycled water system will provide approximately 6,300 AFY of non-potable supply in 2045. A portion of the recycled water delivered as part of this project will offset existing demands, thereby reducing the City's per capita water use.

6.10.3 Recycled Water Distribution Network and Exchange Program

The City is evaluating indirect reuse of its recycled water through an exchange agreement with the USBR, where a portion of the City's recycled water would be discharged into the DMC, and a like amount of water would be diverted from the DMC for treatment at the JJWTP for potable use. This project is considered an essential part of the City's projected future water supply portfolio as it provides multiple benefits:

- Provides for the beneficial use of recycled water;
- Provides an additional potable water supply for the City;
- Improves water supply reliability and reduces the City's dependence on other imported supplies;
- Builds on the existing wastewater and recycled water infrastructure; and
- Reduces salt loading in the Delta as USBR has to release additional water from the New Melones Reservoir to meet Delta salinity standards.

The Recycled Water Distribution Network and Exchange Program would require development of a project description, National Environmental Policy Act (NEPA) / California Environmental Quality Act (CEQA) review, an exchange agreement with the USBR, and design and construction of a new recycled water pipeline to discharge recycled water to the DMC downstream of the City's JJWTP intake. Assuming such a project is implemented, the City expects that it would initially provide an estimated 1,925 AFY of potable water, and future expansion of the program could be implemented as needed to meet future demands up to 7,500 AFY. This supply would be 100% reliable and would not be subject to drought cutbacks.



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

	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.					
	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	Expected Increase in Water Supply to Supplier
	Y/N	Supplier Name				
ASR Program Expansion	No	--	--	2040	Single-Dry and Multi-Dry Year	300
Recycled Water System Expansion	No	--	--	2025	All Year Types	6,300
Recycled Water Distribution Network and Exchange	Yes	USBR	--	2030	All Year Types	Up to 7,500
NOTES: (a) Volumes are in units of AFY. (b) It is estimated that the recycled water demand will be approximately 6,300 AFY at buildout. The recycled water supply is reported herein to the extent that it is needed to meet demand. (c) The Recycled Water Distribution Network and Exchange program will be dependent upon approved development beyond the 2025 horizon.						

6.11 Summary of Existing and Planned Sources of Water

- CWC § 10631 (b)** Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).
- CWC § 10631 (b) (2)** When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.
- CWC § 10631 (b) (4) (D)** A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

The City's current supply sources include purchased water from the CVP and SCWSP, as well as groundwater from the local Tracy Subbasin. During 2016 and 2020, the City's total supplies ranged from 15,360 AFY to 19,527 AFY. On average, 95% of the supplies were from purchased water. The City's historical and current supplies are presented in **Table 6-8**.



The City manages the multiple supply sources based on contractual agreements, climate, City policy, regulatory requirements, and various other factors. In the future, the City intends to continue utilizing its existing supplies. However, as further discussed in Section 7 below, future supply reliability of imported water is projected to decrease. The City plans to increase its future supply by increasing groundwater production and implementing the supply projects described in Section 6.10.

The City estimates that approximately 33,868 AFY of potable water supply and 6,300 AFY of non-potable water supply will be available in 2045 under normal conditions. **Table 6-9** shows the projected sources and water supply volumes in five-year increments over the next 25 years.



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

Water Supply	Additional Detail on Water Supply	Actual Volume					Water Quality	Total Right or Safe Yield (optional)
		2016	2017	2018	2019	2020		
Purchased or Imported Water	CVP	3,341	5,702	6,133	8,277	6,573	Drinking Water	--
Purchased or Imported Water	SCWSP	11,371	11,464	10,471	8,750	11,773	Drinking Water	--
Groundwater (not desalinated)	Tracy Subbasin of the San Joaquin Valley Groundwater Basin (DWR 5-022.15)	648	995	817	645	1,181	Drinking Water	--
Total		15,360	18,161	17,420	17,672	19,527		--

NOTES:

- (a) Volumes are in units of AF.
- (b) 2016-2019 groundwater production is the sum of water extracted from the City's production wells and the net injection or extraction from the City's ASR well. 2020 production does not include ASR well in accordance with the City's direction.
- (c) Water served to Patterson Pass Business Park (PPBP) is purchased by PPBP from the Byron Bethany Irrigation District. The City only provides treatment and delivery services for this water in accordance with a "treat and wheel" agreement. Therefore, the water supply associated with PPBP is not included herein.

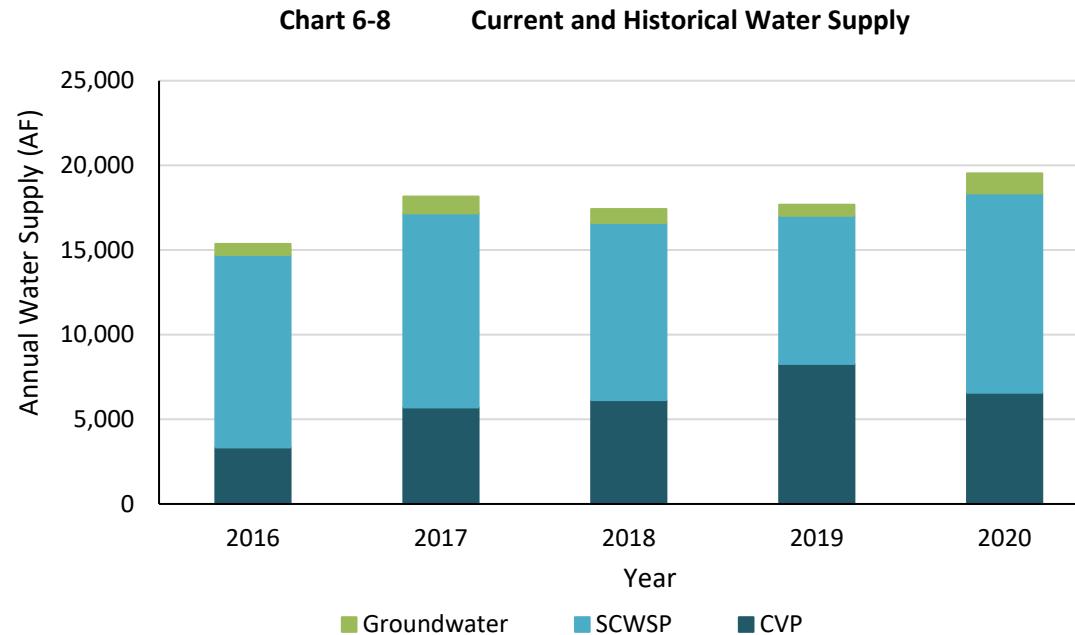




Table 6-9 Water Supplies - Projected (DWR Table 6-9)

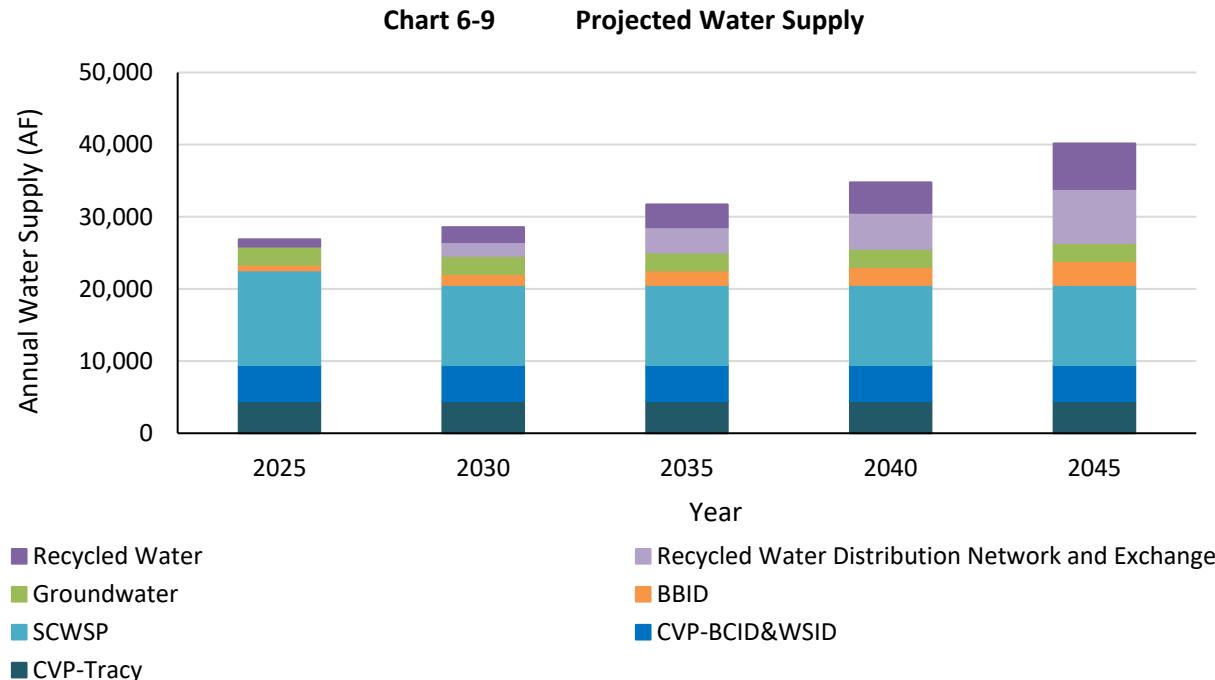
Water Supply	Additional Detail on Water Supply	Projected Water Supply									
		2025		2030		2035		2040		2045	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Purchased or Imported Water	CVP Surface Water (Tracy USBR Contract)	4,448	--	4,448	--	4,448	--	4,448	--	4,448	--
Purchased or Imported Water	CVP Surface Water (BCID and WSID USBR Assignments)	5,000	--	5,000	--	5,000	--	5,000	--	5,000	--
Purchased or Imported Water	SCWSP (SSJID)	13,135	--	11,120	--	11,120	--	11,120	--	11,120	--
Purchased or Imported Water	BBID Pre-1914 (to meet Tracy Hills demand)	800	--	1,500	--	2,000	--	2,500	--	3,300	--
Groundwater (not desalinated)	Tracy Subbasin of the San Joaquin Valley Groundwater Basin (DWR 5-022.15)	2,500	--	2,500	--	2,500	--	2,500	--	2,500	--
Exchanges	Recycled Water Distribution Network and Exchange (b)	0	--	1,925	--	3,500	--	5,000	--	7,500	--
Recycled Water	Note (c)	1,000	--	2,067	--	3,133	--	4,200	--	6,300	--
Total		26,883	--	28,560	--	31,701	--	34,768	--	40,168	--

NOTES:

(a) Volumes are in units of AF.

(b) The Recycled Water Distribution Network and Exchange program will be dependent upon approved development beyond the 2025 horizon.

(c) Given that recycled water supply cannot be used to fulfill potable water demand, it is reported herein to the extent that it is needed to meet demand. Excess available supplies are not reported.





6.12 Special Conditions

CWC § 10635(b)

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

6.12.1 Climate Change Effects

As discussed in the City's Local Hazard Mitigation Plan (LHMP; City of Tracy, 2019a), drought conditions are likely to become more frequent and persistent over the next century due to climate, and recent drought conditions over the past decade underscore the need to reexamine water supply and distribution management, conservation, and use policy. In the City and the State of California as a whole, groundwater can act as a critical buffer against the impacts of drought and climate change. According to California's Climate Adaptation Strategy, also referred to as "Safeguarding California Plan: 2018 Update", climate change is likely to significantly diminish California's future water supply. As a result, the state must change its water management, as climate change will create greater competition for limited water supplies. These water management concerns will impact the City's water suppliers, including CVP users, the SCWSP agencies, and other neighboring water management agencies.

6.12.2 Regulatory Conditions and Project Development

Emerging regulatory conditions (e.g., issues surrounding the Bay-Delta Plan Amendment) may affect planned future projects and the characterization of future water supply availability and analysis. Potential impacts of Bay-Delta Plan Amendment implementation on the City's supply reliability are described in Section 7.1.1. If the City moves forward with any plans to develop additional new supply projects, emerging regulatory conditions will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.

6.12.3 Other Locally Applicable Criteria

Other locally applicable criteria may affect characterization and availability of an identified water supply. For example, changes in regional water transfer rules may alter the availability of a water supply that had historically been readily available. Further, the City's groundwater supply reliability may be revisited as the GSP for the Tracy Subbasin is developed and implemented. Reliability of the City's supply is further discussed in Section 7. If the City moves forward with any plans to develop additional new supply projects, locally applicable criteria will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.



6.13 Energy Use

CWC § 10631.2

(a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:

- (1) An estimate of the amount of energy used to extract or divert water supplies.*
- (2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.*
- (3) An estimate of the amount of energy used to treat water supplies.*
- (4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.*
- (5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.*
- (6) An estimate of the amount of energy used to place water into or withdraw from storage.*
- (7) Any other energy-related information the urban water supplier deems appropriate.*

(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

(c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.

In the City's water system, energy is used for groundwater extraction, water and wastewater treatment, and moving water in the distribution system. The energy use is metered and documented in monthly Pacific Gas & Electric (PG&E) bills. During 2020, the City used a total of 2,113,261 kilowatt hours (kWh) of energy for operation of water facilities in the water system. As the total volume of water entering the system was 19,527 AF, the energy intensity was calculated to be 108 kWh/AF (**Table 6-10**). There is currently no power generation associated with the City's water system.



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

Urban Water Supplier:

City of Tracy

Water Delivery Product

Retail Potable Deliveries

Enter Start Date for Reporting Period	1/1/2020	Urban Water Supplier Operational Control		
End Date	12/31/2020			
Is upstream embedded in the values reported?	No	Sum of All Water Management Processes	Non-Consequential Hydropower	
Water Volume Units Used	AF	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (AF)	19,527	0	19,527	
Energy Consumed (kWh)	2,113,261	0	2,113,261	
Energy Intensity (kWh/volume)	108.2	0.0	108.2	
Quantity of Self-Generated Renewable Energy				
	0 kWh			
Data Quality				
Metered Data				
Data Quality Narrative:				
Volume of water data is from the City's and its suppliers' meters. Energy usage is for water facilities and is from the City's energy bills.				
Narrative:				
The City uses energy for groundwater extraction, water and wastewater treatment, and moving water in the distribution system.				



7 WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

CWC § 10620 (f)

An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

CWC § 10630.5

Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

This section describes the constraints on the City of Tracy's (City's) water supply sources, as well as the management strategies that the City has employed or will employ to address these constraints. This section also provides an estimate of the supply volumes available to the City and the corresponding supply and demand assessments in normal years, single dry years, and multiple dry year periods. Assessment of water supply reliability is complex and dependent upon a number of factors, such as the number of water sources, regulatory and legal constraints, hydrological and environmental conditions, climate change, and expected growth, among others. The City has made its best determination of future water supply reliability based on the available information, as described below.

7.1 Water Service Reliability Assessment

The following sections describe the City's water service reliability assessment, which presents the City's expected water service reliability for a normal year, single dry year, and five consecutive dry years projections in five-year increments between 2025 and 2045.

7.1.1 Service Reliability – Constraints on Water Sources

CWC § 10631 (b)(1)

A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

Several potential constraints have been identified on each of the City's water supplies, including the various surface water supplies, groundwater production, Aquifer Storage and Recovery (ASR), Semitropic Groundwater Storage Bank (Semitropic), recycled water, and the Recycled Water Distribution Network and Exchange supply. These constraints are summarized in the following sections.

7.1.1.1 DMC/CVP Water Supply Constraints

The City's Central Valley Project (CVP) water is purchased from the United States Bureau of Reclamation (USBR) and is delivered via the Delta-Mendota Canal (DMC; conjunctively referred to as DMC/CVP water).



As discussed in Section 6.1.1, the City has access to 10,000 acre-feet per year (AFY) of DMC/CVP water with Municipal and Industrial (M&I) reliability and 10,000 AFY of DMC/CVP water with agricultural (Ag) reliability. In addition, up to 4,500 AFY of water with pre-1914 appropriative water rights is available from Byron Bethany Irrigation District (BBID). This supply can only be used, however, for the portion of Tracy Hills development within the BBID's service area.

The City's DMC/CVP water supplies are subject to allocations determined by the USBR for "South-of-Delta" contractors. In February 2017, new guidelines and procedures associated with the updated CVP M&I Water Shortage Policy went into effect. In general, the policy provides for the following:

- When M&I contractor allocations are at 100%, the allocation of M&I water will be based on the Contract Total;
- When M&I contractor allocations are below 100%, the allocation of M&I water will be based on a contractor's historical use of CVP M&I water; and
- An M&I contractor's historical use will be determined by calculating the average quantity of CVP water put to beneficial use within the service area during the last three years of water deliveries that were unconstrained by the availability of CVP water.

Before M&I water allocations are reduced, allocations of irrigation water are reduced. When allocation of irrigation water has been reduced below 75% of Contract Total and further water supply reductions are still necessary, both the M&I and irrigation allocations will be reduced by the same percentage increment. The M&I allocation will be reduced until it reaches 75% of historical use, and the irrigation allocation will be reduced until it reaches 50% of irrigation Contract Total. The M&I allocation will not be further reduced until the irrigation allocation is reduced to below 25% of Contract Total. When allocation of irrigation water is reduced below 25% of Contract Total, the USBR will reassess both the availability of CVP water supply and CVP water demand.

While the City is entitled to receive 10,000 AFY of M&I-reliability water, the average quantity of water put to beneficial use by the City during the last three years of water deliveries that were unconstrained by the availability of DMC/CVP water was only 5,930 AFY. Based on USBR's policy, the City's allocation is based on this historical delivery instead of the full contractual amount.

According to their Policy, the USBR will strive to deliver CVP water to M&I water service contractors at not less than the amount needed to meet public health and safety needs, taking into consideration contractors' CVP allocations and available non-CVP supplies, provided CVP water is available.

7.1.1.2 Stanislaus River Water Supply Constraints

As described in Section 6.1.2, the City currently has an allocation of 13,135 AFY of Stanislaus River water through the South County Water Supply Project (SCWSP).

The SCWSP supply is based on the South San Joaquin Irrigation District's (SSJID's) senior, pre-1914 appropriative water rights to the Stanislaus River, coupled with an agreement with the USBR to store water in the New Melones Reservoir. Due to the seniority of the water rights, the City has historically assigned a high reliability to SCWSP water. However, in December 2018, the State Water Resources Control Board (SWRCB) released amendments to the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) which included significant



changes and could result in significant surface water cutbacks. For purposes of its UWMP, SSJID is presenting its water reliability analysis assuming that the Bay-Delta Plan Amendment will not be implemented. SSJID has provided the following rationale for this approach:

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) which, if and when implemented, may have an impact on the Stanislaus River. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of up to 30-50% of the unimpaired flow on the three tributaries from February through June in every year type.

If the Bay-Delta Plan Amendment is implemented as adopted, there are significant impacts in some years to the ability of the Bureau of Reclamation to meet its obligations under the 1988 Stipulation and Agreement to provide formula water to both the Oakdale Irrigation District and SSJID in years when inflow into New Melones is below 600,000 AF which typically occur in dry and critically dry years. This could reduce the minimum projected supply amount of 225,000 AF/year as planned for by SSJID in this UWMP. The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Stanislaus River by the year 2022, assuming all required approvals are obtained by that time; however, implementation of the Bay-Delta Plan Amendment remains uncertain for multiple reasons.

Over a dozen lawsuits have been filed in both state and federal courts, including challenges filed by the Oakdale Irrigation District and SSJID, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment are in the early stages and there have been no consequential court rulings as of this date. Secondly, the Bay-Delta Plan Amendment did not include an allocation of responsibility for meeting the flow requirements. Such an allocation of responsibility must consider the senior water rights of both OID and SSJID who have adjudicated pre-1914 rights and other senior appropriative rights. In recognition of the difficult legal process ahead, many stakeholders throughout California including the State and Federal Government have opted to explore the possibility of voluntary agreements to achieve outcomes comparable to those described in the Bay-Delta Amendment balancing the needs of all water users. Both OID and SSJID have participated in voluntary agreement negotiations. Based on these uncertainties, SSJID has opted to make no near-term planning assumptions related to the implementation of the Bay-Delta Plan Amendment for the purposes of this 2020 UWMP. Should conditions change or consequential resolution of the issues aforementioned come to be, SSJID will revise and re-adopt a 2020 UWMP to reflect changes to its impacted water supply.

As a retail agency, the City relies on SSJID for the reliability projections. Information on supply reliability provided by SSJID is included as **Appendix F**.²³ Consistent with SSJID's approach, this section of the City's

²³ Subsequent to the completion of the public draft of this section of the UWMP, SSJID adjusted its reliability projections for Phase II of the WSCP, indicating in an e-mail dated 30 April 2021 that:

It is likely that more water will be available for other local purposes in 2040 (when Phase II production is assumed) based on trends in more efficient water management and urban growth displacing irrigated



UWMP presents results for the SCWSP water reliability assessment assuming that the Bay-Delta Plan Amendment will not be implemented. However, the City understands that it is helpful to understand the possible supply implications in the event that the Bay-Delta Plan Amendment is implemented as adopted. To fully assess the impacts of the Bay-Delta Plan Amendment and better plan for the potential shortfalls, the City conducted a parallel set of reliability analyses assuming that the Bay-Delta Plan Amendment will be implemented, which is presented in **Appendix G**.

7.1.1.3 *Groundwater Supply Constraints*

Based on a groundwater study the City completed in 2001 (Bookman-Edmonston, 2001), the City is able to withdraw up to 9,000 AFY from the Tracy Subbasin on an average annual basis. However, groundwater production is constrained by the City's well production and treatment capacity, as the infrastructure is aging. Production is further limited by the water quality issues of the City's groundwater supplies, including high total dissolved solids (TDS) concentrations, hardness, and potential formation of chloramines, as discussed in Section 7.1.1.8. In addition, as the Groundwater Sustainability Plan (GSP) for the Tracy Subbasin is developed and implemented, the City's groundwater supply reliability may be revisited.

7.1.1.4 *ASR Supply Constraints*

The City's ASR Program is discussed in Section 6.3. The City conservatively projects that up to 1,000 AFY of groundwater will be available for extraction from buffer storage in the Lower Tulare Formation aquifer associated with the ASR Program. The ASR supply is dependent upon well production and treatment capacity and the availability of other supplies that can be injected and stored.

7.1.1.5 *Semitropic Supply Constraints*

As discussed in Section 6.4, the City has acquired 10,500 acre-feet (AF) of storage capacity in Semitropic, which may be withdrawn at a maximum rate of 3,500 AFY for three consecutive years.

The City's ability to access the Semitropic water in a time of water shortage may be restricted by the operational requirements of the DMC. The City had an experience during the historical drought in 2015 where the City was unable to access CVP water that had been stored in the San Luis Reservoir. Typically, in order to access water stored in the San Luis Reservoir, which is fed by the DMC and is located downstream from the City, the City would divert CVP water from the DMC upstream of the reservoir. However, in 2015, due to flow restrictions in the DMC imposed by the USBR, the City was unable to divert water from the DMC and access its stored water. In July 2015, the City participated in an emergency

agriculture. For purposes of the UWMP, SSJID assumes that its agricultural demands during single dry-year and multiple dry-year events will be linearly reduced by 0.25% per year from 2020 levels freeing up an additional 10,050 AF to be delivered under Phase II from the WTP in 2040.

The reliability projections in this UWMP conservatively do not account for this late adjustment in SSJID's reliability projections.



project with other CVP contractors in the region to reverse the flow of the DMC and pump water back from the San Luis Reservoir.²⁴

Another constraint on the Semitropic water is that it needs to be requested a year in advance, which means that this supply will typically not be available during the first year of drought. Further, there needs to be sufficient availability of surplus supplies such that water can replenish the bank following use of the stored water.

7.1.1.6 Recycled Water Distribution Network and Exchange Program Supply Constraints

The City anticipates that up to an additional 7,500 AFY of CVP water will be available in 2045 through the exchange of the City's recycled water with USBR (see Section 6.10.3), assuming appropriate investments are made by the City. Since the original source of this supply is recycled water, it is assumed to be 100% reliable and available during all hydrologic years.

7.1.1.7 Recycled Water Supply Constraints

As discussed in Section 4.2.2 and 6.7.4, recycled water is estimated to supply 6,300 AFY, or 16% of the City's total demand by 2045, assuming appropriate investments are made by the City in recycled water infrastructure and permitting. Recycled water is assumed to be a 100% reliable and stable water supply source and is estimated to be available during all hydrologic years at a volume that meets the City's projected recycled water demands.

7.1.1.8 Water Quality Impacts

Impaired water quality has the potential to affect water supply reliability. The City has and will continue to meet all state and federal water quality regulations. All drinking water standards are set by the U.S. Environmental Protection Agency (USEPA) under the authorization of the Federal Safe Drinking Water Act of 1974. In California, the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW) can either adopt the USEPA standards or set more stringent standards, which are then codified in Title 22 of the California Code of Regulations. There are two general types of drinking water standards:

- **Primary Maximum Contaminant Levels (MCLs)** are health protective standards and are established using a very conservative risk-based approach for each constituent that takes into potential health effects, detectability and treatability, and costs of treatment. Public water systems may not serve water that exceeds Primary MCLs for any constituent.

²⁴ The emergency pumpback project was a collaborative effort between the City, Del Puerto Water District (DPWD), West Side Irrigation District (WSID), Patterson Water District (PWD), Banta-Carbona Irrigation District (BCID), and BBID. Over July and August of 2015, the project pumped over 4,000 AF of DMC/CVP water north using three portable pumps installed at checks along the DMC. The pumps were removed and normal flows in the DMC resumed on 2 September 2015.



- **Secondary MCLs** are based on the aesthetic qualities of the water such as taste, odor, color, and certain mineral content, and are considered limits for constituents that may affect consumer acceptance of the water.

The City routinely monitors the water that is treated and served to customers to ensure that water delivered to customers meets these drinking water standards. The results of this testing are reported to the SWRCB, DDW following each test and are summarized annually in Water Quality Reports (also known as "Consumer Confidence Reports"), which are provided to customers by mail and made available on the City's website at <https://www.ci.tracy.ca.us/?navId=697>.

A summary of groundwater quality in the Tracy Subbasin is included in the draft GSP materials available on the Tracy Subbasin website: <https://tracysubbasin.org/>. It should be noted that water quality conditions in groundwater represent conditions for source water, prior to treatment by the City and service to customers.

One water quality concern that the City actively manages is TDS. The City's groundwater supply typically meets the primary MCL of 1,000 milligrams per liter (mg/L) but frequently exceeds the secondary MCL of 500 mg/L. In 2019, the City's groundwater supply ranged from 386 to 876 mg/L of TDS, with an average concentration of 752 mg/L.²⁵ Because the TDS concentrations are significantly higher in the groundwater supply than in the City's other water supply sources, in order to meet the secondary MCL in its overall water supply, the City typically scales back its groundwater production from its estimated sustainable yield of 9,000 AFY, particularly in normal rainfall years. The City continues to rely on groundwater for peaking, and under drought conditions, it typically increases its groundwater productions as needed to meet demands when surface water supplies become more limited.

Given the City's proactive monitoring and management of water quality in its source water supplies, water quality is not expected to impact the reliability of the available supplies within the planning horizon (i.e., through 2045) beyond what has been characterized herein.

7.1.1.9 Climate Change Impacts

Section 4.4 of this Urban Water Management Plan (UWMP or Plan) presents information on how the impacts of climate change are considered in projected demands in the City, and Section 6.12.1 provides a summary of potential climate change impacts on supplies. The GSP water budget development is required to include climate change scenarios and assess estimated climate change impacts for purposes of groundwater sustainability, but is not yet available for the Tracy Subbasin.

²⁵ City of Tracy 2019 Water Quality Report, https://www.ci.tracy.ca.us/documents/2019_City_of_Tracy_Water_Quality_Report.pdf.



7.1.2 Service Reliability - Year Type Characterization

CWC § 10631 (b)

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

CWC § 10631 (b)(1)

A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

CWC § 10635 (a)

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

Per the UWMP Guidebook 2020, the water service reliability assessment includes three unique year types:

- A normal hydrologic year represents the water supplies available under normal conditions, this could be an averaged range of years or a single representative year;
- A single dry year represents the lowest available water supply; and
- A five-consecutive-year drought represents the driest five-year period in the historical record.

A summary of the water supplies by each year type, consistent with the UWMP Guidebook 2020 methodology, is provided in the following sections.

Quantification of the available supplies is not compatible with the standard DWR Table 7-1, and therefore the available supplies are summarized in **Table 7-2** through **Table 7-5** in Sections 7.1.2.1 through 7.1.2.3.

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

Year Type	Base Year	Available Supplies if Year Type Repeats	
		X	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location <u>Table 7-2 through Table 7-5</u>
		—	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year			
Single-Dry Year			
Consecutive Dry Years 1st Year			
Consecutive Dry Years 2nd Year			
Consecutive Dry Years 3rd Year			
Consecutive Dry Years 4th Year			
Consecutive Dry Years 5th Year			
NOTES:			

7.1.2.1 Normal Year

Normal or wet water years are those that match or exceed median rainfall and runoff levels. The reliability of each of Tracy's existing and future water supplies and their projected availability during normal year is outlined below and summarized in **Table 7-2**:

- The City's contract with the USBR for 10,000 AFY of DMC/CVP water is subject to M&I reliability. Based on the historical record, the City's long-term average allocation of DMC/CVP water pursuant to this contract is anticipated to be at least 85% of the total entitlement. However, for this UWMP, due to recent environmental concerns in the Delta and potential future impacts due to climate change, the normal year supply of DMC/CVP M&I water is assumed to be 75% of the City's historical use. Based on a historical use of 5,930 AFY (i.e., the average quantity of CVP water put to beneficial use by the City during the last three years of water deliveries that were unconstrained by the availability of CVP water), the projected normal year supply is 4,448 AFY.
- The City has received acquired assignments from Banta-Carbona Irrigation District (BCID; 5,000 AFY) and West Side Irrigation District (WSID; 5,000 AFY) for a total entitlement of 10,000 AFY of DMC/CVP water. These supplies are subject to Ag-reliability. The City is conservatively estimating that it will receive 50% of its Ag-reliability contractual entitlement, or 5,000 AFY, in normal years.



- The City has acquired up to 4,500 AFY of pre-1914 appropriative water rights water from BBID. These supplies are restricted in their place of use, and therefore the supply is anticipated to be equal to the projected demand within that place of use (i.e., the Tracy Hills area) ranging from 800 AFY in 2025 to 3,300 AFY in 2045. The City anticipates being able to receive 100% of this supply in normal years.
- The City has a total contractual entitlement of 13,135 AFY of Stanislaus River water provided through the SCWSP, including 10,000 AFY from its original contract with SSJID, 1,120 AFY purchased from Lathrop, and 2,015 AFY purchased on an interim basis from Escalon. It is assumed that the agreement between Tracy and Escalon will terminate after 2025. Based on information provided by SSJID, the City expects to receive 100% of its SCWSP water supply allocation during a normal water year. As such, the City anticipates being able to receive 13,135 AFY of SCWSP supply in 2025 and 11,120 AFY afterwards, assuming normal year conditions.
- The City is able to withdraw up to 9,000 AFY of groundwater from the Tracy Subbasin. However, due to the aging infrastructure and water quality issues in the City's groundwater supplies, the City is projecting to be able to withdraw up to 2,500 AFY in normal years. This groundwater supply is considered to be 100% reliable.
- The City does not anticipate using its Semitropic water or ASR water in normal years.
- The City anticipates that a Recycled Water Distribution Network and Exchange agreement will be executed with the USBR by 2030 to provide additional CVP supplies to the City in exchange for the City discharging a like amount of tertiary-treated recycled water to the DMC. The City assumes that the Recycled Water Distribution Network and Exchange will be implemented as needed to meet future demand conditions and is currently projected to supply an amount ranging from 1,925 AFY in 2030 to 7,500 AFY in 2045. This water supply is considered to be 100% reliable.
- The City's recycled water supply is expected to be 100% reliable. Based on the projected non-potable demands and assuming that the City makes investments in infrastructure and permitting, the City estimates that they will have access to 1,000 AFY of recycled water supply in 2025, increasing to 6,300 AFY in 2045.

**Table 7-2 Projected Water Supply in Normal Years (Responds to DWR Table 7-1)**

Water Supply	Allocation / Reliability	Supply Amount				
		2025	2030	2035	2040	2045
<i>Current Potable Supplies</i>						
CVP - USBR Tracy Contract	75% of Historical Use	4,448	4,448	4,448	4,448	4,448
CVP - USBR BCID & WSID Contract	50% of Contract	5,000	5,000	5,000	5,000	5,000
SCWSP - SSJID Contract	100% of Contract	13,135	11,120	11,120	11,120	11,120
BBID	100% of Tracy Hills Demand	800	1,500	2,000	2,500	3,300
Groundwater	100% Reliable	2,500	2,500	2,500	2,500	2,500
<i>Anticipated Future Potable Supplies</i>						
Recycled Water Distribution Network and Exchange	100% Reliable	0	1,925	3,500	5,000	7,500
Total Potable Supply	--	25,883	26,493	28,568	30,568	33,868
<i>Anticipated Future Non-Potable Supplies</i>						
Recycled Water	100% Reliable	1,000	2,067	3,133	4,200	6,300
Total Non-Potable Supply	--	1,000	2,067	3,133	4,200	6,300
Total Supply	--	26,883	28,560	31,701	34,768	40,168

NOTES:

(a) Volumes are in units of AF.

(b) Information provided by the City and SSJID. Recycled water and groundwater volumes assume the City investments in infrastructure and/or permitting.

7.1.2.2 Single Dry Year

During a single dry year, all of the City's existing surface water allotments are subject to some level of reduction. Assumed reductions are greater than what was included in the City's 2015 UWMP due to the actual reductions in CVP deliveries experienced in the recent drought and the new USBR M&I Reliability Policy adopted in 2017. The actual reductions will vary with the severity of the regional water supply shortage and climatic conditions, and the consideration of contract agreements.

The reliability of each of Tracy's existing and future water supplies and their projected availability during a single dry year is outlined below and summarized in **Table 7-3**.

- The City's contract with the USBR for 10,000 AFY of DMC/CVP water is subject to M&I reliability. During a single dry year, the City estimates to receive 25% of the City's historical use. Based on the historical use of 5,930 AFY, the projected supply is 1,483 AFY.



- The City has a total entitlement of 10,000 AFY of DMC/CVP Ag-reliability water. The City anticipates receiving 0% of its DMC/CVP Ag-reliability water in a single dry year.
- The City has acquired up to 4,500 AFY of pre-1914 appropriative water rights water from BBID. This supply is restricted with regard to the place of use (Tracy Hills). The City anticipates being able to receive 85% of its contractual entitlement in a single dry year (3,825 AFY). As the projected demand is 3,300 AFY in 2045 and is lower than the 3,825 AFY of available supply, the reduction in reliability does not result in a reduction to actual amount of water used. Therefore, the supply in a single dry year is anticipated to be equal to the projected demand within the Tracy Hills area, ranging from 800 AFY in 2025 to 3,300 AFY.
- The City has a total contractual entitlement of 13,135 AFY of Stanislaus River water provided through the SCWSP. Based on information provided by SSJID, the City expects to receive 76% of its SCWSP water supply allocation during 2025, 2030, and 2035 and 56% during 2040 and 2045. In addition, it is assumed that the SCWSP water transferred from Escalon will no longer be available after 2025. As such, the City estimates 9,974 AFY of SCWSP supply in 2025, 8,444 AFY in 2030 and 2035, and 6,177 AFY afterwards.
- During a single dry year, the City anticipates increasing its groundwater production on a short-term basis from the normal year production of 2,500 AFY to 4,500 AFY. The groundwater supply is considered to be 100% reliable.
- The City anticipates that 700 AFY of water will be available for use in a single dry year through operation of its ASR well. An additional 300 AFY is estimated to be available by 2040 for a total of 1,000 AFY. This water supply is considered to be 100% reliable assuming that the City is consistently able to refill the ASR storage during non-drought years to maintain at least 1,000 AF in storage at the beginning of a single dry year.
- The City has acquired 10,500 AFY of storage in Semitropic, which allows the City to withdraw up to 3,500 AFY for three consecutive years. Due to the difficulties experienced by the City in accessing stored water via the DMC on a short timeframe, the City has conservatively assumed that the Semitropic water will not be available in a single dry year.
- The City anticipates that a Recycled Water Distribution Network and Exchange agreement will be executed with the USBR by 2030 to provide additional CVP supplies to the City in exchange for the City discharging a like amount of tertiary-treated recycled water to the DMC. The City assumes that the Recycled Water Distribution Network and Exchange will be implemented as needed to meet future demand conditions and is currently projected to supply an amount ranging from 1,925 AFY in 2030 to 7,500 AFY in 2045. This water supply is considered to be 100% reliable.
- The City's recycled water supply is expected to be 100% reliable. Based on the projected non-potable demands and assuming that the City makes investments in infrastructure and permitting, the City estimates that they will have access to 1,000 AFY of recycled water supply in 2025, increasing to 6,300 AFY in 2045.



Table 7-3 Projected Water Supply in Single Dry Years (Responds to DWR Table 7-1)

Water Supply	Allocation / Reliability	Supply Amount				
		2025	2030	2035	2040	2045
<i>Current Potable Supplies</i>						
CVP - USBR Tracy Contract	25% of Historical Use	1,483	1,483	1,483	1,483	1,483
CVP - USBR BCID & WSID Contract	0% of Contract	0	0	0	0	0
SCWSP - SSJID Contract	56%-76% of Contract	9,974	8,444	8,444	6,177	6,177
BBID	100% of Tracy Hills Demand	800	1,500	2,000	2,500	3,300
Groundwater	100% Reliable	4,500	4,500	4,500	4,500	4,500
<i>Anticipated Future Potable Supplies</i>						
Recycled Water Distribution Network and Exchange	100% Reliable	0	1,925	3,500	5,000	7,500
ASR Dry Year Supply	100% Reliable	700	700	700	1,000	1,000
Total Potable Supply	--	17,456	18,551	20,626	20,659	23,959
<i>Anticipated Future Non-Potable Supplies</i>						
Recycled Water	100% Reliable	1,000	2,067	3,133	4,200	6,300
Total Non-Potable Supply	--	1,000	2,067	3,133	4,200	6,300
Total Supply	--	18,456	20,618	23,759	24,859	30,259
NOTES:						
(a) Volumes are in units of AF.						
(b) Information provided by the City and SSJID. Recycled water and groundwater volumes assume the City investments in infrastructure and/or permitting. ASR volumes assume surplus supplies are available in wet years to inject and store, as well as additional investment in ASR construction and operation.						

7.1.2.3 Five Consecutive Year Drought

If there are multiple dry years, the City's surface water supplies (from both the CVP and SCWSP) may be significantly reduced. Thus, in the event of drought, the City will have to depend more heavily on conservation efforts, groundwater, and the proposed future supply projects.

The reliability of each of Tracy's existing and future water supplies and their projected availability during a five consecutive year drought is outlined below and summarized in **Table 7-4** and **Table 7-5**.

- The City's contract with the USBR for 10,000 AFY of DMC/CVP water is subject to M&I reliability. During multiple dry years, the City estimates that it will receive 40% of the City's historical use. Based on the historical use of 5,930 AFY, the projected supply is 2,372 AFY.



- The City has a total entitlement of 10,000 AFY of DMC/CVP Ag-reliability water. The City anticipates receiving 0% of its DMC/CVP Ag-reliability water in multiple dry years.
- The City has acquired up to 4,500 AFY of pre-1914 appropriative water rights water from BBID. This supply is restricted with regard to the place of use (Tracy Hills). The City anticipates being able to receive 85% of its contractual entitlement in multiple dry years (3,825 AFY). As the projected demand is 3,300 AFY in 2045 and is lower than the 3,825 AFY of available supply, the reduction in reliability does not result in a reduction to actual amount of water used. Therefore, the supply in multiple dry years is anticipated to be equal to the projected demand within the Tracy Hills area, ranging from 800 AFY in 2025 to 3,300 AFY.
- The City has a total contractual entitlement of 13,135 AFY of Stanislaus River water provided through the SCWSP. Based on information provided by SJID, the City's SCWSP water supply reliability during multiple dry years range from 56% to 100%. In addition, it is assumed that the SCWSP water transferred from Escalon will no longer be available after 2025. The City's projected SCWSP supply is presented in **Table 7-4**.
- During multiple dry years, the City anticipates increasing its groundwater production on a short-term basis from the normal year production of 2,500 AFY to 4,500 AFY. The groundwater supply is considered to be 100% reliable.
- The City anticipates that 700 AF of water will be available for use in multiple dry years through operation of its ASR well. An additional 300 AF is estimated to be available by 2040 for a total of 1,000 AF. It is assumed that the City will be unable to refill the ASR storage during multiple dry years. Therefore, the annual ASR supply available is assumed to be equally one fifth of the total stored volume (i.e., 140 AFY between 2025 and 2035 and 200 AFY between 2040 and 2045). This water supply is considered to be 100% reliable assuming that the City is consistently able to refill the ASR storage in non-drought years to maintain at least 1,000 AF in storage at the beginning of a multiple dry year sequence.
- The City has acquired 10,500 AFY of storage in Semitropic, which allows the City to withdraw up to 3,500 AFY for three consecutive years. Due to the difficulties experienced by the City in accessing stored water via the DMC on a short timeframe, the City has conservatively estimated that the 0% of the City's storage will be available in the first year of a five-consecutive-year drought, and 100% will be available over the following four years. Based on the City's current storage at Semitropic of 6,887 AF, the amount available in the second to fifth year of a five-consecutive-year drought is assumed to be 1,722 AFY (6,887 AF divided by four). A similar reliability estimate is provided for all dry-year sequences under the assumption that the City is consistently able to re-fill the water bank in non-drought years to maintain at least 7,000 AFY in storage at the beginning of a multiple dry year sequence.
- The City anticipates that a Recycled Water Distribution Network and Exchange agreement will be executed with the USBR by 2030 to provide additional CVP supplies to the City in exchange for the City discharging a like amount of tertiary-treated recycled water to the DMC. The City assumes that the Recycled Water Distribution Network and Exchange will be implemented as needed to meet future demand conditions and is currently projected to supply an amount ranging from 1,925 AFY in 2030 to 7,500 AFY in 2045. This water supply is considered to be 100% reliable.



- The City's recycled water supply is expected to be 100% reliable. Based on the projected non-potable demands and assuming that the City makes investments in infrastructure and permitting, the City estimates that they will have access to 1,000 AFY of recycled water supply in 2025, increasing to 6,300 AFY in 2045.

Table 7-4 Projected SCWSP Water Supply in Multiple Dry Years (Responds to DWR Table 7-1)

Year Type		2025	2030	2035	2040	2045
Multiple Dry Years	First year	13,135	11,120	11,120	11,120	11,120
	Second year	13,135	11,120	11,120	11,120	11,120
	Third year	9,974	8,444	8,444	6,177	6,177
	Fourth year	9,974	8,444	8,444	6,177	6,177
	Fifth year	13,135	11,120	11,120	11,120	11,120

NOTES:

(a) Volumes are in units of AF.

(b) Information provided by SSJID. SSJID's reliability estimates for a five consecutive year drought were based on the historical supplies available during the 2012 to 2016 drought period. During 2012, 2013, and 2016 (the first, second, and fifth years), SSJID was able to provide the full allocation, whereas during 2014 and 2015 (the third and fourth years), SSJID was only able to provide 75% of the full allocation.

**Table 7-5 Projected Other Water Supplies in Multiple Dry Years (Responds to DWR Table 7-1)**

Water Supply	Allocation / Reliability	Supply Amount				
		2025	2030	2035	2040	2045
<i>Current Potable Supplies</i>						
CVP - USBR Tracy Contract	40% of Historical Use	2,372	2,372	2,372	2,372	2,372
CVP - USBR BCID & WSID Contract	0% of Contract	0	0	0	0	0
BBID	100% of Tracy Hills Demand	800	1,500	2,000	2,500	3,300
Groundwater	100% Reliable	4,500	4,500	4,500	4,500	4,500
Semitropic Dry Year Supply	100% Reliable	1,722	1,722	1,722	1,722	1,722
<i>Anticipated Future Potable Supplies</i>						
Recycled Water Distribution Network and Exchange	100% Reliable	0	1,925	3,500	5,000	7,500
ASR Dry Year Supply	100% Reliable	140	140	140	200	200
Total Potable Supply	--	9,534	12,159	14,234	16,294	19,594
<i>Anticipated Future Non-Potable Supplies</i>						
Recycled Water	100% Reliable	1,000	2,067	3,133	4,200	6,300
Total Non-Potable Supply	--	1,000	2,067	3,133	4,200	6,300
Total Supply	--	10,534	14,225	17,367	20,494	25,894
NOTES:						
(a) Volumes are in units of AF.						
(b) Information provided by the City.						
(c) This table summarizes the City's supplies with the exception of SCWSP which is provided separately in Table 7-4. Recycled water and groundwater volumes assume the City investments in infrastructure and/or permitting. ASR and Semitropic volumes assume surplus supplies are available in wet years to inject and/or store, as well as additional investment in ASR construction and operation. Semitropic supply is assumed to be unavailable in the first year of a multiple dry year. Other supply volumes are assumed to be constant in each year of a multiple dry year.						



7.1.3 Service Reliability - Supply and Demand Assessment

CWC § 10635 (a)

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

The City's projected water demands are compared to its water supplies in normal years, single dry years, and multiple dry year periods.

7.1.3.1 Water Service Reliability - Normal Year

As shown in **Table 7-6**, the City is expected to have adequate water supplies during normal years to meet its projected demands through 2045.

Table 7-6 Normal Year Supply and Demand Comparison (DWR Table 7-2)

	2025	2030	2035	2040	2045
Supply totals <i>From DWR Table 6-9</i>	26,883	28,560	31,701	34,768	40,168
Demand totals <i>From DWR Table 4-3</i>	21,509	25,167	28,871	32,603	39,379
Difference	5,374	3,393	2,830	2,165	789
NOTES:					
(a) Volumes are in units of AF.					

7.1.3.2 Water Service Reliability - Single Dry Year

The reliability of the City's surface water supplies is estimated to be significantly reduced during a single dry year. As a result, total water supplies are projected to be insufficient to meet the projected demands. As shown in **Table 7-7**, the potential shortfall is projected to be 9,120 AFY in 2045, which equals to 23% of the projected demands.

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

	2025	2030	2035	2040	2045
Supply totals	18,456	20,618	23,759	24,859	30,259
Demand totals	21,509	25,167	28,871	32,603	39,379
Difference	(3,053)	(4,549)	(5,112)	(7,744)	(9,120)
NOTES:					
(a) Volumes are in units of AF.					

7.1.3.3 Water Service Reliability – Five Consecutive Dry Years

During multiple dry years, the sufficiency of the City's water supplies to meet the projected demands depends on the drought year. During the first, second, and fifth year of drought in 2025, the City is projected to have sufficient supply. However, during the third and fourth year, the City's total water demand is estimated to exceed total supply by approximately 1,001 AFY. In 2035 to 2045, as demand increases, supply shortfalls are expected in all five years, with the largest shortfall being approximately 7,308 AFY in 2045, or 19% of the projected demands (Table 7-8).

Table 7-8 Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4)

		2025	2030	2035	2040	2045
First year	Supply totals	21,947	23,624	26,765	29,892	35,292
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	438	(1,543)	(2,106)	(2,711)	(4,087)
Second year	Supply totals	23,669	25,345	28,487	31,614	37,014
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	2,160	178	(384)	(990)	(2,365)
Third year	Supply totals	20,507	22,669	25,811	26,671	32,071
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	(1,001)	(2,498)	(3,061)	(5,933)	(7,308)
Fourth year	Supply totals	20,507	22,669	25,811	26,671	32,071
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	(1,001)	(2,498)	(3,061)	(5,933)	(7,308)
Fifth year	Supply totals	23,669	25,345	28,487	31,614	37,014
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	2,160	178	(384)	(990)	(2,365)
NOTES:						
(a) Volumes are in units of AF.						



7.1.4 Uncertainties in Dry Year Water Supply Projections

As shown in the above tables, significant water supply shortfalls are currently projected in future single and multiple dry years. However, there are currently numerous sources of uncertainty in the dry year water supply projections as summarized below:

- Implementation of the Bay-Delta Plan Amendment is under negotiation. The SSJID and others are continuing negotiations with the SWRCB on implementation of the Bay-Delta Plan Amendment for water supply cutbacks, particularly during droughts. This is a dynamic situation and the projected drought cutback allocations may need to be revised before the next (i.e., 2025) UWMP depending on the outcome of ongoing negotiations. A conservative estimate of the potential impacts of the Bay-Delta Plan Amendment on the SCWSP (and therefore the City) is provided in **Appendix G**.
- Benefits of the City's development of additional ASR and recycled water supplies are accounted for in current supply projections. However, implementation of these projects will require significant investment by the City in the near- and long-term. Similarly, investments in wet years supplies will be needed to refill storage in Semitropic and in the ASR wells.
- The City will have to continue to work closely with the USBR and SSJID on their rationing policies to ensure that M&I needs can be met.
- The City's projected water demands are subject to change in the future based upon future housing needs, increased conservation, and development of additional local supplies or policies to limit water demand associated with current and future development.
- Frequency and duration of cutbacks are also uncertain. While the projected shortfalls presented in the UWMP appear severe, the actual frequency and duration of such shortfalls are uncertain. In addition to the supply volumes, the above listed uncertainties would also impact the projected frequency and duration of shortfalls.

7.1.5 Description of Water Management Tools and Options

Although there remains large uncertainty in future supply availability, the City has developed strategies and actions to address the projected supply shortfalls.

As described in Section 6.7, the City has made great strides to develop recycled water supplies. If additional recycled water is made available, the potable water demands will be less than the current projections and therefore the resultant supply shortage will likely to be smaller.

The City has also taken numerous steps to expand its existing supply and to obtain new supply sources, including the ASR Program and Recycled Water Distribution Network and Exchange Program. Other potential supply options, such as direct potable reuse of recycled water, is also being considered.

In addition, the City has been implementing, and plans to continue to implement, the demand management measures described in Section 9. Further, in response to the anticipated future shortfalls, the City has developed a robust Water Shortage Contingency Plan (WSCP) that systematically identifies ways in which the City can reduce water demands. The WSCP is included in Section 8.



The City is currently exploring other policy-based water efficiency tools that supply-constrained agencies across California have implemented. These policy-based tools are often bundled together and referred to as Water Demand Offset (WDO) or Water Neutrality policies. Through these policies, project developers are generally required to offset the new demand anticipated by the development through some combination of demand mitigation options, such as:

- **On-site retrofits.** Project developer with existing property reduces total projected water demand by retrofitting existing property with efficient water fixtures. If projected water demand is reduced below baseline for existing property, no off-site WDOs are required. If not, offsite WDOs are required.
- **Off-site retrofits.** Project developer coordinates and pays for installation of water efficient fixtures at other properties or converts existing irrigation systems to recycled water for other off-site properties, typically those owned by other entities.
- **On-site reuse.** Larger scale developments are required to implement on-site reuse of water, including rainwater, greywater, stormwater, and blackwater. These policies have recently been implemented by the Cities of San Francisco²⁶ and Menlo Park.²⁷
- **Supply augmentation.** Project developer secures its own water supply to serve the development, either through direct provision of water to the development or through an agreement to transfer rights to the water supplier.
- **WDO fees.** Project developer pays fees to implementing entity based on the amount of water offset, and the agency uses the fees to fund water conservation programs. Such conservation programs could include system water loss mitigation projects (e.g., capital improvement, Advanced Metering Infrastructure [AMI] meters, etc.), purchase of water efficient equipment (e.g., NO-DES hydrant flushing machine to recycle water used to flush mains), and recycled water

²⁶ In September 2012, the City and County of San Francisco implemented Article 12C of the San Francisco Health Code, commonly referred to as the Non-potable Water Ordinance, which established regulations for the collection, treatment, and use of alternate water sources for non-potable applications. The Non-potable Water Ordinance requires any new development projects 250,000 square feet (sq ft) or more to install an onsite non-potable water system that collects and treats greywater, rainwater, and foundation drainage for use in toilet and urinal flushing and irrigation. Development projects 40,000 sq ft or more must prepare water budget calculations to assess the amount of rainwater, greywater, and foundation drainage available to the project, as well as assess the demands associated with toilet and urinal flushing and irrigation.

²⁷ The City of Menlo Park established guidelines for water use efficiency and recycled water requirements through several zoning ordinances, including: Office (O) Section 16.43.140 Green and sustainable building, Life Sciences (LS) Section 16.44.140 Green and sustainable building, and Residential Mixed-Use (R-MU) Section 16.45.140 Green and sustainable building. These ordinances comply with the California Green Building Standards Code (CALGreen), Cal. Code Regs., Title 24, Part 11 and require all new buildings 250,000 sq ft or more to use alternate sources of water approved by the City for non-potable uses, including rainwater, greywater, stormwater and blackwater. Approved uses for non-potable water include toilet and urinal flushing, cooling applications, process water, dust control and soil compaction, water features or decorative fountains, irrigation, or others approved by the City.



system infrastructure, as well as fixture rebate or retrofit and education-based conservation programs.

Such policies could be designed as a “net neutral” policy wherein the new development is required to offset all new demands associated with the development project. In addition to conserving water, this approach has a key benefit to the City in support of its water supply planning efforts such as Water Supply Assessments (WSAs), because even if the City shows reduced water reliability in its planning horizon (e.g., supply shortfalls identified in drought periods), approval of such developments would not change the overall supply reliability picture for the existing customers. Additionally, including a WDO fee element to such policies could result in an ongoing funding source that could support a variety of conservation and/or water loss mitigation efforts, including those that directly respond to the forthcoming Making Water Conservation a California Way of Life annual water use objectives requirements.

7.2 Drought Risk Assessment

CWC § 10635(b)

Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:

- (1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.*
- (2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.*
- (3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.*
- (4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.*

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

In addition to the long-term water service reliability assessment presented above, the Drought Risk Assessment (DRA) considers the effects on available water supply sources of an assumed five-year drought commencing the year after the assessment is completed, i.e., from 2021 through 2025. Sections 7.1.1, 7.1.2, and 7.1.3 of this Plan present an evaluation of the sufficiency of the City’s supplies to meet projected water demands in dry year conditions. The DRA presented herein is performed using the same methodology and assumptions as discussed above. The DRA is intended to inform the demand management measures and water supply projects and programs to be included in the UWMP (see



Chapters 6 and 9). Suppliers may conduct an interim update or updates to this DRA within the five-year cycle of its UWMP update, i.e., before the 2025 UWMP.

7.2.1.1 Characteristic Five-Year Water Use

As a first step to the DRA, water suppliers are advised to estimate unconstrained water demand for the next five years (2021-2025). Unconstrained water demand is the expected water use in the absence of drought water use restrictions. The demand forecast for the next five years is shown in **Table 7-9** below, as a linear extrapolation between the 2020 demand and the projected 2025 demand.

Table 7-9 Characteristic Five-Year Water Use

2021	2022	2023	2024	2025
19,923	20,320	20,716	21,112	21,509

NOTES:
(a) Volumes are in units of AF.

7.2.2 DRA Individual Water Source Reliability

As previously described, the City relies on a variety of water source supplies including imported surface water supply, groundwater production wells, ASR wells, Semitropic Groundwater Storage Bank, and recycled water. The DRA presented herein is based on the same reliability assumptions of each source of supply as discussed in Section 7.1 for five consecutive years of drought. It is further assumed that the BBID supply will increase linearly between 2020 and 2025 and that the recycled water supply will not be available until 2025.

7.2.3 DRA Total Water Supply and Use Comparison

Table 7-10 provides a comparison of the water supply sources available to the City with the total projected water use for an assumed drought period from 2021 through 2025. The City is expected to have sufficient supply in 2021, 2022, and 2025. However, in 2023 and 2024, the demands are estimated to exceed supplies by 1,313 AFY and 1,657 AFY, respectively.

The City has developed a WSCP (Section 8) to address water shortage conditions resulting from any cause (e.g., droughts, impacted distribution system infrastructure, regulatory-imposed shortage restrictions, etc.). The WSCP identifies a variety of actions that the City will implement to reduce demands and further ensure supply reliability at various levels of water shortage.

In addition, as described in Section 7.1.5, the City may implement WDO or Water Neutrality policies that require project developers to offset the new demand anticipated from the development to address the potential water shortage.



Table 7-10 Five-Year Drought Risk Assessment Tables to Address Water Code 10635(b) (DWR Table 7-5)

2021	Total
Total Water Use	19,923
Total Supplies	20,739
Surplus/Shortfall w/o WSCP Action	816

Planned WSCP Actions (use reduction and supply augmentation)

WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	816
Resulting % Use Reduction from WSCP action	0%

2022	Total
Total Water Use	20,320
Total Supplies	22,513
Surplus/Shortfall w/o WSCP Action	2,193

Planned WSCP Actions (use reduction and supply augmentation)

WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	2,193
Resulting % Use Reduction from WSCP action	0%

2023	Total
Total Water Use	20,716
Total Supplies	19,403
Surplus/Shortfall w/o WSCP Action	(1,313)

Planned WSCP Actions (use reduction and supply augmentation)

WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,313
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	6%



**Table 7-10 Five-Year Drought Risk Assessment Tables to Address Water Code
10635(b) (DWR Table 7-5)**

2024	Total
Total Water Use	21,112
Total Supplies	19,455
Surplus/Shortfall w/o WSCP Action	(1,657)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,657
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	8%

2025	Total
Total Water Use	21,509
Total Supplies	23,669
Surplus/Shortfall w/o WSCP Action	2,160
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	2,160
Resulting % Use Reduction from WSCP action	0%
NOTES:	
(a) Volumes are in units of AF.	



8 WATER SHORTAGE CONTINGENCY PLAN

CWC § 10640

(a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

(b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

The City of Tracy's (City's) Water Shortage Contingency Plan (WSCP) is included as **Appendix H**. The WSCP serves as a standalone document to be engaged in the case of a water shortage event, such as a drought or supply interruption, and defines specific policies and actions that will be implemented at various shortage level scenarios. The primary objective of the WSCP is to ensure that the City has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. Consistent with California Water Code (CWC) §10632, the WSCP includes six levels to address shortage conditions ranging from up to 10% to greater than 50% shortage, identifies a suite of demand mitigation measures for the City to implement at each level, and identifies procedures for the City to annually assess whether or not a water shortage is likely to occur in the coming year, among other things.

A summary of the key elements of the WSCP including water shortage levels and demand-reduction actions is shown in Table 8-1, **Table 8-2**, and **Table 8-3**. Additional details are provided in **Appendix H**.



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

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City may reduce water use by up to 10% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 8-2 and Table 8-3).
2	Up to 20%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by 10% to 20% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 8-2 and Table 8-3).
3	Up to 30%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by 20% to 30% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 8-2 and Table 8-3).
4	Up to 40%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by 30% to 40% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 8-2 and Table 8-3).
5	Up to 50%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by 40% to 50% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 8-2 and Table 8-3).
6	>50%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by greater than 50% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 8-2 and Table 8-3).



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

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other	5%	<ul style="list-style-type: none"> • Prohibitions: <ul style="list-style-type: none"> ○ Allowing flagrant water waste or incidental water runoff. ○ Irrigating using a hose without a shutoff nozzle attached. ○ Using potable water to operate non-recirculating decorative water features, including splash pads. ○ Irrigating outdoors during and within 48 hours following a measurable rainfall. "Measurable rainfall" means any amount of precipitation that generates a puddle or runoff. ○ The serving of drinking water other than upon request, in eating or drinking establishments. ○ Irrigating ornamental grass or turf on public street medians. ○ Irrigating outside of newly constructed homes and buildings in a manner that is inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development. ○ Irrigating any hardscape. • Mandatory requirements: <ul style="list-style-type: none"> ○ Any customer must properly maintain all outdoor plumbing and irrigation systems and control all leaks within 72 hours of discovery or notification. ○ Customers shall practice prudent water conservation measures, including: (i) Planting drought-tolerant landscapes; (ii) Installing and maintaining water-efficient irrigation systems such as drip and bubble irrigation with weather or soil-based controllers; (iii) Installing sprinkler heads with a low flow rate appropriate for the landscape to prevent overwatering and runoff; (iv) Watering only in the late night or early morning hours during non-windy periods. ○ A hose that dispenses potable water shall be fitted with a shut-off 	Yes



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

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
			<p>nozzle or flow restriction device attached to it that causes it to cease dispensing water immediately when not in use.</p> <ul style="list-style-type: none">○ All swimming pools, hot tubs, and spas installed after May 1, 1993 must have a separation tank and water recovery system installed in the filter backwash system, with a 90% water recovery standard.○ Each swimming pool, hot tub and spa installed after July 15, 2015 must have a non-permeable floating cover or equivalent device that provides 90% surface coverage.● All landscape irrigation is restricted to before 9:00 a.m. or after 7:00 p.m. daily. This applies to residential, commercial, industrial, institutional, municipal and other public agencies or entities.● Restaurants and commercial lodging establishments must post notice of drought conditions.● Hotels and motels must offer guests an option to opt out of linen/towel service.	



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

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Other	15%	<ul style="list-style-type: none"> Continue with actions and measures from Stage 1. Landscapes, including residential, commercial, industrial, institutional, municipal and other public agencies or entities, may be irrigated three days per week as follows: (1) Odd-numbered addresses may irrigate only on Monday, Wednesday, and Saturday before 9:00 a.m. and after 7:00 p.m. (2) Even-numbered addresses may irrigate only on Tuesday, Thursday, and Sunday before 9:00 a.m. and after 7:00 p.m. (3) At any time provided that only drip, microspray or bubbler irrigation is used. Any customer must repair and control all outdoor water leaks that violate TMC §11.28, as determined by the City, within 48 hours of discovery or notification. Except as otherwise provided, individual residential car washing is allowed only with the use of a bucket. "Individual residential car washing" means the cleaning with potable water of a motor vehicle that is registered to an individual who lives on the premise. Automobile and recreational vehicle dealerships are allowed to continue washing vehicles with a hose that is fitted with a shut-off nozzle or flow restriction device attached under the following conditions: (1) Automobiles and recreational vehicles may be washed only on Friday using the method outlined above. (2) An automobile, motorcycle, boat, or motorhome may be washed the day before or the day of delivery to the purchaser using the method outlined above before 9:00 a.m. or after 7:00 p.m. No customer may add water or refill a swimming pool, spa, or hot tub unless it has a separation tank and water recovery system installed in the filter backwash system, with a 90% water recovery standard and it is a maintenance or health and safety issue. 	Yes



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

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Other	25%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 and 2. Landscapes, including residential, commercial, industrial, institutional, municipal and other public agencies or entities, may be irrigated two days per week as follows: (1) Odd-numbered addresses may irrigate only on Wednesday and Saturday before 9:00 a.m. and after 7:00 p.m. (2) Even-numbered addresses may irrigate only on Thursday and Sunday before 9:00 a.m. and after 7:00 p.m. 	Yes
4	Other	35%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 3. Landscapes, including residential, commercial, industrial, institutional, municipal and other public agencies or entities, may be irrigated one day per week as follows: (1) Odd-numbered addresses may irrigate only on Wednesday before 9:00 a.m. and after 7:00 p.m. (2) Even-numbered addresses may irrigate only on Thursday before 9:00 a.m. and after 7:00 p.m. 	Yes
5	Other	45%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 4. No outdoor potable water uses are allowed. No recreational water uses are allowed. 	Yes
6	Other	55%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 5. Water use shall not exceed the water budget established for each account type. City Council may prohibit water uses not required for public health and safety and fire protection. 	Yes

NOTES:

(a) The percentages listed in this table are the cumulative savings for each shortage level with implementation of corresponding supply augmentation and other agency actions in Table 8-3. Detailed saving estimates based on end use, response action, and implementation rates are in **Appendix H**.



Table 8-3 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? (a)	Additional Explanation or Reference
1	Other	5%	<ul style="list-style-type: none"> Expand outreach for existing water conservation programs. Promote public awareness (e.g., website, social media).
2	Other	15%	<ul style="list-style-type: none"> Continue with actions and measures from Stage 1. Increase public outreach (e.g., water bill inserts, media campaign, hosting public events and workshops). Offer water use surveys to up to the top 10% of residential, CII, and irrigation accounts. Increase enforcement efforts. Decrease frequency and length of line flushing.
3	Other	25%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 and 2. Establish a drought hotline. Conduct an audit of up to 25% of the City's distribution system to identify and repair leaks. Expand water use surveys to up to the top 20% of residential and CII accounts and up to the top 50% of dedicated irrigation accounts.
4	Other	35%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 3.
5	Other	45%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 4. City Council may implement a drought rate surcharge, as set forth in TMC §11.28.230. No new water connections may be approved.
6	Other	55%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 5. Reduce distribution system pressure. Establish water budgets for all customer accounts.
<p>NOTES:</p> <p>(a) The percentages listed in this table are the cumulative savings for each shortage level with implementation of corresponding demand reduction actions in Table 8-2. Detailed saving estimates based on end use, response action, and implementation rates are in Appendix H.</p>			



9 DEMAND MANAGEMENT MEASURES

CWC § 10631 (e)

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

This section provides an overview of the City of Tracy's (City's) current and planned Demand Management Measures (DMMs), which include specific types and groupings of water conservation measures typically implemented by water suppliers. Implementation of the City's DMMs is a key component of the City's water use reduction plan. Implementation of DMMs over the past ten years has helped the City achieve its 2015 Interim and 2020 Water Use Targets under SB X7-7 (see Chapter 5).

9.1 City Water Conservation

CWC § 10631 (e)

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

The City implements all of the DMMs, as described below and summarized in Table 9-1 and the associated chart.



9.1.1 DMM 1 – Water Waste Prevention Ordinances

Prohibition of water uses to prevent water waste were originally included in the 1992 Water Shortage Contingency Plan (WSCP) and 2015 WSCP as voluntary actions under Stage 1 and mandatory actions under Stage 2. Stage 1 of the 1992 WSCP has been enacted since the 2010 UWMP. The City enacted Stage 2 of the 1992 WSCP in August 2014 in response to the historic drought. Subsequently, the City adopted the 2015 WSCP in June 2015 and Stages 3 and 4 of the 2015 WSCP became effective in that month. The 2015 WSCP was incorporated into the Tracy Municipal Code (TMC) §11.28.160 with some modifications.

The 2020 WSCP establishes the same water waste prohibitions as were included in the TMC as part of the Stage 1 requirements, which include the following:

Prohibitions

- Allowing flagrant water waste or incidental water runoff.
- Irrigating using a hose without a shutoff nozzle attached.
- Using potable water to operate non-recirculating decorative water features, including splash pads.
- Irrigating outdoors during and within 48 hours following a measurable rainfall. "Measurable rainfall" means any amount of precipitation that generates a puddle or runoff.
- The serving of drinking water other than upon request, in eating or drinking establishments.
- Irrigating ornamental grass or turf on public street medians.
- Irrigating outside of newly constructed homes and buildings in a manner that is inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.
- Irrigating any hardscape.

Requirements

- All customers must properly maintain all plumbing and irrigation systems and control any leaks within 72 hours of discovery or notification.
- Customers shall practice prudent water conservation measures, including:
 - Planting drought-tolerant landscapes;
 - Installing and maintaining water-efficient irrigation systems such as drip and bubble irrigation with weather or soil-based controllers;
 - Installing sprinkler heads with a low flow rate appropriate for the landscape to prevent overwatering and runoff; and
 - Watering only in the late night or early morning hours during non-windy periods.
- A hose that dispenses potable water shall be fitted with a shut-off nozzle or flow restriction device attached to it that causes it to cease dispensing water immediately when not in use.



- All swimming pools, hot tubs and spas installed after 1 May 1993 must have a separation tank and water recovery system installed in the filter backwash system, with a 90% water recovery standard.
- Each swimming pool, hot tub and spa installed after 15 July 2015 must have a non-permeable floating cover or equivalent device that provides 90% surface coverage.

In subsequent stages of the WSCP, the City is empowered to further reduce or eliminate water waste during periods of water supply shortage or emergency. These measures, described in more detail in the WSCP, include restrictions on landscape irrigation, sidewalk and car washing, and other residential, recreational, and commercial uses of water.

Enforcement of the water waste prohibition is done by the City's Water Resources and Compliance Manager (WRCM). The WRCM enforces water waste violations in the same manner as violations of the WSCP (see Section 8.7), which involves a series of Courtesy Notices informing customers of the identified violations and the need for corrective action within 72 hours. If the first Courtesy Notice does not induce compliance, the WRCM issues a second notice. If those do not result in compliance, the WRCM writes a Notice of Intent to Impose a Penalty letter, delivered by certified mail, that details the efforts to date to gain compliance and the penalties associated with those violations. It also then allows the City to issue an Administrative Civil Liability against the owner for non-compliance if they do not respond.

Tracy enforces its water waste ordinance on a year-round basis. Approximately 353 actions have been taken by the City since 2015 to enforce the water waste ordinance. No citations have had to be issued since 2015.

9.1.2 DMM 2 – Metering

CWC § 526 (a)

Notwithstanding any other provision of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract ... shall do both of the following:

(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings constructed prior to January 1, 1992, located within its service area.

(2) On and after March 1, 2013, or according to the terms of the Central Valley Project water contract in operation, charge customers for water based on the actual volume of deliveries, as measured by a water meter.

CWC § 527 (a)

(a) An urban water supplier that is not subject to Section 526 shall do both of the following:

(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

The City has installed radio-capable water meters at all of its water service connections. All meters within the City's service area are read on a monthly basis. The ability to perform meter readings remotely via radio enhances data acquisition and can potentially alert customers or the City when there is a leak, potentially reducing wasted water. Depending on the availability of budget and staffing support, the City



is planning to implement a program in the future that will allow water meters to be utilized in such a way. The City has installed Advanced Metering Infrastructure (AMI) meters at some accounts, which will provide real-time water usage data to both the customer and the City. Installation of AMI meters has the ability to help the City reduce unaccounted-for water (UAW) in the future through the early identification of leaks. The City is planning to continue installation of AMI meters in the future.

The City has adopted the Department of Water Resources (DWR) Model Water Efficient Landscaping Ordinance (MWELO), which requires certain residential and non-residential projects to install separate irrigation meters if landscaped areas meet specific size thresholds.²⁸ In August 2012, the City conducted a feasibility study to assess the merits of implementing a program to provide incentives to switch mixed-use Commercial, Industrial, and Institutional (CII) accounts to dedicated landscape meters. The study concluded that it would be too cost-prohibitive to retrofit all current mixed-use CII accounts. However, all new construction is required to be equipped with a separate dedicated landscape meter. As time and money allow, current water use accounts will be retrofitted for dedicated landscape meters, starting with larger Commercial accounts.

9.1.3 DMM 3 – Conservation Pricing

The City's current water rate structure uses a tiered conservation structure for all residential customers. The structure consists of four consumption-based tiers with progressively higher commodity charges at each tier to pay for the increased costs related to peak demands. This structure is also proven to encourage conservation year-round. The City anticipates performing a new Water Rate Study in Fiscal Year 2022/23 in order to address the needs of the Utilities Department going forward. Any rate increases would have to be approved by City Council via the Proposition 218 noticing and public hearing process.

In addition, the City Council maintains the authority to adopt conservation pricing and water use surcharges in times of need (see **Appendix H**).

9.1.4 DMM 4 – Public Education Outreach

The City distributes information about water conservation and efficiencies to the public through bill inserts, brochures, community speakers, paid advertising, school education programs, and community events. The City's public information program is managed by the City's WRCM and includes the following activities:

- Distributing bill inserts that promote conservation;
- Promoting water conservation through television, streaming digital, and radio advertisements;
- Coordinating with homeowner associations and local non-profit organizations to provide additional water conservation and efficiencies material and speakers;

²⁸ Per California Code of Regulation §492.7(a)(1)(A), landscape water meters must be installed for residential irrigated landscapes of 5,000 square feet or greater and for non-residential irrigated landscapes between 1,000 square feet and 5,000 square feet (at which point CWC §535 applies).



- Maintaining a booth at the City's annual Bean Festival where information is distributed regarding the City's water conservation and efficiencies programs; and
- Using cinema advertisements by running one promotional slide before every movie at the Tracy Cinemark.

The City continues to promote water and other resource conservation at City schools through in-class presentations to fourth, fifth and sixth grade classrooms during Water Week. The City also distributes public outreach materials to schools for distribution, including the 40-page *Official Captain Hydro Water Conservation Workbook* and packages of water conservation flyers. The number of classroom visits and water conservation materials distributed vary each year depending on school participation. The City plans to continue working with the school districts and private schools in its service area to provide instructional assistance, educational materials, and classroom presentations that emphasize local urban, agricultural, and environmental issues related to water use.

The City also maintains a website providing water conservation and efficiencies tips and information regarding the City's water conservation and efficiencies programs discussed in Section 9.1.7, such as ultra low flush toilet rebates and the residential water survey program.²⁹

9.1.5 DMM 5 – Programs to Assess and Manage Distribution System Real Loss

Citywide water consumption is tracked through the use of the Inspironix Water Usage Data System (WUDS) software and Tyler MUNIS. The City calculates UAW by comparing total metered water consumption to potable water purchases and groundwater production. The City completes the American Water Works Association (AWWA) Water Loss Worksheet each year. Completion of this worksheet allows the City to estimate real water loss, which consists of water loss attributable to the distribution system and includes physical water loss from the pressurized system and storage tanks up to the point of customer consumption. The City contracts with a third-party vendor each year in order to validate its annual audit and make recommendations on ways to reduce UAW.

The City monitors its distribution for leaks by using acoustic sounders and the Supervisory Control and Data Acquisition (SCADA) software. A system-wide leak detection survey has not been completed since 1999; however, the City performs routine maintenance of its water lines and promptly repairs any ruptured water lines.

9.1.6 DMM 6 – Water Conservation Program Coordination and Staffing Support

The City's water conservation program is administered by the City's WRCM, Mrs. Stephanie Reyna-Hiestand. As Tracy's WRCM, Mrs. Reyna-Hiestand's responsibilities are divided as follows: 45% to water conservation and efficiencies efforts, 45% to storm water management, and 10% to groundwater management. The duties of the WRCM include coordination and oversight of conservation and efficiencies programs and DMM implementation, preparation and submittal of the United States Bureau of Reclamation (USBR) Annual Update, communication and promotion of water conservation and efficiencies issues to senior City management, coordination of agency conservation and efficiencies

²⁹ <http://www.ci.tracy.ca.us/?navId=687>



programs with operations and planning staff, and preparation of the annual water conservation and efficiencies budget. Contact information for the City's water conservation and efficiencies program is listed below:

Name: Stephanie Reyna-Hiestand

Phone: 209-831-6333

Email: stephanie.hiestand@cityoftracy.org

The City's water conservation and efficiencies program is funded through the Water Utility and grants. The City estimated that its total water conservation and efficiencies program budget for Fiscal Year 2019-2020 was approximately \$36,000, which includes expenses related to advertising, implementing DMMs, providing incentives and rebates, and more.

9.1.7 DMM 7 – Other DMMs

Other DMMs provided by the City, in addition to those discussed above, include the following:

- **Ultra Low Flush Toilet (ULFT) Rebates:** The City locally administers a ULFT Rebate Program for its residential and commercial customers. The ULFT Rebate Program was initiated in February 2007 and is subject to budget funding each fiscal year. Rebates are “first come, first served” and will continue until all ULFT rebates have been awarded each funded year. As part of this program, the City offers customers up to \$125 in rebates for customers replacing a high-volume toilet (i.e., 3.0 gallons per flush [gpf], or more) in a building that was built prior to 1994 with a ULFT that uses less than 1.6 gpf. Covered rebate expenses include the tank, bowl, supply line, wax ring, caulking, seat, bolts, bolt covers, tax, and professional installation. Up to three rebates are allowed per Single Family Residential (SFR) account and up to four rebates per building are allowed per Multi-Family Residential (MFR) and CII customer account. Between 2015 and 2020, the City provided a total of 203 rebates.
- **Water Use Survey Program:** Water use surveys are offered to SFR and MFR customers in pre-1994 buildings at no cost to the customer. As part of this program, a Water Efficiency Representative from the City conducts a tour of the property to identify leaks and offer water and money saving opportunities. Participants may receive water-saving equipment and information, as recommended by City staff.
- **Plumbing Retrofit Material Giveaways:** The City offers free plumbing retrofit materials to SFR and MFR customers participating in its Water Use Survey Program. The following materials are available at no cost as part of this giveaway program:
 - Bathroom aerators using 1.0 gallons per minute (gpm);
 - Kitchen aerators using 1.5 gpm; and
 - Low-flow shower heads using 1.5 gpm.



9.2 Implementation over the Past Five Years

Table 9-1 summarizes the DMMs implemented by the City and the extent of implementation (e.g., number of surveys, number of rebates) for each of the programs listed under DMM-7 each year between 2015 and 2020 as data were available. Through implementation of the DMMs, the City has been able to significantly reduce water demands in its service area and help its customers to achieve water and cost savings.

9.3 Implementation to Achieve Water Use Targets

CWC § 10631 (e)

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) ... The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

Beginning in 2023, urban water retailers will be required to report on “annual water use objectives” by November 1 of each year and to achieve these objectives by 1 January 2027 (per CWC § 10609). The annual water use objectives will be calculated based on standards for indoor residential water use, outdoor residential water use, and distribution system water loss. Additionally, it is anticipated that performance-based standards for the CII sectors, separate from the annual water use objectives, will also be developed by DWR and implemented in the future. However, the specific standards that will be used to determine a retailer’s annual urban water use objectives are currently under development by DWR, and thus, the annual urban water use objectives for the City cannot be calculated or estimated. Therefore, the City intends to continue implementing the DMMs described above and will evaluate potential adjustments needed to these programs as the annual water use objective standard methodologies are developed in the coming years. New programs may be added as needed. In particular, the City is planning to implement a smart water irrigation controller rebate program and a turf replacement rebate in 2021.



Table 9-1 Summary of DMMs and Implementation over the Past Five Years (2015-2020)

DMM Category	Program or Activity	Target Sector	Nature of Implementation	Extent of Implementation
1	Water Waste Prevention Ordinances	SFR, MFR, CII, And IRR	Mandatory requirements and prohibitions of water uses to prevent water waste were included in the TMC §11.28.160 and the 2020 WSCP Stage 1.	These requirements and prohibitions are enforced at all times.
2	Metering	SFR, MFR, CII, And IRR	All water service connections are metered. Many non-residential and multi-family customers have sub-meters to monitor water use for landscape irrigation separately from indoor uses. As time and money allow, current water use accounts will be retrofitted for dedicated landscape meters. All new construction shall be equipped with a separate dedicated landscape meter.	All accounts are metered and read on a monthly basis.
3	Conservation Pricing	SFR, MFR, CII, And IRR	The current water rate includes a tiered structure. The City also maintains the authority to implement water use surcharges (TMC §11.28.220) and conservation pricing (TMC §11.28.230) in times of need.	Rate structure based on user classes and consumption. Water rate study planned for FY 2022/23.
4	School Education Program: Captain Hydro	SFR, MFR	Copies of the 40-page <i>Official Captain Hydro Water Conservation Workbook</i> provided to each school for dissemination to Kindergarten through Sixth Grade classes.	Distributed to teachers on request.
4	Public Outreach Program	SFR, MFR	Information about water conservation and efficiencies in the City distributed to customers through newsletters, bill inserts, flyers, information packages, email messages, and other methods of distribution.	2016: 54,847 contacts Other years' data are not available.



Table 9-1 Summary of DMMs and Implementation over the Past Five Years (2015-2020)

DMM Category	Program or Activity	Target Sector	Nature of Implementation	Extent of Implementation
4	Media Contacts	SFR, MFR, CII, And IRR	Contact made with television channels, radio stations, and newspaper to promote water conservation and efficiencies within the City. The goal of this contact is to produce a story about water conservation and efficiencies resulting from the outreach.	2016: 12 contacts Other years' data are not available.
4	Other Public Outreach	SRF, MFR, CII, And IRR	The City maintains water conservation and efficiencies program pages on its website and posts outreach materials on its social media accounts: http://www.ci.tracy.ca.us/?navId=687 .	Implemented
5	AWWA Water Loss Worksheet	Non-revenue	The City completes the AWWA Water Loss Worksheet each year, which allows the City to estimate "real water loss." Real water loss consists of water loss attributable to the distribution system and includes physical water loss from the pressurized system and storage tanks up to the point of customer consumption.	2016: AWWA Validity Score = 62 2017: AWWA Validity Score = 61 2018: AWWA Validity Score = 61 2019: AWWA Validity Score = 67 2020: AWWA Validity Score (draft report) = 66
6	Conservation Program Coordination and Staff	SFR, MFR, CII And IRR	City employs a WRCM and funds the water conservation program through the Water Utility and grants. The WRCM devotes approximately 45% of her time to water conservation and efficiencies.	Estimated water conservation and efficiencies program budget for Fiscal Year 2019-2020 was approximately \$36,000.
7	Ultra Low Flush Toilet Rebate	SFR, MFR, CII	Up to \$125 rebate for replacing toilets in pre-1994 buildings using more than 3.0 gpf with qualifying toilets that use less than 1.6 gpf. Up to three rebates are allowed per SFR account and up to four rebates per building are allowed per MFR and CII customer account.	FY 2015-16: 99 rebates, \$18,864 spent FY 2016-17: 50 rebates, \$9,787 spent FY 2017-18: 23 rebates, \$4,481 spent FY 2018-19: 18 rebates, \$3,496 spent FY 2019-20: 13 rebates, \$2,625 spent



Table 9-1 Summary of DMMs and Implementation over the Past Five Years (2015-2020)

DMM Category	Program or Activity	Target Sector	Nature of Implementation	Extent of Implementation
7	Water Use Survey Program	SFR, MFR, CII	Free water use surveys are offered to SFR and MFR customers in pre-1994 buildings. As part of this program, a Water Efficiency Representative from the City conducts a tour of the property to identify leaks and offer water and money saving opportunities. Participants may receive water-saving equipment and information, as recommended by City staff.	Estimated to be less than 20 surveys over the last five years.
7	Plumbing Retrofit Material Giveaways	SFR, MFR, CII	Water-saving fixtures and other items are available to SFR and MFR customers participating in the Water Use Survey Program at no cost. These giveaways include bathroom aerators, kitchen aerators, a low-flow shower head, and other free items.	Estimated to be less than 10 per year during 2016 to 2019 and none in 2020.



10 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

This chapter provides information on a public hearing, the adoption process for the Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP), the adopted UWMP and WSCP submittal process, plan implementation, and the process for amending the adopted UWMP or WSCP.

10.1 Notification of UWMP Preparation

CWC § 10621 (b)

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

In February 2021, the City of Tracy (City) sent a letter to the County of San Joaquin and other local agencies informing them that the City was in the process of updating its UWMP and WSCP and soliciting their input in the update process. A listing of the entities contacted is provided in **Table 2-5**; the notices are included in **Appendix C** for reference. The letter was sent more than 60 days before the public hearing as required by code.

10.2 Notification of Public Hearing

CWC § 10642

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

10.2.1 Notice to Cities and Counties

At least two weeks prior to the public hearing, the entities listed in **Table 2-5** were noticed that the UWMP and WSCP public hearing would be occurring on 1 June 2021. The letter informed them of the locations the Public Review Draft 2020 UWMP and the updated WSCP would be available for review and welcoming



their input and comments on the document. The Public Review Draft 2020 UWMP and the WSCP was available for public review on the City's website. Copies of these letters are provided in **Appendix C**.

10.2.2 Notice to the Public

The City issued public notifications soliciting public input during the preparation of 2020 UWMP and the WSCP. On 14 May 2021 and 21 May 2021, the City published a notice in Tracy Press informing the public that the 2020 UWMP and the WSCP would be available for public review on the City's website, consistent with requirements of California Government Code 6066. The notice also informed the public that the 2020 UWMP and WSCP public hearing would be held at City Hall on 1 June 2021³⁰. A copy of this notice is included in **Appendix D**.

10.3 Public Hearing and Adoption

CWC § 10608.26

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

Prior to adopting the Plan, the City held a formal public hearing to present information on the 2020 UWMP and WSCP on 1 June 2021. The meeting was held in City Hall and was continued to the 15 June 2020 Council Meeting. Several members of the public provided comments on the Public Draft of the UWMP during the public comment period. Copies of the City's emailed responses to the public's written comments are included in **Appendix I**.

As part of the public hearing, the City provided the audience with information on compliance with the Senate Bill (SB) X7-7, including its baseline daily per capita water use, water use targets, implementation plan, and 2020 compliance.

This UWMP was adopted by Resolution No. 2021-082 by the City Council during its 15 June 2021 City Council meeting. The WSCP was adopted by Resolution No. 2021-082 during the same meeting. A copy of the resolutions is included in **Appendix J**.

³⁰ The public hearing on 1 June 2020 was continued to the 15 June 2021 Council Meeting, where the final resolution was adopted.



10.4 Plan Submittal

CWC § 10621

(f) (1) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

CWC § 10635 (c)

The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

CWC § 10644

(a) (1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.

This UWMP and WSCP were submitted to DWR within 30 days of adoption and by the 1 July 2021 deadline. The submittal was done electronically through Water Use Efficiency Data Portal, an online submittal tool. The adopted Plan was also sent to the California State Library and San Joaquin County.

10.5 Public Availability

CWC § 10645

(a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

(b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

On or about 4 May 2021, printed hard copies of the draft 2020 UWMP and WSCP were made available for review during normal business hours at the City's office. Electronic versions were also made available by visiting the City's website (<https://www.cityoftracy.org/?navid=697>).



10.6 Amending an Adopted UWMP or Water Shortage Contingency Plan

CWC § 10644 (b)

If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.

If the Plan is amended, each of the steps for notification, public hearing, adoption, and submittal will also be followed for the amended document.

References

2020 Urban Water Management Plan City of Tracy



11 REFERENCES

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Tracy, 2020. *Citywide Water System Master Plan Update*, prepared by West Yost Associates, November 2020 Draft.

Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX A

COMPLETED UWMP CHECKLIST



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Chapter 1
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Section 1.6
x	x	Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1 and Table 2-1
x	x	Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.3.2 and Table 2-5



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 1.3 Section 2.3.3
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2.3.1
	x	Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	N/A
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Chapter 3
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.5
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.2 and Table 3-1
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.3 and Table 3-2



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.2 and 5.1, Table 3-1
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.2
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Chapter 4, Tables 4-1 to 4-4
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.1.3, Table 4-3
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System Water Use	Section 4.2.1, Table 4-4
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4.2.4, Table 4-7
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4.1.4, Table 4-3
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.2.3, Table 4-6
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 4.4



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.4, Table 5-3
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	N/A
x		Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.4, Table 5-3
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.3



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Appendix E
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 7.1.2
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, <i>including changes in supply due to climate change.</i>	System Supplies	Section 6.12.1, Section 7.1.2
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Chapter 6
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Sections 6.3 to 6.10
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 6.11 and Table 6-9



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.3
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.2.1
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2
x	x	Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 6.2.4



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.5 and Table 6-1
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 6.2
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.9
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.7.2 and Tables 6-2 and 6-3
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.7.3 and Table 6-4
x	x	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.7.3 and Table 6-4



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.7.3 and Table 6-4
x	x	Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.7.5
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.7.5 and Table 6-6
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.8
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 6.5.2 and Table 6-2
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Sections 6.10 and 6.11 and Table 6-8



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 6.13 and Table 6-10
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Chapter 7
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.1.4
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.1
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 7.2



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 7.2
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 7.1.2 and Tables 7-1 to 7-6
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 7.1.3 and Tables 7-6 to 7-8
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Sections 6.12.1, and 7.1.3
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Chapter 8, Appendix H
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Appendix H – Chapter 2



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Appendix H – Chapters 11 and 12
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix H – Chapter 4
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Appendix H – Chapter 4
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Appendix H – Chapter 5
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix H – Chapter 5



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix H – Chapter 6 and Table 6-2
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix H – Chapter 6 and Table 6-1
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix H – C Section 6.3
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Appendix H – Section 6.4
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Appendix H – Section 6.7
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix H – Chapter 6.6
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix H – Chapter 7



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix H – Chapter 7
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix H – Chapter 8
x	x	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix H – Chapter 9
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix H – Chapter 5
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix H – Sections 6.5 and 9
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix H – Chapter 10
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix H – Chapter 10



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Appendix H – Chapter 10
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix H – Chapter 11
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Appendix H – Section 6.1.2
x	x	Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Appendix H – Chapter 13
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Appendix H – Chapter 13



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	N/A
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Chapter 9
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 10.1
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 10.4



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Section 10.5
x	x	Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Section 10.2.1
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 10.6



Completed UWMP Checklist

2020 Urban Water Management Plan

City of Tracy

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5
x	x	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	N/A
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4

Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX B

REDUCED DELTA RELIANCE



1. BACKGROUND

As stated in Appendix C of the Urban Water Management Plan Guidebook 2020 (UWMP Guidebook 2020; DWR, 2021)¹,

“An urban water supplier (Supplier) that anticipates participating in or receiving water supply benefits from a proposed project (covered action) 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).”

As the City of Tracy (City) has determined that it is subject to this requirement, this Appendix is intended to provide the needed information to demonstrate consistency with Delta Plan Policy WR P1.

Delta Plan Policy WR P1 subsection (a) states:

(a) Water shall not be exported from, transferred through, or used in the Delta if all of the following apply:

- (1) One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to **adequately contribute to reduced reliance on the Delta and improved regional self-reliance** consistent with all of the requirements listed in paragraph (1) of subsection (c);*
- (2) That failure has significantly caused the need for the export, transfer, or use; and*
- (3) The export, transfer, or use would have a significant adverse environmental impact in the Delta.*

WR P1 subsection (c)(1) defines “adequately contributing to reduced reliance on the Delta” as follows:

(c)(1) Water suppliers that have done the following are contributing to reduced reliance on the Delta:

- (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*

¹ The UWMP Guidebook 2020 is available at: <https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans>



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).

The analysis and documentation provided in this Appendix include all of the elements described in WR P1(c)(1) and has been prepared in accordance with Appendix C of the UWMP Guidebook 2020.

2. EXPECTED OUTCOMES OF MEASURABLE REDUCTION IN DELTA RELIANCE

The expected outcomes for the City's Delta reliance and regional self-reliance were developed based on the approach and guidance described in Appendix C of the UWMP Guidebook 2020 and are summarized in Table B-1 through Table B-4 below. This evaluation involves the following steps:

- Setting a baseline and evaluating normal-year water demands;
- Estimating service area population and water use; and
- Evaluating and projecting water supply sources to meet estimated normal year demands, including supplies from the Delta, local groundwater supplies, and non-potable supplies.

In order to calculate the expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance, future water demands need to be compared to a baseline. As the Delta Reform Act was enacted in 2009 and became effective in 2010, the City used 2010 as the baseline year.

Other inputs to the evaluation include service area water demands and population for 2010, 2015, and 2020, which were obtained from the 2015 and 2020 UWMPs.

Table B-1 calculates the estimated water use efficiency savings since the baseline year of 2010. The calculation uses the change in gallons per capita per day and population to estimate water use efficiency in the years 2015 through 2045 compared to the baseline year of 2020. The water use efficiency savings are added back into the demands to calculate the City's total demands without water use efficiency accounted for, as shown in Table B-2.

Together Tables B-1 and B-2 demonstrate that the City has made significant improvements in water efficiency and that demands would be even higher than currently projected without the water efficiency improvements.

Appendix B

2020 Urban Water Management Plan

City of Tracy



Table B-1 Calculation of Water Use Efficiency

Service Area Water Use Efficiency Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Water Demands with Water Use Efficiency Accounted For (a)	16,603	14,041	19,527	21,509	25,167	28,871	32,603	39,379
Non-Potable Water Demands (a)	-	-	-	1,000	2,067	3,133	4,200	6,300
Potable Service Area Demands with Water Use Efficiency Accounted For (b)	16,603	14,041	19,527	20,509	23,100	25,738	28,403	33,079
Total Service Area Population	Baseline (2010)	2015	2020	2,025	2030	2035	2040	2045
Service Area Population (c)	83,312	85,707	96,345	109,900	120,367	130,833	141,300	166,700
Water Use Efficiency Since Baseline (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Per Capita Water Use (GPCD)	178	146	181	167	171	176	179	177
Change in Per Capita Water Use from Baseline (GPCD)		(32)	3	(11)	(7)	(2)	2	(1)
Estimated Water Use Efficiency Since Baseline (d)		3,039	-	1,393	887	336	-	142

NOTES:

- (a) Water demands are from Table 4-2 and Table 4-8 of the 2020 UWMP.
- (b) Equal to total demands with water use efficiency accounted for minus non-potable water demands.
- (c) Population is from Table 3-1 and Table 4-2 of the 2020 UWMP.
- (d) Estimated water use efficiency is equal to the change in per capita water use multiplied by the service area population, converted to acre-feet per year by dividing by a factor of 892.7 gpd/AFY. In years where the per capita water use was higher than the baseline, the estimated water use efficiency savings are assumed to be zero.

Appendix B

2020 Urban Water Management Plan

City of Tracy



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

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Water Demands with Water Use Efficiency Accounted For	16,603	14,041	19,527	21,509	25,167	28,871	32,603	39,379
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline (a)		3,039	-	1,393	887	336	-	142
Service Area Water Demands without Water Use Efficiency Accounted For (b)	16,603	17,080	19,527	22,902	26,054	29,207	32,603	39,521

NOTES:

(a) Estimated water use efficiency is from Table B-1.

(b) Calculated as the sum of demands with water use efficiency accounted for and the estimated water use efficiency.

Appendix B

2020 Urban Water Management Plan

City of Tracy



The City has also made significant investments in diversifying its water supply portfolio and increasing self-reliance. Water supplies that contribute to regional self-reliance are quantified in **Error! Reference source not found.** and are grouped into the following categories:

- Water Recycling: The City has completed the initial phase of its recycled water system and is planning to expand the system to serve future development areas throughout the City. Recycled water is anticipated to supply 6,300 acre-feet per year (AFY), or approximately 16% of the total demand by 2045.
- Local and Regional Water Supply and Storage Projects: The City is projecting an increased use of groundwater to approximately 2,500 AFY starting in 2025.
- Other Programs and Projects that Contribute to Regional Self-Reliance: The City anticipates that a Recycled Water Exchange agreement will be executed with the United States Bureau of Reclamation (USBR) by 2030 to provide additional Central Valley Project (CVP) supplies to the City in exchange for the City discharging a like amount of tertiary-treated recycled water to the Delta-Mendota Canal (DMC). The Recycled Water Exchange will be implemented as needed to meet future demand conditions and is currently projected to supply an amount ranging from 1,925 AFY in 2030 to 7,500 AFY in 2045.

Further discussion of these water supplies is provided within Chapter 6 of the UWMP. As shown in Table B-3 below, the percentage of water supplies that contribute to regional self-reliance has been higher than the baseline (2010) and is projected to increase in the future through 2045.

In addition to the aforementioned sources, the City has two water supplies that are considered to rely on the Delta Watershed for purposes of this evaluation. These supplies are reported in Table B-4 under the following categories:

- CVP Contract Supplies: The City receives CVP water through the DMC under several contracts with the USBR and neighboring agencies. The projected CVP supplies range from 10,248 AFY in 2025 to 12,748 AFY in 2045.
- Delta/Delta Tributary Diversions: The City's supply from the South County Water Supply Project (SCWSP) is diverted from the Stanislaus River. The City anticipates being able to receive up to 13,135 AFY of SCWSP water in 2025 and 11,120 AFY in 2030 to 2045. The projected supply shown in Table B-4 is reported to the extent needed to meet the projected demands.

As presented in Table B-4, the percentage of water supplies from the Delta Watershed decreased from the 97% in the baseline year (2010) to the current 94% (2020), and is projected to decrease significantly to 58% by 2045.

The results are visualized in Chart C-1 and C-2. Chart C-1 presents the historical and projected water supply from both Delta and non-Delta sources along with the demand. Chart C-2 plots the percent of supply from the Delta Watershed, which shows a declining trend. In accordance with California Code of Regulations Title 23, Section 5003 (c)(1), the decrease in the percentage of water supplies from the Delta demonstrates the City's reduced reliance on the Delta Watershed and shows that the City's water supplies are consistent with Delta Plan Policy WR P1.

Appendix B

2020 Urban Water Management Plan

City of Tracy



Table B-3 Calculation of Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet) (a)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Use Efficiency	-	3,039	-	1,393	887	336	-	142
Water Recycling	-	-	-	1,000	2,067	3,133	4,200	6,300
Stormwater Capture and Use	-	-	-	-	-	-	-	-
Advanced Water Technologies	-	-	-	-	-	-	-	-
Conjunctive Use Projects	-	-	-	-	-	-	-	-
Local and Regional Water Supply and Storage Projects	498	519	1,181	2,500	2,500	2,500	2,500	2,500
Other Programs and Projects that Contribute to Regional Self-Reliance	-	-	-	-	1,925	3,500	5,000	7,500
Water Supplies Contributing to Regional Self-Reliance	498	3,558	1,181	4,893	7,379	9,469	11,700	16,442
Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Water Demands without Water Use Efficiency Accounted For (b)	16,603	17,080	19,527	22,902	26,054	29,207	32,603	39,521
Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Supplies Contributing to Regional Self-Reliance	498	3,558	1,181	4,893	7,379	9,469	11,700	16,442
Change in Water Supplies Contributing to Regional Self-Reliance (c)		3,060	683	4,395	6,881	8,971	11,202	15,944
Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Percent of Water Supplies Contributing to Regional Self-Reliance (d)	3.0%	20.8%	6.0%	21.4%	28.3%	32.4%	35.9%	41.6%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance (e)		17.8%	3.0%	18.4%	25.3%	29.4%	32.9%	38.6%

NOTES:

(a) Water use efficiency is from Table B-1. Other supplies are from Table 11 of the 2010 UWMP, Table 5-1 of the 2015 UWMP, and Table 6-8 and Table 6-9 of the 2020 UWMP.

(b) Values are from Table B-2.

(c) Calculated as the difference between the amount shown for the year and the amount shown for the 2010 baseline year.

Appendix B

2020 Urban Water Management Plan

City of Tracy



(d) Calculated as the water supplies contributing to regional self-reliance divided by the water demands without water use efficiency accounted for.

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

Water Supplies from the Delta Watershed (Acre-Feet) (a)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
CVP/SWP Contract Supplies	5,303	3,778	6,573	10,248	10,948	11,448	11,948	12,748
Delta/Delta Tributary Diversions	10,850	9,744	11,773	7,761	7,727	8,290	8,955	10,331
Transfers and Exchanges	-	-	-	-	-	-	-	-
Other Water Supplies from the Delta Watershed	-	-	-	-	-	-	-	-
Total Water Supplies from the Delta Watershed	16,153	13,522	18,346	18,009	18,675	19,738	20,903	23,079
Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Water Demands without Water Use Efficiency Accounted For (b)	16,603	17,080	19,527	22,902	26,054	29,207	32,603	39,521
Change in Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Supplies from the Delta Watershed	16,153	13,522	18,346	18,009	18,675	19,738	20,903	23,079
Change in Water Supplies from the Delta Watershed (c)		(2,631)	2,193	1,856	2,522	3,585	4,750	6,926
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
Percent of Water Supplies from the Delta Watershed (d)	97.3%	79.2%	94.0%	78.6%	71.7%	67.6%	64.1%	58.4%
Change in Percent of Water Supplies from the Delta Watershed (c)		-18.1%	-3.3%	-18.7%	-25.6%	-29.7%	-33.2%	-38.9%

NOTES:

(a) Supply data are from Table 11 of the 2010 UWMP, SB X7-7 Table 4-A of the 2015 UWMP, and Table 6-8 and Table 6-9 of the 2020 UWMP.

(b) Values are from Table B-2.

(c) Calculated as the difference between the amount shown for the year and the amount shown for the 2010 baseline year.

(d) Calculated as the water supplies from the Delta Watershed divided by the water demands without water use efficiency accounted for.



Chart B-1 Historical and Projected Water Supply and Demand

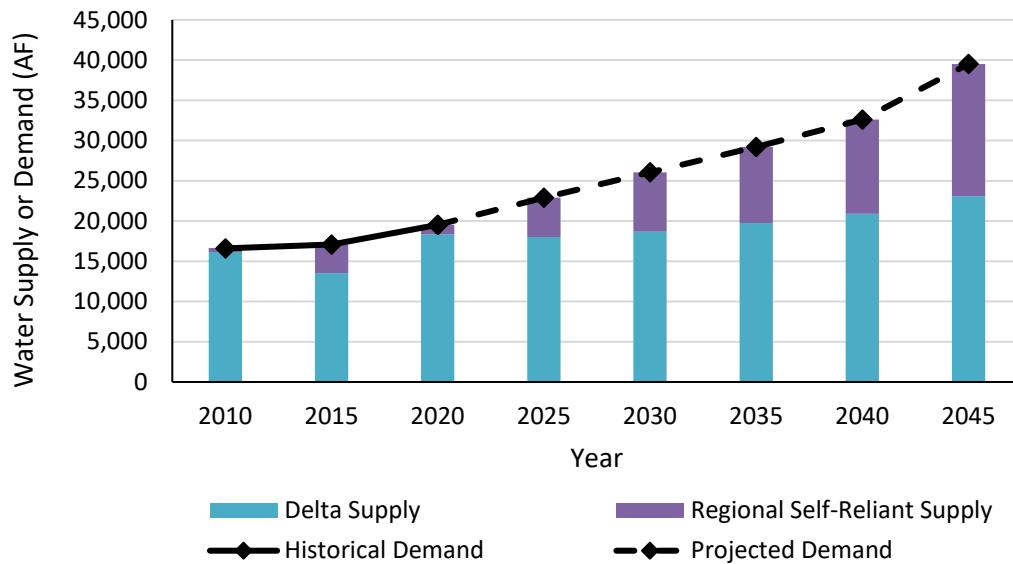
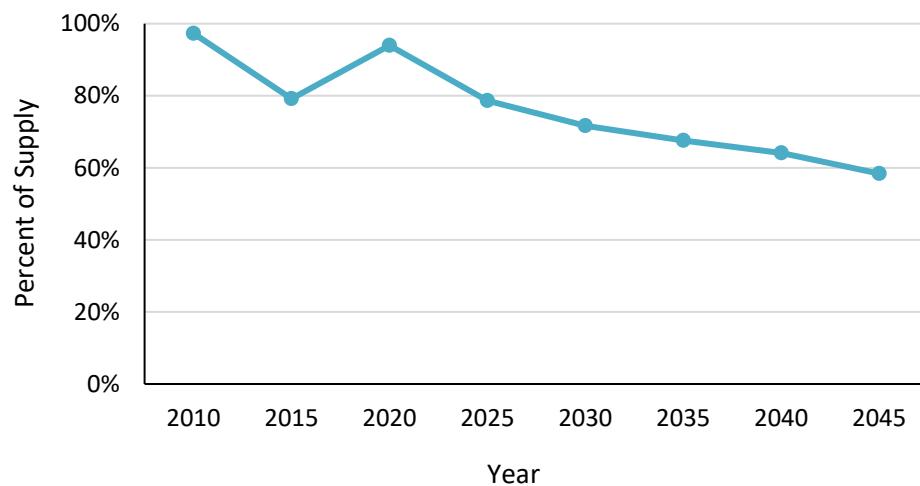


Chart B-2 Percent of Supply from Delta Sources



Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX C

UWMP AGENCY NOTIFICATION LETTERS



February 4, 2021

Matt Zidar
SJC Public Works
1810 East Hazelton Ave.
Stockton, CA 95205

Via e-mail: mzidar@sjgov.org

Re: Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the City of Tracy (City) to update its Urban Water Management Plan (UWMP) and associated Water Shortage Contingency Plan (WSCP) every 5 years. The City is currently reviewing its existing UWMP and associated WSCP, which were updated in 2016, and considering revisions to the documents. The updated UWMP and WSCP are due by July 1, 2021. We invite your agency's input in this revision process.

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City of Tracy
3900 Holly Drive
Tracy, California 95304
(209) 831-6333
Stephanie.Hiestand@cityoftracy.org

Sincerely,

Kuldeep Sharma
Director of Utilities



February 4, 2021

David Weisenberger
Banta-Carbona Irrigation District
3514 W. Lehman Road
Tracy, CA 95304

Via e-mail: bcid@inreach.com

Re: Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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(209) 831-6333
Stephanie.Hiestand@cityoftracy.org

Sincerely,

Kuldeep Sharma
Director of Utilities



February 4, 2021

Nat Bacchetti
Pescadero Reclamation District
3650 W. Canal Blvd.
Tracy, CA 95304

Via e-mail: rd2058@yahoo.com

Re: Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,



Kuldeep Sharma
Director of Utilities



February 4, 2021

Nick Janes
BBID
7995 Bruns Road
Byron, CA 94514-1625

Via e-mail: n.janes@bbid.org

Re: Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Kuldeep Sharma
Director of Utilities



February 4, 2021

Rick Gilmore
BBID
7995 Bruns Road
Byron, CA 94514-1625

Via e-mail: admin@bbid.org

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Sincerely,


Kuldeep Sharma
Director of Utilities



February 4, 2021

Mike Wackman
SJCDWQC
3294 Ad Art Road
Stockton, CA 95215

Via e-mail: michael@wackmanconsulting.com

Re: Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Kuldeep Sharma
Director of Utilities



February 4, 2021

Diana Trejo
City of Escalon
2060 McHenry Avenue
Escalon, CA 95230

Via e-mail: dtrejo@cityofescalon.org

Re: Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Kuldeep Sharma
Director of Utilities



February 4, 2021

Federico Barajas
SLWMWA
PO Box 2157
Los Banos, CA 93635

Via e-mail: federico.barajas@slwmwa.org

Re: Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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J. Scott Petersen
SLDMWA
PO Box 2157
Los Banos, CA 95635

Via e-mail: scott.petersen@sldmwa.org

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Kuldeep Sharma
Director of Utilities



February 4, 2021

Peter Rietkerk
SSJID
PO Box 747
Ripon, CA 95366-0747 PRIETKERK@SSJID.COM

Via e-mail: prietkerk@ssjid.com

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Sincerely,

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Director of Utilities



February 4, 2021

George Montross
City of Manteca
1001 West Center Street
Manteca, CA 95337

Via e-mail: gmontross@ci.manteca.ca.us

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Sincerely,

Kuldeep Sharma
Director of Utilities



February 4, 2021

Michael King
City of Lathrop
390 Town Centre Drive
Lathrop, CA 95330

Via e-mail: mkings@ci.lathrop.ca.us

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Gregory Gibson
City of Lathrop
390 Town Centre Drive
Lathrop, CA 95330

Via e-mail: gibson@ci.lathrop.ca.u

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Stephanie.Hiestand@cityoftracy.org

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Director of Utilities



February 4, 2021

Koosun Kim
City of Manteca
1001 West Center Street
Manteca, CA 95337

Via e-mail: Kkim@ci.manteca.ca.us

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Sincerely,


Kuldeep Sharma
Director of Utilities



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Koosun Kim
City of Manteca
1001 West Center Street
Manteca, CA 95337

Via e-mail: Kkim@ci.manteca.ca.us

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



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Water Resources & Compliance Manager



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Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
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City of Manteca
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Water Resources & Compliance Manager



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May 4, 2021

Peter Rietkerk
SSJID
PO Box 747
Ripon, CA 95366-0747

Via e-mail: prietkerk@ssjid.com

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Water Resources & Compliance Manager



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Via e-mail: scott.petersen@sldmwa.org

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If you have any questions about the 2020 UWMP or WSCP or the process for updating these documents, please contact me at: (209) 831-6333.

Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Federico Barajas
SLWMWA
PO Box 2157
Los Banos, CA 93635

Via e-mail: federico.barajas@sldmwa.org

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the City of Tracy (City) to update its Urban Water Management Plan (UWMP) and associated Water Shortage Contingency Plan (WSCP) every 5 years. The City must also make the draft documents available for public review and hold a public hearing before adopting its UWMP and associated WSCP.

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Sincerely,

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Diana Trejo
City of Escalon
2060 McHenry Avenue
Escalon, CA 95230

Via e-mail: dtrejo@cityofescalon.org

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Mike Wackman
SJCDWQC
3294 Ad Art Road
Stockton, CA 95215

Via e-mail: michael@wackmanconsulting.com

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the City of Tracy (City) to update its Urban Water Management Plan (UWMP) and associated Water Shortage Contingency Plan (WSCP) every 5 years. The City must also make the draft documents available for public review and hold a public hearing before adopting its UWMP and associated WSCP.

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Rick Gilmore
BBID
7995 Bruns Road
Byron, CA 94514-1625

Via e-mail: admin@bbid.org

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Nick Janes
BBID
7995 Bruns Road
Byron, CA 94514-1625

Via e-mail: n.janes@bbid.org

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Nat Bacchetti
Pescadero Reclamation District
3650 W. Canal Blvd.
Tracy, CA 95304

Via e-mail: rd2058@yahoo.com

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

David Weisenberger
Banta-Carbona Irrigation District
3514 W. Lehman Road
Tracy, CA 95304

Via e-mail: bcid@inreach.com

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Matt Zidar
SJC Public Works
1810 East Hazelton Ave.
Stockton, CA 95205

Via e-mail: mzidar@sjgov.org

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Water Resources & Compliance Manager



City of Tracy
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Tracy, CA 95304

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MAIN 209.831.6330
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May 4, 2021

Dave Umezaki
EKI Consulting
2001 Junipero Serra Blvd. #300
Daly City, CA 94014

Via e-mail: dumezaki@ekiconsult.com

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Thomas Birmingham
Westlands Water District
PO Box 6056
Fresno, CA 93703-6056

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.6330
FAX 209.831.4484
www.cityoftracy.org

May 4, 2021

Jose Gutierrez
Westlands Water District
PO Box 6056
Fresno, CA 93703-6056

Re: Notice of Public Hearing Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

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Sincerely,

Stephanie Reyna-Hiestand

Stephanie Reyna-Hiestand
Water Resources & Compliance Manager

Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX D

UWMP PUBLIC HEARING NOTICES

Dave Umezaki

From: Stephanie Reyna-Hiestand <Stephanie.Hiestand@cityoftracy.org>
Sent: Tuesday, June 22, 2021 12:36 PM
To: Dave Umezaki
Subject: FW: Public Hearing Notice

From: Sandra Edwards <Sandra.Edwards@cityoftracy.org>
Sent: Wednesday, May 12, 2021 1:02 PM
To: Stephanie Reyna-Hiestand <Stephanie.Hiestand@cityoftracy.org>
Subject: FW: Public Hearing Notice

Confirmation of newspaper notice.

Sandra

From: Vanessa Alfaro <valfaro@tracypress.com>
Sent: Wednesday, May 12, 2021 12:51 PM
To: Sandra Edwards <Sandra.Edwards@cityoftracy.org>
Subject: Re: Public Hearing Notice

Hi Sandra,
Hope all is well! Confirmed, cost \$41.80. Thank you!

Vanessa Alfaro

Sales / Legal Advertising
Tracy Press ~ Patterson Irrigator
Direct: 209-830-4216
95 W. 11th Street, Suite 203
Tracy, CA 95376

****Effective Immediately my work hours have changed****

Tues-Fri: 8:30-10:30 & 3:00-6:00
I will check emails on a regular basis
(best method to get in contact).
And will return all phone calls ASAP

On Wed, May 12, 2021 at 11:40 AM Sandra Edwards <Sandra.Edwards@cityoftracy.org> wrote:

Attached is a public hearing notice we would like advertised in the Tracy Press on Friday, May 14, 2021.

The department to be charged is Utilities.

Please confirm receipt of this notice.

Thank you!

Sandra Edwards

Executive Assistant

City of Tracy

Utilities Department

3900 Holly Drive

Tracy, CA 95304

(209) 831-6329

Legals 5

PUBLIC NOTICE

No. 0291

FICTITIOUS BUSINESS NAME STATEMENT
File No. 2021-078502
The following person(s) (are) doing business as **SIMILE DENTAL OF TRACY**, 2616 Pavilion Parkway, Ste. 104, Tracy, CA 95304.

County of Place of Business:

SAN JOAQUIN COUNTY

Full Name of Registrant:

D. PARK MPH DDS

DENTAL CORPORATION

4141 Allott Avenue

Sherman Oaks, CA 91423

CALIFORNIA

This business is conducted by:

A CORPORATION

The registrant commenced to trans-

act business under the fictitious busi-

ness name or names listed above on

N/A.

Signed: DAVID PARK

ORIGINAL Fictitious Business Name Statement:

This statement was filed with

STEVE J. BESTOLARIDES

CLERK OF SAN JOAQUIN COUNTY:

5/04/2021

This Fictitious Business Statement

Expires On: 5/04/2026

Tracy Press: May 14, 21, 28, June 4

6/13, 20, 27, 2021

PUBLIC NOTICE

No. 0289

NOTICE OF PETITION TO ADMINISTER ESTATE OF: CHERYL PIERCE CASE NUMBER: STK-PR-EST-2021-0000515

To all heirs, beneficiaries, creditors, contingent creditors, and persons who may otherwise be interested in the will or estate, or both, of: CHERYL PIERCE A Petition for Probate has been filed by: DENISE PIERCE In the Superior Court of California, County of San Joaquin The Petition for Probate requests that DENISE PIERCE 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 in this court as follows: Date: JUNE 14, 2021 Time: 10:00 a.m. Dept: 11A located at: Superior Court of California, County of San Joaquin 180 East Weber Avenue Stockton, CA 95202

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

PUBLIC NOTICE

No. 0290

the date of the 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:

Kuhwinder Kenea Bains

801 10th Street 5th Floor

Modesto, CA 95354

209-521-1500

Tracy Press: May 14, 21, 28

PUBLIC NOTICE

No. 0286

NOTIFICATION OF PUBLIC HEARING

Banta School District's 2021-22 Budget.

The proposed 2021-22 Budget of the Banta School District will be available for inspection at 22375 El Rancho Road, Tracy, CA 95304 between the hours of 9:00 a.m. to 3:00 p.m. June 7, 8, 9, 10, 2021.

PUBLIC HEARING WILL BE HELD AT:
22345 El Rancho Road Tracy, CA 95304

Public may also view the meeting under "QUICK LINKS" at bantsd.org (questions must be submitted by 12:00 p.m. 6/10/21)

DATE: June 10, 2021
TIME: 7:00 p.m.

Tracy Press: May 21, 2021

PUBLIC NOTICE

No. 0302

NOTICE OF PUBLIC HEARING BEFORE THE SAN JOAQUIN COUNCIL OF GOVERNMENTS (SJCOG)

Acting as the San Joaquin County Transportation Authority

NOTICE IS GIVEN that at 4:00 p.m. (or soon thereafter), on June 24, 2021 at the regularly scheduled SJCOG Board Meeting, a public hearing will be held to receive oral and written statements regarding any proposed amendments to the Measure K Ordinance and Expenditure Plan.

In accordance with Governor Newson's Executive Order N-32-20, The San Joaquin Council of Governments and staff will be participating in this meeting via teleconference. In the interest of maintaining appropriate social distancing, members of the public may participate in the meeting electronically and shall have the right to observe and offer public comment at the appropriate time during this special meeting by joining at <https://sjcog.zoom.us/j/94401264486>, or by calling in at 1-669-900-6833 (Webinar ID: 944 0126 4486). To be recognized to speak, press "9" which will signal the moderator.

In 2006, San Joaquin voters renewed the previous Measure K program for another 20-year period to implement the 9-cent sales tax for transportation purposes through March 31, 2041. The Measure K Renewal Expenditure Plan calls for street repairs,

PUBLIC NOTICE

No. 0303

safety and operational improvements on local streets and roads, projects to reduce congestion on streets and highways, passenger rail and bus service to provide alternatives to the car and improve air quality of the San Joaquin Valley, as well as separation of streets from railroads at designated crossings to improve safety.

SJCOG staff propose amending the Measure K Renewal Ordinance to revise the Regional Congestion Management Plan language to be consistent with current state law. At this time, this is the only proposed amendment to the Measure K Ordinance and there are no proposed changes to the Measure K Expenditure Plan. The public hearing process may identify other proposals.

If you have any comments relevant to the Ordinance and Expenditure Plan amendment process, you are invited to be present. If you challenge the nature of any proposed action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or in written correspondence delivered to SJCOG at or prior to the public hearing. Copies of the Measure K Ordinance and Expenditure Plan are available at www.sjcg.org.

For further information, contact Ryan Niblock, Senior Regional Planner, at (209) 235-0588.

Tracy Press: May 21, 2021

PUBLIC NOTICE

No. 0304

NOTICE OF PUBLIC HEARING

CITY OF TRACY

A Public Hearing will be held by the City Council of the City of Tracy on Tuesday, June 1, 2021, at 7:00 p.m., or as soon thereafter as possible, in the Tracy City Hall, 333 Civic Center Plaza, Tracy, to consider:

PUBLIC HEARING AND APPROVAL OF THE URBAN WATER MANAGEMENT PLAN 2020 UPDATE INCLUDING THE WATER SHORTAGE CONTINGENCY PLAN

All interested persons are invited to be present and to submit statements orally or in writing before or during the meeting.

Information concerning this matter may be obtained at the Utilities Department, 3900 Holly Drive, (209) 831-4333. A copy of the Urban Water Management Plan 2020 can be viewed at the Tracy City Library and at the Tracy Wastewater Treatment Plant. A copy is also available on the City's website at <https://www.cityoftc.org/?navid=697>.

ADRIANNE RICHARDSON

CITY CLERK

Tracy Press: May 21, 2021

We can help

with all your
Legal
Publication
needs!

- NEW BUSINESS
- NAME CHANGE
- PUBLIC NOTICE

Give us a call at 835-3030

PUBLIC NOTICE

No. 0307

**NOTICE OF AVAILABILITY
30-DAY PUBLIC COMMENT PERIOD**

The San Joaquin Council of Governments, as the Regional Transportation Planning Agency (RTPA) and the Metropolitan Planning Organization (MPO) for San Joaquin County, is pleased to announce the availability of the initial draft of the FY 2021-2022 Unmet Transit Needs Assessment for public review and comment. The Unmet Transit Needs Assessment document and received unmet transit need comments can be accessed at www.sjcg.org/utn or viewed at the SJCOG office upon request. At this time of this announcement, only the initial DRAFT FY 2021-2022 Unmet Transit Needs Assessment is available for public comment. The public comment period begins on May 12, 2021 and ends on June 12, 2021. Comments may be submitted to Joel G. Campos, Associate Regional Planner, at campos@sjcg.org or utn@sjcg.org. The SJCOG Board will vote on a resolution of the findings within the assessment on June 24, 2021.

This business is conducted by: A LIMITED LIABILITY COMPANY

The registrant commenced to transact business under the fictitious business name or names listed above on MAY 13, 2021.

Signed: CHARLES P. MEECHAM
ORIGINAL Fictitious Business Name Statement.

This statement was filed with STEVE J. BESTOLARIDES

CLERK OF SAN JOAQUIN COUNTY:

5/13/2021

This Fictitious Business Statement

Expires On: 5/13/2026

Tracy Press: May 21, 28, June 4, 11

PUBLIC NOTICE

No. 0308

PUBLIC NOTICE
No. 0305

FICTITIOUS BUSINESS NAME STATEMENT
File No. 2021-083669

The following person(s) (is/are) doing business as **UNIVERSAL PAVERS**, 11627 W. Clover Road, Tracy, CA 95304.

County of Place of Business:

SAN JOAQUIN COUNTY

Full Name of Registrant:

RICARDO ALFONSO

ESCOBAR-GARCIA

2929 N. MacArthur Drive, #67

Tracy, CA 95376

This business is conducted by:

AN INDIVIDUAL

The registrant commenced to transact business under the fictitious business name or names listed above on N/A.

Signed: RICARDO ALFONSO

ESCOBAR-GARCIA

ORIGINAL Fictitious Business Name Statement.

This statement was filed with STEVE J. BESTOLARIDES

CLERK OF SAN JOAQUIN COUNTY:

5/12/2021

This Fictitious Business Statement

Expires On: 5/12/2026

Tracy Press: May 21, 28, June 4, 11

PUBLIC NOTICE

No. 0311

PUBLIC NOTICE
No. 0309

FICTITIOUS BUSINESS NAME STATEMENT
File No. 2021-081865

The following person(s) (is/are) doing business as **THE FOOFIE PET**, 1960 Clearbrook Court, Tracy, CA 95376.

County of Place of Business:

SAN JOAQUIN COUNTY

Full Name of Registrant:

SARAH ELIZABETH CARR

1960 Clearbrook Court

Tracy, CA 95376

This business is conducted by:

AN INDIVIDUAL

The registrant commenced to transact business under the fictitious business name or names listed above on N/A.

Signed: SARAH ELIZABETH CARR

ORIGINAL Fictitious Business Name Statement.

This statement was filed with STEVE J. BESTOLARIDES

CLERK OF SAN JOAQUIN COUNTY:

5/10/2021

This Fictitious Business Statement

Expires On: 5/10/2026

Tracy Press: May 21, 28, June 4, 11

PUBLIC NOTICE

No. 0310

PUBLIC NOTICE
No. 0310

FICTITIOUS BUSINESS NAME STATEMENT

File No. 2021-082027

The following person(s) (is/are) doing business as **PAKRISTHA.NET**, 2268 Golden Leaf Lane, Tracy, CA 95377.

County of Place of Business:

SAN JOAQUIN COUNTY

Full Name of Registrant:

MAHMOOD HASAN

2268 Golden Leaf Lane

Tracy, CA 95377

This business is conducted by:

AN INDIVIDUAL

The registrant commenced to trans-

act business under the fictitious busi-

ness name or names listed above on

N/A.

Signed: MAHMOOD HASAN

ORIGINAL Fictitious Business Name Statement.

This statement was filed with STEVE J. BESTOLARIDES

CLERK OF SAN JOAQUIN COUNTY:

5/10/2021

This Fictitious Business Statement

Expires On: 5/10/2026

Tracy Press: May 21, 28, June 4, 11

PUBLIC NOTICE

No. 0308

PUBLIC NOTICE
No. 0308

FICTITIOUS BUSINESS NAME STATEMENT

File No. 2021-078255

The following person(s) (is/are) doing business as **PASLA TRANSPORT**, 2250 Valencia Court, Tracy, CA 95377.

County of Place of Business:

SAN JOAQUIN COUNTY

Full Name of Registrant:

AMRITPAL SINGH

2250 Valencia Court

Tracy, CA 95377

This business is conducted by:

AN INDIVIDUAL

The registrant commenced to trans-

act business under the fictitious busi-

ness name or names listed above on

N/A.

Signed: AMRITPAL SINGH

ORIGINAL Fictitious Business Name Statement.

This statement was filed with STEVE J. BESTOLARIDES

CLERK OF SAN JOAQUIN COUNTY:

5/04/2021

This Fictitious Business Statement

Expires On: 5/04/2026

Tracy Press: May 21, 28, June 4, 11

PUBLIC NOTICE

No. 0311

PUBLIC NOTICE
No. 0311

FICTITIOUS BUSINESS NAME STATEMENT

File No. 2021-082012

The following person(s) (is/are) doing business as **SLURPEE RUSH, LLC**, 1825 Azalea Street

Lodi, CA 95242

CALIFORNIA

This business is conducted by:

A LIMITED LIABILITY COMPANY

The registrant commenced to trans-

act business under the fictitious busi-

ness name or names listed above on

N/A.

Signed: JAGJEET SINGH

ORIGINAL Fictitious Business Name Statement.

This statement was filed with STEVE J. BESTOLARIDES

CLERK OF SAN JOAQUIN COUNTY:

5/10/2021

This Fictitious Business Statement

Expires On: 5/10/2026

Tracy Press: May 21, 28, June 4, 11

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Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX E

SBX7-7 COMPLIANCE TABLES

SB X7-7 2020 Compliance Form

The SB X7-7 2020 Compliance Form is for the calculation of 2020 compliance only. All retail suppliers must complete the SB X7-7 Compliance Form. Baseline and target calculations are done in the SB X7-7 Verification Form.

The SB X7-7 Verification Form is for the calculation of baselines and targets and is a separate workbook from the SB X7-7 2020 Compliance Form. Most Suppliers will have completed the SB X7-7 Verification Form with their 2015 UWMP and do not need to complete this form again in 2020. See Chapter 5 Section 5.3 of the UWMP Guidebook for more information regarding which Suppliers must, or may, complete the SB X7-7 Verification Form for their 2020 UWMP. 2020 compliance calculations are done in the SB X7-7 2020 Compliance Form.

WUE Data Portal Entry Exceptions

The data from the tables below will not be entered into WUE Data Portal tables. These tables will be submitted as separate uploads, in Excel, to WUE Data Portal.

Process Water Deduction

SB X7-7 tables 4-C, 4-C.1, 4-C.2, 4-C.3, 4-C.4 and 4-D

A supplier that will use the process water deduction will complete the appropriate tables in Excel, submit them as a separate upload to the WUE Data Portal, and include them in its UWMP.

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* <i>(select one from the drop down list)</i>
Acre Feet
<i>*The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.</i>
NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate	
Method Used to Determine 2020 Population (may check more than one)	
<input checked="" type="checkbox"/>	1. Department of Finance (DOF) or American Community Survey (ACS)
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input type="checkbox"/>	4. Other DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	96,345
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions				2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use* <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	19,527	-	-	-	-	19,527

* 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	DMC/CVP		
This water source is (check one):			
<input type="checkbox"/>	The supplier's own water source		
<input checked="" type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
	6,573	-	6,573

¹ Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3. ² Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s) Meter Error Adjustment

Complete one table for each source.

Name of Source	Groundwater		
This water source is (check one):			
<input checked="" type="checkbox"/>	The supplier's own water source		
<input type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
	1,181		1,181

¹ Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3. ² Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	SCWSP		
This water source is (check one):			
<input type="checkbox"/>	The supplier's own water source		
<input checked="" type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
	11,773		11,773
¹ <i>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.</i> 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 <i>(For use only by agencies that are deducting indirect recycled water)</i>								
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	
			-		-			-

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.*

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	
<input type="checkbox"/>	Criteria 1- Industrial water use is equal to or greater than 12% of gross water use. Complete SB X7-7 Table 4-C.1
<input type="checkbox"/>	Criteria 2 - Industrial water use is equal to or greater than 15 GPCD. Complete SB X7-7 Table 4-C.2
<input type="checkbox"/>	Criteria 3 - Non-industrial use is equal to or less than 120 GPCD. Complete SB X7-7 Table 4-C.3
<input type="checkbox"/>	Criteria 4 - Disadvantaged Community. Complete SB x7-7 Table 4-C.4
NOTES:	

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.1: 2020 Process Water Deduction Eligibility <i>(For use only by agencies that are deducting process water using Criteria 1)</i>				
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
	19,527		0%	NO
NOTES:				

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.2: 2020 Process Water Deduction Eligibility <i>(For use only by agencies that are deducting process water using Criteria 2)</i>				
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
		96,345	-	NO
NOTES:				

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.3: 2020 Process Water Deduction Eligibility <i>only by agencies that are deducting process water using Criteria 3)</i>						(For use
Criteria 3						
Non-industrial use is equal to or less than 120 GPCD						
2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction <i>Fm SB X7-7 Table 4</i>	2020 Industrial Water Use	2020 Non-industrial Water Use	2020 Population <i>Fm SB X7-7 Table 3</i>	Non-Industrial GPCD	Eligible for Exclusion Y/N
	19,527		19,527	96,345	181	NO

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.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
<input type="checkbox"/>	2020 \$75,235		0%	YES

*California median household income 2015 -2019 as reported in US Census Bureau QuickFacts.

NOTES

Data from these tables will not be entered into WUEdata.

Instead,

the entire tables will be uploaded to WUEdata as a separate upload in Excel format.

This table(s) is only for Suppliers that deduct process water from their 2020 gross water use.

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:

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water <i>Fm SB X7-7 Table 4</i>	2020 Population <i>Fm SB X7-7 Table 3</i>	2020 GPCD
19,527	96,345	181
NOTES:		

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD ¹	Optional Adjustments to 2020 GPCD					2020 Confirmed Target GPCD ^{1,2}	Did Supplier Achieve Targeted Reduction for 2020?		
	Enter "0" if Adjustment Not Used			TOTAL Adjustments ¹	Adjusted 2020 GPCD ¹ (Adjusted if applicable)				
	Extraordinary Events ¹	Weather Normalization ¹	Economic Adjustment ¹						
181	-	-	-	-	181	181	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:

SB X7-7 Table 7: 2020 Target Method*Select Only One*

Target Method		Supporting Documentation
<input checked="" type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1

20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
226	181
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
209	199	182	182
¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.			² 2020
NOTES:			

Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX F

SUPPLY RELIABILITY INFORMATION PROVIDED BY SSJID



**SOUTH SAN JOAQUIN
IRRIGATION DISTRICT**

October 26, 2016

City of Escalon
Interim City Manager, Tammy Alcantor
talcantor@cityofescalon.org

City of Manteca
City Manager, Elena Reyes
ereyes@ci.manteca.ca.us

City of Tracy
City Manager, Troy Brown
cm@ci.tracy.ca.us

City of Lathrop
City Manager, Stephen Salvatore
city.manager@ci.lathrop.ca.us

City of Ripon
City Administrator, Kevin Werner
kwerner@cityofripon.org

Dear Public Officials:

On September 15, 2016, the State Water Resources Control Board released a revised Phase 1 Substitute Environmental Document (SED) analyzing proposed changes to the current Bay-Delta Water Quality Control Plan. The document proposes to release approximately 40-percent of what would naturally flow in watersheds tributary to the San Joaquin River like the Stanislaus River, during the February – June period. This means that surface water users on those watersheds would be restricted from using and storing water until 40-percent of unimpaired flows are rededicated for water quality and instream fishery purposes.

For the Stanislaus River, surface water cutbacks would be drastic. SSJID estimates the SED will result in average annual reductions of between 10 and 25-percent, with drought period reductions critically reducing surface water supplies by up to 64-percent. This would result in crippling water supply shortages for its agricultural customers and permanent mandatory conservation for the Cities of Manteca, Lathrop, Tracy, and Escalon who have partnered with SSJID on the Nick C. DeGroot Water Treatment Plant to meet current and future water supply needs. The SED also calls on additional groundwater pumping to make up the surface water deficit created by the plan, without adequately analyzing the local “critical” subbasin or new laws requiring sustainable use of our local groundwater resources. The implementation of the SED is expected to result in annual losses of thousands of jobs and billions of dollars to the regional economy.

At the SSJID Board of Director’s meeting on Tuesday, October 11, 2016, the Board adopted a Resolution #16-13-W (attached) opposing the State Water Resources Control Board 2016 revised draft Substitute Environmental Document. The District is reaching out to the Cities of Escalon, Lathrop, Manteca, Ripon, and Tracy to urge your support in its efforts to oppose the SED by having your city councils adopt a similar resolution. We also invite you to voice your support at a State Board Hearing to be held at 9:00 am on Friday, December 16, at the Stockton Memorial Civic Auditorium, located at 525 N. Center Street, in Stockton, and provide comments on the SED to the State Board, due by January 17, 2016. We stand ready to assist in coordinating comments with you as we continue to study and understand the impacts associated with the SED to the local area.

Thank you for your consideration. If you have any questions regarding this matter, please feel free to contact me.

Sincerely,

Peter M. Rietkerk
General Manager

From: [Brandon Nakagawa](#)
To: [Dave Umezaki](#)
Subject: RE: SSJID Reliability Discussion
Date: Tuesday, April 20, 2021 2:56:49 PM

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) which, if and when implemented, may have an impact on the Stanislaus River. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of up to 30-50% of the unimpaired flow on the three tributaries from February through June in every year type.

If the Bay-Delta Plan Amendment is implemented as adopted, there are significant impacts in some years to the ability of the Bureau of Reclamation to meet its obligations under the 1988 Stipulation and Agreement to provide formula water to the both Oakdale Irrigation District and SSJID in years when inflow into New Melones is below 600,000 AF which typical occur in dry and critically dry years. This could reduce the minimum projected supply amount of 225,000 AF/year as planned for by SSJID in this UWMP. The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Stanislaus River by the year 2022, assuming all required approvals are obtained by that time; however, implementation of the Bay-Delta Plan Amendment remains uncertain for multiple reasons.

Over a dozen lawsuits have been filed in both state and federal courts, including challenges filed by the Oakdale Irrigation District and SSJID, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment are in the early stages and there have been no consequential court rulings as of this date. Secondly, the Bay-Delta Plan Amendment did not include an allocation of responsibility for meeting the flow requirements. Such an allocation of responsibility must consider the senior water rights of both OID and SSJID who have adjudicated pre-1914 rights and other senior appropriative rights. In recognition of the difficult legal process ahead, many stakeholders throughout California including the State and Federal Government have opted to explore the possibility of voluntary agreements to achieve outcomes comparable to those described in the Bay-Delta Amendment balancing the needs of all water users. Both OID and SSJID have participated in voluntary agreement negotiations. Based on these uncertainties, SSJID has opted to make no near-term planning assumptions related to the implementation of the Bay-Delta Plan Amendment for the purposes of this 2020 UWMP. Should conditions change or consequential resolution of the issues aforementioned come to be, SSJID will revise and re-adopt a 2020 UWMP to reflect changes to its impacted water supply.

Brandon W. Nakagawa P.E.
Water Resources Coordinator
South San Joaquin Irrigation District
Direct: 209.249.4613
Cell: 209.305.8442
Fax: 209.249.4691

From: Dave Umezaki <dumezaki@ekiconsult.com>
Sent: Tuesday, April 20, 2021 12:15 PM
To: Brandon Nakagawa <bnakagawa@ssjid.com>
Subject: RE: SSJID Reliability Discussion

We would like some sort of narrative or paragraph explaining the rationale for not assuming implementation of the Bay Delta Plan.

--Dave

C. David Umezaki, P.E.
Senior Project Engineer
EKI Environment & Water, Inc.
2001 Junipero Serra Boulevard, Suite 300
Daly City, California 94014
T: (650) 292-9100 | D: (650) 292-9079
dumezaki@ekiconsult.com | www.ekiconsult.com

From: Brandon Nakagawa <bnakagawa@ssjid.com>
Sent: Tuesday, April 20, 2021 12:10 PM
To: Dave Umezaki <dumezaki@ekiconsult.com>
Subject: RE: SSJID Reliability Discussion

To keep things simple, I made a few notes in the tables. If you need more I can provide something.

Brandon W. Nakagawa P.E.
Water Resources Coordinator
South San Joaquin Irrigation District
Direct: 209.249.4613
Cell: 209.305.8442
Fax: 209.249.4691

From: Dave Umezaki <dumezaki@ekiconsult.com>
Sent: Tuesday, April 20, 2021 12:06 PM
To: Brandon Nakagawa <bnakagawa@ssjid.com>
Subject: RE: SSJID Reliability Discussion

Thanks Brandon – we'll take a look. Will you also be able to send me the narrative today?

--Dave

C. David Umezaki, P.E.

Senior Project Engineer

EKI Environment & Water, Inc.

2001 Junipero Serra Boulevard, Suite 300

Daly City, California 94014

T: (650) 292-9100 | D: (650) 292-9079

dumezaki@ekiconsult.com | www.ekiconsult.com

From: Brandon Nakagawa <bnakagawa@ssjid.com>

Sent: Tuesday, April 20, 2021 11:56 AM

To: Dave Umezaki <dumezaki@ekiconsult.com>

Subject: RE: SSJID Reliability Discussion

Dave,

I have filled out the tables to the best of my abilities. I'm sure that you will have questions. Please feel free to contact me.

Brandon

Brandon W. Nakagawa P.E.

Water Resources Coordinator

South San Joaquin Irrigation District

Direct: 209.249.4613

Cell: 209.305.8442

Fax: 209.249.4691

DRAFT Submittal Table 6-9 Wholesale: Water Supplies — Projected

DRAFT OPTIONAL Table 6-9 Wholesale: Water Supplies — Projected Potable

DRAFT OPTIONAL Table 6-9 Wholesale: Water Supplies – Projected Non-Potable

Water Supply	Projected Water Supply				
	2025	2030	2035	2040	2045 (opt)

<i>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</i>	Additional Detail on Water Supply	Reasonably Available Volume	Total Right or Safe Yield (optional)								
Add additional rows as needed											
Total	0	0	0	0	0	0	0	0	0	0	0
NOTES:											

DRAFT Submittal Table 7-1 Wholesale: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2020	300,000	100%
Single-Dry Year	1977	225,000	75%
Multiple-Dry Years 1st Year	2012	300,000	100%
Multiple-Dry Years 2nd Year	2013	287,000	95.6%
Multiple-Dry Years 3rd Year	2014	225,000	75%
Multiple-Dry Years 4th Year	2015	225,000	75%
Multiple-Dry Years 5th Year	2016	300,000	100%
Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table. Suppliers may create an additional worksheet for the additional tables.			
NOTES:			

DRAFT Submittal Table 7-2 Wholesale: Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)					
Demand totals (autofill fm Table 4-3)					
Difference	0	0	0	0	0
NOTES:					

DRAFT OPTIONAL Table 7-2 Wholesale: Normal Year Supply and Demand Comparison - Potable

	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)	0	0	0	0	0
Demand totals (autofill from Table 4-3)	0	0	0	0	0
Difference	0	0	0	0	0
NOTES:					

DRAFT OPTIONAL Table 7-2 Wholesale: Normal Year Supply and Demand Comparison - Non-Potable

	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)	0	0	0	0	0
Demand totals (autofill fm Table 4-3)	0	0	0	0	0
Difference	0	0	0	0	0
NOTES:					

DRAFT Submittal Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (Opt)
Supply totals	23,935	23,935	23,935	23,935	23,935
Demand totals					
Difference	0	0	0	0	0

NOTES: Annual supply is reduced to 23,935 AF/yr based on actual 2020 calendar year WTP deliveries when supplies are projected to be 225,000 AF or less for the water year. SSJID will endeavor to deliver more water if conditions allow at the request of their municipal customers.

OPTIONAL Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison - Potable

	2025	2030	2035	2040	2045 (Opt)
Supply totals					
Demand totals					
Difference	0	0	0	0	0

NOTES:

OPTIONAL Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison - Non-Potable

	2025	2030	2035	2040	2045 (Opt)
Supply totals					
Demand totals					
Difference	0	0	0	0	0

NOTES:



DRAFT Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	31,522	31,522	31,522	43,090	43,090
	Demand totals					
	Difference	0	0	0	0	0
Second year	Supply totals	31,522	31,522	31,522	43,090	43,090
	Demand totals					
	Difference	0	0	0	0	0
Third year	Supply totals	23,935	23,935	23,935	23,935	23,935
	Demand totals					
	Difference	0	0	0	0	0
Fourth year <i>(optional)</i>	Supply totals	23,935	23,935	23,935	23,995	23,995
	Demand totals					
	Difference	0	0	0	0	0
Fifth year <i>(optional)</i>	Supply totals	31,522	31,522	31,522	43,090	43,090
	Demand totals					
	Difference	0	0	0	0	0
Sixth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
NOTES:						

OPTIONAL Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison - Potable					
	2025	2030	2035	2040	2045 (Opt)
Supply totals					

First year	Demand totals				
	Difference	0	0	0	0
Second year	Supply totals				
	Demand totals				
Third year	Supply totals				
	Demand totals				
Fourth year (optional)	Supply totals				
	Demand totals				
Fifth year (optional)	Supply totals				
	Demand totals				
Sixth year (optional)	Supply totals				
	Demand totals				
Difference					
NOTES:					

OPTIONAL Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison - Non-Potable

		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Second year	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Third year	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fourth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
NOTES:						

Note: Totals can be entered directly or from the Optional Planning Tool available online.

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

2021	Total
Gross Water Use	
Total Supplies	
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)	
Resulting % Use Reduction from WSCP action	#DIV/0!

2022	Total
Gross Water Use [Use Worksheet]	
Total Supplies [Supply Worksheet]	
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)	
Resulting % Use Reduction from WSCP action	#REF!

2023	Total
Gross Water Use [Use Worksheet]	
Total Supplies [Supply Worksheet]	
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)	
Resulting % Use Reduction from WSCP action	#DIV/0!

2024	Total
Gross Water Use [Use Worksheet]	
Total Supplies [Supply Worksheet]	
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)	

Resulting % Use Reduction from WSCP action	#DIV/0!
2025	Total
Gross Water Use [Use Worksheet]	
Total Supplies [Supply Worksheet]	
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)	
Resulting % Use Reduction from WSCP action	#DIV/0!

Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX G

WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT ASSUMING IMPLEMENTATION OF BAY-DELTA PLAN AMENDMENT



Water Service Reliability and Drought Risk Assessment Assuming Implementation of Bay-Delta Plan Amendment

As described in Chapter 7 of the Urban Water Management Plan (UWMP), the City of Tracy (City) relies on its wholesale agency the South San Joaquin Irrigation District (SSJID) for the reliability projections related to the South County Water Supply Project (SCWSP). Information on supply reliability provided by SSJID is included as Appendix F of the UWMP. Chapter 7 of the UWMP presents results for the SCWSP water reliability assessment assuming that the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) will not be implemented, which is consistent with SSJID's approach. SSJID has provided the following rationale for this approach:

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) which, if and when implemented, may have an impact on the Stanislaus River. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of up to 30-50% of the unimpaired flow on the three tributaries from February through June in every year type.

If the Bay-Delta Plan Amendment is implemented as adopted, there are significant impacts in some years to the ability of the Bureau of Reclamation to meet its obligations under the 1988 Stipulation and Agreement to provide formula water to both the Oakdale Irrigation District and SSJID in years when inflow into New Melones is below 600,000 AF which typically occur in dry and critically dry years. This could reduce the minimum projected supply amount of 225,000 AF/year as planned for by SSJID in this UWMP. The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Stanislaus River by the year 2022, assuming all required approvals are obtained by that time; however, implementation of the Bay-Delta Plan Amendment remains uncertain for multiple reasons.

Over a dozen lawsuits have been filed in both state and federal courts, including challenges filed by the Oakdale Irrigation District and SSJID, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment are in the early stages and there have been no consequential court rulings as of this date. Secondly, the Bay-Delta Plan Amendment did not include an allocation of responsibility for meeting the flow requirements. Such an allocation of responsibility must consider the senior water rights of both OID and SSJID who have adjudicated pre-1914 rights and other senior appropriative rights. In recognition of the difficult legal process ahead, many stakeholders throughout California including the State and Federal Government have opted to explore the possibility of voluntary agreements to achieve outcomes comparable to those described in the Bay-Delta Amendment balancing the needs of all water users. Both OID and SSJID have participated in voluntary agreement negotiations. Based on these uncertainties, SSJID has opted to make no near-term planning assumptions related to the implementation of the Bay-Delta Plan Amendment for the purposes of this 2020 UWMP. Should conditions change or consequential resolution of the issues aforementioned come to be, SSJID will revise and re-adopt a 2020 UWMP to reflect changes to its impacted water supply.

Appendix G
2020 Urban Water Management Plan
City of Tracy



However, the City understands that it is helpful to understand the possible supply implications in the event that the Bay-Delta Plan Amendment is implemented as adopted. To fully assess the impacts of the Bay-Delta Plan Amendment and better plan for the potential shortfalls, the City conducted a parallel set of reliability analyses assuming that the Bay-Delta Plan Amendment will be implemented, which is presented below.

Table 1 below mirrors Table 7-2 in the UWMP and presents the City's projected water supply in normal years based on the assumption that the reliability of the SCWSP in normal years will be 75% of the contractual amount. The City's current contractual amount of SCWSP water is 13,135 acre-feet per year (AFY) in total.¹ The City anticipates that its temporary contract with Escalon to purchase Escalon's allocation of 2,015 AFY will terminate after 2025. By that time, the City's allocation will be reduced to 11,120 AFY. As such, the City anticipates being able to receive 9,851 AFY of SCWSP supply in 2025 and 8,340 AFY afterwards, assuming normal year conditions.

¹ Water Supply Development and Operating Agreement, August 2020.

Escalon Amendment to Tracy-SSJID Water Supply Development Agreement, March 2006.

Appendix G

2020 Urban Water Management Plan

City of Tracy



**Table 1 Projected Water Supply in Normal Years
Assuming Implementation of Bay-Delta Plan Amendment**

Water Supply	Allocation / Reliability	Supply Amount				
		2025	2030	2035	2040	2045
<i>Current Potable Supplies</i>						
CVP - USBR Tracy Contract	75% of Historical Use	4,448	4,448	4,448	4,448	4,448
CVP - USBR BCID & WSID Contract	50% of Contract	5,000	5,000	5,000	5,000	5,000
SCWSP - SSJID Contract	75% of Contract	9,851	8,340	8,340	8,340	8,340
BBID	100% of Tracy Hills Demand	800	1,500	2,000	2,500	3,300
Groundwater	100% Reliable	2,500	2,500	2,500	2,500	2,500
<i>Anticipated Future Potable Supplies</i>						
Recycled Water Distribution Network and Exchange	100% Reliable	0	1,925	3,500	5,000	7,500
Total Potable Supply	--	22,599	23,713	25,788	27,788	31,088
<i>Anticipated Future Non-Potable Supplies</i>						
Recycled Water	100% Reliable	1,000	2,067	3,133	4,200	6,300
Total Non-Potable Supply	--	1,000	2,067	3,133	4,200	6,300
Total Supply	--	23,599	25,779	28,921	31,988	37,388

NOTES:

(a) Volumes are in units of AF.

(b) Information provided by the City. Recycled water and groundwater volumes assume the City investments in infrastructure and/or permitting.

Appendix G

2020 Urban Water Management Plan

City of Tracy



Table 2 below mirrors Table 7-3 in the UWMP and presents the City's projected water supply in single dry years. Based on the assumption that in single dry years the reliability of the SCWSP will be reduced to 36% of the contract amount, the City anticipates being able to receive 4,729 AFY of SCWSP supply in 2025 and 4,003 AFY afterwards.

**Table 2 Projected Water Supply in Single Dry Years
Assuming Implementation of Bay-Delta Plan Amendment**

Water Supply	Allocation / Reliability	Supply Amount				
		2025	2030	2035	2040	2045
<i>Current Potable Supplies</i>						
CVP - USBR Tracy Contract	25% of Historical Use	1,483	1,483	1,483	1,483	1,483
CVP - USBR BCID & WSID Contract	0% of Contract	0	0	0	0	0
SCWSP - SSJID Contract	36% of Contract	4,729	4,003	4,003	4,003	4,003
BBID	100% of Tracy Hills Demand	800	1,500	2,000	2,500	3,300
Groundwater	100% Reliable	4,500	4,500	4,500	4,500	4,500
<i>Anticipated Future Potable Supplies</i>						
Recycled Water Distribution Network and Exchange	100% Reliable	0	1,925	3,500	5,000	7,500
ASR Dry Year Supply	100% Reliable	700	700	700	1,000	1,000
Total Potable Supply	--	12,211	14,111	16,186	18,486	21,786
<i>Anticipated Future Non-Potable Supplies</i>						
Recycled Water	100% Reliable	1,000	2,067	3,133	4,200	6,300
Total Non-Potable Supply	--	1,000	2,067	3,133	4,200	6,300
Total Supply	--	13,211	16,177	19,319	22,686	28,086
NOTES:						
(a) Volumes are in units of AF.						
(b) Information provided by the City. Recycled water and groundwater volumes assume the City investments in infrastructure and/or permitting. ASR volumes assume surplus supplies are available in wet years to inject and store, as well as additional investment in ASR construction and operation.						

Appendix G

2020 Urban Water Management Plan

City of Tracy



Similarly, Table 3 below mirrors Tables 7-4 and 7-5 in the UWMP and presents the City's projected water supply in multiple dry years. Based on the assumption that in multiple dry years the reliability of the SCWSP will be reduced to 36% of the contract amount, the City anticipates being able to receive 4,729 AFY of SCWSP supply in 2025 and 4,003 AFY afterwards.

**Table 3 Projected Water Supplies in Multiple Dry Years
Assuming Implementation of Bay-Delta Plan Amendment**

Water Supply	Allocation / Reliability	Supply Amount				
		2025	2030	2035	2040	2045
<i>Current Potable Supplies</i>						
CVP - USBR Tracy Contract	40% of Historical Use	2,372	2,372	2,372	2,372	2,372
CVP - USBR BCID & WSID Contract	0% of Contract	0	0	0	0	0
SCWSP - SSJID Contract	36% of Contract	4,729	4,003	4,003	4,003	4,003
BBID	100% of Tracy Hills Demand	800	1,500	2,000	2,500	3,300
Groundwater	100% Reliable	4,500	4,500	4,500	4,500	4,500
Semitropic Dry Year Supply	100% Reliable	1,722	1,722	1,722	1,722	1,722
<i>Anticipated Future Potable Supplies</i>						
Recycled Water Distribution Network and Exchange	100% Reliable	0	1,925	3,500	5,000	7,500
ASR Dry Year Supply	100% Reliable	140	140	140	200	200
Total Potable Supply	--	14,262	16,162	18,237	20,297	23,597
<i>Anticipated Future Non-Potable Supplies</i>						
Recycled Water	100% Reliable	1,000	2,067	3,133	4,200	6,300
Total Non-Potable Supply	--	1,000	2,067	3,133	4,200	6,300
Total Supply	--	15,262	18,228	21,370	24,497	29,897
NOTES:						
(a) Volumes are in units of AF.						
(b) Information provided by the City. Recycled water and groundwater volumes assume the City investments in infrastructure and/or permitting. ASR and Semitropic volumes assume surplus supplies are available in wet years to inject and/or store, as well as additional investment in ASR construction and operation. Semitropic supply is assumed to be unavailable in the first year of a multiple dry year. Other supply volumes are assumed to be constant in each year of a multiple dry year.						

Appendix G

2020 Urban Water Management Plan

City of Tracy



The City's projected water demands are compared to its water supplies in normal years, single dry years, and multiple dry year periods in Table 4, Table 5 and Table 6, which mirror Tables 7-6 through 7-8 in the UWMP. As can be seen below, supplies are projected to be insufficient to meet the projected demands after 2040 in normal years, with a potential shortfall of 1,991 AFY in 2045, equal to 5% of the projected demand. In single dry years, supply shortfalls are projected in all years from 2025 to 2045, with maximum shortfalls of 39% of the projected demand (in 2025), or 11,293 AFY total (in 2045). In multiple dry years, supply shortfalls are also projected in all years from 2025 to 2045, which are up to 37% of the projected demand (in 2025), or up to 11,204 AFY total (in 2045).

**Table 4 Normal Year Supply and Demand Comparison
Assuming Implementation of Bay-Delta Plan Amendment**

	2025	2030	2035	2040	2045
Supply totals <i>From DWR Table 6-9</i>	24,103	25,780	28,921	31,988	37,388
Demand totals <i>From DWR Table 4-3</i>	21,509	25,167	28,871	32,603	39,379
Difference	2,594	613	50	(615)	(1,991)

NOTES:
(a) Volumes are in units of AF.

**Table 5 Single Dry Year Supply and Demand Comparison
Assuming Implementation of Bay-Delta Plan Amendment**

	2025	2030	2035	2040	2045
Supply totals	13,211	16,177	19,319	22,686	28,086
Demand totals	21,509	25,167	28,871	32,603	39,379
Difference	(8,298)	(8,990)	(9,552)	(9,918)	(11,293)

NOTES:
(a) Volumes are in units of AF.

Appendix G

2020 Urban Water Management Plan

City of Tracy



**Table 6 Multiple Dry Years Supply and Demand Comparison
Assuming Implementation of Bay-Delta Plan Amendment**

		2025	2030	2035	2040	2045
First year	Supply totals	13,541	16,507	19,648	22,775	28,175
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	(7,968)	(8,660)	(9,223)	(9,828)	(11,204)
Second year	Supply totals	15,262	18,228	21,370	24,497	29,897
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	(6,246)	(6,939)	(7,501)	(8,107)	(9,482)
Third year	Supply totals	15,262	18,228	21,370	24,497	29,897
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	(6,246)	(6,939)	(7,501)	(8,107)	(9,482)
Fourth year	Supply totals	15,262	18,228	21,370	24,497	29,897
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	(6,246)	(6,939)	(7,501)	(8,107)	(9,482)
Fifth year	Supply totals	15,262	18,228	21,370	24,497	29,897
	Demand totals	21,509	25,167	28,871	32,603	39,379
	Difference	(6,246)	(6,939)	(7,501)	(8,107)	(9,482)
NOTES:						
(a) Volumes are in units of AF.						

Appendix G

2020 Urban Water Management Plan

City of Tracy



Table 7 below mirrors Table 7-10 in the UWMP and presents a Drought Risk Assessment (DRA) which considers the effects on available water supply sources of an assumed five-year drought commencing the year after the assessment is completed, i.e., from 2021 through 2025. Supply shortfalls are projected in all five years with the largest shortfall being approximately 7,591 AFY in 2021, or 38% of the projected demand.

**Table 7 Five-Year Drought Risk Assessment Tables to Address Water Code 10635(b)
Assuming Implementation of Bay-Delta Plan Amendment**

2021	Total
Total Water Use	19,923
Total Supplies	12,333
Surplus/Shortfall w/o WSCP Action	(7,591)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	7,591
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	38%

2022	Total
Total Water Use	20,320
Total Supplies	14,106
Surplus/Shortfall w/o WSCP Action	(6,213)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	6,213
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	31%

2023	Total
Total Water Use	20,716
Total Supplies	14,158
Surplus/Shortfall w/o WSCP Action	(6,558)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	6,558
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	32%

Appendix G

2020 Urban Water Management Plan

City of Tracy



**Table 7 Five-Year Drought Risk Assessment Tables to Address Water Code 10635(b)
Assuming Implementation of Bay-Delta Plan Amendment**

2024	Total
Total Water Use	21,112
Total Supplies	14,210
Surplus/Shortfall w/o WSCP Action	(6,902)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	6,902
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	33%
2025	Total
Total Water Use	21,509
Total Supplies	15,262
Surplus/Shortfall w/o WSCP Action	(6,246)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	6,246
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	29%
NOTES:	
(a) Volumes are in units of AF.	

As presented in the tables, supply shortfalls are significantly increased under the assumption that the Bay-Delta Plan Amendment will be implemented. However, there are currently numerous sources of uncertainty in the supply projections as summarized below:

- Implementation of the Bay-Delta Plan Amendment is under negotiation. The SSJID and others are continuing negotiations with the State Water Resources Control Board (SWRCB) on implementation of the Bay-Delta Plan Amendment for water supply cutbacks, particularly during droughts. This is a dynamic situation and the projected drought cutback allocations may need to be revised before the next (i.e., 2025) UWMP depending on the outcome of ongoing negotiations.
- Benefits of the City's development of additional Aquifer Storage and Recovery (ASR) and recycled water supplies are accounted for in current supply projections. However, implementation of these projects will require significant investment by the City in the near- and long-term. Similarly, investments in wet years supplies will be needed to refill storage in the Semitropic Groundwater Storage Bank and in the ASR wells.

Appendix G
2020 Urban Water Management Plan
City of Tracy



- The City will have to continue to work closely with the United States Bureau of Reclamation (USBR) and SSJID on their rationing policies to ensure that Municipal and Industrial (M&I) needs can be met.
- The City's projected water demands are subject to change in the future based upon future housing needs, increased conservation, and development of additional local supplies or policies to limit water demand associated with current and future development.
- Frequency and duration of cutbacks are also uncertain. While the projected shortfalls presented here appear severe, the actual frequency and duration of such shortfalls are uncertain. In addition to the supply volumes, the above listed uncertainties would also impact the projected frequency and duration of shortfalls.

As mentioned above, the City is conducting this analysis as part of the planning efforts. Despite that there remains large uncertainty in future supply availability, the City has developed and will continue to develop various strategies and actions to address the projected supply shortfalls. In addition, as conditions evolve and as new information becomes available, the City may conduct an interim update or updates to the UWMP within the five-year cycle, i.e., before the 2025 UWMP.

Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX H

WATER SHORTAGE CONTINGENCY PLAN



Water Shortage Contingency Plan 2020 Update

City of Tracy

June 2021



TABLE OF CONTENTS

1	INTRODUCTION	5
2	WATER SUPPLY RELIABILITY ANALYSIS.....	7
3	PRIOR DROUGHT ACTIONS.....	8
4	ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES.....	9
4.1	Evaluation Criteria	10
4.2	Water Supply	10
4.3	Unconstrained Customer Demand.....	11
4.4	Planned Water Use for Current Year Considering Dry Subsequent Year	11
4.5	Infrastructure Considerations	11
4.6	Team Members and Decision Makers.....	11
4.7	Decision-Making Process.....	12
5	WATER SHORTAGE LEVELS	14
6	SHORTAGE RESPONSE ACTIONS.....	16
6.1	Demand Reduction.....	16
6.2	Supply Augmentation	17
6.3	Operational Changes	23
6.4	Mandatory Restrictions	23
6.5	Emergency Response Plan.....	23
6.6	Seismic Risk and Mitigation Plan	25
6.7	Shortage Response Action Effectiveness	26
7	COMMUNICATION PROTOCOLS	31
7.1	Communication Objectives	31
7.2	Communication Protocols	31
7.3	Coordination.....	33
8	COMPLIANCE AND ENFORCEMENT	34
9	LEGAL AUTHORITIES	36
10	FINANCIAL CONSEQUENCES OF WSCP	37
11	MONITORING AND REPORTING	39

Water Shortage Contingency Plan

2020 Update

City of Tracy



12 WSCP REFINEMENT PROCEDURES.....	40
13 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY	41

Water Shortage Contingency Plan

2020 Update

City of Tracy



TABLES

- Table 5-1 Water Shortage Contingency Plan Levels (DWR Table 8-1)
- Table 6-1 Demand Reduction Actions (DWR Table 8-2)
- Table 6-2 Supply Augmentation and Other Actions (DWR Table 8-3)
- Table 6-3 Baseline Water Use Profile
- Table 10-1 Summary of Measures to Mitigate Revenue and Expenditure Impacts

ATTACHMENTS

- Attachment 1. Drought Response Tool Quantitative Assessment
- Attachment 2. Water System Emergency Response Plan (Excerpted)
- Attachment 3. Water Shortage Contingency Plan Resolutions



1 INTRODUCTION

CWC § 10640

(a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

(b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

This section presents the City of Tracy's (City's) Water Shortage Contingency Plan (WSCP), which has been developed to serve as a flexible framework of planned response measures to mitigate future water supply shortages. The City's WSCP was last updated in June 2015 via Ordinance 1196 and was included in the 2015 Urban Water Management Plan (UWMP). This WSCP builds upon and supersedes the 2015 WSCP.

The WSCP includes the stages of response to a water shortage caused by drought or by supply interruptions caused by infrastructure failure, regulatory mandate, or catastrophic human-caused or natural events. The primary objective of the WSCP is to ensure that the City has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. The WSCP also includes procedures to conduct an annual assessment of water supply and demand in order to determine whether water shortage conditions are likely to exist in the forthcoming year, and to proactively begin the process of implementing WSCP stages of action, as appropriate.

This WSCP has been prepared in accordance with California Water Code (CWC) § 10640 and CWC § 10632 of the UWMP Act. Text from the UWMP Act has been included in grey text boxes with italicized font at beginning of relevant sections of this WSCP. The information presented in the respective WSCP sections and the associated text and tables are collectively intended to fulfill the requirements of that sub-section of the UWMP Act.

The City's 2020 WSCP will be incorporated into the Water Management Chapter of the Tracy Municipal Code (TMC) as codified in Chapter 11.28, Article 5 - Drought and Other Water Emergency, and Article 6 – Water Conservation and Rationing Plan, Water Emergency Plan, Variances and Appeals.

The WSCP has been developed to support the broader vision of the City laid out in the General Plan. Among other things, the General Plan emphasizes the importance of "hometown feel", community livability, quality of life, and increased economic development. To that end, the City's WSCP reflects the following set of guiding principles:

- Prioritize the reduction of non-essential water uses. This WSCP concentrates on the reduction of non-essential water uses and gives the highest priority to preserving water uses that are essential to the health, safety, welfare, and economic vitality of the City's customers.



- Water cutbacks will focus on outdoor water use. Outdoor water use is an important, but relatively discretionary end use in comparison to indoor water uses related to drinking, cooking, and sanitary activities. Outdoor water use supplied with recycled water, however, may not need to be cut back as ample supplies of recycled water are likely to be available even during a drought.
- Focus on fewer, enforceable requirements. This WSCP targets end uses that can offer significant savings with a high degree of enforceability, such as dedicated irrigation accounts.
- Communicate early, penalize later. Early stages focus on creating public awareness and signaling the need for conservation, whereas later stages impose stricter requirements and increase penalties and enforcement.

Practically, these principles guide the City to ask for a shared contribution from all of its customers towards meeting water reduction goals during periods of water shortage. They further direct the City to focus its water conservation efforts on reducing discretionary water uses such as outdoor irrigation, while attempting to minimize economic and other impacts to its residential and commercial customers. The City learned during the recent drought that public outreach and awareness are capable of generating significant savings in response to a severe drought. Therefore, this WSCP emphasizes these activities before it mandates specific water-conserving actions.



2 WATER SUPPLY RELIABILITY ANALYSIS

CWC § 10632 (a) (1) *The analysis of water supply reliability conducted pursuant to Section 10635.*

This section provides a summary of the City's water supply reliability analysis, recognizing that the WSCP is intended to be a standalone document that can be adopted and amended independently.

The City relies and plans to rely on a wide range of water supply sources, including various surface water supplies, groundwater production, Aquifer Storage and Recovery (ASR), Semitropic Groundwater Storage Bank (Semitropic), recycled water and the Recycled Water Distribution Network and Exchange program for its supply. Surface water supplies include Central Valley Project (CVP) water purchased from the United States Bureau of Reclamation (USBR) and Stanislaus River water provided by the South San Joaquin Irrigation District (SSJID) through the South County Water Supply Project (SCWSP).

The reliability analysis was performed based on, among other things, SSJID's water reliability analysis, which assumes that the State Water Resources Control Board's (SWRCB's) released amendments to the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) will not be implemented. If the Bay-Delta Plan Amendment is implemented, significant surface water cutbacks would likely be experienced, as presented in Appendix G to the UWMP.

Based on the service reliability analysis, the City's is expected to have adequate water supplies during normal years to meet projected demands through 2045. However, the City is projecting up to 9,120 acre-feet per year (AFY) of supply shortfall in single dry years by 2045, or up to 24% of the projected demand. In multiple dry years, the projected shortfalls by 2045 are up to 7,308 AFY or 19% of the projected demand.

A Drought Risk Assessment (DRA) was also conducted during the water supply reliability assessment, which evaluates the effects on available water supply sources of an assumed five-year drought commencing the year after the assessment is completed (i.e., from 2021 through 2025). Based on the DRA, the City is expected to have sufficient water supply in 2021, 2022, and 2025. However, in 2023 and 2024, the demands are estimated to exceed supplies by 1,313 AFY and 1,657 AFY, respectively. This WSCP addresses such water shortage conditions and identifies a variety of actions that the City will implement to reduce demands and further ensure supply reliability at various levels of water shortage.



3 PRIOR DROUGHT ACTIONS

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

On 1 April 2015, Governor Brown issued the fourth in a series of Executive Orders regarding actions necessary to address California's severe drought conditions. Executive Order B-29-15 directed the SWRCB to impose the first-ever mandatory restrictions on urban water suppliers to achieve a statewide 25% reduction in potable urban water usage through February 2016.¹ The Executive Order also required Commercial, Industrial, and Institutional (CII) users to implement water efficiency measures, prohibited irrigation with potable water of ornamental turf in public street medians, and prohibited irrigation with potable water outside newly constructed homes and buildings that was not delivered by drip or microspray systems, along with numerous other directives.

On 5 May 2015, the SWRCB adopted Resolution 2015-0032, which mandated minimum actions by water suppliers and their customers to conserve water supplies into 2016 and assigned a mandatory water conservation savings goal to each water supplier based on their residential gallons per capita per day (R-GPCD) water use. The mandatory conservation standards established by the SWRCB and included in CWC §865(c) ranged from 8% for suppliers with an R-GPCD below 65 R-GPCD, up to 36% for suppliers with an R-GPCD of greater than 215 GPCD. As with the emergency drought regulations adopted by the SWRCB in 2014, the new water conservation regulation was primarily intended to reduce outdoor urban water use. On 2 February 2016, the SWRCB voted to extend the reduction targets through October 2016 with some modifications.²

Based on its R-GPCD, the City was required to reduce water use by 28% in 2015 relative to its 2013 water use.³ The City Council enacted Stages 3 and 4 of the 2015 WSCP on 2 June 2015. The City achieved high savings (up to a 34% reduction in total demand) during the summer and fall months, likely corresponding to large cut-backs in irrigation water uses. Total cumulative water savings through February 2016 were 26.9%.

On 7 April 2017, Governor Brown issued Executive Order B-40-17, which lifted the drought emergency in most of California while maintaining prohibitions on wasteful practices and water reporting requirements. The City has incorporated these permanent prohibitions into Stage 1 of its WSCP update.

¹ Executive Order B-29-15 is located online at https://www.ca.gov/archive/gov39/wp-content/uploads/2017/09/4.1.15_Executive_Order.pdf, accessed 4 February 2021.

² Adopted text of the extended Emergency Regulations located online at http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/emergency_reg/final_reg_enacted.pdf, accessed 4 February 2021.

³ The City has qualified for a climate adjustment to its mandatory conservation standard, which has been reduced by 3%, from 28% to 25%, effective 1 March 2016.



4 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

CWC § 10632 (a) (2)

The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decision making process that an urban water supplier will use each year to determine its water supply reliability.

(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

(iii) Existing infrastructure capabilities and plausible constraints.

(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.

(v) A description and quantification of each source of water supply.

CWC § 10632.1

An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.

CWC § 10632.2

An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan, as identified in subdivision (a) of Section 10632, or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1. Nothing in this section prohibits an urban water supplier from taking actions not specified in its water shortage contingency plan, if needed, without having to formally amend its urban water management plan or water shortage contingency plan.

On an annual basis, the City will conduct an Annual Supply-Demand Assessment (Annual Assessment) to identify whether there is likely to be a water shortage condition in the following year. For purposes of this assessment, a water shortage condition is defined as an anticipated shortfall of greater than 10%, corresponding to Water Shortage Level (or Stage) 2. Each element of the Annual Assessment is described below, along with the key data inputs and methodologies for determining these elements.



4.1 Evaluation Criteria

The City will conduct its Annual Assessment in consideration of existing hydrological and regulatory conditions such as any state-mandated drought or water use restrictions. Further, as imported sources constitute a significant portion of the City's supply, the City will rely primarily on USBR and SSJID for the supply reliability portion of its Annual Assessment. The City's supply and demand evaluation criteria will be calculated using the key data inputs to the Annual Assessment, including:

- Imported water allocation;
- Emergency allocation;
- Effectiveness of active conservation;
- ASR storage;
- Banked water (Semitropic) availability;
- Demand; and
- Infrastructure constraints.

4.2 Water Supply

On the basis of the evaluation criteria described below and available supporting information, the City will quantify the projected available supply for the forthcoming year. This quantification will likely be a range, and subject to revision as new data become available and as conditions evolve.

4.2.1 Imported Sources

- CVP Available Supply: The USBR makes an annual determination of allocations which is then provided to the City in early March. In 2018, the USBR revised its M&I Water Shortage Allocation Policy to determine allocations based on historical average use as a baseline, not contracted allotment.
- SCWSP Available Supply: SSJID makes an annual determination of allocation which is provided to the City in late April or early May.

4.2.2 Local Sources

- Groundwater Available Supply: The City assesses the prior year's production and any production constraints. Evaluations include consideration of: (1) any new Groundwater Sustainability Agency (GSA) policies (e.g., pumping allocations) or sustainability criteria that could trigger a change in groundwater volume available for pumping, (2) any well operational or water quality issues, and (3) any new limitations on well permitting that could limit the ability to deepen existing supply wells or drill new supply wells.
- ASR Storage: The City assesses available supply by comparing the prior year's demand against actual injection.



- Recycled Water (Non-Potable Supply): Recycled water is currently not available. However, once the permitting process is completed, the City will assess the previous year's production and any production constraints to evaluate the availability of recycled water. The evaluations will include any new recycled water policies and criteria that could trigger a change in volume available.

4.3 Unconstrained Customer Demand

Unconstrained customer demands (i.e., the expected water use in the absence of shortage-caused reductions in water use) will be evaluated and estimated for the forthcoming year based on:

- A comparison of monthly customer demands relative to prior years (e.g., last three years);
- Evaluation of current and anticipated weather conditions;
- New demands anticipated during the coming year (e.g., new accounts coming online); and
- Any other potentially pertinent factors identified by the City (e.g., pandemic-related stay-at-home orders).

4.4 Planned Water Use for Current Year Considering Dry Subsequent Year

The City will compare the estimated unconstrained demands to the anticipated supplies for the current year, assuming that the following year will be dry (i.e., a supply shortfall greater than 10%), and using the evaluation criteria identified above.

4.5 Infrastructure Considerations

The City will evaluate how infrastructure capabilities and constraints may affect its ability to deliver supplies to meet expected customer water demands in the coming year. The constraints and capabilities are expected to include, among other things:

- Anticipated capital projects and upgrades;
- Anticipated maintenance and repairs; and
- Emergency maintenance and repairs.

4.6 Team Members and Decision Makers

Team members and decision makers include the following City staff:

- Water Operations Superintendent;
- Water Resources and Compliance Manager (WRCM);
- Director of Utilities;
- City Manager; and
- City Council.



4.7 Decision-Making Process

The decision-making process and timeline are anticipated to be as follows:

- March:
 - USBR conveys the CVP allocation (i.e., available percentage of annual historical average supply) to the City.
- Late April to Early May:
 - SSJID conveys the available percentage of contracted allocation that the City shall receive.
 - City determines local supply available.
 - City determines total supply available.
 - City determines expected demand.
 - City compares supply and demand to determine the water supply conditions for the current year and one dry year.
 - If shortage greater than 10% is determined to exist, the City shall implement response actions in the WSCP through City Council declaration.

Per Section 11.28.140 of the TMC, the City Council may declare a drought and direct the City Manager to implement all provisions of Article 6 of this chapter when one or more of the following conditions exist:

- a) *The average static groundwater basin level reaches thirty (30) feet below sea level as determined by the Water Production Supervisor by means of monthly groundwater soundings at the water production wells, or if the estimated groundwater demand for the year exceeds 6,000 acre feet, the estimated safe yield for groundwater extraction;*
- b) *A cutback of available surface water supplies obtained from the Central Valley Project or South San Joaquin Irrigation District occurs;*
- c) *A drought is declared by the Governor of California covering the water sources used by the City, and subsequent reductions of water supplied to the City will occur or are likely to occur;*
- d) *Any unusual situation or circumstance which affects the quantity or quality of the water supply.*

Per Section 11.28.210 of the TMC, the City Council may declare a water emergency and direct the City Manager to implement appropriate water conservation and/or rationing requirements consistent with this chapter when one or more of the following conditions exist:



- a) *A decrease in the ability to draw groundwater due to well contamination, well failure or other equipment or system failure, and no alternative source of water is available;*
- b) *Contamination of the water system;*
- c) *Natural disasters affecting water deliveries;*
- d) *During times of floods which would affect water quality;*
- e) *Sabotage or threats of sabotage against the water system;*
- f) *Any unusual situation or circumstance which affects the quantity or quality of the water supply.*

- June:
 - City prepares the Annual Assessment report.
- July 1 or within 14 days of receiving final allocation from the USBR, whichever is later:
 - City submits the Annual Assessment to the California Department of Water Resources (DWR).

As stated in the regulations, the City shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in this WSCP, as identified in the CWC subdivision (a) of §10632, or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the Annual Assessment Report pursuant to CWC §10632.1. Should the City choose to include reasonable alternative actions, it will describe identified reasonable alternative actions (shortage response actions in addition to what has been identified in Section 6 of this WSCP) to reduce the gap between water supply and demand.



5 WATER SHORTAGE LEVELS

CWC § 10632 (a) (3)

(A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

Consistent with the requirements of CWC § 10632(a)(3), this WSCP is based on the six water shortage levels (also referred to as “stages”) shown in Table 5-1. These stages are intended to address shortages caused by any condition, including the catastrophic interruption of water supplies. Besides the mandatory prohibitions, each stage of the WSCP is implemented by a formal declaration by the City Council recognizing the need for a reduction in water use and enacting a specific stage of action due to a water supply shortage or emergency. All of the stages allow for adequate water to protect public health and safety and satisfy the fire protection needs of the City. **Table 5-1** summarizes the water supply reduction and supply conditions associated with each stage of action.



Table 5-1 Water Shortage Contingency Plan Levels (DWR Table 8-1)

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City may reduce water use by up to 10% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 6-1 and Table 6-2).
2	Up to 20%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by 10% to 20% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 6-1 and Table 6-2).
3	Up to 30%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by 20% to 30% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 6-1 and Table 6-2).
4	Up to 40%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by 30% to 40% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 6-1 and Table 6-2).
5	Up to 50%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by 40% to 50% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 6-1 and Table 6-2).
6	>50%	<ul style="list-style-type: none"> Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist per TMC Section 11.28.140 and Section 11.28.210 and that the City must reduce water use by greater than 50% due to water supply shortages or emergency. Includes implementation of mandatory restrictions on end uses as well as agency actions (see Table 6-1 and Table 6-2).



6 SHORTAGE RESPONSE ACTIONS

CWC § 10632 (a) (4)

Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

- (A) Locally appropriate supply augmentation actions.*
- (B) Locally appropriate demand reduction actions to adequately respond to shortages.*
- (C) Locally appropriate operational changes.*
- (D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.*
- (E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.*

CWC § 10632 (b)

For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

This section describes the response actions the City will take to deal with the shortages associated with each of the six stages enumerated in Section 5.

6.1 Demand Reduction

As shown in **Table 6-1**, the WSCP lists the demand reduction methods that the City will implement during each stage of action to reduce the City's own water consumption and encourage reduction in water use by its customers. The monthly and cumulative annual water savings impacts associated with each restriction, prohibition and consumption reduction method were quantitatively estimated using the Drought Response Tool (DRT)⁴ for each stage of action, see Attachment 1.

A main focus of the City's planned demand reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. The public outreach efforts that the City will implement to respond to a water shortage are described in Section 7.

6.1.1 Prohibitions on End Uses

Restrictions and prohibitions associated with each stage in the City's WSCP are presented in **Table 6-1**. As discussed above, these responses focus on the reduction of non-essential water uses such as ornamental

⁴ The DRT is an Excel spreadsheet model developed by EKI Environment & Water, Inc. that calculates monthly savings by implementing drought response actions.



landscape irrigation, and preserve water uses that are estimated to the health, safety, welfare, and economic vitality of the City's customers.

In addition, several mandatory prohibitions are enforced at all times as part of Stage 1 to eliminate water waste, which include each of the prohibitions on end uses that are anticipated to be mandated by the SWRCB in response to Executive Order B-37-16. Prohibitions in subsequent stages go beyond the SWRCB requirements and become increasingly restrictive.

6.1.2 Defining Water Features

CWC § 10632 (b)

For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

As required by CWC § 10632, the City distinguishes between “decorative water features” such as ponds, lakes, and fountains that are artificially supplied with water and “recreational water features” such as swimming pools and spas. Prohibitions on water use for decorative water features are listed separately from those for recreational water features (see **Table 6-1**).

6.2 Supply Augmentation

As described in Chapter 6 of the UWMP, the City’s existing contract with SSJID allows transfer of water allotment from other SCWSP agencies. The City has also made significant efforts to develop new supplies. If water shortages occur, the City intends to explore additional transfers and purchases from other sources. The amount of supply available cannot be quantified at this time and therefore is not included in Table 6-2.

Table 6-2 lists other actions that the City will take, including promoting public awareness, offering water use surveys, implementing drought surcharge, etc.



Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other	5%	<ul style="list-style-type: none"> • Prohibitions: <ul style="list-style-type: none"> ○ Allowing flagrant water waste or incidental water runoff. ○ Irrigating using a hose without a shutoff nozzle attached. ○ Using potable water to operate non-recirculating decorative water features, including splash pads. ○ Irrigating outdoors during and within 48 hours following a measurable rainfall. "Measurable rainfall" means any amount of precipitation that generates a puddle or runoff. ○ The serving of drinking water other than upon request, in eating or drinking establishments. ○ Irrigating ornamental grass or turf on public street medians. ○ Irrigating outside of newly constructed homes and buildings in a manner that is inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development. ○ Irrigating any hardscape. • Mandatory requirements: <ul style="list-style-type: none"> ○ Any customer must properly maintain all outdoor plumbing and irrigation systems and control all leaks within 72 hours of discovery or notification. ○ Customers shall practice prudent water conservation measures, including: (i) Planting drought-tolerant landscapes; (ii) Installing and maintaining water-efficient irrigation systems such as drip and bubble irrigation with weather or soil-based controllers; (iii) Installing sprinkler heads with a low flow rate appropriate for the landscape to prevent overwatering and runoff; (iv) Watering only in the late night or early morning hours during non-windy periods. ○ A hose that dispenses potable water shall be fitted with a shut-off 	Yes



Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
			<p>nozzle or flow restriction device attached to it that causes it to cease dispensing water immediately when not in use.</p> <ul style="list-style-type: none"> ○ All swimming pools, hot tubs, and spas installed after May 1, 1993 must have a separation tank and water recovery system installed in the filter backwash system, with a 90% water recovery standard. ○ Each swimming pool, hot tub and spa installed after July 15, 2015 must have a non-permeable floating cover or equivalent device that provides 90% surface coverage. ● All landscape irrigation is restricted to before 9:00 a.m. or after 7:00 p.m. daily. This applies to residential, commercial, industrial, institutional, municipal and other public agencies or entities. ● Restaurants and commercial lodging establishments must post notice of drought conditions. ● Hotels and motels must offer guests an option to opt out of linen/towel service. 	



Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Other	15%	<ul style="list-style-type: none"> Continue with actions and measures from Stage 1. Landscapes, including residential, commercial, industrial, institutional, municipal and other public agencies or entities, may be irrigated three days per week as follows: (1) Odd-numbered addresses may irrigate only on Monday, Wednesday and Saturday before 9:00 a.m. and after 7:00 p.m. (2) Even-numbered addresses may irrigate only on Tuesday, Thursday and Sunday before 9:00 a.m. and after 7:00 p.m. (3) At any time provided that only drip, microspray or bubbler irrigation is used. Any customer must repair and control all outdoor water leaks that violate TMC §11.28, as determined by the City, within 48 hours of discovery or notification. Except as otherwise provided, individual residential car washing is allowed only with the use of a bucket. "Individual residential car washing" means the cleaning with potable water of a motor vehicle that is registered to an individual who lives on the premise. Automobile and recreational vehicle dealerships are allowed to continue washing vehicles with a hose that is fitted with a shut-off nozzle or flow restriction device attached under the following conditions: (1) Automobiles and recreational vehicles may be washed only on Friday using the method outlined above. (2) An automobile, motorcycle, boat or motorhome may be washed the day before or the day of delivery to the purchaser using the method outlined above before 9:00 a.m. or after 7:00 p.m. No customer may add water or refill a swimming pool, spa or hot tub unless it has a separation tank and water recovery system installed in the filter backwash system, with a 90% water recovery standard and it is a maintenance or health and safety issue. 	Yes



Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Other	25%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 and 2. Landscapes, including residential, commercial, industrial, institutional, municipal and other public agencies or entities, may be irrigated two days per week as follows: (1) Odd-numbered addresses may irrigate only on Wednesday and Saturday before 9:00 a.m. and after 7:00 p.m. (2) Even-numbered addresses may irrigate only on Thursday and Sunday before 9:00 a.m. and after 7:00 p.m. 	Yes
4	Other	35%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 3. Landscapes, including residential, commercial, industrial, institutional, municipal and other public agencies or entities, may be irrigated one day per week as follows: (1) Odd-numbered addresses may irrigate only on Wednesday before 9:00 a.m. and after 7:00 p.m. (2) Even-numbered addresses may irrigate only on Thursday before 9:00 a.m. and after 7:00 p.m. 	Yes
5	Other	45%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 4. No outdoor potable water uses are allowed. No recreational water uses are allowed. 	Yes
6	Other	55%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 5. Water use shall not exceed the water budget established for each account type. City Council may prohibit water uses not required for public health and safety and fire protection. 	Yes

NOTES:

(a) The percentages listed in this table are the cumulative savings for each shortage level with implementation of corresponding supply augmentation and other agency actions in Table 6-2. Detailed saving estimates based on end use, response action, and implementation rates are in Attachment 1.



Table 6-2 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? (a)	Additional Explanation or Reference
1	Other	5%	<ul style="list-style-type: none"> Expand outreach for existing water conservation programs. Promote public awareness (e.g., website, social media).
2	Other	15%	<ul style="list-style-type: none"> Continue with actions and measures from Stage 1. Increase public outreach (e.g., water bill inserts, media campaign, hosting public events and workshops). Offer water use surveys to up to the top 10% of residential, CII, and irrigation accounts. Increase enforcement efforts. Decrease frequency and length of line flushing.
3	Other	25%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 and 2. Establish a drought hotline. Conduct an audit of up to 25% of the City's distribution system to identify and repair leaks. Expand water use surveys to up to the top 20% of residential and CII accounts and up to the top 50% of dedicated irrigation accounts.
4	Other	35%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 3.
5	Other	45%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 4. City Council may implement a drought rate surcharge, as set forth in TMC §11.28.230. No new water connections may be approved.
6	Other	55%	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 5. Reduce distribution system pressure. Establish water budgets for all customer accounts.
<p>NOTES:</p> <p>(a) The percentages listed in this table are the cumulative savings for each shortage level with implementation of corresponding demand reduction actions in Table 6-1. Detailed saving estimates based on end use, response action, and implementation rates are in Attachment 1.</p>			



6.3 Operational Changes

The water shortage response actions included in **Table 6-1** and Table 6-2 include the operational changes that the City will implement during each stage of action, including measures to: (1) reduce system losses through reductions in line flushing and system pressure, (2) increase enforcement and patrols, (3) develop water budgets, and in certain conditions, (4) implement a moratorium on new services.

6.4 Mandatory Restrictions

The water shortage response actions included in **Table 6-1** include a variety of mandatory customer water use restrictions that will be necessary to achieve the targeted demand reductions for the different shortage stages. The types of restrictions and the manner and degree of enforcement for these restrictions vary by stage, and are discussed in Section 8.

6.5 Emergency Response Plan

In response to the requirements of the Public Health, Security and Bioterrorism Preparedness and Response Act of 2002 (Bioterrorism Act), which amended the Safe Drinking Water Act to include Section 1433, the City prepared a Water System Emergency Response Plan (WSERP). The City's WSERP provides a framework for emergency response by the City's Utilities Department by describing the department's emergency management organization, roles, and responsibilities and emergency policies and procedures. Excerpts from the City's WSERP can be found in Attachment 2. In accordance with the aforementioned goals, the WSERP:

- Describes the Department of Utilities' emergency management organization;
- Identifies of the types of emergencies that the Department of Utilities may need to respond to for its water system;
- Outlines the roles and responsibilities the Department of Utilities and its staff during emergency response and recover; and
- Compiles and organizes water system emergency response protocols and procedures.

Prior to the 2003 WSERP, the City had developed numerous emergency planning and procedures documents which provide information on emergency roles and responsibilities and specific emergency procedures for the City's water supply and distribution facilities. Tracy's 2003 WSERP is not intended to replace these documents, but is designed to work in conjunction with existing plans. Additional water supply emergency plans adopted by the City include:

- City of Tracy Emergency Plan;
- Emergency Response Handbook;
- City of Tracy General Standby Procedures;
- Process Safety Management Program;
- Emergency Action Plan;



- Department of Health Services Water Quality Emergency Notification Plan;
- Water Treatment Plant Operations Manual;
- Water Treatment Plant Operations Plan;
- Risk Management Plan; and
- Hazardous Materials Business Plan.

A more complete description of these plans can be found in the WSERP.

6.5.1 Types of Emergencies

Several types of emergencies can occur which could impact the City's water system and its operations. The City's WSERP is designed to assist the City in quick response to water system emergencies that may include the following natural or man-made causes:

- Earthquake;
- Fires;
- Contamination or loss of water supply;
- Hazardous materials spills or leaks;
- Severe storms or floods;
- Landslides;
- Pipelines, reservoir, tank and/or building failure;
- Civil unrest, vandalism, or terrorist action or threat;
- National security emergency;
- Widespread power outage;
- Airplane crash;
- Traffic/highway accidents; and
- Intrusion through Supervisory Control and Data Acquisition system.

It is important to note that there are a number of events, such as large earthquakes or fires, which occur infrequently, but have a very high impact potential. There are also events, such as severe storms and floods, which have less of an impact potential, but occur more frequently. Although the planning basis for Tracy's WSERP is for a major emergency, the principles outlined in the WSERP can be applied to any type or magnitude of event.

6.5.2 Emergency Categories and Response Levels

Four response categories have been defined in the WSERP to provide a common method of describing the type of event, area affected, and the extent of coordination or assistance needed. These categories



include the following: (0) Readiness/Routine Response, (1) Local Emergency, (2) Local Disaster, and (3) Major Disaster (see Table 6, Attachment 2).

Depending on the severity of a given emergency, the situation may warrant response from different levels of government consistent with the Standardized Emergency Management System. Tracy's WSERP identifies these levels as State, Regional, Operational Area (San Joaquin County), Local (City of Tracy), or Field (Utilities Staff). The extent of each levels' responsibilities is described in Figure 1 of Attachment 2 and their involvement in each of the four emergency response categories are outlined in Table 6 of Attachment 2.

6.5.3 Plan Activation, Response, and Deactivation

Table 9 in Attachment 2 gives the response categories, triggers, and potential response actions to be implemented to the extent required by the nature and scope of the emergency. The activation process includes plan triggers, staff responsibilities, mutual aid or assistance availability, and damage assessment. Responses are coordinated in accordance with the severity and extent of the emergency.

Table 10 of Attachment 2 identifies deactivation triggers and potential actions to be implemented once the emergency situation has been corrected and water quality is established. The deactivation process is in the reverse order of the activation process, starting with the highest category attained in the activation process.

6.6 Seismic Risk and Mitigation Plan

CWC § 10632.5

(a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.

(b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.

(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.

The City has prepared a Local Hazard Mitigation Plan (LHMP), which discusses in detail the potential risk associated with earthquake hazard and includes a mitigation action plan. The LHMP can be found at the City's website at: <https://www.ci.tracy.ca.us/?navid=9460>. As described in the LHMP, the City is located in an area of moderate seismic activity. There are a number of faults within and around the City that have the potential to produce earthquakes that could impact the City. However, the overall significance of the earthquake hazard is considered medium due to the occasional probability of occurrence.



6.7 Shortage Response Action Effectiveness

In order to evaluate and ensure that effective actions will be implemented with the proper level of intensity, the City employed the DRT model. The DRT model calculates monthly savings anticipated by implementing each stage as detailed below.

6.7.1 Baseline Water Use Profile

Using the DRT, the City developed a baseline water use profile that reflected recent usage patterns within the City's service area by major water use sector during 2017 to 2019 (see **Table 6-3**). Key findings from these analyses are presented below.

Residential Per Capita Demand

The City's baseline residential per capita demand was approximately 100 R-GPCD.

Estimated Proportion of Outdoor Water Use

As shown on **Table 6-3** and the associated charts, outdoor water use, which can generally be considered as a "discretionary or non-essential water use", was estimated to be approximately 42% of the City's total consumption during this baseline time period (2017 to 2019). Dedicated irrigation meters for potable water accounted for 13% of the total potable irrigation demand.

The DRT estimates indoor water use to be equivalent to the lowest monthly water use for each sector, accounting for the number of days in each month. Outdoor water use for each sector was estimated to be the difference between the total water use and the estimated indoor water use. If City customers tend to irrigate more heavily during winter months, this method would conservatively result in an underestimation of the proportion of outdoor water use.

The proportion of outdoor water use within the residential and CII sectors is estimated to be 40% and 35%, respectively. This indicates that there is potential to achieve significant water savings across these sectors, simply by focusing on outdoor uses. If the proportion of outdoor water use is being underestimated by the DRT method, then even more substantial savings may be achieved through targeting outdoor water use. As further shown in the **Table 6-3** and associated charts, the seasonal variation in baseline water use reflects increased irrigation demands during the summer and fall months. Therefore, the greatest potential for reductions in non-essential water use are expected during these months.



Table 6-3 Baseline Water Use Profile

Sector	End-Use	Baseline (2017-2019) Water Use												Annual % of Total by Sector	
		January	February	March	April	May	June	July	August	September	October	November	December		
Residential	Indoor	537	485	537	519	537	519	537	537	519	537	519	537	6,317	60%
	Outdoor	0	88	11	134	252	537	602	789	559	626	354	195	4,148	40%
	<i>Subtotal Residential</i>	537	573	548	653	789	1,056	1,139	1,325	1,079	1,162	873	732	10,466	-
CII	Indoor	170	154	170	165	170	165	170	170	165	170	165	170	2,006	65%
	Outdoor	0	34	3	35	99	123	129	175	157	157	70	107	1,089	35%
	<i>Subtotal CII</i>	170	188	173	200	270	288	299	345	322	327	235	277	3,095	-
Dedicated Irrigation	Outdoor	40	25	40	155	228	238	316	350	312	297	149	60	2,210	100%
Non-Revenue	Non-Revenue	246	127	267	248	406	354	388	78	113	-117	-9	-120	1,981	100%
Total	Indoor	707	639	707	684	707	684	707	707	684	707	684	707	8,323	47%
	Outdoor	40	147	54	324	580	898	1,047	1,314	1,028	1,079	573	362	7,447	42%
	Non-Revenue	246	127	267	248	406	354	388	78	113	-117	-9	-120	1,981	11%
	Total	993	913	1,028	1,256	1,693	1,936	2,142	2,098	1,825	1,669	1,249	948	17,751	-

NOTES:

- (a) Baseline water use is calculated as the average of 2017 to 2019 water use. Volumes are in units of AF.
- (b) Indoor water use was estimated to be the lowest monthly water use for each sector, accounting for the number of days in each month. Outdoor water use for each sector was estimated to be the difference between the total water use and the estimated indoor water use.

Chart 6-3A Baseline Year Annual Water Use by Sector and End Use

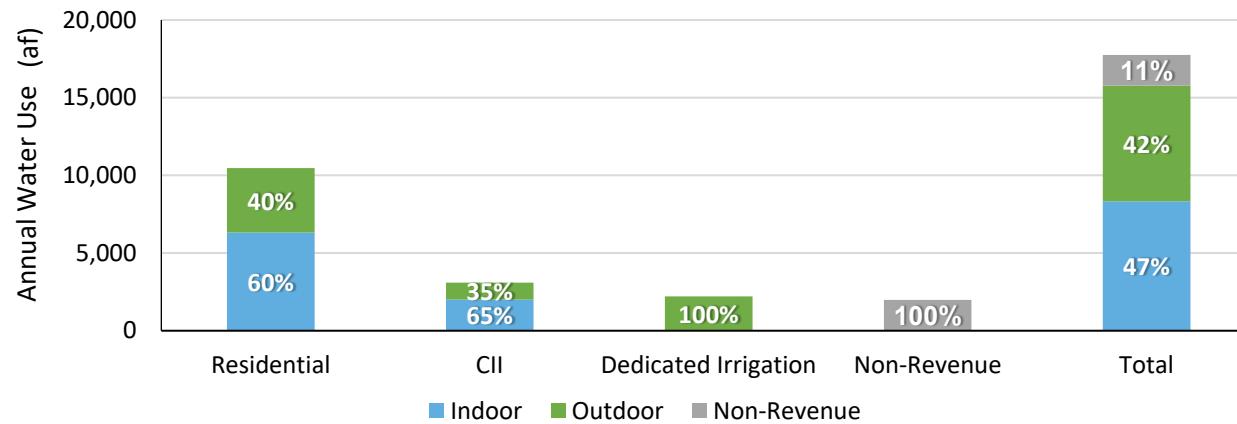
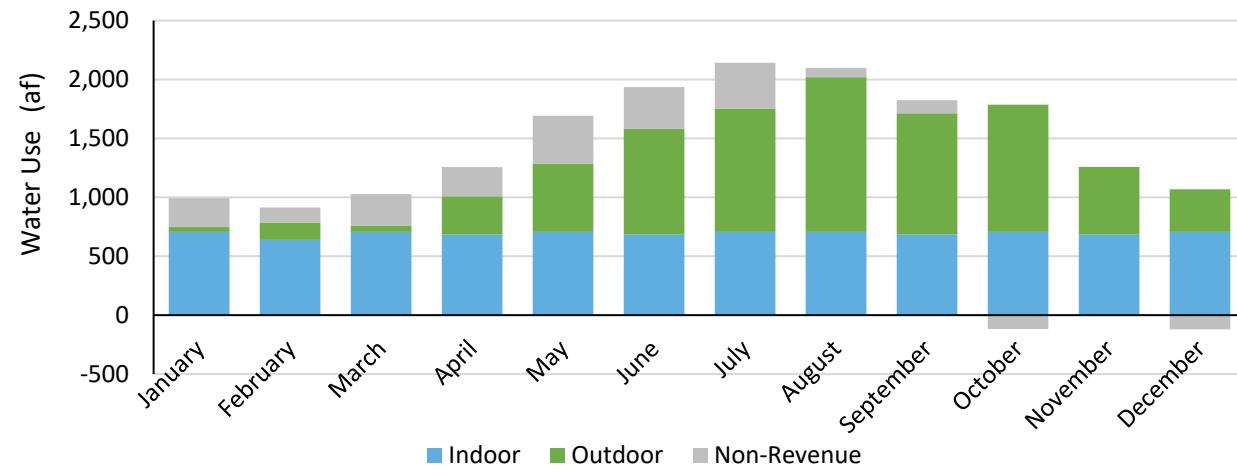


Chart 6-3B Baseline Year Monthly Indoor vs. Outdoor Water Use





6.7.2 Shortage Response Action Effectiveness

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

For each drought response action, the user specifies:

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

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

- A minimum residential indoor per capita daily usage of 25 gallons;
- A maximum residential outdoor usage reduction of 100%;
- A maximum CII indoor usage reduction of 30%; and
- A maximum CII outdoor usage reduction of 100%.

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

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

- 5% for Stage 1;
- 15% for Stage 2;
- 25% for Stage 3;
- 35% for Stage 4;
- 45% for Stage 5; and
- 55% for Stage 6.

The City's shortage response actions are summarized in **Table 6-1** and Table 6-2. Key DRT inputs and outputs for each of the stages of action are reproduced in Attachment 1, including water shortage



reduction actions, savings assumptions, and implementation rates that are required for the City to achieve the required annual demand reductions for each of the six stages of action. At each stage, there are two types of demand-reduction actions identified:

- Restrictions on customer water usage; and
- Consumption reduction actions by the City to encourage decreased water usage.

Many actions are implemented across a number of stages, some at increasing implementation levels. Therefore, the actions in **Table 6-1** and Table 6-2 are listed as a row under the first stage at which they are implemented. The percentage savings represent total savings achieved by implementing the actions listed under that stage.



7 COMMUNICATION PROTOCOLS

CWC § 10632 (a) (5)

Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:

- (A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.*
- (B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.*
- (C) Any other relevant communications.*

7.1 Communication Objectives

The City's main objective is to be transparent and provide the necessary information in the most efficient manner to achieve the following:

- Encourage all water consumers to implement both voluntary and mandatory actions that increase conservation for the current level of the WSCP enacted;
- Ensure that all sectors are aware of the current situation or emergency that is creating the need to conserve through increased outreach and education;
- Reduce mixed messages that create confusion, maintain integrity through our own actions, and ensure all messages are appropriate for the level of action being requested;
- Provide accolades for accomplishments by all sectors for reductions that are being realized through water conservation, efficiencies, and other actions taken;
- Engage not only the general public but the City's business and civic leaders, elected officials, and employees in the actions that may be taken in order to assist with the current emergency or situation as well as future water reliability savings;
- Keep the City informed and prepared for either increasing or decreasing WSCP action levels based on hydrologic and ongoing conditions;
- Request feedback from stakeholders and the general public frequently and incorporate where possible; and
- Reduce the action level of the WSCP to the lowest level and show demonstrated results of the community's actions and impacts to the City's quality of life and our economy.

7.2 Communication Protocols

The City's communication protocols include a multi-media platform that will be utilized to convey important messages regarding water shortages and both voluntary and mandatory actions. Public outreach plays a vital role in increasing the awareness of the need to reduce water use across all



water sectors. A strong communication plan will educate City ratepayers as well as community leaders and the community as a whole on the City's current water supply situation. It will also inform the actions necessary to achieve the City's conservation goals and how they will be implemented. It is important to communicate these messages to ratepayers as early as possible:

- Specific actions the City is requesting to conserve water;
- How much the City needs to save and the duration;
- What is creating the shortage; and
- How the City is implementing actions to correct the problem or situation.

7.2.1 Communications for a Predicted or Ongoing Shortage

Each stage of the WSCP is implemented with a formal declaration by the City Council. Procedures for water shortage declaration and determination are detailed in Section 4. Even before formal declaration of a water shortage, a public information program will be activated to provide customers with as much advance notice as possible.

For a predicted or ongoing shortage that requires an up or down movement in the City's WSCP Shortage Level, the City Council will declare the existence of a shortage condition. The City will post these declarations on its website and other multi-media outlets. This will also require a City resolution announcing the actions and prohibitions at each stage level with the declaration and City Council approval.

The general public will be notified of the predicted or ongoing shortage level and the implementation actions necessary for them to follow. The implementation of the shortage action level will take effect once approval by City Council has been obtained and will be noticed in the appropriate locations such as newspaper, City Hall, and the Utilities Department, as well as other multi-media outlets.

7.2.2 Routine Communication Protocols

To ensure enacted water shortage levels actions are effectively communicated, the City will increase its public education and outreach efforts across all sectors. The outreach materials and methods will be updated frequently during the anticipated or ongoing shortage to reflect the current water use reductions or prohibitions. This communication may include the following:

- Convey key status changes to all sectors for all water shortage levels;
- Provide frequent updates to City Manager and the City media on conditions and implementation actions by City for all water shortage levels;
- Increase coordination with other departments and agencies on all water shortage levels;
- Conduct briefings with City Manager and other key civic and business leaders at all water shortage levels;
- Promote available water assistance programs and resources to vulnerable members of the community and outreach materials for impacted sectors in all water shortage levels;



- Suspend promotion of landscape and outdoor incentive programs during Stages 5 and 6; and
- Suspend promotion of all water use efficiency programs and concentrate on imminent needs during water Stages 5 and 6.

The City has a full array of platforms to implement its communication protocols and strategies. At any time, the City may update its website, social media platforms, and email contact list to reflect changing conditions and to convey important messages. The City may also decide to hold in-person workshops, news conferences, or other events to inform changes in conditions. The City is prepared and determined to provide effective and efficient communication during times of shortages.

7.2.3 Communications for Catastrophic Events

In the event of a catastrophic supply event that interrupts water service, the City Council will immediately deploy the appropriate level of the WSCP that is best suited for the situation. All messaging will reflect the emergency conditions and the need for public health and safety implementation. The City will coordinate with emergency response services, incident command and public health providers in order to provide updates as they become available.

7.3 Coordination

Coordination between the City and with other public agencies can begin prior to formal declaration of a water shortage and can be accomplished through regular meetings, e-mail group updates, and presentations. In a regional water shortage scenario, the City would use public outreach resources and materials provided by USBR and/or SSJID. In addition to these materials, the City may develop its own materials to communicate with customers, such as a dedicated customer service hotline, and expand its normal public outreach to support its water conservation efforts (see Chapter 9 of the UWMP).

In order for the City to ensure that it is effectively communicating its message without confusion and keeping its integrity, the City plans to work closely with its water suppliers, other departments within the City and our community at all levels. During drought and/or other times when supply is limited, this coordination may need to increase in order to ensure outreach is being conducted efficiently and as needed to adapt to the changing environment. The City always looks for ways to leverage other resources with its own in order to provide the highest level of service.



8 COMPLIANCE AND ENFORCEMENT

CWC § 10632 (a) (6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.

The City is authorized under Chapter 11.28, Article 6 of the TMC to enforce the requirements of the WSCP. Relevant sections of the TMC are excerpted below.

11.28.050 - Authority.

The following officers and employees are authorized to enforce this chapter, including issuing an order to cease and desist and/or a notice of intention to impose a penalty: City Manager, Director of Development Services, Director of Public Works, Director of Utilities, Water Resources Coordinator, Water Resources Analyst, Environmental Control Officer, Environmental Compliance Technician, Water Patrol, Sworn Peace Officers, Firefighters, and Code Enforcement Officers.

(Prior code § 11-7.301)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

Enforcement of the City's water use restrictions and prohibitions is focused on soliciting cooperation from water customers who are unaware of the restrictions or have failed to comply with the provisions of the WSCP. The City first issues a Notice of Violation informing customers regarding the specific violation and corrective action within 72 hours. If the first notice does not work, the City issues a second Notice of Violation. If the two cease and desists notices do not result in compliance, the WRCM sends a Notice of Intent to Impose a Penalty letter, by certified mail, to the owner which identifies the dates, times, violations noted and penalty amounts. It also contains information on the appeals process. Relevant sections of the TMC are excerpted below.

11.28.060 - Enforcement and Implementation.

The City Manager or his/her designee is charged with primary responsibility for the implementation and enforcement of this chapter. If there is a conflict between two stages (at Section 11.28.160 through 11.28.210), the more restrictive stage shall apply. The Director shall prepare the forms, warnings, and similar documents as he or she deems necessary or appropriate to implement this chapter.

(Prior code § 11-7.302)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.070 - Order, notice, penalty and appeal.

(a) Cease and desist order. Upon a determination by the Director that a person has consumed or used water in violation of a mandatory provision of this chapter, the Director may issue an order to cease and desist from the violation, and further order that the person comply with this chapter, or otherwise take appropriate remedial or preventive action. The Director shall serve the order:

- (1) Personally; or*
- (2) By leaving or posting a copy at the person's residence or place of business; or*



(3) *By mail.*

(b) *Notice of intent to impose a penalty. If, after the issuance of a cease and desist order, the person continues to consume or use, or again consumes or uses, water in violation of this chapter, the Director may issue a notice of intention to impose a penalty. The notice shall:*

- (1) *Identify the date and time of the violation,*
- (2) *State the amount of penalty to be imposed, and*
- (3) *Advise the person of the appeal rights. The notice of intention shall be served in the same manner as the cease and desist order.*

(c) *Penalty. After the notice of intent to impose a penalty is served, a penalty shall be assessed in the amount of: One Hundred and no/100ths (\$100.00) Dollars for the first violation, Two Hundred and no/100ths (\$200.00) Dollars for the second violation, and Five Hundred and no/100ths (\$500.00) Dollars for the third and each subsequent violation. The penalty is subject to collection in the same manner as utility service charges.*

(d) *Appeal. A person may appeal the imposition of the penalty assessed to the utility account. The person must request an appeal within fifteen (15) calendar days from the date of service of the notice of intention to impose a penalty. The request for an appeal hearing must be addressed to the City Manager and received by the City within the fifteen-day period. Failure to timely appeal constitutes a waiver of the right to appeal (and the penalty will be assessed).*

(e) *Appeal hearing. If timely requested, the appeal hearing shall be held before the City Manager, or his or her designee, who shall make a factual finding on the existence of a violation(s). The hearing shall be held within thirty (30) days from the date the City receives the appeal, unless continued by mutual consent. The hearing officer shall give notice by first class mail of the date and time of the appeal hearing, at least ten days before the hearing. The appellant may present witnesses and documentary evidence, and may be represented by anyone of his or her choosing. The decision of the hearing officer is final.*



9 LEGAL AUTHORITIES

CWC § 10632 (a) (7)

(A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.

(B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.

(C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

CWC § 10632.3

It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.

Under California law, including CWC Chapters 3.3 and 3.5 of Division 1, Parts 2.55 and 2.6 of Division 6, Division 13, and Article X, Section 2 of the California Constitution, the City Council is authorized to implement the water shortage actions outlined in this WSCP. In all water shortage cases, shortage response actions to be implemented will be at the discretion of the City Council and will be based on an assessment of the supply shortage, customer response, and need for demand reductions.

It is noted that upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 [commencing with Section 8550] of Division 1 of Title 2 of the Government Code) based on drought conditions, the state will defer to implementation of locally adopted water shortage contingency plans to the extent practicable. The City will coordinate with San Joaquin County within which it provided water supply services as well as other regional and local water suppliers for possible proclamation of a local emergency, as necessary. The City shall declare a water shortage emergency in accordance with Water Code Chapter 3 (commencing with Section 350) of Division 1 general provision regarding water shortage emergencies.

As discussed above, the City has authority under Chapter 11.28, Article 6 of the TMC to require water rationing and conservation and to enforce penalties. An adopted water shortage contingency resolution is included as Attachment 3.



10 FINANCIAL CONSEQUENCES OF WSCP

CWC § 10632 (a) (8)

A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:

(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.

Since the City bills its customers per unit volume of water consumed, the City will experience a reduction in revenue to the City's Water Enterprise Fund upon implementation of the WSCP. To compensate for the expected revenue reduction caused by water conservation, the City reserves the authority to implement temporary water rate increases, as adopted by resolution of the City Council (TMC §11.28.220). Additionally, the City Council may adopt a resolution to establish a water rate structure, including excess water use surcharges, that provides incentives to conserve water (TMC §11.28.230). Individual customers may seek a waiver of to excess water use surcharges through the variance process set forth in TMC §11.28.240.

The City's current water rate structure uses a tiered conservation structure for all residential customers. The structure is four consumption-based tiers with progressively higher commodity charges at each tier to pay for the increased costs related to peak demands. This structure is also proven to encourage conservation year-round. The City anticipates performing a new Water Rate Study in Fiscal Year 2022/23 in order to address the needs of the Utilities Department going forward. Any rate increases would have to be approved by City Council via the Proposition 218 noticing and public hearing process.

The City also anticipates the potential necessity to tap into reserves in order to operate, manage and maintain its water system as the current rate structure is not adequately preparing for the impacts of significant shortages.

Further, the City may defer capital improvements. This is a necessary action in order to meet contractual requirements of bond holders as it relates to outstanding debt, as the City must maintain a minimum debt service coverage ratio. This action is critical to obtaining future funding for capital projects required for improving water system reliability and to mitigate future drought and emergency situations. Any reallocation of capital project funding to meet short-term emergency needs would be restricted by bond covenants that require bond proceeds to be used exclusively for capital projects.

Table 10-1 summarizes the City's measures to mitigate the impacts of prolonged water shortages or emergencies on revenues and expenditures.

**Table 10-1 Summary of Measures to Mitigate Revenue and Expenditure Impacts**

Name of Measure	Summary of Effects
Council approved rate increase	<ul style="list-style-type: none"> Provides additional revenues when water sales decline or expenditures increase Replenishes reserve funds used to offset effects of shortages
Use of Operating Reserve	<ul style="list-style-type: none"> Provides for unanticipated needs when normal water supply is disrupted by a catastrophic event
Use of Rate Stabilization Reserve	<ul style="list-style-type: none"> Provides a source of funds to mitigate future rate increases by maintaining legal covenanted rates
Reductions in expenditures through possible deferrals	<ul style="list-style-type: none"> Reduces current operational expenditures to compensate for reduction in water sales revenue Delays operations and maintenance and capital improvements



11 MONITORING AND REPORTING

CWC § 10632 (a) (9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

All of the City's current service connections are metered and meters are read on a monthly basis. Actual water savings achieved by implementing the WSCP will be determined by comparing water consumption records while WSCP is in place with an appropriate baseline consumption.

Pursuant to California Code of Regulations (CCR) Title 23 §991, the City reports monthly water use and production to the SWRCB⁵. Effective October 1, 2020, during a governor declared drought emergency or when an urban water supplier invokes a water shortage level to respond to a drought greater than 10%, each supplier is required to submit an expanded report that contains the supplier's actions and statistics in achieving planning reductions.

⁵ Water supplier monthly reports can be accessed at https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.html



12 WSCP REFINEMENT PROCEDURES

CWC § 10632 (a) (10) *Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.*

The WSCP is implemented as an adaptive management plan. The City will evaluate the need to revise its WSCP every year after performing its Annual Assessment. The evaluation will consider the effectiveness of WSCP actions and any anticipated water supply shortages assessed by the Annual Assessment. If the WSCP is revised, the City Council will adopt a new resolution adopting the revised WSCP, and if necessary, declare a water shortage level to implement.



13 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

CWC § 10632 (c) *The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.*

The City informed the public and the appropriate agencies of: (1) its intent to prepare a WSCP, (2) where the WSCP was available for public review, and (3) when the public hearing regarding the WSCP would be held. All notifications were completed in compliance with the stipulations of Section 6066 of the Government Code.

A copy of the adopted 2020 WSCP including any amendments will be provided to the DWR, the California State Library, and San Joaquin County within 30 days of the adoption (Attachment 3). An electronic copy of the adopted 2020 WSCP will be submitted to the DWR using the DWR online submittal tool.

A copy of the adopted 2020 WSCP will be available for public review in Tracy City Hall during normal business hours and on the City website within 30 days after filing the plan with DWR.



ATTACHMENT 1

DROUGHT RESPONSE TOOL QUANTITATIVE ASSESSMENT

1 - Home
City of Tracy

Enter Agency Information	
Agency Name	City of Tracy
Total Population Served	93,009
Baseline Year(s)	2017-2019
Percentage of Residential Indoor Use During Minimum Month (%)	100%
Percentage of CII Indoor Use During Minimum Month (%)	100%
Comments	

Navigation

USER'S GUIDE	Download and read the guide before using this Tool
1 - HOME	Enter agency information
2 - INPUT BASELINE YEAR WATER USE	Enter Baseline Year production and use
3 - BASELINE YEAR WATER USE PROFILE	Review and confirm entered information
4 - DROUGHT RESPONSE ACTIONS	Select Drought Response Actions and input estimated water savings and implementation rates.
5 - ESTIMATED WATER SAVINGS	Review estimated water production and compare estimated savings to conservation target.
6 - DROUGHT RESPONSE TRACKING	Track production and water savings against the conservation target.



Drought Response Tool

[Home](#)[Input Baseline Year Water Use](#)[Baseline Year Water Use Profile](#)[Drought Response Actions](#)[Estimated Water Savings](#)[Drought Response Tracking](#)

1 - Home City of Tracy

For questions about this tool or for additional information, contact:

Anona Dutton, P.G., C.Hg.
adutton@ekiconsult.com
(650) 292-9100



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2 - Input Baseline Year (2017-2019) Water Use

City of Tracy

Units:

i Select the units to input monthly production and use data. Enter the total monthly potable water production for the Baseline Year. Next, enter monthly water use data by sector for the Baseline Year. If you bill on a bi-monthly basis, divide your billing data between the months that the billing cycle includes. If your single-family and multi-family accounts are tracked separately, enter the combined water use for both sectors in the Residential Water Use column. If your commercial, industrial, and institutional (CII) accounts are tracked separately, enter the combined water use for each sector in the CII Water Use column. Your non-revenue water use is calculated by subtracting your monthly residential, CII, and dedicated irrigation water uses from your monthly production. Your monthly residential gallons per capita per day (R-GPCD) is calculated by dividing your monthly residential water use by your population entered in Worksheet 1 - Home.

Date	Total Production (af)	Residential Water Use (af)	CII Water Use (af)	Dedicated Irrigation Water Use (af)	Non-Revenue Water Use (af)	Total R-GPCD	Comments
January	993	537	170	40	246	61	
February	913	573	188	25	127	72	
March	1,028	548	173	40	267	62	
April	1,256	653	200	155	248	76	
May	1,693	789	270	228	406	89	
June	1,936	1,056	288	238	354	123	
July	2,142	1,139	299	316	388	129	
August	2,098	1,325	345	350	78	150	
September	1,825	1,079	322	312	113	126	
October	1,669	1,162	327	297	-117	131	
November	1,249	873	235	149	-9	102	
December	948	732	277	60	-120	83	

3 - Baseline Year (2017-2019) Water Use Profile

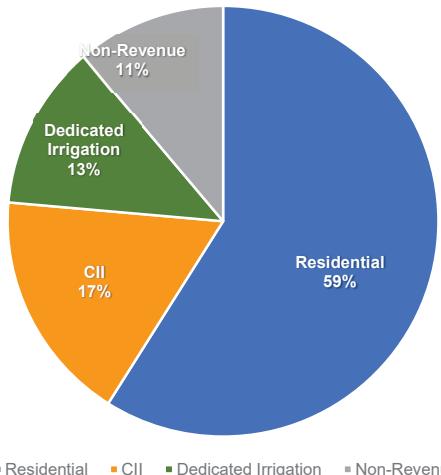
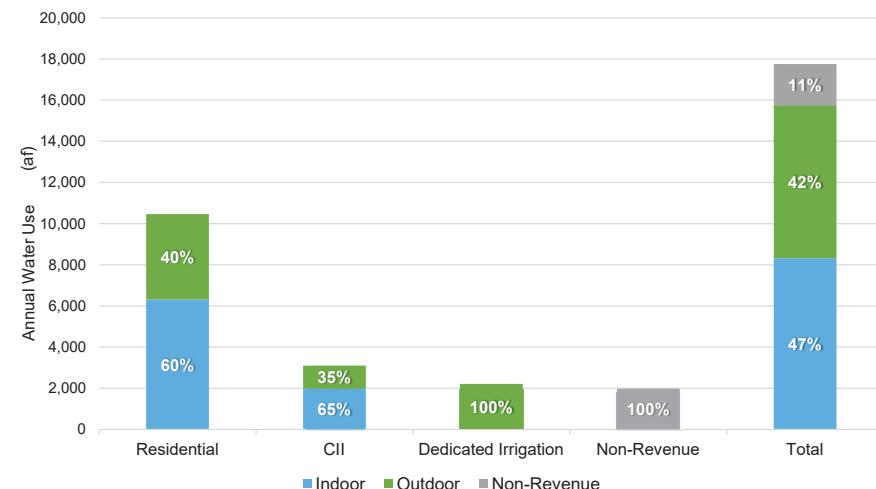
City of Tracy

Baseline Year (2017-2019) Annual Water Use Summary

Units: (af)

A summary of your Baseline Year water use by sector and major end use category is shown below. Select the units in which your production and use data are displayed.

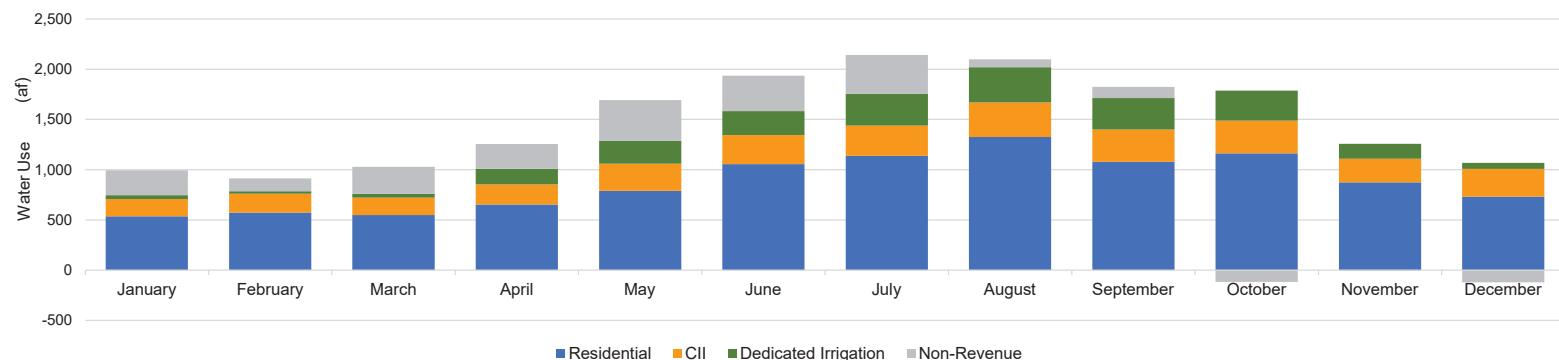
Water Use	Total Production (af)	Water Use (af)			Comments
		Residential	CII	Dedicated Irrigation	
Total	17,751	10,466	3,095	2,210	1,981
Total Indoor	8,323	6,317	2,006	--	--
Total Outdoor	7,447	4,148	1,089	2,210	--
Total Non-Revenue	1,981	--	--	--	1,981
Total Indoor %	47%	60%	65%	0%	--
Total Outdoor %	42%	40%	35%	100%	--
Total Non-Revenue %	11%	--	--	--	100%

Baseline Year (2017-2019) Percent Annual
Water Use by SectorBaseline Year (2017-2019) Annual Water Use by Sector and End
Use

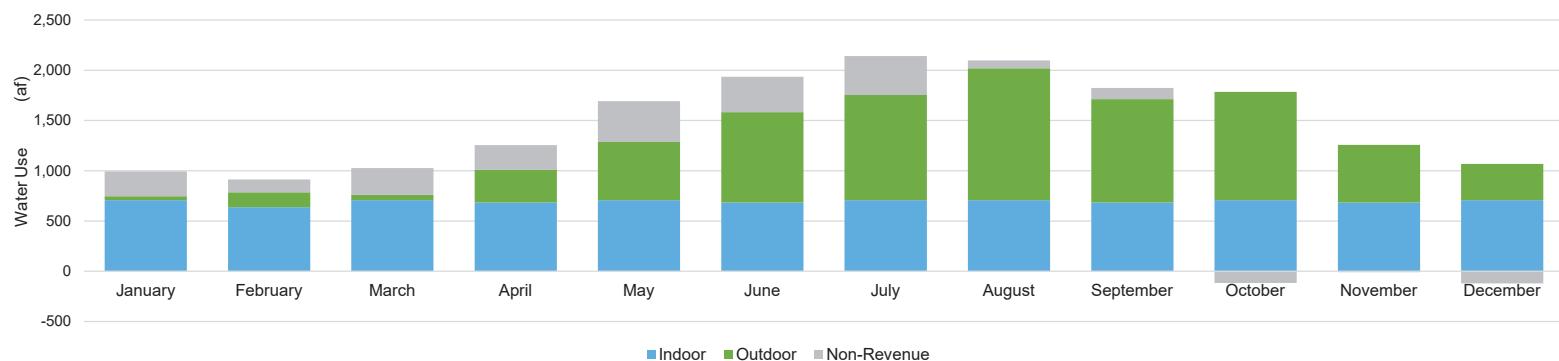
3 - Baseline Year (2017-2019) Water Use Profile

City of Tracy

Baseline Year (2017-2019) Monthly Total Water Use by Sector



Baseline Year (2017-2019) Monthly Indoor vs. Outdoor Water Use



4 - Drought Response Actions - Stage 1

City of Tracy

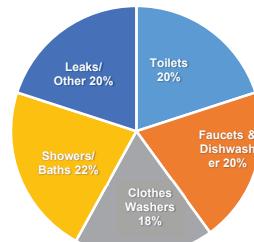
Maximum Savings Potential

i Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

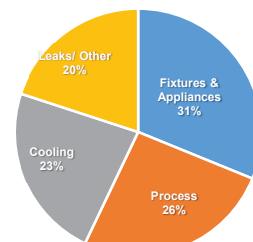
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	72%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector

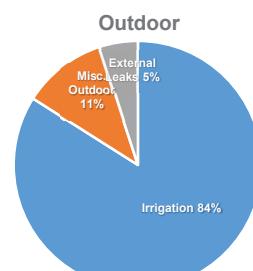
Residential Indoor



CII Indoor



Outdoor



4 - Drought Response Actions - Stage 1

City of Tracy

Drought Response Actions

i Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (-) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Possible Mandatory Prohibitions						
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	All Outdoor	<input checked="" type="checkbox"/>	14%	40%	--	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Irrigation	<input checked="" type="checkbox"/>			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%	See Appendix D of the DRP	--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	<input checked="" type="checkbox"/>	3%	50%		--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	<input checked="" type="checkbox"/>				--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	<input checked="" type="checkbox"/>			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	<input checked="" type="checkbox"/>	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 1

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Agency Actions						
Media Campaign, Newspaper Articles, Website	All	<input checked="" type="checkbox"/>	0.5%	40%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	<input checked="" type="checkbox"/>		50%	--	--
Water Efficiency Workshops, Public Events	All	<input type="checkbox"/>	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	<input type="checkbox"/>	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	<input type="checkbox"/>	100%		--	--
Home or Mobile Water Use Reports	All	<input type="checkbox"/>	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	<input type="checkbox"/>	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	<input type="checkbox"/>	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	<input type="checkbox"/>	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	<input type="checkbox"/>	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	<input type="checkbox"/>			--	--
Moratorium on New Connections	All	<input type="checkbox"/>			--	--
Move to Monthly Metering / Billing	All	<input type="checkbox"/>	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	<input type="checkbox"/>			--	--
Establish Drought Hotline	All	<input type="checkbox"/>			--	--
Reduce Distribution System Pressures	Non Revenue Water	<input type="checkbox"/>	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	<input type="checkbox"/>	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	12%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	<input type="checkbox"/>	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input type="checkbox"/>	100%	50%		
Require Repair of all Leaks within 72 hours	External Leaks	<input checked="" type="checkbox"/>	100%	5%		
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	<input type="checkbox"/>	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	<input type="checkbox"/>	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	<input type="checkbox"/>	75%	50%	--	--

4 - Drought Response Actions - Stage 1

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	<input type="checkbox"/>	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	10%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	<input type="checkbox"/>	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input type="checkbox"/>	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 72 hours	Leaks	<input checked="" type="checkbox"/>	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	<input checked="" type="checkbox"/>	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	<input type="checkbox"/>	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	<input type="checkbox"/>	20%	50%	--	--
► CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	<input type="checkbox"/>	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	5%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	<input type="checkbox"/>	79%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	<input type="checkbox"/>		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	<input type="checkbox"/>	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 72 hours	Leaks	<input checked="" type="checkbox"/>	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	<input type="checkbox"/>	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	<input type="checkbox"/>	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	<input type="checkbox"/>	30%	50%	--	--

4 - Drought Response Actions - Stage 1

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Install a Water-Efficient Showerhead	Showers/Baths	<input type="checkbox"/>			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Fill the Bathtub Halfway	Showers/Baths	<input type="checkbox"/>			--	--
Wash Only Full Loads of Clothes	Clothes Washers	<input type="checkbox"/>			--	--
Install a High-Efficiency Toilet	Toilets	<input type="checkbox"/>			--	--
Take Shorter Showers	Showers/Baths	<input type="checkbox"/>			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Reduce Outdoor Irrigation	Irrigation	<input type="checkbox"/>			--	--
Install Drip-Irrigation	Irrigation	<input type="checkbox"/>			--	--
Use Mulch	Irrigation	<input type="checkbox"/>			--	--
Plant Drought Resistant Trees and Plants	Irrigation	<input type="checkbox"/>			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	<input type="checkbox"/>			--	--
Flush Less Frequently	Toilets	<input type="checkbox"/>			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	<input type="checkbox"/>			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	<input type="checkbox"/>			--	--

5 - Estimated Water Savings - Stage 1

City of Tracy

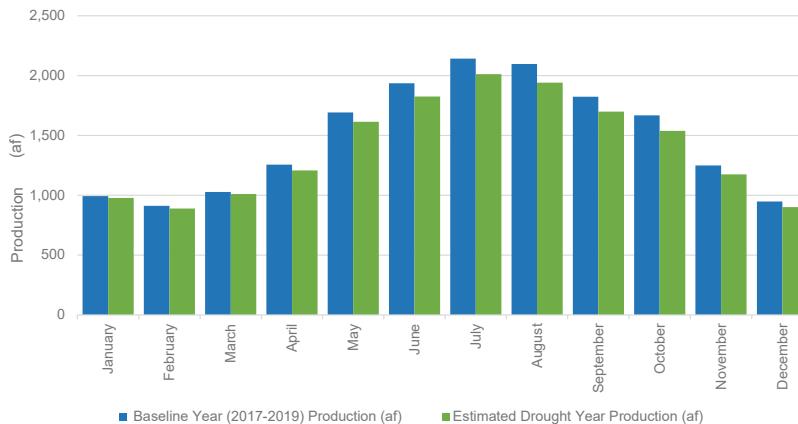
Estimated Monthly Water Use and Savings Summary

Units: (af)

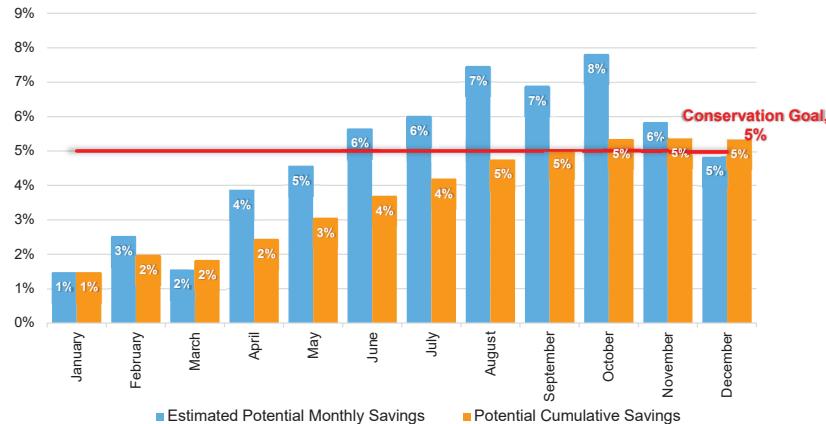
ⓘ This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2017-2019) Production (af)	Estimated Drought Year Production (af)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	993	978	1%	1%	5%	
February	913	890	3%	2%	5%	
March	1,028	1,012	2%	2%	5%	
April	1,256	1,208	4%	2%	5%	
May	1,693	1,615	5%	3%	5%	
June	1,936	1,827	6%	4%	5%	
July	2,142	2,013	6%	4%	5%	
August	2,098	1,942	7%	5%	5%	
September	1,825	1,699	7%	5%	5%	
October	1,669	1,538	8%	5%	5%	
November	1,249	1,176	6%	5%	5%	
December	948	902	5%	5%	5%	

Baseline Year(s) Production vs. Estimated Production



Estimated Potential Monthly Water Savings



4 - Drought Response Actions - Stage 2

City of Tracy

Maximum Savings Potential

i Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

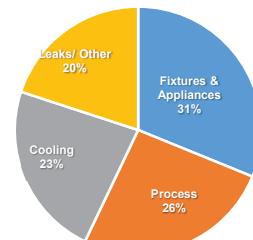
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	72%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector

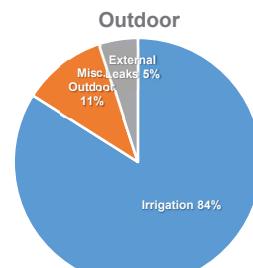
Residential Indoor



CII Indoor



Outdoor



4 - Drought Response Actions - Stage 2

City of Tracy

Drought Response Actions

i Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (-) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Possible Mandatory Prohibitions						
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	All Outdoor	<input checked="" type="checkbox"/>	14%	60%	--	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Irrigation	<input type="checkbox"/>			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%	See Appendix D of the DRP	--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	<input checked="" type="checkbox"/>	3%	50%		--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	<input checked="" type="checkbox"/>				--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	<input checked="" type="checkbox"/>			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	<input checked="" type="checkbox"/>	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 2

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Agency Actions						
Media Campaign, Newspaper Articles, Website	All	<input checked="" type="checkbox"/>	0.5%	60%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	<input checked="" type="checkbox"/>		50%	--	--
Water Efficiency Workshops, Public Events	All	<input checked="" type="checkbox"/>	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	<input checked="" type="checkbox"/>	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	<input type="checkbox"/>	100%		--	--
Home or Mobile Water Use Reports	All	<input type="checkbox"/>	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	<input checked="" type="checkbox"/>	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	<input type="checkbox"/>	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	<input type="checkbox"/>	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	<input type="checkbox"/>	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	<input type="checkbox"/>			--	--
Moratorium on New Connections	All	<input type="checkbox"/>			--	--
Move to Monthly Metering / Billing	All	<input type="checkbox"/>	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	<input checked="" type="checkbox"/>			--	--
Establish Drought Hotline	All	<input type="checkbox"/>			--	--
Reduce Distribution System Pressures	Non Revenue Water	<input type="checkbox"/>	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	<input checked="" type="checkbox"/>	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	12%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 3 Days/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	36%	60%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input type="checkbox"/>	100%	50%		
Require Repair of all Leaks within 48 hours	External Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	<input type="checkbox"/>	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	<input type="checkbox"/>	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	<input type="checkbox"/>	75%	50%	--	--

4 - Drought Response Actions - Stage 2

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	<input checked="" type="checkbox"/>	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	10%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 3 Days/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	30%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input type="checkbox"/>	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Require Pool Covers	Misc. Outdoor	<input checked="" type="checkbox"/>	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	<input checked="" type="checkbox"/>	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	<input type="checkbox"/>	20%	50%	--	--
► CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	<input checked="" type="checkbox"/>	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	5%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 3 Days/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	16%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	<input type="checkbox"/>		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	<input type="checkbox"/>	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	<input type="checkbox"/>	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	<input type="checkbox"/>	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	<input type="checkbox"/>	30%	50%	--	--

4 - Drought Response Actions - Stage 2

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Install a Water-Efficient Showerhead	Showers/Baths	<input type="checkbox"/>			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Fill the Bathtub Halfway	Showers/Baths	<input type="checkbox"/>			--	--
Wash Only Full Loads of Clothes	Clothes Washers	<input type="checkbox"/>			--	--
Install a High-Efficiency Toilet	Toilets	<input type="checkbox"/>			--	--
Take Shorter Showers	Showers/Baths	<input type="checkbox"/>			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Reduce Outdoor Irrigation	Irrigation	<input type="checkbox"/>			--	--
Install Drip-Irrigation	Irrigation	<input type="checkbox"/>			--	--
Use Mulch	Irrigation	<input type="checkbox"/>			--	--
Plant Drought Resistant Trees and Plants	Irrigation	<input type="checkbox"/>			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	<input type="checkbox"/>			--	--
Flush Less Frequently	Toilets	<input type="checkbox"/>			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	<input type="checkbox"/>			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	<input type="checkbox"/>			--	--

5 - Estimated Water Savings - Stage 2

City of Tracy

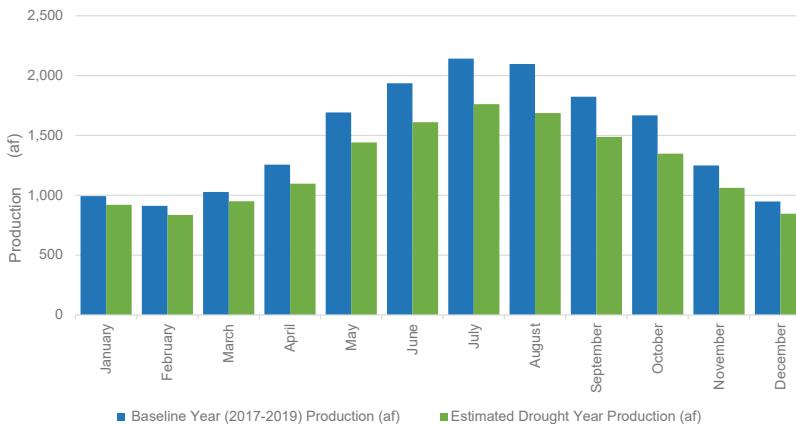
Estimated Monthly Water Use and Savings Summary

Units: (af)

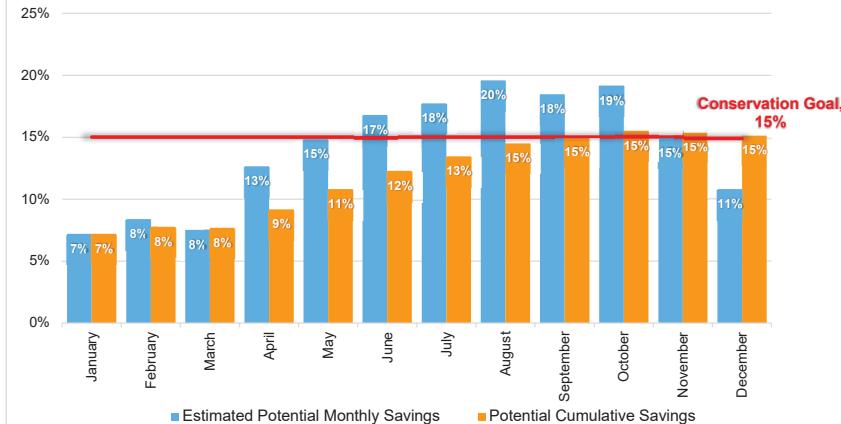
Information: This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2017-2019) Production (af)	Estimated Drought Year Production (af)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	993	922	7%	7%	15%	
February	913	836	8%	8%	15%	
March	1,028	950	8%	8%	15%	
April	1,256	1,097	13%	9%	15%	
May	1,693	1,442	15%	11%	15%	
June	1,936	1,611	17%	12%	15%	
July	2,142	1,762	18%	13%	15%	
August	2,098	1,687	20%	15%	15%	
September	1,825	1,488	18%	15%	15%	
October	1,669	1,349	19%	15%	15%	
November	1,249	1,062	15%	15%	15%	
December	948	846	11%	15%	15%	

Baseline Year(s) Production vs. Estimated Production



Estimated Potential Monthly Water Savings



4 - Drought Response Actions - Stage 3

City of Tracy

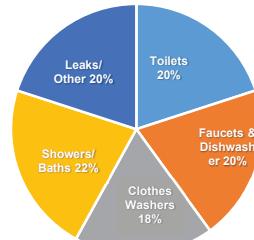
Maximum Savings Potential

i Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

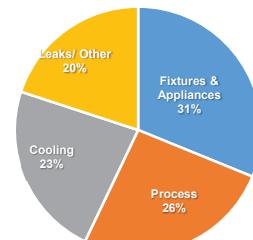
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	72%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector

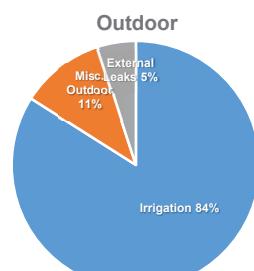
Residential Indoor



CII Indoor



Outdoor



4 - Drought Response Actions - Stage 3

City of Tracy

Drought Response Actions

i Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (-) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Possible Mandatory Prohibitions						
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	All Outdoor	<input checked="" type="checkbox"/>	14%	70%	--	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Irrigation	<input checked="" type="checkbox"/>			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%	See Appendix D of the DRP	--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	<input checked="" type="checkbox"/>	3%	50%		--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	<input checked="" type="checkbox"/>				--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	<input checked="" type="checkbox"/>			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	<input checked="" type="checkbox"/>	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 3

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Agency Actions						
Media Campaign, Newspaper Articles, Website	All	<input checked="" type="checkbox"/>	0.5%	70%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	<input checked="" type="checkbox"/>		50%	--	--
Water Efficiency Workshops, Public Events	All	<input checked="" type="checkbox"/>	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	<input checked="" type="checkbox"/>	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	<input type="checkbox"/>	100%		--	--
Home or Mobile Water Use Reports	All	<input type="checkbox"/>	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	<input checked="" type="checkbox"/>	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	<input checked="" type="checkbox"/>	45%	25%	DWR, 2015	Target 25% of leakage.
Implement Drought Rate Structure / Water Budgets	All	<input type="checkbox"/>	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	<input type="checkbox"/>	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	<input type="checkbox"/>			--	--
Moratorium on New Connections	All	<input type="checkbox"/>			--	--
Move to Monthly Metering / Billing	All	<input type="checkbox"/>	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	<input checked="" type="checkbox"/>			--	--
Establish Drought Hotline	All	<input checked="" type="checkbox"/>			--	--
Reduce Distribution System Pressures	Non Revenue Water	<input type="checkbox"/>	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	<input checked="" type="checkbox"/>	30%	50%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	12%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 2 Days/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	57%	60%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input type="checkbox"/>	100%	50%		
Require Repair of all Leaks within 48 hours	External Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	<input type="checkbox"/>	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	<input type="checkbox"/>	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	<input type="checkbox"/>	75%	50%	--	--

4 - Drought Response Actions - Stage 3

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	<input checked="" type="checkbox"/>	10%	20%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	10%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 2 Days/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	53%	60%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input type="checkbox"/>	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Require Pool Covers	Misc. Outdoor	<input checked="" type="checkbox"/>	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	<input checked="" type="checkbox"/>	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	<input type="checkbox"/>	20%	50%	--	--
► CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	<input checked="" type="checkbox"/>	10%	20%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	5%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 2 Days/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	44%	60%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	<input type="checkbox"/>		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	<input type="checkbox"/>	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	<input type="checkbox"/>	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	<input type="checkbox"/>	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	<input type="checkbox"/>	30%	50%	--	--

4 - Drought Response Actions - Stage 3

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Install a Water-Efficient Showerhead	Showers/Baths	<input type="checkbox"/>			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Fill the Bathtub Halfway	Showers/Baths	<input type="checkbox"/>			--	--
Wash Only Full Loads of Clothes	Clothes Washers	<input type="checkbox"/>			--	--
Install a High-Efficiency Toilet	Toilets	<input type="checkbox"/>			--	--
Take Shorter Showers	Showers/Baths	<input type="checkbox"/>			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Reduce Outdoor Irrigation	Irrigation	<input type="checkbox"/>			--	--
Install Drip-Irrigation	Irrigation	<input type="checkbox"/>			--	--
Use Mulch	Irrigation	<input type="checkbox"/>			--	--
Plant Drought Resistant Trees and Plants	Irrigation	<input type="checkbox"/>			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	<input type="checkbox"/>			--	--
Flush Less Frequently	Toilets	<input type="checkbox"/>			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	<input type="checkbox"/>			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	<input type="checkbox"/>			--	--

5 - Estimated Water Savings - Stage 3

City of Tracy

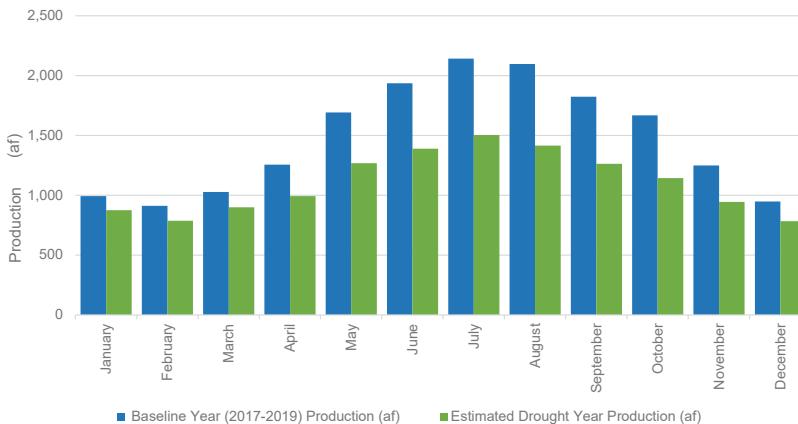
Estimated Monthly Water Use and Savings Summary

Units: (af)

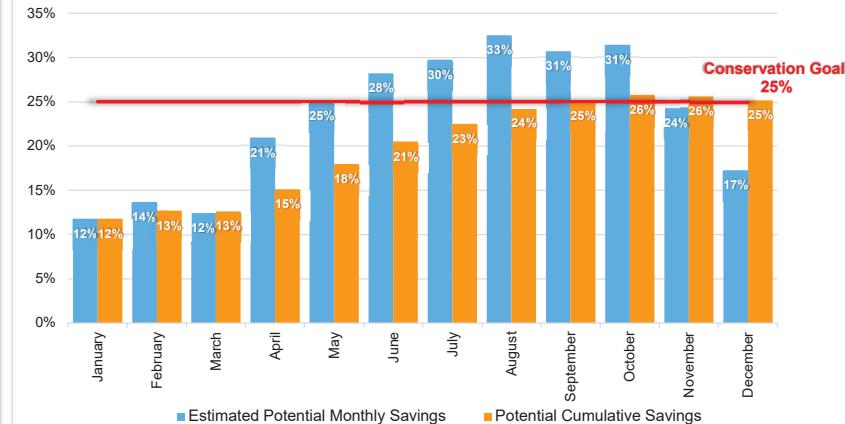
Information: This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2017-2019) Production (af)	Estimated Drought Year Production (af)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	993	876	12%	12%	25%	
February	913	788	14%	13%	25%	
March	1,028	900	12%	13%	25%	
April	1,256	993	21%	15%	25%	
May	1,693	1,269	25%	18%	25%	
June	1,936	1,390	28%	21%	25%	
July	2,142	1,504	30%	23%	25%	
August	2,098	1,416	33%	24%	25%	
September	1,825	1,264	31%	25%	25%	
October	1,669	1,144	31%	26%	25%	
November	1,249	945	24%	26%	25%	
December	948	784	17%	25%	25%	

Baseline Year(s) Production vs. Estimated Production



Estimated Potential Monthly Water Savings



4 - Drought Response Actions - Stage 4

City of Tracy

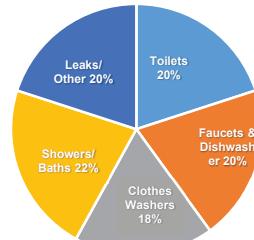
Maximum Savings Potential

i Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

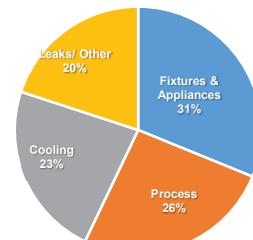
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	72%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector

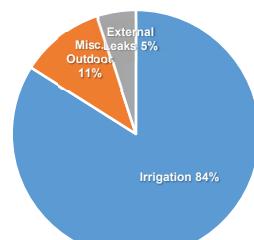
Residential Indoor



CII Indoor



Outdoor



4 - Drought Response Actions - Stage 4

City of Tracy

Drought Response Actions

i Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (-) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Possible Mandatory Prohibitions						
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	All Outdoor	<input checked="" type="checkbox"/>	14%	75%	--	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Irrigation	<input checked="" type="checkbox"/>			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%	See Appendix D of the DRP	--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	<input checked="" type="checkbox"/>	3%	50%		--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	<input checked="" type="checkbox"/>				--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	<input checked="" type="checkbox"/>			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	<input checked="" type="checkbox"/>	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 4

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Agency Actions						
Media Campaign, Newspaper Articles, Website	All	<input checked="" type="checkbox"/>	0.5%	70%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	<input checked="" type="checkbox"/>		50%	--	--
Water Efficiency Workshops, Public Events	All	<input checked="" type="checkbox"/>	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	<input checked="" type="checkbox"/>	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	<input type="checkbox"/>	100%		--	--
Home or Mobile Water Use Reports	All	<input type="checkbox"/>	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	<input checked="" type="checkbox"/>	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	<input checked="" type="checkbox"/>	45%	25%	DWR, 2015	Target 25% of leakage.
Implement Drought Rate Structure / Water Budgets	All	<input type="checkbox"/>	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	<input type="checkbox"/>	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	<input type="checkbox"/>			--	--
Moratorium on New Connections	All	<input type="checkbox"/>			--	--
Move to Monthly Metering / Billing	All	<input type="checkbox"/>	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	<input checked="" type="checkbox"/>			--	--
Establish Drought Hotline	All	<input checked="" type="checkbox"/>			--	--
Reduce Distribution System Pressures	Non Revenue Water	<input type="checkbox"/>	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	<input checked="" type="checkbox"/>	30%	50%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	12%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	79%	75%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input type="checkbox"/>	100%	50%		
Require Repair of all Leaks within 48 hours	External Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	<input type="checkbox"/>	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	<input type="checkbox"/>	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	<input type="checkbox"/>	75%	50%	--	--

4 - Drought Response Actions - Stage 4

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	<input checked="" type="checkbox"/>	10%	20%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	10%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	77%	75%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input type="checkbox"/>	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Require Pool Covers	Misc. Outdoor	<input checked="" type="checkbox"/>	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	<input checked="" type="checkbox"/>	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	<input type="checkbox"/>	20%	50%	--	--
► CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	<input checked="" type="checkbox"/>	10%	20%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	5%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, Between 7PM and 9AM	Irrigation	<input checked="" type="checkbox"/>	72%	75%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	<input type="checkbox"/>		100%		
Prohibit Single-Pass Cooling Systems	Cooling	<input type="checkbox"/>	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	<input type="checkbox"/>	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	<input type="checkbox"/>	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	<input type="checkbox"/>	30%	50%	--	--

4 - Drought Response Actions - Stage 4

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Install a Water-Efficient Showerhead	Showers/Baths	<input type="checkbox"/>			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Fill the Bathtub Halfway	Showers/Baths	<input type="checkbox"/>			--	--
Wash Only Full Loads of Clothes	Clothes Washers	<input type="checkbox"/>			--	--
Install a High-Efficiency Toilet	Toilets	<input type="checkbox"/>			--	--
Take Shorter Showers	Showers/Baths	<input type="checkbox"/>			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Reduce Outdoor Irrigation	Irrigation	<input type="checkbox"/>			--	--
Install Drip-Irrigation	Irrigation	<input type="checkbox"/>			--	--
Use Mulch	Irrigation	<input type="checkbox"/>			--	--
Plant Drought Resistant Trees and Plants	Irrigation	<input type="checkbox"/>			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	<input type="checkbox"/>			--	--
Flush Less Frequently	Toilets	<input type="checkbox"/>			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	<input type="checkbox"/>			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	<input type="checkbox"/>			--	--

5 - Estimated Water Savings - Stage 4

City of Tracy

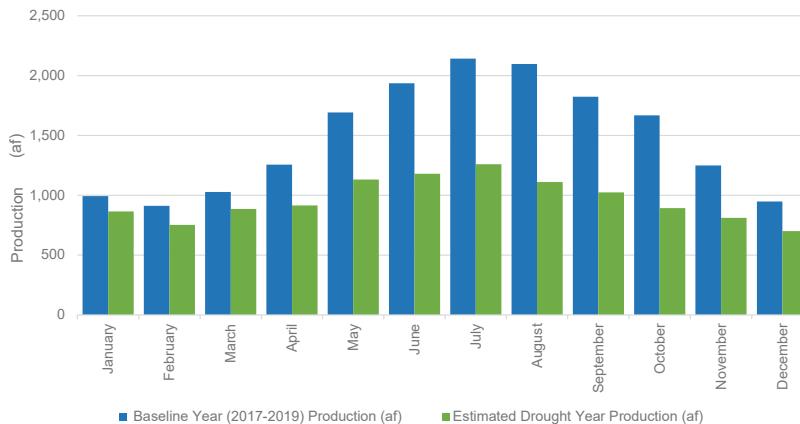
Estimated Monthly Water Use and Savings Summary

Units: (af)

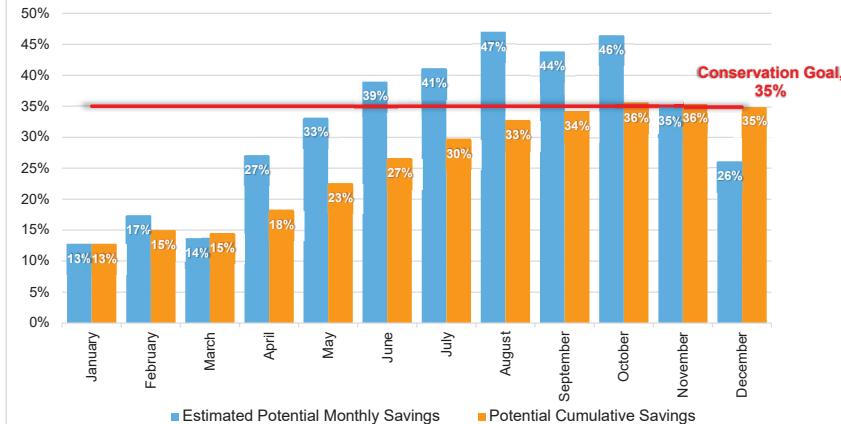
ⓘ This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2017-2019) Production (af)	Estimated Drought Year Production (af)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	993	866	13%	13%	35%	
February	913	754	17%	15%	35%	
March	1,028	887	14%	15%	35%	
April	1,256	916	27%	18%	35%	
May	1,693	1,131	33%	23%	35%	
June	1,936	1,181	39%	27%	35%	
July	2,142	1,260	41%	30%	35%	
August	2,098	1,111	47%	33%	35%	
September	1,825	1,024	44%	34%	35%	
October	1,669	893	46%	36%	35%	
November	1,249	812	35%	36%	35%	
December	948	701	26%	35%	35%	

Baseline Year(s) Production vs. Estimated Production



Estimated Potential Monthly Water Savings



4 - Drought Response Actions - Stage 5

City of Tracy

Maximum Savings Potential

i Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

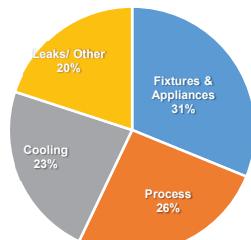
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	72%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector

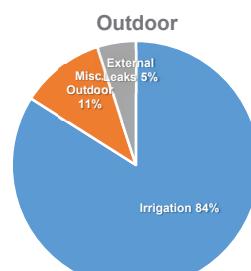
Residential Indoor



CII Indoor



Outdoor



4 - Drought Response Actions - Stage 5

City of Tracy

Drought Response Actions

i Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (-) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Possible Mandatory Prohibitions						
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	All Outdoor	<input checked="" type="checkbox"/>	14%	85%	--	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Irrigation	<input checked="" type="checkbox"/>			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%	See Appendix D of the DRP	--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	<input checked="" type="checkbox"/>	3%	50%		--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	<input checked="" type="checkbox"/>				--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	<input checked="" type="checkbox"/>			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	<input checked="" type="checkbox"/>	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 5

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Agency Actions						
Media Campaign, Newspaper Articles, Website	All	<input checked="" type="checkbox"/>	0.5%	75%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	<input checked="" type="checkbox"/>		50%	--	--
Water Efficiency Workshops, Public Events	All	<input checked="" type="checkbox"/>	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	<input checked="" type="checkbox"/>	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	<input type="checkbox"/>	100%		--	--
Home or Mobile Water Use Reports	All	<input type="checkbox"/>	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	<input checked="" type="checkbox"/>	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	<input checked="" type="checkbox"/>	45%	25%	DWR, 2015	Target 25% of leakage.
Implement Drought Rate Structure / Water Budgets	All	<input checked="" type="checkbox"/>	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	<input type="checkbox"/>	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	<input type="checkbox"/>			--	--
Moratorium on New Connections	All	<input checked="" type="checkbox"/>			--	--
Move to Monthly Metering / Billing	All	<input type="checkbox"/>	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	<input checked="" type="checkbox"/>			--	--
Establish Drought Hotline	All	<input checked="" type="checkbox"/>			--	--
Reduce Distribution System Pressures	Non Revenue Water	<input type="checkbox"/>	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	<input checked="" type="checkbox"/>	30%	50%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	12%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	79%	75%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input checked="" type="checkbox"/>	100%	85%		
Require Repair of all Leaks within 48 hours	External Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	<input type="checkbox"/>	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	<input type="checkbox"/>	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	<input type="checkbox"/>	75%	50%	--	--

4 - Drought Response Actions - Stage 5

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	<input checked="" type="checkbox"/>	10%	20%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	10%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	77%	75%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input checked="" type="checkbox"/>	100%	80%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Require Pool Covers	Misc. Outdoor	<input checked="" type="checkbox"/>	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	<input checked="" type="checkbox"/>	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	<input type="checkbox"/>	20%	50%	--	--
► CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	<input checked="" type="checkbox"/>	10%	20%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	5%	40%	Historical savings in 2013 to 2015	--
Prohibit use of Potable Water for Irrigation	Irrigation	<input checked="" type="checkbox"/>	100%	80%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	<input type="checkbox"/>		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	<input type="checkbox"/>	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	<input type="checkbox"/>	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	<input type="checkbox"/>	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	<input type="checkbox"/>	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	<input type="checkbox"/>	30%	50%	--	--

4 - Drought Response Actions - Stage 5

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Install a Water-Efficient Showerhead	Showers/Baths	<input type="checkbox"/>			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Fill the Bathtub Halfway	Showers/Baths	<input type="checkbox"/>			--	--
Wash Only Full Loads of Clothes	Clothes Washers	<input type="checkbox"/>			--	--
Install a High-Efficiency Toilet	Toilets	<input type="checkbox"/>			--	--
Take Shorter Showers	Showers/Baths	<input type="checkbox"/>			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Reduce Outdoor Irrigation	Irrigation	<input type="checkbox"/>			--	--
Install Drip-Irrigation	Irrigation	<input type="checkbox"/>			--	--
Use Mulch	Irrigation	<input type="checkbox"/>			--	--
Plant Drought Resistant Trees and Plants	Irrigation	<input type="checkbox"/>			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	<input type="checkbox"/>			--	--
Flush Less Frequently	Toilets	<input type="checkbox"/>			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	<input type="checkbox"/>			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	<input type="checkbox"/>			--	--

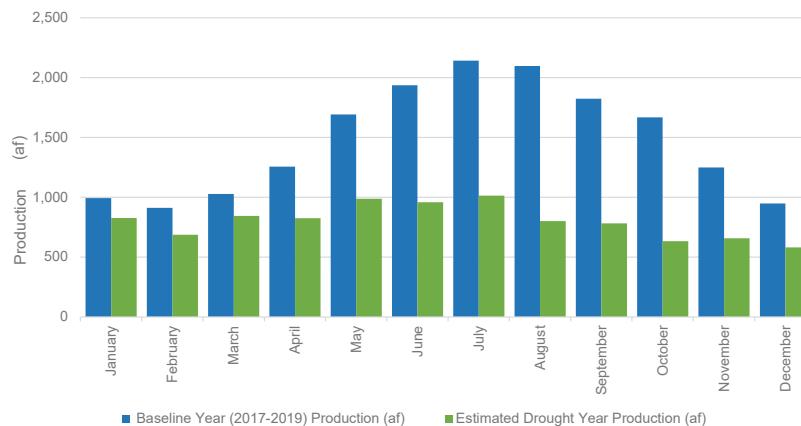
5 - Estimated Water Savings - Stage 5

City of Tracy

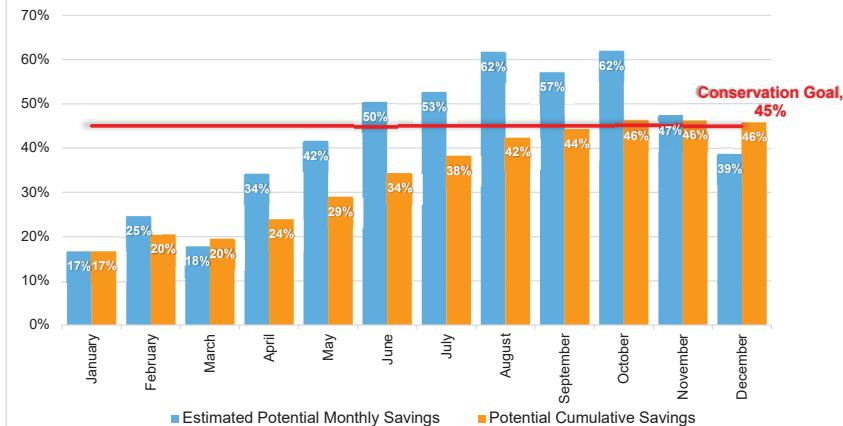
Estimated Monthly Water Use and Savings Summary

Estimated Monthly Water Use and Savings Summary						
Month	Baseline Year (2017-2019) Production (af)	Estimated Drought Year Production (af)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	993	828	17%	17%	45%	
February	913	688	25%	20%	45%	
March	1,028	845	18%	20%	45%	
April	1,256	827	34%	24%	45%	
May	1,693	988	42%	29%	45%	
June	1,936	959	50%	34%	45%	
July	2,142	1,014	53%	38%	45%	
August	2,098	802	62%	42%	45%	
September	1,825	782	57%	44%	45%	
October	1,669	634	62%	46%	45%	
November	1,249	658	47%	46%	45%	
December	948	581	39%	46%	45%	

Baseline Year(s) Production vs. Estimated Production



Estimated Potential Monthly Water Savings



4 - Drought Response Actions - Stage 6

City of Tracy

Maximum Savings Potential

i Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

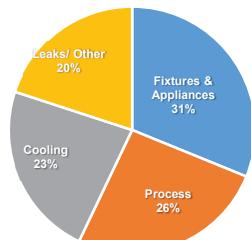
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	72%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector

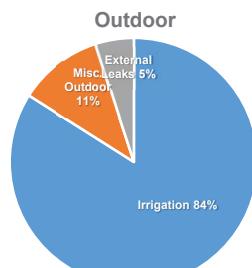
Residential Indoor



CII Indoor



Outdoor



4 - Drought Response Actions - Stage 6

City of Tracy

Drought Response Actions

i Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (-) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Possible Mandatory Prohibitions						
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	All Outdoor	<input checked="" type="checkbox"/>	14%	90%	--	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Irrigation	<input checked="" type="checkbox"/>			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%	See Appendix D of the DRP	--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	<input checked="" type="checkbox"/>	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	<input checked="" type="checkbox"/>	3%	50%		--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	<input checked="" type="checkbox"/>				--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	<input checked="" type="checkbox"/>			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	<input checked="" type="checkbox"/>	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	<input checked="" type="checkbox"/>	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 6

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Agency Actions						
Media Campaign, Newspaper Articles, Website	All	<input checked="" type="checkbox"/>	0.5%	80%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	<input checked="" type="checkbox"/>		50%	--	--
Water Efficiency Workshops, Public Events	All	<input checked="" type="checkbox"/>	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	<input checked="" type="checkbox"/>	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	<input type="checkbox"/>	100%		--	--
Home or Mobile Water Use Reports	All	<input type="checkbox"/>	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	<input checked="" type="checkbox"/>	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	<input checked="" type="checkbox"/>	45%	25%	DWR, 2015	Target 25% of leakage.
Implement Drought Rate Structure / Water Budgets	All	<input checked="" type="checkbox"/>	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	<input type="checkbox"/>	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	<input type="checkbox"/>			--	--
Moratorium on New Connections	All	<input checked="" type="checkbox"/>			--	--
Move to Monthly Metering / Billing	All	<input type="checkbox"/>	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	<input checked="" type="checkbox"/>			--	--
Establish Drought Hotline	All	<input checked="" type="checkbox"/>			--	--
Reduce Distribution System Pressures	Non Revenue Water	<input checked="" type="checkbox"/>	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	<input checked="" type="checkbox"/>	30%	50%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	12%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	79%	75%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input checked="" type="checkbox"/>	100%	100%		
Require Repair of all Leaks within 48 hours	External Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	<input type="checkbox"/>	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	<input type="checkbox"/>	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	<input type="checkbox"/>	75%	50%	--	--

4 - Drought Response Actions - Stage 6

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	<input checked="" type="checkbox"/>	10%	20%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	10%	40%	Historical savings in 2013 to 2015	--
Limit Irrigation to 1 Day/Week, Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	77%	75%		
Prohibit use of Potable Water for Irrigation	Irrigation	<input checked="" type="checkbox"/>	100%	90%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Require Pool Covers	Misc. Outdoor	<input checked="" type="checkbox"/>	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	<input checked="" type="checkbox"/>	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	<input type="checkbox"/>	10%	80%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	<input checked="" type="checkbox"/>	20%	80%	--	--
► CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	<input checked="" type="checkbox"/>	10%	20%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to Between 7PM and 9AM	Irrigation	<input type="checkbox"/>	5%	40%	Historical savings in 2013 to 2015	--
Prohibit use of Potable Water for Irrigation	Irrigation	<input checked="" type="checkbox"/>	100%	90%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	<input type="checkbox"/>		100%		
Prohibit Single-Pass Cooling Systems	Cooling	<input type="checkbox"/>	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 48 hours	Leaks	<input checked="" type="checkbox"/>	100%	8%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	<input type="checkbox"/>	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	<input type="checkbox"/>	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	<input type="checkbox"/>	10%	80%	--	--
Establish Water Budget - 25% Reduction	All CII uses	<input type="checkbox"/>	25%	80%	--	--
Establish Water Budget - 30% Reduction	All CII uses	<input checked="" type="checkbox"/>	30%	80%	--	--

4 - Drought Response Actions - Stage 6

City of Tracy

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Install a Water-Efficient Showerhead	Showers/Baths	<input type="checkbox"/>			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Fill the Bathtub Halfway	Showers/Baths	<input type="checkbox"/>			--	--
Wash Only Full Loads of Clothes	Clothes Washers	<input type="checkbox"/>			--	--
Install a High-Efficiency Toilet	Toilets	<input type="checkbox"/>			--	--
Take Shorter Showers	Showers/Baths	<input type="checkbox"/>			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	<input type="checkbox"/>			--	--
Reduce Outdoor Irrigation	Irrigation	<input type="checkbox"/>			--	--
Install Drip-Irrigation	Irrigation	<input type="checkbox"/>			--	--
Use Mulch	Irrigation	<input type="checkbox"/>			--	--
Plant Drought Resistant Trees and Plants	Irrigation	<input type="checkbox"/>			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	<input type="checkbox"/>			--	--
Flush Less Frequently	Toilets	<input type="checkbox"/>			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	<input type="checkbox"/>			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	<input type="checkbox"/>			--	--

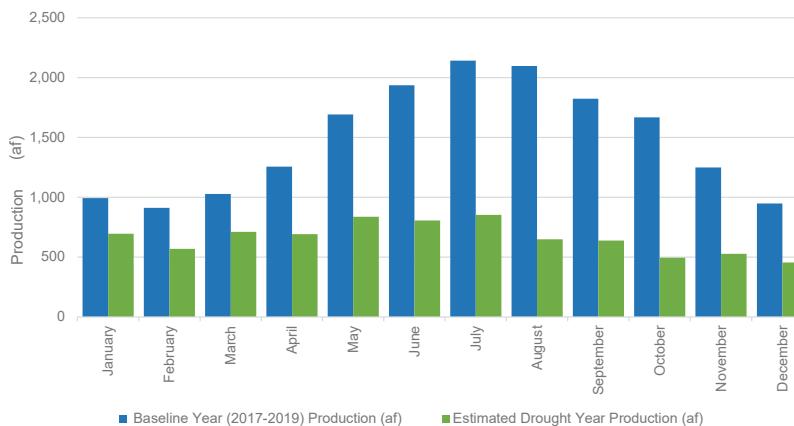
5 - Estimated Water Savings - Stage 6

City of Tracy

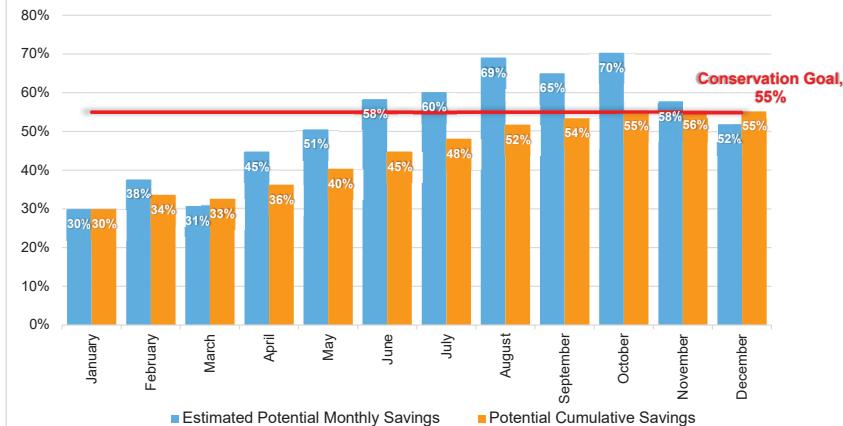
Estimated Monthly Water Use and Savings Summary

Estimated Monthly Water Use and Savings Summary						
Month	Baseline Year (2017-2019) Production (af)	Estimated Drought Year Production (af)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	993	696	30%	30%	55%	
February	913	569	38%	34%	55%	
March	1,028	712	31%	33%	55%	
April	1,256	693	45%	36%	55%	
May	1,693	838	51%	40%	55%	
June	1,936	807	58%	45%	55%	
July	2,142	853	60%	48%	55%	
August	2,098	649	69%	52%	55%	
September	1,825	638	65%	54%	55%	
October	1,669	495	70%	55%	55%	
November	1,249	528	58%	56%	55%	
December	948	456	52%	55%	55%	

Baseline Year(s) Production vs. Estimated Production



Estimated Potential Monthly Water Savings





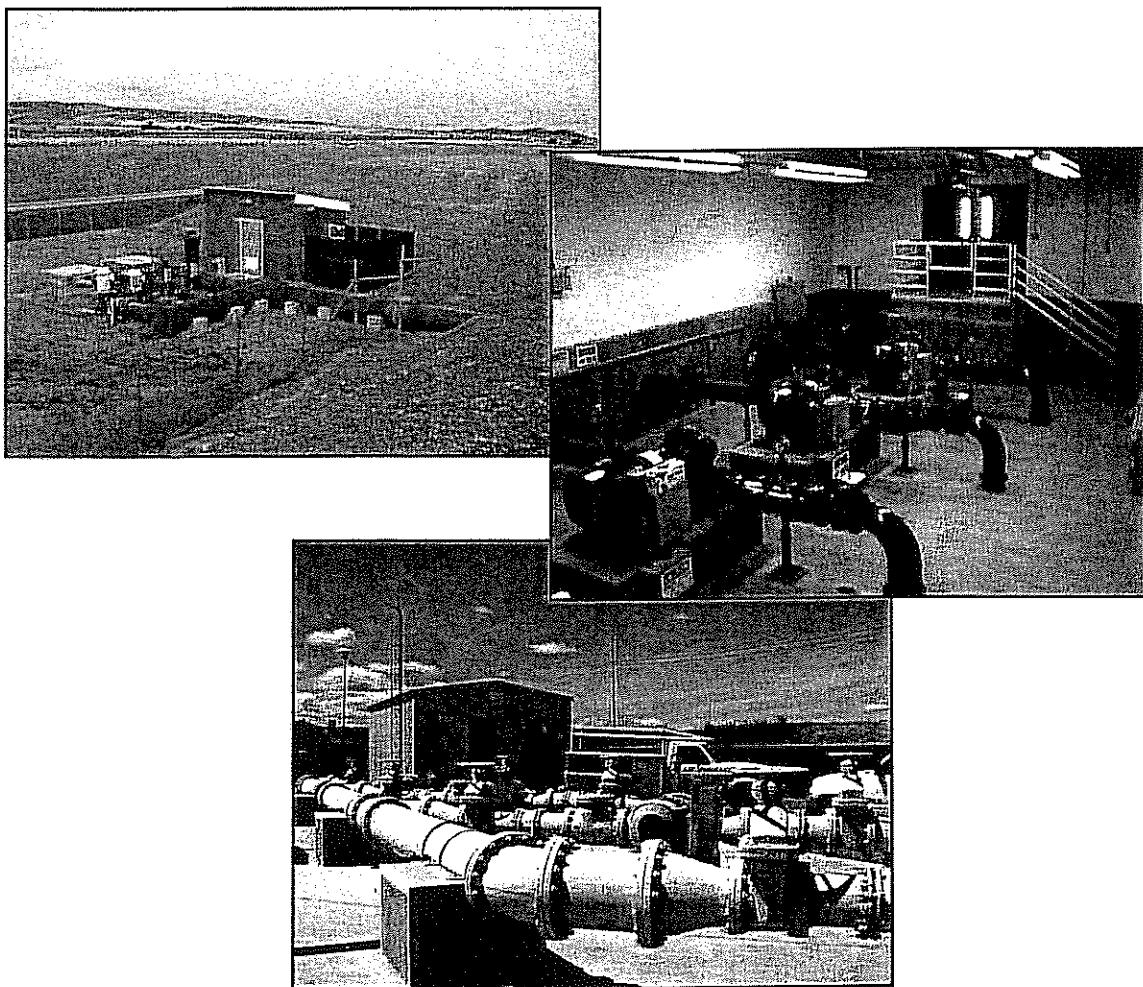
ATTACHMENT 2

WATER SYSTEM EMERGENCY RESPONSE PLAN (EXCERPTED)



City of Tracy

Water System Emergency Response Plan



**Prepared by
West Yost & Associates**

June 2004

Compliance with SEMS

The City's Emergency Plan and Emergency Management Organization is consistent with the Standardized Emergency Management System (SEMS). This Water System ERP is also consistent with SEMS. All local government agencies must use SEMS in multi-jurisdictional or multi-agency emergency responses to be eligible for state reimbursement of response-related costs.

SEMS defines a standard organization with accompanying roles and responsibilities to be used by public agencies in the field and in the Emergency Operations Center (EOC) whenever an emergency requires response from multiple agencies. SEMS utilizes the Incident Command System (ICS), which was originally developed by the fire service for managing emergency response to wildland fires.

The five organizational levels of SEMS are defined in Figure 1. Figure 2 shows the California OES regions. The City is located in OES Inland Region IV.

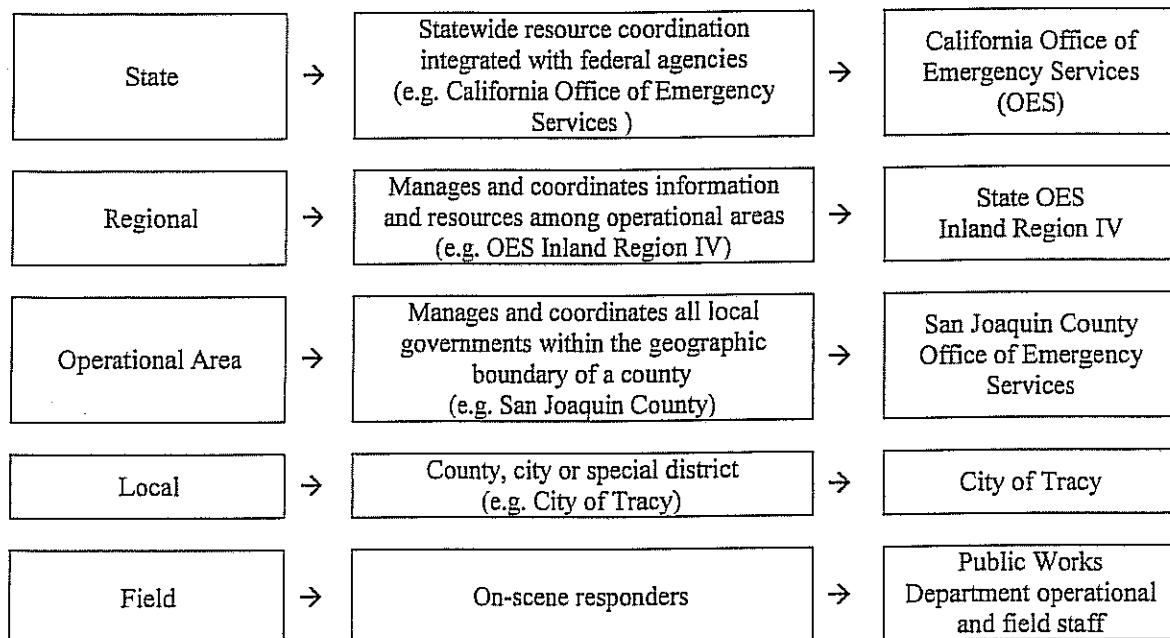


Figure 1. SEMS Organizational Levels

Emergency Categories

Four response categories have been defined for the Public Works Department to provide a common method of describing the type of event, area affected and extent of coordination or assistance needed. These response categories are described in Table 6.

Table 6. Public Works Department Emergency Response Categories

Emergency Response Category	Types of Emergencies	Examples of Possible Emergencies	Agencies Involved
Category 0: Readiness/ Routine Response	On-going response to daily emergency situations	<ul style="list-style-type: none"> ▪ Minor pipe breaks/leaks ▪ Water supply/quality alerts from DMC ▪ Equipment malfunction at City facility 	<ul style="list-style-type: none"> ▪ Public Works staff
Category 1: Local Emergency	Situation confined to one location within the City service area and not adversely affecting local services, populations or traffic. Public Works staff may require assistance from another local agency.	<ul style="list-style-type: none"> ▪ Single pipeline break ▪ Single pump station out of service ▪ Localized hazardous materials spills ▪ Localized power outage ▪ Water supply alert from the Bureau requiring the City to shut off supply from DMC for a short amount of time 	<ul style="list-style-type: none"> ▪ City Manager, Public Works Director and staff ▪ County hazardous materials response team ▪ PG&E
Category 2: Local Disaster	Situation affecting multiple local services, populations and geographic areas. Coordination is necessary between several local agencies.	<ul style="list-style-type: none"> ▪ Major transmission pipeline break or failure of a storage reservoir ▪ Landslide ▪ Localized fire ▪ Localized flooding ▪ Large hazardous material spill ▪ Widespread power outage ▪ Water supply alert from the Bureau requiring the City to shut off supply from DMC for an extended amount of time 	<ul style="list-style-type: none"> ▪ City Manager, Public Works Director and staff ▪ Local fire department ▪ Local police ▪ Highway patrol ▪ County OES ▪ PG&E
Category 3: Major Disaster	Regional disaster involving widespread damage to structures and disruption of services	<ul style="list-style-type: none"> ▪ Major earthquake with widespread damage to water system ▪ Multiple pipeline breaks ▪ Long-term loss of water supply from DMC 	<ul style="list-style-type: none"> ▪ City Manager, Public Works Director and staff ▪ Local, County and State agencies

PLAN ACTIVATION**Definition**

This plan will be activated to the extent required by the nature and scope of the emergency. This activation process, including plan triggers, staff responsibilities, mutual aid or assistance availability and damage assessment, is covered in this section.

Triggers/Criteria

As described earlier (Table 6), four emergency categories have been defined for the City's Public Works Department. Responses must be coordinated in accordance with these categories. A summary of response categories, potential triggers and potential response actions are listed in Table 9. During an emergency, changing conditions (including water demand, storage and supply) must be closely monitored in order to assess the impact of the emergency on water system operations and customers and the need for additional response actions.

Table 9. Response Categories, Triggers and Potential Response Actions

Emergency Response Category	Potential Response Triggers	Potential Response Actions
Category 0: Readiness/ Routine Response	<ul style="list-style-type: none"> ▪ Minor pipe breaks/leaks ▪ Equipment malfunction at a water facility ▪ Water supply/quality alerts from DMC 	<ul style="list-style-type: none"> ▪ Assess outage duration and determine if additional supplies or reduced demand is necessary. ▪ Assess and repair problem ▪ If possible, fill and maintain storage reservoirs at full in case water supply issue is escalated ▪ Coordinate with SLDMWA to stay informed on water supply status ▪ Remain alert and ready for potential escalation of water supply problem
Category 1: Local Emergency	<ul style="list-style-type: none"> ▪ Single pipeline break/pipeline split ▪ Single pump station out of service ▪ Localized hazardous materials spills ▪ Localized or short-term power outage ▪ Water supply/quality alert from SLDMWA requiring City to shut off supply from DMC for a short amount of time ▪ Potential impact to private property 	<ul style="list-style-type: none"> ▪ Assess outage duration and determine if additional supplies or reduced demand is necessary. ▪ Assess and repair problem ▪ Notify impacted homeowners as necessary ▪ Closely monitor water demands and storage levels ▪ Relocate/utilize emergency generators as needed ▪ Contact County hazardous materials response team as needed ▪ Contact PG&E as needed ▪ Coordinate with SLDMWA to stay informed on water supply status from DMC

CITY OF TRACY**WATER SYSTEM
EMERGENCY RESPONSE PLAN**

Emergency Response Category	Potential Response Triggers	Potential Response Actions
Category 2: Local Disaster	<ul style="list-style-type: none"> ▪ Major transmission pipeline break or failure of a storage reservoir ▪ Landslide ▪ Localized fire ▪ Localized flooding ▪ Large hazardous material spill ▪ Widespread or long-term power outage ▪ Water supply/quality alert from SLDMWA requiring City to shut off supply from DMC for an extended amount of time 	<ul style="list-style-type: none"> ▪ Assess outage duration and determine if additional supplies or reduced demand is necessary. ▪ Assess damage and develop and implement a prioritized plan for repairs ▪ Closely monitor storage levels in reservoirs still operational ▪ Relocate/utilize emergency generators as needed ▪ Notify customers of supply outage/interruption, as necessary ▪ Coordinate with local fire and law enforcement, as necessary ▪ Coordinate with County OES ▪ Coordinate with SLDMWA to stay informed on water supply status from DMC
Category 3: Major Disaster	<ul style="list-style-type: none"> ▪ Major earthquake with widespread damage to water system ▪ Multiple pipeline breaks ▪ Major fire ▪ Long-term loss of water supply from DMC 	<ul style="list-style-type: none"> ▪ Activate EOC ▪ Assess outage duration and determine if additional supplies or reduced demand is necessary. ▪ Notify customers of supply outage ▪ Stop delivery of potable water to customers (or issue Boil Water Order or Unsafe Water Alert), as necessary ▪ Notify County OES ▪ Notify DHS ▪ Assess damage to City water facilities and establish priorities for repairs ▪ Coordinate with SLDMWA to stay informed on water supply/quality status from DMC ▪ Closely monitor storage levels in any reservoirs still operational ▪ Track all emergency expenditures for possible reimbursement

Staff Recall

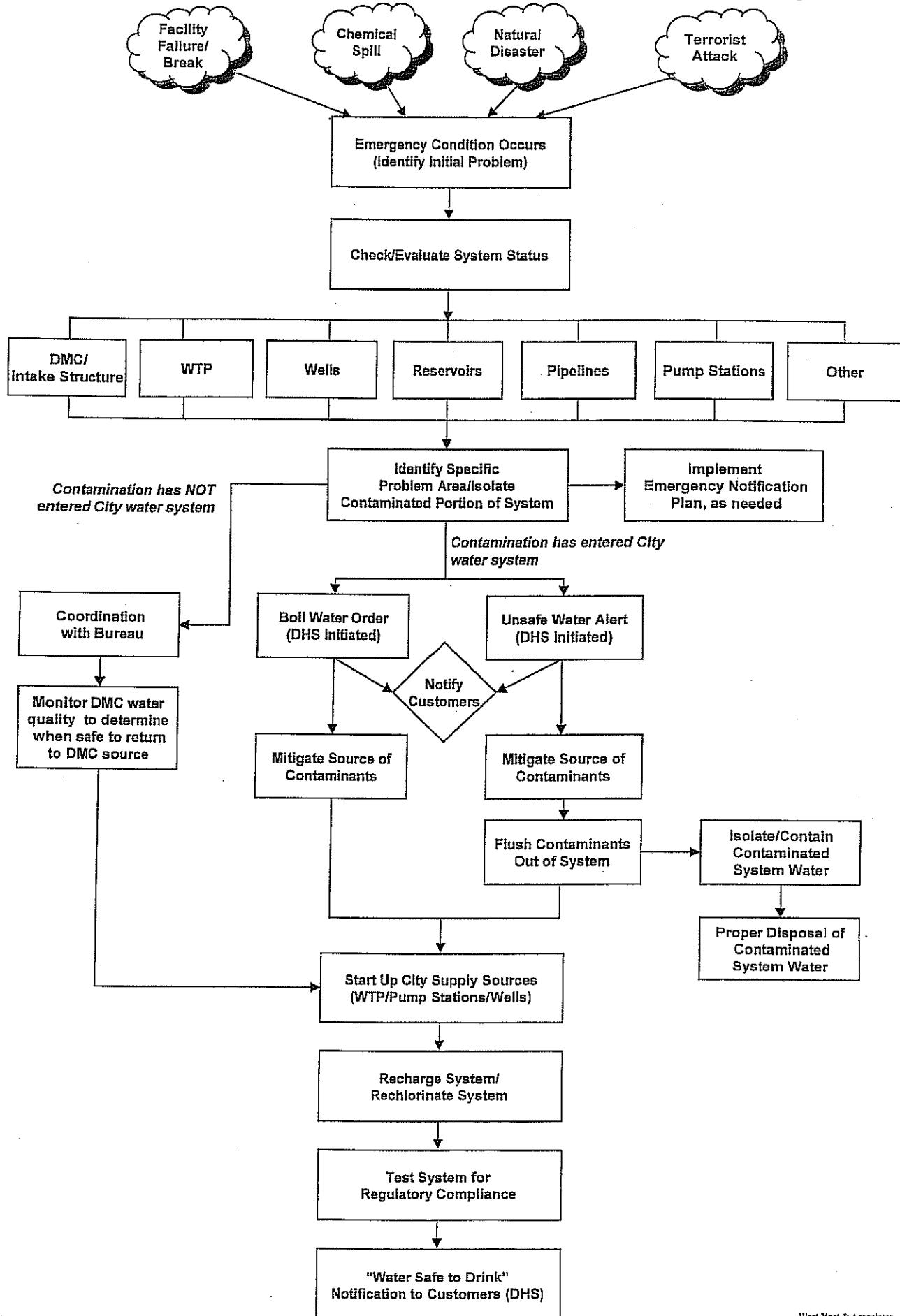
City Public Works staff resources are limited and most Public Works employees work normal business hours, Monday through Friday. Only the John Jones Water Treatment Plant and the Wastewater Treatment Plant have personnel on-site 24 hours per day, seven days a week. During normal business hours, Public Works staff maintains communications via cell phones, pagers and vehicle radios. If an incident occurs in the field or at one of City's water system facilities during normal business hours, the first person at the emergency scene automatically becomes the Incident Commander until other Public Works personnel or appropriate authorities replace him/her. During off-hours, field personnel are on-call and are reachable via pager or cell phone in the case of an emergency.

Table 10. Deactivation Triggers and Potential Deactivation Actions

Emergency Response Category	Potential Deactivation Triggers	Potential Deactivation Actions
Category 3: Major Disaster	<ul style="list-style-type: none"> ▪ DMC supply has been partially restored ▪ Major pipeline breaks have been repaired ▪ Primary wells, pump stations and reservoir are operational 	<ul style="list-style-type: none"> ▪ Deactivate EOC ▪ Notify customers ▪ Notify County OES ▪ Notify DHS ▪ Start disinfection of transmission mains and purge system of all non-potable water ▪ Start to operate water system in a normal operating mode
Category 2: Local Disaster	<ul style="list-style-type: none"> ▪ Demands can now be met utilizing normal flows from DMC ▪ Suppressed local fire or hazardous materials release ▪ Pipelines/storage tanks have been repaired ▪ Power has been restored ▪ SLDMWA advises that DMC supply has been restored 	<ul style="list-style-type: none"> ▪ Stop use of emergency generators ▪ Notify customers/agencies that operations are returning to normal
Category 1: Local Emergency	<ul style="list-style-type: none"> ▪ Repair work has been completed by Public Works personnel ▪ SLDMWA advises that DMC is operating normally 	<ul style="list-style-type: none"> ▪ Perform testing to ensure that systems are operating normally ▪ Inform all involved that operations are back to normal
Category 0: Readiness/ Routine Response	<ul style="list-style-type: none"> ▪ Repair work or testing has been completed by Public Works personnel ▪ SLDMWA advises that water supply alert is over 	<ul style="list-style-type: none"> ▪ Advise all that operations are back to normal

City of Tracy

Plan for Restoration of Water Service After an Emergency





ATTACHMENT 3

WATER SHORTAGE CONTINGENCY PLAN RESOLUTIONS

RESOLUTION 2021-082

APPROVING THE 2020 URBAN WATER MANAGEMENT PLAN INCLUDING THE
WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, California Water Code sections 10610 -10657, the Urban Water Management Planning Act (ACT) requires urban water suppliers, such as the City of Tracy, once every five years to prepare an updated management plan of its current and future water resources in order to assure a continued adequate and reliable water supply to its customers, and

WHEREAS, The City's 2015 Urban Water Management Plan was approved and submitted to the State in 2016, and

WHEREAS, The City of Tracy in conjunction with its consultant, EKI Environmental, have been working together to compile and analyze pertinent data in order to update to the 2015 Urban Water Management Plan (UWMP) and its Water Shortage Contingency Plan (WSCP) as required by the State Department of Water Resources (DWR), and

WHEREAS, The 2020 UWMP addresses all requirements of the State DWR including the Reduced Delta Reliance approach, and

WHEREAS, The update to the WSCP will require an amendment to the Tracy Municipal Code 11.28 Water Management under Article 6. Water Conservation and Rationing Plan, Water Emergency Plan, Variances and Appeals, scheduled for approval by City Council at a later date, and

WHEREAS, This item has fiscal impacts to revenues and expenditures in both the Water Enterprise fund and Tracy Infrastructure Master Plan (TIMP) fees, and

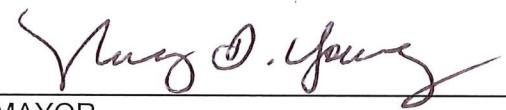
WHEREAS, This item was considered by City Council on its June 1, 2021 meeting and after opening the public hearing, City Council continued this item to June 15, 2021, and

WHEREAS, The City's Water System Master Plan, presently being updated will provide more information including the cost estimates, TIMP fees and implementation plan for additional water sources and infrastructure improvements;

NOW, THEREFORE, BE IT RESOLVED, That the City Council of the City of Tracy hereby approves the 2020 Urban Water Management Plan including the Water Shortage Contingency Plan.

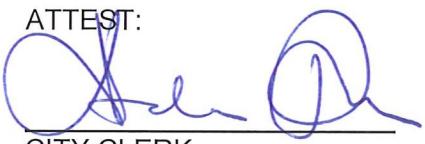
The foregoing Resolution 2021-082 was adopted by Tracy City Council on the 15th day of June, 2021, by the following vote:

AYES: COUNCIL MEMBERS: BEDOLLA, DAVIS, VARGAS, YOUNG
NOES: COUNCIL MEMBERS: NONE
ABSENT: COUNCIL MEMBERS: ARRIOLA
ABSTAIN: COUNCIL MEMBERS: NONE



MAYOR

ATTEST:



CITY CLERK

Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX I

CITY OF TRACY RESPONSES TO WRITTEN PUBLIC COMMENTS

Kuldeep Sharma

From: Elizabeth Drayer <edrayer@westyost.com>
Sent: Tuesday, April 20, 2021 11:29 AM
To: PPIG LLC; Andrew Malik; Gina Peace; Jenny Haruyama
Cc: 'Martin, Tom'; 'Jeff Major'; 'John Palmer'; Kuldeep Sharma; Robert Armijo; Paul Verma
Subject: RE: Recycled water

Hi all

Please see below for West Yost's response to comments. As detailed below, we stand by the water demand projections that are included in the Draft Water Master Plan and feel that they are an appropriate estimate of future water demands based on the City's proposed future development.

Relationship of the demand factors in Table 4-15 and the demand calculations in Appendix A:

Jim Miller stated that the demand factors in Table 4-15 of the Water Master Plan were incorrectly applied to the projected development data. The footnotes included in Table 4-15 describe the assumptions used for the application of the demand factors. Per those stated assumptions, the calculations in Appendix A (Tables A-2, A-3, and A-4) are not simply equal to the product of the acreage and the demand factors from Table 4-15. There are a couple of reasons for this:

1. Irrigation demands for most land use types are calculated using separate irrigation factors as footnoted in Table 4-15. These irrigation factors are determined by the land use type (residential vs. non-residential) as well as by the type of water assumed to be used for irrigation (potable vs. recycled). These irrigation factors are included in Table 4-15. Appendix A Tables A-2, A-3, and A-4 show in separate columns the acreage the "regular" demand factor is applied to and the acreage the irrigation demand factors are applied to.
2. Unaccounted-for Water (UAFW) factors must be applied to the demands calculated from the water demand factors in Table 4-15 to fully capture the amount of water required from City supplies to meet the expected demands. As footnoted in Appendix A Tables A-2, A-3, and A-4, these factors are applied to the demands shown in these tables.

Application of Water Use Factors to Gross Acres vs. Net Acres:

Jim Miller stated that the water demand factors were incorrectly applied to gross acres. As described in Section 4.8.2.1 of the Water Master Plan, the water demand factors were developed on a gross acreage basis and, therefore, they must be applied to gross acres to accurately estimate demands. Net acreage was converted to gross acreage using a factor of 1.22 (82% of City is net acreage) before calculating use factors. See Section 4.8.2.1 of the Water Master Plan for additional discussion.

Differences in projections between the Water Master Plan and the Wastewater Master Plan:

Jim Miller stated that there is an apparent discrepancy in the growth in water demands in the Water Master Plan as compared to the growth in wastewater flows in the Wastewater Master Plan, and that this is additional evidence that the water demands in the Water Master Plan are over-stated. In early 2020 West Yost reviewed the wastewater flow projections prepared by Carollo for the Draft Wastewater Master Plan and noted that there was an apparent discrepancy in the projected growth in wastewater flows as compared to the projected growth in water demands. From our review of the Draft Wastewater Master Plan, it appeared that Carollo had only considered the future growth designated on the City's TAZ spreadsheet. We discussed that for the Water Master Plan we had also included data for other on-going approved projects that we had conducted hydraulic analyses for and that these projects were in addition to the future development areas designated in the City's TAZ spreadsheet. These approved projects are discussed in Section 3.3.2 and Table 3-1 of the Water Master Plan. In general, these additional projects did not make a big difference, with two exceptions:

1. Westside Ranch Specific Plan added 1,263 units beyond what was in the City's TAZ spreadsheet.

2. Non-Master Plan Areas (aka infill) added 3,131 units and significant acreage beyond the City's TAZ spreadsheet. This included future projections from NEI, Industrial Areas SP, and I-205 SP.

Again, West Yost believes that the water demand projections contained in the Draft Water Master Plan are appropriate. We would be happy to discuss these assumptions further if you have additional questions or need additional clarification.

Elizabeth Drayer

Vice President

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Responses From West Yost Associates to the six main issues raised by Jim Miller in his April 29, 2021 Technical Memorandum are as follows:

- **Water Transfers and Unaccounted For Water (UAFW):** Any water transfers that may have occurred in past years are NOT included in the calculation of unaccounted for water. Unaccounted for water is simply a comparison of total annual water production (treated surface water purchased from SSJID, surface water treated at JJWTP, and groundwater pumped by the City for potable use) to annual metered water consumption (from customer billing records). Any water that may have been transferred is not included in the City's water production numbers, and therefore does not impact the calculation of unaccounted for water.
- **Irrigation Recycled Water Use:** Per the State's Model Water Efficient Landscape Ordinance and the City's Municipal Code, some landscape areas can be considered as Special Landscape Areas and can have a high water use factor. We used the higher factor for areas assumed to be parks irrigated with recycled water. This is shown in Table 4-14 in Section 4.8.2.3 of the Draft Water Master Plan.
- **Gross vs. Net:** As described in Section 4.8.2.1, we evaluated unit water use factors based on water meter data and land uses from the City's GIS parcel database. The methodology regarding gross vs. net acres is described in detail in Section 4.8.2.1 of the Draft Water Master Plan.
- **Industrial Use:** The Water Master Plan update was started in 2018. 2017 was selected to be the base year as that was the data that was available at that time. The development of the unit water use factor for industrial is described in Section 4.8.2.3 of the Draft Water Master Plan and has been recommended to accommodate the wide range of possible Industrial water uses for planning purposes.
- **Growth Rate:** Future land use projections for the Draft Water Master Plan are based on information provided by City Planning. The last update of that planning data was received from City Planning on April 30, 2020.
- **Facilities:** Based on the future land use projections and our analysis of water uses, we do not believe the projected water demands are exaggerated. Furthermore, we are not recommending expansion of the water treatment plant in the Draft Water Master Plan. (see Section 8.4.1 of the Draft Water Master Plan).

Kuldeep Sharma

From: Elizabeth Drayer <edrayer@westyost.com>
Sent: Friday, May 14, 2021 12:56 PM
To: Kuldeep Sharma; Andrew Malik; Robert Armijo; Paul Verma; Stephanie Reyna-Hiestand; Lea Emmons
Subject: FW: Information from last weeks call
Attachments: 2021 Draft City Water Master Plan review WJM 4 29 2021.pdf

Hi all

Happy Friday! I wanted to provide my responses to Jim Miller's latest comments on the Draft Water Master Plan methodology and findings.

Please note that I am sending this email to City staff only at this time. If you would like me to forward these responses to Jim Miller and others, please let me know.

My responses to the six main issues that he raises in his April 29, 2021 Technical Memorandum are as follows:

- **Water Transfers and Unaccounted For Water (UAFW):** Any water transfers that may have occurred in past years are NOT included in the calculation of unaccounted for water. Unaccounted for water is simply a comparison of total annual water production (treated surface water purchased from SSJID, surface water treated at JJWTP, and groundwater pumped by the City for potable use) to annual metered water consumption (from customer billing records). Any water that may have been transferred is not included in the City's water production numbers, and therefore does not impact the calculation of unaccounted for water.
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Elizabeth Drayer

Vice President

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WEST YOST

direct 925.461.6793

Currently working from home. Please use mobile: 650.740.3762

From: jimmiller1709@comcast.net

Sent: Wednesday, May 5, 2021 2:35 PM

27 May 2021

Comments are shown below in regular font, with City responses shown in ***bold italic*** font.

Table 3-1 Population – Current and Projected (DWR Table 3-1) -The year 2045 uses buildout numbers from the draft water master plan. The population shown of 166,700 is not possible under the low growth measure (Measure A). The most the population can increase in any 5-year period is limited to about 10,000 people (600 units a year at 3.3 persons per unit) if growth occurs at the maximum allowable rate every year. The population for 2045 should be limited to approximately 151,800. Buildout won't occur until at least the 2060 timeframe.

- ***EKI prepared Table 3-1 based on the Draft Water System Master Plan (WSMP), specifically Table 4-18, and so the table reflects the assumptions developed for that document. The UWMP did assume buildout of planned development would occur in 2045; this assumption can be modified in the future.***

Table 4-1 Demands for Potable and Non-potable Water – Actual (DWR Table 4-1) – For these projections, how are the water transfers to other agencies and banking deposits into SemiTropic categorized? They appear to be in the *Losses* and *Other* categories. How are inputs into the ASR program accounted for? Transfers and water bank deposits are not City uses. These waters are claimed by others in their state and federal reporting and need to be subtracted from Tracy's demands and subsequent projected demands.

- ***EKI prepared Table 4-1 based on the raw data provided by the City of Tracy. Water transfers or banking deposits were not included in the raw data.***

Table 4-2 Current and Historical Potable Water Demand and Population - City data filed online with the state and the data collected from Westlands, Del Puerto, Bureau of Reclamation, SemiTropic Water Bank show the City transferred water in every year between 2010 and 2020 except 2011 and 2015. In addition, there may have been inputs into the Aquifer Storage and Recovery Program, as those numbers were excluded from the report at the direction of the City staff. These transfers and deposits into storage banks average almost 2500 acft per year for the 11-year period. Including these transfers as use within Tracy is misleading. Take these uses out, Tracy's demands drop and so does the use per capita.

- ***EKI prepared Table 4-2 based on the raw data provided by the City of Tracy. Water transfers or banking deposits were not included in the raw data.***

Table 4-3 12-Month Water Loss Audit Reporting (DWR Table 4-4) – It appears transfers were included in the five years shown. In 2016, Westlands received 1600 acft from Tracy. In 2017, Tracy transferred approximately 1260 acft to SemiTropic. In 2018, Westlands received another 2,000 acft and 1,975 acft of the AG water contracted from BCID and WSID was transferred by the Bureau. In 2019, the Bureau showed another transfer of AG water of 2,897 acft. In 2020, water may have been put into the ASR well

number 8 or transferred to someone, 2600-3600 acft. These transfers were not included in the current water master plan nor this report.

- ***Water transfers or banking deposits were not included in the raw data provided by the City of Tracy.***

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

- The table says it includes non-potable demands, but this appears to be potable demands only. Landscaping line item seems to hold uses steady. This does not make sense. Why doesn't the irrigation demand increase over time, as new park facilities and landscaping occur with growth? Also, why does the landscaping water use not drop as the potable water use currently serving the sites is replaced with recycled water?
 - ***The table heading is from the standard DWR template, and is intended to include non-potable uses other than recycled water, which is covered in other tables.***
 - ***Potable irrigation demands were based on Draft WSMP. The potable irrigation demand does not increase with time due to recycled water being used for much of the new parks and landscaping that occur with growth.***
- Lastly, the recycled water irrigation demands used in the water master plan errantly used demand factors from the 2012 water master plan and does not appear to have updated the demand numbers to reflect the California Landscaping Act requirements. Recycled water demands may be overestimated by as much as 100%.
 - ***Recycled water irrigation demand factors are based on the State's Model Water Efficient Landscape Ordinance and the City's Water Efficient Landscape Ordinance which state that areas irrigated with recycled water are classified as Special Landscape Areas. Actual recycled water use for irrigation will be site-specific and will depend on the amount and type of landscaping; however, site-specific landscape plans were not available for consideration in the WSMP.***
- The *Loss* line item includes UAFW from the master plan at 9.6%. The 9.6% was calculated assuming transferred water was used in the City in 2016 and 2017. The actual loss for the City appears to be near 5%. Assuming losses at nearly 10% makes the losses one of the largest water uses within the City--3200 acft in a year is 2 to 3 fire hydrants left open to run full flow for an entire year. This is an enormous amount of water.
 - ***Again, the transferred water is not in the demands.***
- Other – Passive Savings – this is the savings from existing customers for indoor use. The number is significant at over 1,100 acft at buildout. This should have been identified in the draft water master plan. The *projected passive conservation* is calculated by applying a percentage to the *projected water demand*. The projected water demands include the historically transferred

water (1800-2500 acft per year average), which should be removed from the projections. Reducing the demand projections also reduces the *projected passive conservation*.

- **Because the transferred water is not included in the historical demand table, the statement that they “should be removed from the projections” is incorrect.**

Table 4-8 Gross Water Use (DWR Table 4-3) – This table shows a significant increase in per capita total water use by buildout. The recycled water demands are exaggerated as discussed above, but they also appear to double count some potable demands. The City has a 30-plus year trend in reducing water use per person. Therefore, it does not make sense that future uses would go up so dramatically given the historical data.

- **There is no “significant increase in per capita water use”. As the later Table 4-9 and associated charts show, residential per capita water use is very flat over time, increasing only from 100 gallons per capita day in 2025 to 104 gallons per capita day in 2045. Table 4-8 is based purely on other tables (Tables 4-1, 4-2, and Table 6-4) which the commenter has commented on elsewhere.**

Table 4-9 Current and Projected Residential Per Capita Water Use – How was the *Residential Potable Water Demand* calculated? It appears to be some type of percentage. Tracy has a low growth measure that limits the number of units to 600 per year. The percentage used to calculate this growth does not appear to recognize the cap of 600 units per year and thus overestimates the growth in demand.

- **Values in Table 4-9 are derived from the values in Tables 4-1 and 4-2, and are not based on a “percentage”. The commenter previously commented on Tables 4-1 and 4-2.**

Table 5-2 Baselines and Targets Summary (DWR Table 5-1) – *Average Baseline GPCD*, how do these numbers change when transfers and banking are removed? More than 3,000 acft was transferred in 2004; 1600 acft in 2005; and in 2007, 5175 acft was transferred.

- **Again, water transfers or banking deposits were not included in the raw data provided by the City of Tracy.**

Table 6-1 Groundwater Volume Pumped (DWR Table 6-1) – Footnote B says the 2020 numbers do not include the ASR well. Is this where the 3600 acft of losses in 2020 comes from (see Table 4-1)?

- **The losses are not related to the ASR well. As shown in Table 4-1, groundwater recharge into the ASR well is approximately 190 acre-feet.**

Table 6-4 Recycled Water Direct Beneficial Uses within Service Area (DWR Table 6-4) – The recycled water demands shown in this table are exaggerated.

- The landscaping Irrigation (excluding golf courses) year 2045 number shows almost 2500 acft of water use for landscape irrigation, however, the parks listed: Legacy Fields Sports Complex, Tracy Sports Complex, Plasencia Fields in the master plan have a demand of less than 1000 ac ft per year, where is the other 1500 acft of this demand coming from, given that commercial and industrial uses are listed separately? This implies hundreds of acres of additional park land will be irrigated, but the land use tables in the master plan does show enough additional parkland.

- *In addition to the large park areas listed, the projected recycled water demand includes irrigation demand for common landscaped areas and roadway medians for several land use categories (including Residential – Medium Density, Residential – High Density, Residential – Very High Density, Commercial, Office, Industrial, and Institutional) as well as irrigation demand for neighborhood and community parks for residential land use categories (Residential – Very Low Density, Residential – Low Density, and Residential – Medium Density land uses)*
- Commercial Use – Year 2045 numbers show 3,654 acft of recycled water demand for Cordes Ranch Development. Cordes Ranch at buildout is on pace for only 200 acft per year in irrigation demands. Where does the additional 3400 ac ft of demand occur?
 - *See response to previous comments regarding assumptions for recycled water use*
- Industrial Use – Tracy Power Plant Alta Gas has a need of only approximately 55 acft of recycled water per year and is building a 4" line per the letter they sent supporting the grant work for the recycled water system. The number shown at 197 acft, is 4 times as much as what they said they will need.
 - *See response to previous comments regarding assumptions for recycled water use*

Table 6-5 2015 UWMP Recycled Water Use Projections Compared to 2020 Actual (DWR Table 6-5) – 2015 UWMP assumed almost 1000 acft of recycled water use in the City by 2020. There was 0 acft of recycled water used in the City in 2020. The projections going forward are exaggerated and have been for quite some time. See other comments above.

- *This comment is related to the previous comments about recycled water. The 2015 projection was based on the best information available at that time. However, because the recycled water distribution facilities were not completed by 2020, there could be no recycled water served in 2020.*

Table 6-7 Expected Future Water Supply Projects or Programs (DWR Table 6-7) – Table says the Recycled Water System Expansion is needed by 2025. The demands without transfers and with corrected recycled water use info do not reflect this need.

- *See previous responses above regarding transfers.*

Additionally, how will recycled water system expansion be funded in the next 3.5 years?

- *This comment is outside the scope of the UWMP.*

Lastly, footnote C says, “the Recycled Water Distribution Network and Exchange program will be dependent upon approved development beyond the 2025 horizon.” This indicates the exchange program will be water supply for future annexations, so why then is it needed by 2025?

- *As stated in the table, the planned implementation year for the exchange program is 2030 (not 2025). We note that the Draft Water System Master Plan will be updated to be consistent with the UWMP.*

Table 6-8 Water Supplies – Actual (DWR Table 6-8) – The CVP line item for purchased or imported water includes transfers to Westlands, SemiTropic and of AG water from BCID and WSID. These transfers need to be removed from the table because it implies, they met demands within Tracy, but they did not, they met demands somewhere else, and that water is being claimed by others in their state and federal reporting. Additionally, footnote B says the ASR info was excluded from the 2020 number.

- *See previous responses regarding water transfers and ASR.*

Lastly, the footnotes to the table are not called out in the table, so where do the footnotes apply?

- *The footnotes apply to the entire table.*

Table 6-9 Water Supplies – Projected (DWR Table 6-9) – The projected water supplies shown for year 2025 are odd. The CVP water is assumed to be reduced to 4,449 acft per year, while the CVP supplies from BCID and WSID do not seem to show the same reduced reliability—they still show 5,000 acft available. Why does the M&I contract get cut back so much compared to the AG water?

- *The 5,000 AF for BCID and WSID represents a 50% cutback from the 10,000 acre-feet total contract for BCID and WSID combined, as outlined in Section 6.1.1. This is actually a larger cutback than the M&I water. We also note that M&I water is based on historical use, while the agricultural water is based on the contract.*

The water from SSJID assumes the City completed the acquisition of 2000 acft of additional supplies from SSJID, then reduces this number going forward. Shouldn't it be the other way around—reduced now (11,120 acft) and expanded (13,135 acft) going forward?

- *The 2,015 AF is from the City's temporary agreement with the City of Escalon. This agreement is expected to sunset in 2025, which is the reason why the 13,135 acre-feet number decreases to 11,120 in 2025. This is explained in Section 6.1.2.*

Table 7-3 Projected Water Supply in Single Dry Years (Responds to DWR Table 7-1) – The water supply column does not show the SemiTropic water bank as a supply—why not?

- *As stated in Section 7.1.1.5 of the UWMP, "Another constraint on the Semitropic water is that it needs to be requested a year in advance, which means that this supply will typically not be available during the first year of drought."*

Also, the groundwater study says, for a single dry year, as much as 23,000 acft of groundwater can be used with a sustained yield of 9,000 acft per year. Why are the groundwater supplies limited to 4,500 acft?

- *As described in Section 7.1.1.3 of the UWMP, due to infrastructure reliability, water quality issues, and salinity issues in the wastewater effluent, groundwater supplies are limited to significantly below the sustained yield amount. As noted in Sections 7.1.2.1 and 7.1.2.2, the groundwater supplies are limited to 2,500 acre-feet in normal years and 4,500 acre-feet in dry years.*

Table 7-4 Projected SCWSP Water Supply in Multiple Dry Years (Responds to DWR Table 7-1) – Why does full allocation of SSJID water occur in the 5th year of an extended drought and not occur in 3rd or 4th years?

- *This has to do with the fact that SSJID's reliability estimates for five consecutive dry years are based on the base years of 2012 through 2016. During 2016 (the fifth year), SSJID was able to provide the full allocation, whereas during 2014 and 2015 (the third and fourth years), SSJID was only able to provide 75% of the full allocation. An explanation can be added to the UWMP, either in the text or in a footnote.*

Table 7-5 Projected Other Water Supplies in Multiple Dry Years (Responds to DWR Table 7-1) – Why is groundwater use limited to 4,500 acft – when safe yield is 9,000?

- *See response to second comment on Table 7-3.*

Tables 7-6 through 7-8 need to be reprinted after addressing the comments from above.

Table 7-9 Characteristic Five-year Use – This needs to be adjusted by removing the water transfers and water bank deposits assumed in the base numbers from 2017.

- *This comment is addressed by previous comment responses.*

Table 7-10 Five -Year Drought Risk Assessment Tables to Address Water Code 10635(b) (DWR Table 7-5) – These tables need to be redone after transfers are accounted for and recycled water demands are reduced to reasonable projections.

- *This comment is addressed by previous comment responses.*

Chapter 8 needs to be rewritten after demands are reduced, transfers are removed, and groundwater use limitations are increased.

- *This comment is addressed by previous comment responses.*

Appendices

2020 Urban Water Management Plan

City of Tracy



APPENDIX J

RESOLUTION 2021-082 ON UWMP AND WSCP 2020 UPDATE

RESOLUTION 2021-082

APPROVING THE 2020 URBAN WATER MANAGEMENT PLAN INCLUDING THE
WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, California Water Code sections 10610 -10657, the Urban Water Management Planning Act (ACT) requires urban water suppliers, such as the City of Tracy, once every five years to prepare an updated management plan of its current and future water resources in order to assure a continued adequate and reliable water supply to its customers, and

WHEREAS, The City's 2015 Urban Water Management Plan was approved and submitted to the State in 2016, and

WHEREAS, The City of Tracy in conjunction with its consultant, EKI Environmental, have been working together to compile and analyze pertinent data in order to update to the 2015 Urban Water Management Plan (UWMP) and its Water Shortage Contingency Plan (WSCP) as required by the State Department of Water Resources (DWR), and

WHEREAS, The 2020 UWMP addresses all requirements of the State DWR including the Reduced Delta Reliance approach, and

WHEREAS, The update to the WSCP will require an amendment to the Tracy Municipal Code 11.28 Water Management under Article 6. Water Conservation and Rationing Plan, Water Emergency Plan, Variances and Appeals, scheduled for approval by City Council at a later date, and

WHEREAS, This item has fiscal impacts to revenues and expenditures in both the Water Enterprise fund and Tracy Infrastructure Master Plan (TIMP) fees, and

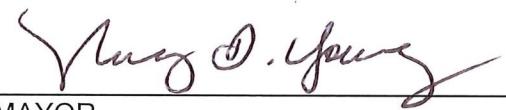
WHEREAS, This item was considered by City Council on its June 1, 2021 meeting and after opening the public hearing, City Council continued this item to June 15, 2021, and

WHEREAS, The City's Water System Master Plan, presently being updated will provide more information including the cost estimates, TIMP fees and implementation plan for additional water sources and infrastructure improvements;

NOW, THEREFORE, BE IT RESOLVED, That the City Council of the City of Tracy hereby approves the 2020 Urban Water Management Plan including the Water Shortage Contingency Plan.

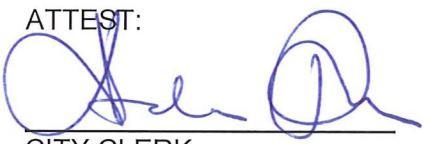
The foregoing Resolution 2021-082 was adopted by Tracy City Council on the 15th day of June, 2021, by the following vote:

AYES: COUNCIL MEMBERS: BEDOLLA, DAVIS, VARGAS, YOUNG
NOES: COUNCIL MEMBERS: NONE
ABSENT: COUNCIL MEMBERS: ARRIOLA
ABSTAIN: COUNCIL MEMBERS: NONE



MAYOR

ATTEST:



CITY CLERK



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