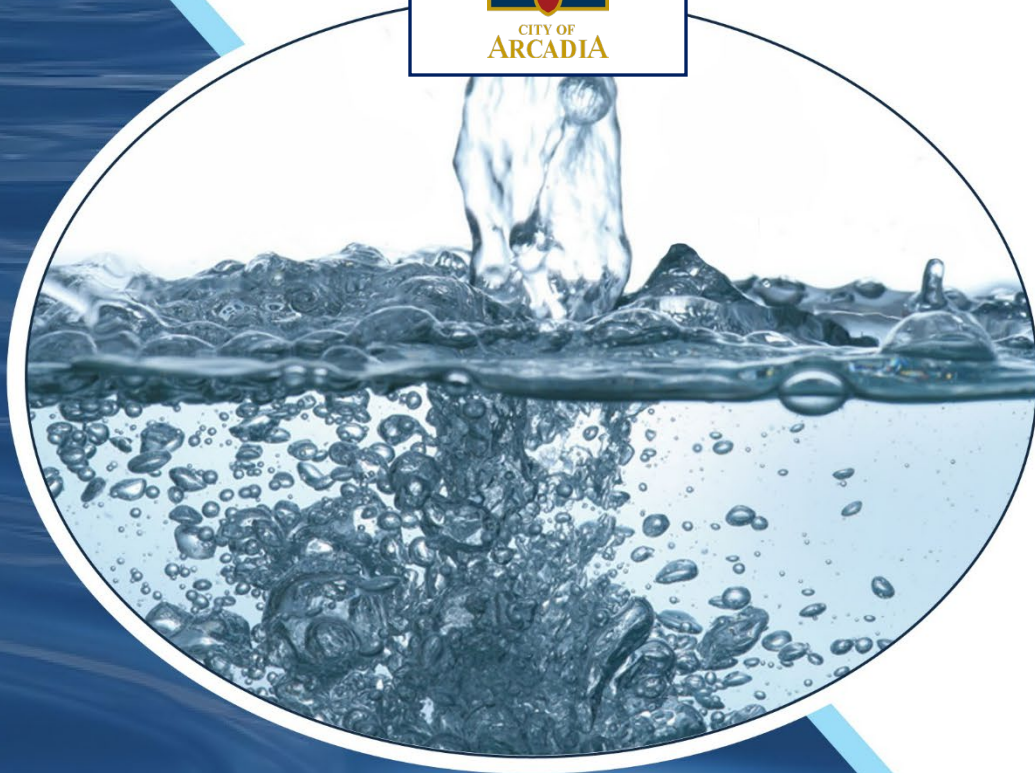


2025
URBAN WATER MANAGEMENT PLAN
AND
WATER SHORTAGE CONTINGENCY PLAN

CITY OF ARCADIA



**CITY OF
ARCADIA**



MAY 2026 FINAL DRAFT



Northern California • Southern California • Arizona • Oregon



City of Arcadia

2025

Urban Water Management Plan



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TABLE OF CONTENTS

Page

CHAPTER 1.....	1-1
URBAN WATER MANAGEMENT PLAN INTRODUCTION AND OVERVIEW	1-1
1.1 UPDATED GUIDANCE FOR 2025 URBAN WATER MANAGEMENT PLANS	1-4
1.2 SUBMITTAL TABLES.....	1-5
1.2.1 INCLUSION OF SUBMITTAL TABLES	1-5
1.2.1 OPTIONAL PLANNING TOOL	1-6
1.3 RECOMMENDED UWMP ORGANIZATION	1-6
1.4 UWMPS IN RELATION TO OTHER EFFORTS.....	1-7
1.4.1 SPECIFIC CONSIDERATIONS	1-7
1.5 DEPARTMENT OF WATER RESOURCES’ REVIEW PROCESS	1-9
1.6 UWMPS AND GRANT OR LOAN ELIGIBILITY.....	1-9
1.7 TIPS FOR URBAN WATER MANAGEMENT PLAN PREPARES.....	1-10
CHAPTER 2.....	2-1
PLAN PREPARATION	2-1
2.1 BASIS FOR PREPARING A PLAN	2-2
2.1.1 SUPPLIERS WITH BOTH WHOLESALE AND RETAIL SALES.....	2-3
2.1.2 PUBLIC WATER SYSTEMS	2-4
2.2 INDIVIDUAL OR REGIONAL PLANS	2-5
2.2.1 REGIONAL REPORTING.....	2-5
2.3 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE.....	2-6
2.3.1 FISCAL OR CALENDAR YEAR	2-6
2.3.2 UNITS OF MEASURE	2-6
2.4 COORDINATION AND OUTREACH	2-6
2.4.1 WHOLESALE AND RETAIL COORDINATION	2-7
2.4.2 COORDINATION WITH OTHER AGENCIES AND THE COMMUNITY	2-7
2.4.3 NOTICE TO CITIES AND COUNTIES	2-8
2.5 SUBMITTAL TABLES.....	2-9
2.5.1 SUBMITTAL TABLE 2-1: PWSs	2-9
2.5.2 SUBMITTAL TABLE 2-2: PLAN TYPE IDENTIFICATION.....	2-10
2.5.3 SUBMITTAL TABLE 2-3: SUPPLIER INFORMATION	2-11
2.5.4 SUBMITTAL TABLE 2-4: WATER SUPPLIER INFORMATION EXCHANGE	2-12
CHAPTER 3.....	3-1
SERVICE AREA DESCRIPTION	3-1
3.1 GENERAL DESCRIPTION.....	3-2
3.2 SERVICE AREA BOUNDARY MAPS	3-3
3.3 SERVICE AREA CLIMATE	3-4
3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS	3-6
3.4.1 SERVICE AREA POPULATION	3-6
OTHER SOCIAL, ECONOMIC, AND DEMOGRAPHIC FACTORS	3-8

**TABLE OF CONTENTS
(Continued)**

	<u>Page</u>
3.4.2	3-8
3.5	LAND USES WITHIN SERVICE AREA3-9
3.6	SUBMITTAL TABLES.....3-10
3.6.1	SUBMITTAL TABLE 3-1: POPULATION - CURRENT AND PROJECTED3-10
CHAPTER 4.....	4-1
WATER USE CHARACTERIZATION.....	4-1
4.1	NON-POTABLE VERSUS POTABLE WATER USE4-2
4.2	PAST, CURRENT, AND PROJECTED WATER USE BY SECTOR.....4-2
4.2.1	WATER-USE SECTORS LISTED IN WATER CODE 4-4
4.2.2	OPTIONAL WATER-USE SECTORS IN ADDITION TO THOSE LISTED IN WATER CODE4-6
4.2.3	PAST WATER USE4-6
4.2.4	CURRENT WATER USE.....4-6
4.2.5	PROJECTED WATER USE.....4-7
4.3	DISTRIBUTION SYSTEM WATER LOSS.....4-24
4.3.1	PREVIOUS FIVE YEARS DISTRIBUTION SYSTEM LOSSES4-24
4.3.2	PROGRESS TOWARD MEETING THE WATER LOSS PERFORMANCE STANDARD4-25
4.4	SUBMITTAL TABLES.....4-26
4.4.1	TABLE 4-1: TOTAL USES FOR POTABLE AND NON-POTABLE WATER- ACTUAL4-27
4.4.2	TABLE 4-2: TOTAL USES OF POTABLE AND NON-POTABLE WATER— PROJECTED.....4-28
4.4.3	TABLE 4-3: INCLUSION IN WATER-USE PROJECTIONS4-29
4.4.4	OPTIONAL TABLE 4-4: PASSIVE WATER SAVINGS PROJECTION4-29
4.4.5	TABLE 4-5: WATER LOSS AUDIT REPORTING4-30
4.4.6	TABLE 4-6: PROGRESS TOWARD 2028 WATER LOSS STANDARD4-31
CHAPTER 5.....	5-1
SB X7-7 BASELINE, 2020TARGETS, 2025 REPORTING	5-1
5.1	REPORTING REQUIREMENTS FOR WHOLESALE SUPPLIERS.....5-2
5.2	REPORTING REQUIREMENTS FOR RETAIL SUPPLIERS.....5-2
5.2.1	SUPPLIER WAS NOT AN URBAN RETAIL WATER SUPPLIER5-3
5.2.2	SUPPLIER MET 2020 TARGET IN 2020.....5-3
5.2.3	SUPPLIER DID NOT MEET 2020 TARGET IN 2020—NO CHANGE TO SERVICE AREA5-4
5.2.4	SUPPLIER DID NOT MEET 2020 TARGET—CHANGE TO SERVICE AREA SINCE 2020.....5-4
5.2.5	FUNDING ELIGIBILITY5-4
5.2.6	NEXUS TO STATE WATER BOARD URBAN WATER-USE OBJECTIVES (NOT REQUIRED FOR UWMPs).....5-5

**TABLE OF CONTENTS
(Continued)**

	<u>Page</u>
5.3 SUBMITTAL TABLES.....	5-7
CHAPTER 6.....	6-1
NORMAL YEAR WATER SUPPLY CHARACTERIZATION.....	6-1
6.1 WATER SUPPLY ANALYSIS OVERVIEW	6-2
6.1.1 SPECIFIC ANALYSIS APPLICABLE TO ALL WATER SUPPLY SOURCES	6-4
6.1.2 SPECIAL CONSIDERATIONS	6-6
6.2 WATER SUPPLY CHARACTERIZATION.....	6-7
6.2.1 PURCHASED OR IMPORTED WATER	6-7
6.2.2 GROUNDWATER.....	6-10
6.2.3 SURFACE WATER.....	6-38
6.2.4 STORMWATER	6-39
6.2.5 WASTEWATER AND RECYCLED WATER.....	6-39
6.2.6 DESALINATED WATER OPPORTUNITIES	6-46
6.2.7 WATER EXCHANGES AND TRANSFERS	6-47
6.2.8 SUPPLY FROM STORAGE	6-49
6.2.9 OTHER	6-49
6.2.10 FUTURE WATER PROJECTS.....	6-49
6.3 ENERGY USE	6-50
6.4 SUBMITTAL TABLES.....	6-54
6.4.1 TABLE 6-1: GROUNDWATER VOLUME PUMPED.....	6-54
6.4.2 TABLE 6-2: WASTEWATER COLLECTED WITHIN SERVICE AREA	6-55
6.4.3 TABLE 6-3: WASTEWATER TREATMENT AND OUTCOMES WITHIN UWMP SERVICE AREA	6-56
6.4.4 TABLE 6-4: RECYCLED WATER DIRECT BENEFICIAL USES WITHIN SERVICE AREA.....	6-57
6.4.5 TABLE 6-5: 2020 UWMP RECYCLED WATER-USE PROJECTION COMPARED TO 2025 ACTUAL	6-58
6.4.6 TABLE 6-6: METHODS TO ENCOURAGE FUTURE RECYCLED WATER USE	6-59
6.4.7 TABLE 6-7: EXPECTED FUTURE WATER SUPPLY PROJECTS OR PROGRAMS	6-60
6.4.8 TABLE 6-8: WATER SUPPLIES—ACTUAL	6-60
6.4.9 OPTIONAL TABLE 6-8DS: SOURCE DESALINATION BY SUPPLIER	6-62
6.4.10 TABLE 6-9: WATER SUPPLIES—PROJECTED	6-63
CHAPTER 7.....	7-1
WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT	7-1
7.1 CONSTRAINTS ON WATER SOURCES CONSIDERATIONS.....	7-2
7.1.1 SERVICE RELIABILITY - CONSTRAINTS ON WATER SOURCES	7-3
7.2 WATER SERVICE RELIABILITY ASSESSMENT	7-4
7.2.1 WSRA YEAR-TYPE CHARACTERIZATION	7-8
7.2.2 WSRA SUPPLY AND DEMAND COMPARISON	7-9
7.2.3 WSRA DESCRIPTION OF MANAGEMENT TOOLS AND OPTIONS	7-11

**TABLE OF CONTENTS
(Continued)**

	<u>Page</u>
7.3	DROUGHT RISK ASSESSMENT 7-13
7.3.1	DRA, DATA, METHODS, AND BASIS FOR WATER SHORTAGE CONDITIONS 7-14
7.3.2	DRA INDIVIDUAL WATER SOURCE RELIABILITY 7-16
7.3.3	DRA TOTAL WATER SUPPLY AND USE COMPARISON 7-19
	OPTIONAL PLANNING TOOL WORKBOOK 7-19
7.4	SUBMITTAL TABLES 7-20
7.4.1	OPTIONAL TABLE 7-1: BASIS OF WATER-YEAR DATA (WSRA) 7-20
7.4.2	TABLE 7-2: NORMAL-YEAR SUPPLY AND USE COMPARISON 7-21
7.4.3	TABLE 7-3: SINGLE-DRY-YEAR SUPPLY AND USE COMPARISON 7-22
7.4.4	TABLE 7-4: MULTIPLE DRY YEARS SUPPLY AND USE COMPARISON 7-23
7.4.5	TABLE 7-5: FIVE-YEAR DROUGHT RISK ASSESSMENT 7-24
CHAPTER 8	8-1
WATER SHORTAGE CONTINGENCY PLAN	8-1
8.1	WATER SUPPLY RELIABILITY ANALYSIS 8-3
8.2	ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES 8-4
8.2.1	DECISION-MAKING PROCESS 8-5
8.2.2	DATA AND METHODOLOGIES 8-6
8.3	SIX STANDARD WATER SHORTAGE LEVELS 8-8
8.4	SHORTAGE RESPONSE ACTIONS 8-9
8.4.1	SUPPLY AUGMENTATION 8-10
8.4.2	DEMAND REDUCTION 8-12
8.4.3	OPERATIONAL CHANGES 8-16
8.4.4	ADDITIONAL MANDATORY RESTRICTIONS 8-17
8.4.5	EMERGENCY RESPONSE PLAN 8-17
8.4.6	SEISMIC RISK ASSESSMENT AND MITIGATION PLAN 8-18
8.4.7	SHORTAGE RESPONSE ACTION EFFECTIVENESS 8-21
8.5	COMMUNICATION PROTOCOLS 8-23
8.6	COMPLIANCE AND ENFORCEMENT 8-24
8.7	LEGAL AUTHORITIES 8-26
8.8	FINANCIAL CONSEQUENCES OF WSCP 8-27
8.9	MONITORING AND REPORTING 8-28
8.10	WSCP REFINEMENT PROCEDURES 8-29
8.11	SPECIAL WATER FEATURE DISTINCTION 8-30
8.12	PLAN ADOPTION, SUBMITTAL, AVAILABILITY, AND AMENDMENT PROCEDURES 8-31
8.13	RESOURCES AND REFERENCES 8-32
8.14	SUBMITTAL TABLES 8-32
8.14.1	TABLE 8-1: CROSS REFERENCE FOR STANDARD VS. SUPPLIER SHORTAGE LEVELS 8-33
8.14.2	TABLE 8-2: SUPPLY AUGMENTATION AND OTHER ACTION 8-34
8.14.3	TABLE 8-3: DEMAND-REDUCTION ACTIONS 8-35

**TABLE OF CONTENTS
(Continued)**

	<u>Page</u>
CHAPTER 9.....	9-1
DEMAND MANAGEMENT MEASURES	9-1
9.1 DEMAND MANAGEMENT MEASURES FOR RETAIL SUPPLIERS	9-2
9.1.1 IMPLEMENTATION OVER THE PAST FIVE YEARS.....	9-2
9.1.2 IMPLEMENTATION TO ACHIEVE WATER USE TARGETS.....	9-5
9.1.3 REQUIRED DEMAND MANAGEMENT MEASURES.....	9-5
9.2 DEMAND MANAGEMENT MEASURES FOR WHOLESALE SUPPLIERS	9-12
CHAPTER 10.....	10-1
PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION	10-1
10.1 PLAN COMPLETION TIMELINE	10-2
10.2 NOTICE OF PLAN PREPARATION	10-2
10.3 NOTICE OF PUBLIC HEARING	10-3
10.4 PUBLIC HEARING AND ADOPTION	10-4
10.5 PLAN SUBMITTAL	10-5
10.5.1 SUBMITTING A UWMP AND WATER SHORTAGE CONTINGENCY PLAN TO DWR	10-6
10.5.2 ELECTRONIC DATA SUBMITTAL.....	10-6
10.5.3 SUBMITTING A UWMP, INCLUDING WSCP, TO THE CALIFORNIA STATE LIBRARY	10-7
10.5.4 SUBMITTING A UWMP TO CITIES AND COUNTIES.....	10-7
10.6 PUBLIC AVAILABILITY	10-8
10.7 NOTIFICATION TO PUBLIC UTILITIES COMMISSION.....	10-8
10.8 PLAN IMPLEMENTATION	10-9
10.9 AMENDING AN ADOPTED UWMP OR WATER SHORTAGE CONTINGENCY PLAN	10-9
10.9.1 AMENDING A UWMP OR WSCP	10-9
10.9.2 AMENDING A WATER SHORTAGE CONTINGENCY PLAN	10-10
10.10 CALIFORNIA DEPARTMENT OF WATER RESOURCES REVIEW OF SUBMITTED PLANS.....	10-10
10.11 SUBMITTAL TABLES.....	10-11
10.11.1 SUBMITTAL TABLE 10-1: NOTIFICATION TO CITIES AND COUNTIES.....	10-11

**TABLE OF CONTENTS
(Continued)**

LIST OF TABLES

Table 2-1	Public Water Systems	2-9
Table 2-2	Plan Type Identification	2-10
Table 2-3	Supplier Information	2-11
Table 2-4	Water Supplier Information Exchange.....	2-12
Table 3-1:	Population - Current and Projected.....	3-10
Table 4-1	Total Uses for Potable and Non-Potable Water - Actual	4-27
Table 4-2	Total Uses for Potable and Non-Potable Water - Projected.....	4-28
Table 4-3	Inclusion in Water-Use Projections.....	4-29
Table 4-4	Passive Savings Projection	4-29
Table 4-5	Water Loss Audit Reporting.....	4-30
Table 4-6	Progress Toward 2028 Water Loss Standard.....	4-31
Table 5-1	SB X7-7 2020 Target Progress	5-7
Table 6-1	Groundwater Volume Pumped.....	6-54
Table 6-2	Wastewater Collected Within Service Area.....	6-55
Table 6-3	Wastewater Treatment and Outcomes Within UWMP Service Area.....	6-56
Table 6-4	Recycled Water Direct Beneficial Uses Within Service Area	6-57
Table 6-5	2020 UWMP Recycled Water-Use Projection Compared to 2025 Actual	6-58
Table 6-6	Methods to Encourage Future Recycled Water Use.....	6-59
Table 6-7	Expected Future Water Supply Projects or Programs	6-60
Table 6-8	Water Supplies—Actual	6-62
Table 6-9	Water Supplies—Projected.....	6-63
Table 7-1	Basis of Water-Year Data (Reliability Assessment).....	7-20
Table 7-2	Normal-Year Supply and Use Comparison.....	7-21
Table 7-3	Single-Dry-Year Supply and Use Comparison	7-22
Table 7-4	Multiple Dry Years Supply and Use Comparison	7-23
Table 7-5	Five-Year Drought Risk Assessment.....	7-24
Table 8-1	Cross-Reference for Standard vs. Supplier Shortage Levels	8-33
Table 8-2	Supply Augmentation and Other Actions	8-34
Table 8-3	Demand-Reduction Actions	8-35
Table 10-1	Notification to Cities and Counties	10-11

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

- Figure 1 Water Service Area
- Figure 2 Water Service Area and City Boundaries
- Figure 3 Main Basin Location
- Figure 4 Raymond Basin Location

TABLE OF CONTENTS (Continued)

LIST OF APPENDICES

Appendix A	DWR Standardized Tables
Appendix B	Completed Plan Checklist
Appendix C	Demonstration of Reduced Imported Water Reliance
Appendix D	Notification Letters and Notices of Public Hearing
Appendix E	Climate Change Considerations (Cal-Adapt Data)
Appendix F	Long Beach Judgment
Appendix G	Main Basin Judgment
Appendix H	Raymond Basin Adjudication
Appendix I	Draft Recycled Water Feasibility Study
Appendix J	Water Conservation Plan
Appendix K	City of Arcadia Local Hazard Mitigation Plan
Appendix L	Los Angeles County All-Hazard Mitigation Plan
Appendix M	Water Rate Structure
Appendix N	Ordinance 2327 and Resolution 7430
Appendix O	Resolution Adopting 2025 UWMP and WSCP

TABLE OF CONTENTS (Continued)

LIST OF ACRONYMS

AB	Assembly Bill
AF	Acre-feet
AFY	Acre-feet per year
Annual Assessment	Annual Water Supply and Demand Assessment
AWWA	American Water Works Association
BPOU	Baldwin Park Operable Unit
CECs	Constituents of emerging concern
Central District	Central Basin Municipal Water District
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Information System
City	City of Arcadia
CWC	California Water Code
CWEA	Cooperative Water Exchange Agreement
DACs	Disadvantaged Communities
DMMs	Demand Management Measures
DOF	Department of Finance
DPW	Department of Public Works
DRA	Drought Risk Assessment
DWR	Department of Water Resources
ERP	Emergency Response Plan
ETo	Evapotranspiration
FY	Fiscal Year
GCMs	General Circulation Models
GIS	Geographical Information Systems
GPCD	Gallons per capita per day
GSP	Groundwater Sustainability Plan
HERO	Home Energy Renovation Opportunity
JPL	Jet Propulsion Laboratory
JWPCP	Joint Water Pollution Control Plant
Key Well	Baldwin Park Key Well
kWh	Kilowatt Hours
LACSD	Los Angeles County Sanitation District
LAEEF	Los Angeles County Environmental Education Fair
LARWQCB	Los Angeles Regional Water Quality Control Board
M&I	Municipal and Industrial
Main Basin	Main San Gabriel Basin
MGD	Million Gallons Per Day
mg/l	Milligrams per liter
MSL	Mean seal level
MWD	Metropolitan Water District of Southern California
NASA	National Aeronautics and Space Administration
NCP	National Contingency Plan
NDMA	N-nitrosodimethylamine
OSY	Operating Safe Yield

TABLE OF CONTENTS (Continued)

Plan	Urban Water Management Plan
PCE	Perchloroethylene
PHET	Premium High Efficiency Toilet
RCP	Representative Concentration Pathway
RDA	Main Basin Resource Development Assessment
RDA II	Main Basin Water Resource Development Assessment for Stormwater Augmentation Program
RDM	Robust Decision Making
ROD	Records of Decision
RRA	Risk and Resilience Assessment
San Gabriel District	San Gabriel Valley Municipal Water District
SB	Senate Bill
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SGMA	Sustainable Groundwater Management Act of 2014
SJCWRP	San Jose Creek Water Reclamation Plant
SNMP	San Gabriel Valley Salt and Nutrient Management Plan
SWP	State Water Project
SWRCB-DDW	State Water Resources Control Board - Division of Drinking Water
TCE	Trichloroethylene
TDS	Total Dissolved Solids
Three Valleys District	Three Valleys Municipal Water District
Upper Water	Upper San Gabriel Valley Municipal Water District
USEPA	U.S. Environmental Protection Agency
UWMP	Urban Water Management Plan
VOCs	Volatile Organic Compounds
WNWRP	Whittier Narrows Water Reclamation Plant
WQA	Water Quality Authority
WRCC	Western Regional Climate Center
WRD	Water Replenishment District of Southern California
WSAP	Water Supply Allocation Plan
WSRA	Water Supply Reliability Assessment
WSCP	Water Shortage Contingency Plan
WUCA	Water Utility Climate Alliance
WUE	Water Use Efficiency

**TABLE OF CONTENTS
(Continued)**

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CHAPTER 1

URBAN WATER MANAGEMENT PLAN INTRODUCTION AND OVERVIEW

LAY DESCRIPTION - INTRODUCTION

An urban water supplier is defined (pursuant to Section 10617 of the California Water Code¹) as “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.”

The City of Arcadia (City) is classified as an urban water supplier because it serves more than 3,000 customers (i.e. individual metered accounts) and it supplies more than 3,000 acre-feet of water annually to its customers for municipal purposes.

In accordance with the “Urban Water Management Planning Act”, which was enacted by the California Legislature in 1983, every urban water supplier (including the City) is required to prepare and adopt an Urban Water Management Plan (UWMP), periodically review its UWMP, and incorporate updated and new information into an updated UWMP at least once every five years.

The City’s most recent update was its 2020 UWMP (or 2020 Plan) which was submitted to, and approved by, the California Department of Water Resources (DWR). Urban water suppliers (including the City) are required to complete and submit their 2025 UWMPs to DWR by July 1st, 2026.

¹ References to CWC Sections in this 2025 UWMP were obtained from <https://leginfo.legislature.ca.gov/>



The current requirements for preparing the UWMP are included in California Water Code (CWC) Sections 10608 through 10657. The City’s 2025 UWMP (or 2025 Plan) was prepared consistent with the CWC and the recommended organization provided in DWR’s Final “Urban Water Management Plan Guidebook 2025” (Final 2025 UWMP Guidebook), dated January 2026.

The UWMP provides urban water suppliers (including the City) with a reliable management action plan for long-term resource planning to ensure adequate water supplies are available to meet existing and future water supply needs. In addition, the 2025 Plan incorporates water supply reliability determinations resulting from potential prolonged drought, regulatory revisions, and/or changing climatic conditions.

The City’s 2025 Plan consists of the following Chapters:

- Chapter 1 Urban Water Management Plan Introduction and Overview
- Chapter 2 Plan Preparation
- Chapter 3 Service Area Description
- Chapter 4 Water Use Characterization
- Chapter 5 SB X7-7 Baselines, 2020 Targets, and 2025 Reporting
- Chapter 6 Normal-Year 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

A lay description is presented at the beginning of each of these Chapters.



LAY DESCRIPTION – CHAPTER 1

URBAN WATER MANAGEMENT PLAN INTRODUCTION AND OVERVIEW

Chapter 1 (Urban Water Management Plan Introduction and Overview) of the City's 2025 Plan discusses and provides the following:

- An overall lay description of the 2025 Plan, including California Water Code and Urban Water Management Plan Act requirements, is provided. The City is required to prepare an Urban Water Management Plan.
- The City's 2025 Plan was prepared consistent with the recommended organization provided in DWR's Final "Urban Water Management Plan Guidebook 2025", dated January 2026. A description regarding the organization of the 2025 Plan, including a summary of each Chapter, is provided. The City's Water Shortage Contingency Plan (discussed in Chapter 8) is also included in the 2025 Plan.
- The 2025 Plan incorporates DWR's water use and supply tables (standardized Submittal Tables) for the reporting and submittal of UWMP data. Relevant Submittal Tables are included at the end of each Chapter in this 2025 Plan and in Appendix A.
- The City's coordination efforts with other planning agencies are discussed, including coordination efforts with Upper San Gabriel Valley Municipal Water District and the Southern California Association of Governments
- The City's eligibility to receive grants and loans administered by the State of California and/or DWR, as a result of preparing the 2025 Plan, is discussed.
- Information is provided which demonstrates the City's prior, continued, and projected reduction on imported water supplies obtained (either directly or indirectly) from the Sacramento-San Joaquin Delta (Delta). The City has reduced its reliance on the imported water supplies for Fiscal Year 2014-15, Fiscal Year



2019-2020, and Fiscal Year 2024-25. In addition, the City is projected to continue reducing its reliance on the imported water supplies through Fiscal Year 2049-50.

- The checklist developed by DWR and used by the City to incorporate the specific UWMP requirements is discussed. The completed checklist is provided in Appendix B.

1.1 UPDATED GUIDANCE FOR 2025 URBAN WATER MANAGEMENT PLANS

The City's 2025 Plan was prepared consistent with the recommended organization provided in DWR's Final "Urban Water Management Plan Guidebook 2025", dated January 2026. DWR provided the following updated guidance for the preparation of the 2025 Plans (in comparison to the preparation of the 2020 Plans):

- There have been minor changes to the Water Code since the 2020 Plans were submitted; primarily, several definitions have been added (none of these change the requirements for 2025 Plans).
- DWR and the State Water Resources Control Board are using the same criteria to determine when a water supplier with multiple Public Water Systems is considered an Urban Water Supplier subject to UWMP requirements.
- DWR has updated its submittal tables to reflect the current reporting year, improve accuracy of reporting, and more clearly identify information required by Water Code and optional information.
- There has been no change to the Water Code regarding water loss standard reporting since the 2020 Plans were submitted. However, water suppliers can report progress toward compliance with their 2028 Water Loss Standard in the 2025 Plans (see Table 4-6).
- The State Water Resources Control Board has adopted regulations for the use of direct potable reuse (DPR) since the 2020 Plan reporting. To allow for reporting



of DPR, minor changes have been made to the supply and demand tables in the 2025 Plans.

- While projections for lower-income housing were required in the 2020 Plans, additional guidance has been provided for optional reporting of the method used to project water use for lower-income housing.
- In previous years, the guidance for reporting water placed into storage did not differentiate between long-term storage (i.e., water placed into storage one year but extracted in a future year) and short-term storage (i.e., water that is placed into storage and extracted the same year). When a water supplier reports water placed into storage and then reports it was retrieved in the same year (short-term storage) it can cause a double counting error. Additional guidance has been provided recommending that water suppliers do not report water into and out of short-term storage.

1.2 SUBMITTAL TABLES

1.2.1 INCLUSION OF SUBMITTAL TABLES

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.

The City's 2025 Plan includes the completion of DWR's standardized Submittal Tables for the reporting and submittal of UWMP data. Relevant Submittal Tables are included at the end of each Chapter in this 2025 Plan. In addition, all Submittal Tables are provided collectively in Appendix A.



1.2.1 OPTIONAL PLANNING TOOL

DWR has created an optional “Planning Tool Worksheet” for water suppliers to review and assess monthly water use trends. DWR has deemed the tool as optional and the City is not required by DWR to use the tool.

1.3 RECOMMENDED UWMP ORGANIZATION

The City’s 2025 Urban Water Management Plan (2025 Plan) was prepared consistent with the recommended organization provided in DWR’s Final “Urban Water Management Plan Guidebook 2025” (Final 2025 UWMP Guidebook), dated January 2026. The City’s 2025 Plan consists of the following Chapters:

Chapter 1	Urban Water Management Plan Introduction and Overview
Chapter 2	Plan Preparation
Chapter 3	Service Area Description
Chapter 4	Water Use Characterization
Chapter 5	SB X7-7 Baselines, 2020 Targets, and 2025 Reporting
Chapter 6	Normal-Year 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

Pursuant to CWC requirements, the City’s 2025 Plan incorporates DWR’s water use and supply tables (standardized Submittal Tables) for the reporting and submittal of UWMP data. DWR’s standardized Submittal Tables are provided within the body of the 2025 Plan text as well as in Appendix A.



The City's 2025 Plan also provides supporting documents (appendices) including notification letters of the Plan update, public notice of the Plan hearing, and adoption resolution from the City's governing body. Further discussions regarding these supporting documents are provided within the individual Chapters of the City's 2025 Plan.

1.4 UWMPs IN RELATION TO OTHER EFFORTS

The City is a sub-agency of Upper San Gabriel Valley Municipal Water District (Upper Water), a wholesale water agency. Upper Water prepared a 2025 Plan which is incorporated in the City's 2025 UWMP by reference. In addition, the City provided its 2025 UWMP to Upper Water which includes water use projections in five-year increments for a normal year, a single dry year, and a five consecutive year drought over the next 25 years.

1.4.1 SPECIFIC CONSIDERATIONS

1.4.1.1 DEMONSTRATION OF CONSISTENCY WITH THE DELTA PLAN FOR PARTICIPANTS IN COVERED ACTIONS

Pursuant to DWR, an urban water supplier that anticipates participating in or receiving water from a proposed project (or "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 Plans for use in demonstrating consistency with Delta Plan Policy WR P1, "*Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance*". In addition, pursuant to California Code of Regulations, Title 23, § 5003:



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

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

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

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

The City has reduced its reliance on the imported water supplies for FY 2014-15, FY 2019-20, and FY 2024-25. In addition, the City is projected to continue reducing its reliance on the imported water supplies through FY 2049-50. A further discussion which demonstrates the City's measurable reduction in imported water reliance and improvement in regional self-reliance is provided in Appendix C.

1.4.1.2 PERMITTING FOR OCEAN DESALINATION PROJECTS

The City is currently not considering the development of a desalinated water project. However, as discussed in Section 6.2.6, there may be opportunities for use of desalinated ocean water as a potential water supply source in the future, if needed, through coordination with other agencies that have ocean desalination programs.



1.5 DEPARTMENT OF WATER RESOURCES' REVIEW PROCESS

Section 10.5 discusses the process for a water supplier to submit the completed 2025 Plan to DWR, including electronic submittal through DWR's online Water Use Efficiency Data (WUEdata) portal. DWR will subsequently review the 2025 Plans to ensure that they address the California Water Code requirements. Following DWR's review, water suppliers will be notified of the results of the review via a formal review letter. These review letters will also be available to the public on DWR's WUEdata portal. In cases where DWR finds that a Plan does not properly address item(s) in the Water Code, DWR will reach out to the water supplier to discuss needed corrections and correction procedures.

1.6 UWMPs AND GRANT OR LOAN ELIGIBILITY

CWC 10608.56.

- (a) *On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.*
- (c) *Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.*
- (e) *Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.*
- (f) *The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water*



management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

CWC 10656.

An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.

California Code of Regulations Title 23 Division 2 Chapter 5.1 Article 1, Section 596.1

(b)(2) “disadvantaged community” means a community with a median household income that is less than 80 percent of the statewide annual median household income.

Pursuant to DWR’s Final 2025 UWMP Guidebook:

“For a Supplier to be eligible for any water grant or loan administered by DWR, the Supplier must have a current UWMP on file that has been determined by DWR to address the requirements of the Water Code. A current UWMP must also be maintained by the Supplier throughout the term of any grant or loan administered by DWR. A UWMP may also be required to be eligible for other State funding, depending on the conditions that are specified in the funding guidelines. Suppliers are encouraged to seek guidance on the specifics of any State funding source from the respective funding agencies.”

The City’s 2025 UWMP has been prepared to meet eligibility requirements for grants and loans administered by the State and/or DWR.

1.7 TIPS FOR URBAN WATER MANAGEMENT PLAN PREPARERS

The City’s 2025 Plan (which includes the City’s 2025 Water Shortage Contingency Plan (WSCP)) is considered an update to the City’s 2020 UWMP. However, the 2025 Plan



and the WSCP are considered stand-alone documents. As discussed in Section 1.3, the City's 2025 Plan was prepared consistent with the recommended organization provided in DWR's Final 2025 UWMP Guidebook. The City's 2025 Plan was also prepared based on the tips provided in DWR's Final 2025 UWMP Guidebook including the use of information from previous Plans and following the required Plan notification and adoption process.

In addition, a checklist of specific UWMP requirements is included in Appendix B. The checklist includes the page number where the required elements are addressed to assist in DWR's review of the submitted Plan.



CHAPTER 2

PLAN PREPARATION

LAY DESCRIPTION – CHAPTER 2

PLAN PREPARATION

Chapter 2 (Plan Preparation) of the City's 2025 Plan discusses and provides the following:

- The basis for preparing an Urban Water Management Plan is provided. The City is required to prepare the 2025 Plan because it is an “urban water supplier” (the City serves more than 3,000 customers and it supplies more than 3,000 acre-feet of water annually to its customers for municipal purposes)
- The City is a “Public Water System” and is regulated by the State Water Resources Control Board - Division of Drinking Water. The City's Public Water System number is provided in Table 2-1.
- The City's Plan has been prepared as an “individual” plan rather than a “regional” plan in an effort to provide information specific to the City to best inform its employees, management and customers.
- Information presented in the City's 2025 Plan is provided on “fiscal year” basis which is from July 1 through June 30 of the following year.
- Water quantities presented in the City's 2025 Plan are provided on an “acre-foot” basis.
- The City's coordination and outreach efforts with wholesale water agencies, other retail water agencies, and the community are described. The City coordinated the preparation of its 2025 Plan with the cities of Monrovia, Pasadena, and Sierra Madre, California American Water Company, Golden State Water Company, Main



San Gabriel Basin Watermaster, San Gabriel Valley Water Company, Sunny Slope Water Company, Upper Water, and Los Angeles County.

- The City's notification process to the cities and county within which the City provides water supplies to is discussed.

As discussed in Section 1.3, the City's 2025 Plan was prepared consistent with the recommended organization provided in DWR's Final 2025 UWMP Guidebook.

Pursuant to CWC requirements, the City's 2025 Plan incorporates DWR's water use and supply tables (standardized Submittal Tables) for the reporting and submittal of UWMP data.

2.1 BASIS FOR PREPARING A 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 10618.12.

- (t) *"Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.*
- (w) *"Urban wholesale water supplier" means a water supplier, either publicly or privately owned, that provides more than 3,000 acre- feet of water annually at wholesale for potable municipal purposes.*

CWC 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.

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.

The City's 2025 Plan was prepared in accordance with the UWMP Act which was established in 1983. The UWMP Act requires every "urban water supplier" to prepare and adopt a Plan, to periodically review its Plan at least once every five years and make any amendments or changes which are indicated by the review. An "Urban Water Supplier" is defined as 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.

Section 10621(a) of the CWC states, "*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*". As a result, DWR requires the 2025 Plans be submitted by July 1, 2026.

The City is an "urban water supplier" pursuant to Section 10617 of the CWC and directly serves potable water to more than 3,000 customers and supplies more than 3,000 acre-feet per year (AFY) at retail for municipal purposes. The City's 2025 Plan is an update to the City's 2020 Plan.

2.1.1 SUPPLIERS WITH BOTH WHOLESALE AND RETAIL SALES

The City is a retail water supplier (and not a wholesale water supplier). The City's 2025 Plan was prepared based on the CWC requirements pertaining to retail water suppliers.



The City relies on water supplies from wholesale water suppliers which are discussed in Section 2.4.1.

2.1.2 PUBLIC WATER SYSTEMS

California Health and Safety Code 116275.

(h) "Public water system" means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

Pursuant to CWC requirements, the City's 2025 Plan incorporates DWR's standardized Submittal Tables for the reporting and submittal of UWMP data. The Submittal Tables are provided within the body of the 2025 Plan text as well as in Appendix A. The City also submitted the UWMP data (from the Submittal Tables) electronically through DWR's Online Submittal Tool.

In addition, the City is a Public Water System and is regulated by the State Water Resources Control Board - Division of Drinking Water (SWRCB-DDW). The SWRCB-DDW requires water agencies provide the number of connections, water usage, and other information annually. The information provided to SWRCB-DDW indicates the City serves potable water to more than 3,000 customers and supplies more than 3,000 AFY. Table 2-1 provides the City's Public Water System name and number. As indicated in Table 2-1, the City serves only a single Public Water System.



2.2 INDIVIDUAL OR REGIONAL PLANS

The City has developed its 2025 Plan reporting solely on its service area to address all requirements of the California Water Code. The City's 2025 Plan was not developed as a Regional Plan.

As shown in Table 2-2, the City's 2025 Plan is an "Individual UWMP". The City has developed its 2025 Plan reporting solely for its service area to address all requirements of the California Water Code, including water use targets and baselines pursuant to SB X7-7 Water Conservation Act of 2009 reporting (discussed further in Chapter 5). The City notified and coordinated with appropriate regional agencies and constituents (See Section 2.4).

2.2.1 REGIONAL REPORTING

CWC 10620.

(d)(1) An urban water supplier may satisfy the requirements of this part by participation in area wide, regional, watershed, or basin wide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

As indicated in Table 2-2, the City's 2025 Plan was developed as an "Individual UWMP" and not part of a Regional Plan or Regional Alliance.



2.3 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE

CWC 10608.20.

(a)(1) Urban retail water suppliers...may determine the targets on a fiscal or calendar year basis.

2.3.1 FISCAL OR CALENDAR YEAR

The data provided in the City's 2025 Plan is reported on a fiscal year basis, unless noted otherwise, as shown in Table 2-3. A fiscal year begins on July 1st of every year.

2.3.2 UNITS OF MEASURE

As shown in Table 2-3, the data provided in the City's 2025 Plan is reported in units AF, unless noted otherwise.

2.4 COORDINATION AND OUTREACH

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).



2.4.1 WHOLESALE AND RETAIL COORDINATION

The City is a sub-agency of Upper Water, a wholesale agency. As indicated in Table 2-4, the City has provided its 2025 Plan to Upper Water which includes water use projections in five-year increments for normal, single dry, and five consecutive year drought conditions over the next 25 years.

2.4.2 COORDINATION WITH OTHER AGENCIES AND THE COMMUNITY

CWC 10620.

(d)(3) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

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...

The City is a retail water supplier that serves customers in the City of Arcadia. The City is required to coordinate the preparation of the Plan with appropriate agencies in the area, including appropriate water suppliers that share a common source. Therefore, the City coordinated the preparation of its 2025 Plan with the Main San Gabriel Basin Watermaster, Upper Water, City of Monrovia, City of Pasadena, City of Sierra Madre, San Gabriel Valley Water Company, Golden State Water Company, California American Water Company, and Sunny Slope Water Company. As discussed in Section 10.2, the City notified these agencies, as well as the cities and county within which the City provides water supplies, at least sixty (60) days prior to the public hearing of the preparation of the



2025 Plan and invited them to participate in the development of the 2025 Plan. A copy of the notification letters sent to these agencies is provided in Appendix D.

2.4.3 NOTICE TO CITIES AND COUNTIES

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.

As discussed in Section 10.2, notification was provided to the cities and county within which the City provides water supplies that the City was reviewing and considering amendments (updates) to the previous 2020 Plan, and as a result prepare the 2025 Plan. Notification was provided on March 4, 2026, at least 60 days prior to the public hearing (see Appendix D).



2.5 SUBMITTAL TABLES

The applicable standardized Submittal Tables referenced within Chapter 2 are provided below.

2.5.1 SUBMITTAL TABLE 2-1: PWSs

Table 2-1 Public Water Systems

Submittal Table 2-1 Retail: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (AF)
Add additional rows as needed			
CA1910003	City of Arcadia	15,564	13,294
Total		15,564	13,294
DWR NOTES:			
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES: Units are in acre-feet (AF)			



2.5.2 SUBMITTAL TABLE 2-2: PLAN TYPE IDENTIFICATION

Table 2-2 Plan Type Identification

Submittal Table 2-2: Plan Identification		
Select One	Type of Plan	Name of Regional Alliance or RUWMP (Drop Down List)
<input checked="" type="checkbox"/>	Individual UWMP	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)	
	If Supplier selected RUWMP, select name from the drop-down.	
NOTES:		



2.5.3 SUBMITTAL TABLE 2-3: SUPPLIER INFORMATION

Table 2-3 Supplier Information

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
<input type="checkbox"/>	Supplier is a wholesale supplier
<input checked="" type="checkbox"/>	Supplier is a retail supplier
Fiscal or Calendar Year (select one)	
<input type="checkbox"/>	UWMP Tables are in calendar years
<input checked="" type="checkbox"/>	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
07/01	
Units of measure used in UWMP (Select from the drop down list).	
Unit	AF
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	



2.5.4 SUBMITTAL TABLE 2-4: WATER SUPPLIER INFORMATION EXCHANGE

Table 2-4 Water Supplier Information Exchange

Submittal Table 2-4 Retail: Water Supplier Information Exchange Water Code Section 10631(h)
The retail Supplier has informed the following wholesale supplier(s) of projected water use.
Wholesale Water Supplier Name
Add additional rows as needed
Upper San Gabriel Valley Municipal Water District
NOTES:



CHAPTER 3

SERVICE AREA DESCRIPTION

LAY DESCRIPTION – CHAPTER 3

SERVICE AREA DESCRIPTION

Chapter 3 (Service Area Description) of the City’s 2025 Plan discusses and provides the following:

- A description of the City’s service area is provided. The City provides water service to a majority of the City of Arcadia and encompasses an area of approximately 11 square miles. The City of Arcadia is in the north-central area of the San Gabriel Valley extending northward into the southerly slopes of the San Gabriel Mountains and which lies northeast of the City of Los Angeles.
- The City’s water service area encompasses an area of approximately 11 square miles. The location of the City’s water service area is provided in Figure 1.
- A description regarding the City’s water service area climate is provided. The monthly historical average temperatures (including minimum and maximum), monthly historical average rainfall, and monthly evapotranspiration (ET_o) in the vicinity of the City’s service area is summarized. The sources of the climate information are also discussed.
- The population within the City’s water service area is discussed and projected. The sources of the population information are also discussed. The City provides water service to an area with a current population of about 54,700. The City is projected to have a population of about 66,900 by Fiscal Year 2049-50.
- A discussion of land use information used by the City to develop the 2025 Plan is provided. The City reviewed the current and projected land uses within its service



area. The City also reviewed data provided by the Southern California Association of Governments, the Department of Finance, and the United States Census Bureau and prepared for counties, cities, and unincorporated areas within Southern California.

3.1 GENERAL DESCRIPTION

CWC 10631.

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

The City of Arcadia is a residential community encompassing approximately 11 square miles, in the north-central area of the San Gabriel Valley extending northward into the southerly slopes of the San Gabriel Mountains and which lies northeast of the City of Los Angeles.

The City was incorporated in 1903, and in 1914 its citizens agreed to develop a municipal water system. A bond issue was passed and by 1916 the City had purchased an existing water company, drilled wells, built reservoirs and installed thousands of feet of water main as well as fire hydrants and water meters.



In 1918, the State of California granted the City a domestic water supply permit. Since then, the City has improved its water system by drilling additional wells, building new reservoirs, constructing booster pumps, and installing many miles of water mains. These improvements were funded through two bond issues. The last bond was redeemed in 1966, and since then, all additional improvements have been funded by water sales, developers and federal grants.

The City provides water service to a majority of the City of Arcadia and encompasses an area of approximately 11 square miles, as shown in Figure 1. The City currently derives its water supply from groundwater wells that produce water from two groundwater basins; the Main San Gabriel Basin and the Raymond Basin, with the Main San Gabriel Basin as the City's primary groundwater source. The City is also a sub-agency of Upper Water, a wholesale water agency and can purchase treated, imported water. A discussion of the City's sources of water supply is provided in Chapter 6.

3.2 SERVICE AREA BOUNDARY MAPS

As discussed in Section 3.1, the City's service area covers approximately 11 square miles encompassing the majority of the City of Arcadia. A service area boundary map is provided on Figure 1. The City's water service area boundary relative to the City of Arcadia's municipal boundary is also provided in Figure 2.

The City's service area boundary was originally created in a Geographical Information Systems (GIS) shape file format and converted into a KML format. To the extent information was available, metadata was included in the KML file (including map projection, contact information, start and end dates for which the map is valid, constraints, attribute table definitions, and digitizing base).



3.3 SERVICE AREA CLIMATE

CWC 10631.

(a) Describe the service area of the supplier, including ... “climate...”

CWC 10630.

It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.

The monthly historical average temperatures (including minimum and maximum), monthly historical average rainfall, and monthly evapotranspiration in the vicinity of the City’s service area is summarized in the tabulation below. Historical climate information was obtained from the Western Regional Climate Center (WRCC), Los Angeles County Department of Public Works (DPW), and from DWR’s California Irrigation Management Information System (CIMIS).



Service Area Climate Information

Month	Average Temperature (F)	Average Min. Temperature (F)	Average Max. Temperature (F)	Average Total Precipitation (Inches)	ETo (Inches)
January	54.9	43.1	66.7	4.3	2.15
February	56.4	44.5	68.2	4.5	2.54
March	58.3	46.4	70.3	3.4	3.85
April	61.6	49.3	73.9	1.3	4.61
May	64.6	52.7	76.5	0.5	5.21
June	69.2	56.3	82.2	0.1	6.00
July	74.6	60.5	88.7	0.0	6.58
August	75.3	60.9	89.6	0.1	6.38
September	73.4	59.2	87.6	0.4	4.95
October	67.6	54.0	81.2	0.7	3.55
November	60.9	47.7	74.1	1.6	2.48
December	55.4	43.6	67.3	3.2	1.90
Annual	64.4	51.5	77.3	19.9	50.22

Source:

Historical average monthly precipitation and temperature information was obtained from the Western Regional Climate Center (<http://www.wrcc.dri.edu/>) and is based on data collected from Station 046719 (Pasadena, CA) from 1893 through 2015. Historical monthly average ETo information was obtained from the California Irrigation Management Information Systems (<http://www.cimis.water.ca.gov>) and is based on data collected from Station 159 (Monrovia).

The historical average rainfall in the vicinity of the City’s service area is 19.9 inches. The City’s service area in the San Gabriel Valley has a dry climate and summers can reach average maximum daily temperatures in the high 80s. Although changes in climatic conditions may have an impact (as discussed in Section 4.5), the projected water supply demands will be based on average year, single dry year and a five consecutive year drought, based on historical data and projected demands. Precipitation within the vicinity of the City’s service area is discussed further in Section 7.2.



A discussion of the City's sources of supply, how those sources may be impacted by climate change, and the proactive actions the City and other local/regional water managers may take to address the potential climate change on water supplies is provided in Section 4.2.5.6.

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

3.4.1 SERVICE AREA POPULATION

CWC 10631.

(a) Describe the service area of the supplier, including current and projected population... 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 City provides water service to an area with a current population of about 54,700. Table 3-1 presents the current and projected population of the area encompassed by the City's service area from FY 2024-25 to FY 2049-50. The City is projected to have a population of about 66,900 by FY 2049-50.

A GIS analysis using census tracts was performed to estimate the current population (FY 2024-25) within the City's service area. The City's service area is comprised of individual census tracts which represent smaller statistical areas for which population data is available. The smaller census tracts were combined to more accurately represent the total area within the City's service area.

Current census tract information was obtained in a GIS format from the advanced demographics dataset developed by Esri which includes source material supplied by the U.S. Census Bureau and the U.S. Census Bureau's American Community Survey.



The City's service area boundary in a GIS format was overlaid on the census tract GIS layer. Each census tract located within the City's service area was identified (including the entire census tract or a portion of). For a census tract located entirely within the service area, the entire population (i.e. 100 percent) associated with the census tract was incorporated. For a census tract located partially within the service area, the portion (or percentage) of the census tract located geographically within the service area was determined through GIS. The percentage was then applied to the census tract's population in order to estimate the population of the census tract within the service area. The total population within the City's service area was then estimated based on the sum of the populations within these census tracts.

The projected total population within the City's service area was based on growth rate projections included in the Southern California Association of Governments (SCAG) "Connect SoCal 2024, Demographics and Growth Forecast" report dated April 2024. The SCAG report incorporates demographic trends, existing land use, general plan land use policies, and input and projections through the year 2050 from the Department of Finance (DOF) and the U.S. Census Bureau for counties, cities and unincorporated areas within Southern California. Annual growth rate projections within the City's service area were estimated based on the SCAG report and applied to the City's current population to estimate projected populations through 2050.

The City's service area is almost built out with predominantly single and multi-family residential units and some commercial, institutional, and industrial establishments. Moving forward, the City will continue planning for the Regional Housing Needs Assessment (RHNA) allocations and future planned developments including the addition of apartment units and accessory dwelling units (ADUs) as the means of affordable housing.



Pursuant to the California State Housing Law, every jurisdiction (including the City of Arcadia) is required to plan for its RHNA allocation in the Housing Element of its General Plan. RHNA is a representation of future housing needs for all income levels in a jurisdiction. SCAG's "6th Cycle Final RHNA Allocation" was adopted March 2021 (and modified in July 2021) and covers the planning period from October 2021 through October 2029. The total RHNA allocation of housing within the City of Arcadia through 2029 is 3,214 units (including 1,102 "very-low" income units, 570 "low" income units, 605 "moderate" income units, and 937 "above moderate" income units). The City of Arcadia must identify adequate sites and establish policies and programs that will accommodate the estimated growth, however the City of Arcadia is not obligated to produce, construct, or develop these allocated units. However, the population projections in the City's 2025 Plan incorporate anticipated RHNA allocations.

3.4.2 OTHER SOCIAL, ECONOMIC, AND DEMOGRAPHIC FACTORS

CWC 10631.

(a) Describe the service area of the supplier, including... other social, economic, and demographic factors affecting the supplier's water management planning.

No other demographic factors than previously described affect significantly the City's water management planning. However, increased population will have an impact on water demand.



3.5 LAND USES WITHIN SERVICE AREA

CWC 10631.

- (a) *...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...*

The City reviewed the current and projected land uses within its service area during the preparation of this 2025 Plan. Information regarding current and projected land uses is included in the City of Arcadia's General Plan. The existing land uses within the City's service area include residential (single-family and multi-family), commercial, and open space. The projected land uses within the City's service area are expected to remain similar to the existing land uses. In addition, although mostly built-out, the projected population within the City's service area is anticipated to increase (as discussed in Section 3.4). A discussion of the existing and projected water uses for the individual water use sectors within the City's service area, which includes the different land uses, is provided in Section 4.2. As discussed in Section 2.4, the City coordinated the preparation of the 2025 Plan with the City of Arcadia, the County of Los Angeles, and other agencies.

As discussed in Section 3.4, the City obtained data from the Southern California Association of Governments document entitled "Connect SoCal 2024, Demographics and Growth Forecast", dated April 2024. Projected populations in the City's service area were based on growth rate projections developed by SCAG. The data provided by SCAG incorporates demographic trends, existing land use, general plan land use policies, and input and projections through the year 2050 from the Department of Finance and the U.S. Census Bureau for counties, cities and unincorporated areas within Southern California.



3.6 SUBMITTAL TABLES

The applicable standardized Submittal Table referenced within Chapter 3 is provided below.

3.6.1 SUBMITTAL TABLE 3-1: POPULATION - CURRENT AND PROJECTED

Table 3-1 Population - Current and Projected

Submittal Table 3-1 Retail: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	54,700	60,303	65,903	66,233	66,564	66,897
NOTES:						



CHAPTER 4

WATER USE CHARACTERIZATION

LAY DESCRIPTION – CHAPTER 4

WATER USE CHARACTERIZATION

Chapter 4 (Water Use Characterization) of the City's 2025 Plan discusses and provides the following:

- The City provides water service to individual “water use sectors”. These water use sectors include single-family residential, multi-family, commercial, and landscape. Individual descriptions for these water use sectors are provided in Section 4.2.1.
- The City's total water demands (including potable water) over the past 15 years have ranged from 11,621 AFY to 17,452 AFY, with an average of 14,341 AFY. The City currently measures its water use through meter data and billing records.
- The City conducts an annual water loss audit to identify distribution system water losses. Water losses can result from pipeline leaks and inaccurate metering due to faulty meters. Water loss estimates are incorporated into the City's projected water demands.
- The City's current and projected water demands are provided in five-year increments over the next 25 years are provided (through Fiscal Year 2049-50) as shown on Table 4-3.
- The City's water demand projections incorporate passive savings from water savings which are the result of implementation of codes, water conservation standards, and/or ordinances.
- The projected water demands for lower income households are identified and are included in the City's total projected water demands.



- The City’s sources of water supply and how those sources may be impacted by climate change are discussed. The proactive actions the City and other local/regional water managers may take to address the potential climate change impacts on water supplies are also discussed.

4.1 NON-POTABLE VERSUS POTABLE WATER USE

The Water Code requires a description and quantification of water uses within the City’s service area, including both non-potable and potable water. Recycled water (non-potable) uses are addressed in Section 6.2.5, (although the City currently has none); however, a summary is provided in Table 4-1 and Table 4-2. Furthermore, Chapter 4 addresses the City’s potable water demands.

4.2 PAST, CURRENT, AND PROJECTED WATER USE BY SECTOR

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.

CWC 10631.

(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following...



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

(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.

(4)(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.

The City's current and projected water demands are provided in five-year increments over the next 25 years (through FY 2049-50) in Tables 4-1 and 4-2. The City's total water demands were projected based on a review of the "2020 Water Use Target" pursuant to SB X7-7 calculations (discussed in Section 5.2), current water use factors based on recent water demands, Urban Water Use Objective standards (discussed in Section 5.2.6), and the total population projections based on land use trends within the City (discussed in Section 3.4).

The City provides water service to individual "water use sectors" as identified by the California Water Code. The water use sectors supplied by the City are discussed in Section 4.2.1. The water use for each of these sectors during FY 2024-25 is provided in Table 4-1. The projected water use for each individual water use sector through FY 2049-50 is provided in Table 4-2 and is based on the percentage breakdown of water use from each individual water use sector in FY 2024-25 (the percentages were then applied to the projected total water use).



4.2.1 WATER-USE SECTORS LISTED IN WATER CODE

CWC 10631.

(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

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

As shown in Table 4-1, the City's service area includes the following water use sectors listed in the California Water Code:

- Single-family residential
(A single-family dwelling unit is a lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.)
- Multi-family
(Multiple dwelling units are contained within one building or several buildings within one complex.)



- Commercial
(Commercial users are defined as water users that provide or distribute a product or service)
- Institutional (and governmental)
(Institutional users are defined as water user dedicated to public service. Institutional users include, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.)
- Landscape
(Landscape connections supply water solely for landscape irrigation. Landscapes users may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation. Landscape water demands are included in retail demands.)
- Distribution system losses
(Distribution system losses represent the potable water losses from the pressurized water distribution system and water storage facilities, up to the point of delivery to the customers. Additional information is discussed in Section 4.2.4)



4.2.2 OPTIONAL WATER-USE SECTORS IN ADDITION TO THOSE LISTED IN WATER CODE

The City's service area includes other water uses for fire hydrant uses. However, the City's service area does not include other water demand sectors which are not listed in the California Water Code (including exchanges, transfers, wetlands or wildlife habitat, and surface water storage).

4.2.3 PAST WATER USE

Chapter 6 provides a discussion of the sources of water supply the City uses to meet its water demands. Section 6.1 provides a tabulation of the City's historical annual water demands for each water supply source. Over the past 15 years, the City's total water demands have ranged from 11,621 AFY to 17,452 AFY, with an average of 14,341 AFY. In addition, the City previously experienced a five consecutive year drought within its service area from FY 2011-12 to FY 2015-16. The City also reviewed its historical water demands to determine the projected water demands and water supply reliability (discussed in Chapter 7). The City is able to provide sufficient water supplies to meet the projected water demands of its customers, including during a five consecutive year drought period.

4.2.4 CURRENT WATER USE

CWC 10631.

(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past... water use... based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors...



The City currently measures its water use through meter data and billing records. The water use for the City's individual water use sectors during FY 2024-25 are provided in Table 4-1. Recycled water uses are addressed separately in Section 6.5; however, a summary of projected recycled water uses is provided in Table 4-2.

DWR has created an optional "Planning Tool Worksheet" for water suppliers to review and assess monthly water use trends. DWR has deemed the tool as optional and the City is not required by DWR to use the tool. Section 6.1 provides a tabulation of the City's historical annual water uses for each water supply source. During the past 15 years, the City experienced a five consecutive year drought within its service area from FY 2011-12 to FY 2015-16. Historical records indicate the City's annual water demands had been greater prior to FY 2011-12. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. In addition, the City has been able to provide water service to meet maximum day water demands for these years, including during the summer months. A further discussion regarding the reliability of the City's water supply sources is provided in Chapter 7.

4.2.5 PROJECTED WATER USE

4.2.5.1 GENERAL GUIDANCE ON PROJECTIONS

CWC 10631.

(d)(1) For an urban retail water supplier, quantify, to the extent records are available, ... projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors...

CWC 10633.

The plan shall provide, to the extent available, information on recycled water...and shall include all of the following:...



- (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...*

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.*

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 above, the City's current and projected water demands are provided in five-year increments over the next 25 years (through FY 2049-50) in Tables 4-1 and 4-2. The City's total water demands were projected based on a review of the "2020 Water Use Target" pursuant to SB X7-7 calculations (discussed in Section 5.2), current water use factors based on recent water demands, Urban Water Use Objective standards (discussed in Section 5.2.6), and the total population projections based on land use trends within the City (discussed in Section 3.4). Chapter 6 provides a discussion of the sources of water supply the City will use to meet the projected water demands (including recycled water use). The City's projected water demands and water supplies during a normal year, a single dry year, and a five consecutive year drought are provided in Chapter 7.

Because the City relies on wholesale water supplies, the City has provided its 2025 Plan to Upper Water as discussed in Section 2.4.1.



4.2.5.2 WATER-USE PROJECTIONS BY SECTOR

CWC 10631.

(d)(1) For an urban retail water supplier, quantify, to the extent records are available ... projected water use based upon information developed pursuant to subdivision (a),

The City provides water service to individual “water use sectors” as identified by the California Water Code. The water use sectors supplied by the City are discussed in Section 4.2.1. The water use for each of these sectors during FY 2024-25 is provided in Table 4-1. The water use for each of these sectors during FY 2024-25 is provided in Table 4-1. The projected water use for each individual water use sector through FY 2049-50 is provided in Table 4-2 and is based on the percentage breakdown of water use from each individual water use sector in FY 2024-25 (the percentages were then applied to the projected total water use).

4.2.5.3 STANDARDS, CODES, ORDINANCES, AND 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.

(d)(4)(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.



The City's projected water demands are provided in five-year increments over the next 25 years (through FY 2049-50) in Table 4-2. The City's projected water demands and water supplies during a normal year, a single dry year, and a five consecutive year drought are provided in Chapter 7. The projected water demands for each of the City's water use sectors are provided in Table 4-2. As discussed in the following Section, the City's water demand projections incorporate "passive savings" which are the result of implementation of codes, standards, and/or ordinances.

4.2.5.4 RETAIL ONLY

The City's total water demands were projected based on a review of the "2020 Water Use Target" pursuant to SB X7-7 calculations (discussed in Section 5.2), current water use factors based on recent water demands, Urban Water Use Objective standards (discussed in Section 5.2.6), and the total population projections based on land use trends within the City (discussed in Section 3.4). The projected water demands for the water use sectors were based on the percentage breakdown of water demands from each individual water use sector in FY 2024-25 (the percentages were then applied to the projected total water demands). A discussion of the City's water supplies from Upper Water, a wholesaler, are discussed in Section 6.2. As discussed in Section 2.4.1, the City has coordinated its water demand projections with Upper Water for each water use sector.

The City's water demand projections incorporate water savings from "passive savings" which are the result of implementation of codes, standards, and/or ordinances. The City's "Water Conservation Plan", which was created through Ordinance No. 1930, which was adopted in 1991 and subsequently expanded upon by the adoption of Ordinance No. 2327 in 2015 (discussed in Chapter 9.1.3), includes methods for current and ongoing reduction in water use and water waste. Prior to adoption of Ordinance No. 2327, the City's water use rate ranged from approximately 272 gallons per capita day to 317 gallons per capita day (from FY 1995-96 through FY 2004-05). As identified in Section 5.2.2, the



City's actual water use rate during FY 2019-20 was 230 gallons per capita per day which is a decrease of up to 87 gallons per capita per day from the recent historical water use and includes passive savings. The City's projected water demands, incorporate water use targets less than its established SB X7-7 water use target for 2020 and incorporate ongoing water passive savings and reduced water use. As indicated in Table 4-3, estimated future water savings have been considered as part of the City's water use projections.

4.2.5.5 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 requirement 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.*

California Health and Safety Code 50079.5.

- (a) "Lower income households" means persons and families whose income does not exceed the qualifying limits for lower income families... In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.*

The City's water demands projections provided in Table 4-2 include projected water demands for lower income single-family and multi-family households. A lower income household is defined as a household with an income less than 80 percent of the "area median income", adjusted for family size. For the purpose of this evaluation, the entire Los Angeles County was used for the "area median income". The total number of lower



income households within the City’s service area was estimated based on billing records provided by the City, a review of the City of Arcadia’s General Plan, a review of median household income range statistics provided by the US Census Bureau (<https://data.census.gov/cedsci/>), and a review of GIS maps of Disadvantaged Communities² (DACs), including block groups, tracts, and places, provided by DWR. The estimated number of lower income households located within the City’s service area is 33.5 percent of the total number of households. As indicated in Table 4-2, the total projected residential (single family and multi-family) water demands within the City in 2050 is estimated at about 16,388 AFY. Based on a 33.5 percent use factor of total residential water demands, the projected water demand for lower income households will be about 5,496 AFY by FY 2049-50. The projected water demands for lower income households were included in the City’s total projected water demands, as indicated in Table 4-3.

4.2.5.6 CLIMATE CHANGE CONSIDERATIONS

CWC 10630.

It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.

CWC 10635.

- (b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment... (and) shall include each of the following...*
- (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.*

² GIS information for DACs is based on data from the US Census showing census block groups, tracts, and places identified as disadvantaged communities (less than 80 percent of the State’s median household income) or severely disadvantaged communities (less than 60 percent of the State’s median household income).



Climate is defined as “the average course or condition of the weather at a place usually over a period of years as exhibited by temperature, wind velocity and precipitation”.³ A change in the climate which produces a greater amount of precipitation (i.e. more runoff and/or snowpack) and lower temperatures is generally a benefit to water supplies. However, drought conditions which may result in decreased precipitation, decreased runoff, and increased temperature may adversely affect an urban water supplier’s ability to meet demands by potentially impacting supplies. Consequently, the focus of impacts of climate change is on these adverse consequences.

Section 6.2 of this Plan describes the City’s sources of water supply, management practices associated with those sources, and the long-term reliability of those sources. Section 7.3 includes a Drought Risk Assessment which considers the potential impacts of climate change to the City’s water supply sources. Chapter 8 provides a detailed discussion of the City’s Water Shortage Contingency Plan, including but not limited to, the six standard water shortage levels in the event climate change results in a reduction to water supplies associated with a periodic drought condition. The following is a discussion of the City’s sources of supply, how those sources may be impacted by climate change, and the proactive actions the City and other local/regional water managers may take to address the potential climate change impacts on water supplies.

Imported Water Supplies

The City can receive treated imported water as discussed in Section 6.2.1 and relies on the Main Basin Watermaster and Raymond Basin Management Board to manage the groundwater supplies of the Main Basin and Raymond Basin. Consequently, the City directly and/or indirectly relies on Metropolitan Water District of Southern California

³ Climate, www.merriam-webster.com.



(MWD) for those imported water supplies. MWD has prepared a Regional 2025 Urban Water Management Plan which includes a discussion (Section 2.6 in MWD's 2025 UWMP) of the reliability of its water supplies and the impacts of climate change and is incorporated by reference in this Plan. Furthermore, the City is a sub-agency of the Upper Water which has also provided a discussion of climate change considerations and that discussion is included by reference. The following is a brief summary of MWD's efforts:

Resource Planning

- MWD has established the Robust Decision Making (RDM) approach to identify vulnerabilities to its water supplies. Climate change information was applied to MWD's simulated water supply scenarios to demonstrate the vulnerability of water supplies to climate change.
- MWD altered the inflow hydrology scenarios on the Colorado River simulation model to reflect modified inflow to MWD's Colorado River aqueduct.

Knowledge Sharing and Research Support

- MWD is an active and founding member of the Water Utility Climate Alliance (WUCA) which includes 12 nationwide partners collaborating on climate change considerations. As such, MWD shares agency actions on climate change and adaptation. WUCA has also released numerous research papers on climate change.



Implementation of Programs and Policies

- MWD's programs include the use of solar energy, use of ride share programs, and reduction of greenhouse emissions. Collectively these actions are intended to impact the effects of climate change.

Groundwater Supplies – Main Basin

The City relies on groundwater produced from the Main Basin as discussed in Section 6.2.2. The Main Basin (which is included as a subbasin of the San Gabriel Valley Basin, Basin Number 4-13 pursuant to DWR Bulletin 118) has been identified by DWR as a very low-priority groundwater basin partially due to the fact it is adjudicated. In that regard, the Main Basin is actively managed by the Main Basin Watermaster and those management activities are described in detail in Section 6.2.2.

Recognizing the potential impacts of climate change on the Main Basin groundwater supplies (decreased local runoff and replenishment, along with increased groundwater production, may lead to decreased groundwater levels), the City has used climate tools available on the California Energy Commission's Cal-Adapt website (<https://cal-adapt.org/>) to identify potential future climate change cycles for the Main Basin. The Cal-Adapt website has been developed by the Geospatial Innovation Facility at the University of California, Berkeley with funding and advisory oversight by the California Energy Commission and California Strategic Growth Council.

To address the uncertainty in future greenhouse gas emissions, Cal-Adapt has developed a Representative Concentration Pathway 4.5 (RCP 4.5) scenario and a Representative Concentration Pathway 8.5 (RCP 8.5) scenario. RCP 4.5 represents a scenario in which greenhouse gas emissions peak around 2040, then decline and stabilize. RCP 8.5 represents a scenario in which emissions continue to strongly rise through 2050 and



plateau around 2100. RCP 4.5 is a “medium” emissions scenario that models a future in which there is an effort made by societies to reduce greenhouse gas emissions, whereas RCP 8.5 is a “business-as-usual” scenario. For the City’s climate change analysis, the RCP 4.5 scenario was selected.

The Cal-Adapt climate tools also incorporate several General Circulation Models (GCMs), which represent physical processes in the atmosphere, ocean, and land surface. These GCMs projected future climates under conditions such as warm/dry, cooler/wetter, and average simulations. For the City’s climate change analysis, the average condition GCM (CanESM2) was selected.

The climate tools available on the Cal-Adapt website were used to simulate projected annual precipitation and annual average maximum temperature in the Main Basin. An electronic boundary of the Main Basin was submitted online through the Cal-Adapt website in a “KML” file format (i.e. Google Earth format) and data using several of the available climate tools was generated.

Based on the data generated by the Cal-Adapt simulations (see Appendix E), the average annual rainfall in the Main Basin is projected to be 21.7 inches through 2099, compared to historical average of 20.1 inches (from 1961 through 1990). In addition, the average maximum temperature is projected to be 84.7 degrees Fahrenheit compared to a historical average of 78.3 degrees Fahrenheit. Although there may be more precipitation in the future, it may be more likely to fall as rainfall compared to snowfall. The simulations do not denote the duration or intensity of storms contributing to the annual precipitation. Notwithstanding, the San Gabriel River watershed includes a complex and interconnected series of dams, reservoirs and replenishment basins to capture stormwater runoff. In an average to below average year of precipitation, over 95 percent of the precipitation in the watershed is retained within the watershed and is not lost to the ocean. Consequently, most if not all precipitation (whether it is rain or snowfall) likely will be captured for use in



the Main Basin area and not adversely impacted by a potentially higher average annual temperature.

Recognizing these potential impacts to local hydrology resulting from climate change and the resultant impacts to the groundwater supplies, the Main Basin Watermaster has taken (and may reinstate as needed) the following proactive actions to anticipate and circumvent the potential impacts of climate change. These actions will enable the City to rely on the Main Basin as a reliable source of supply.

Judgment Amendments

Since FY 2011-12 the Main Basin Watermaster has become more pro-active by implementing provisions of the Judgment, and developing and instituting new studies, programs and plans to address the drought conditions as they progressively worsened. As a direct result of a multiple-year drought (from 2006 to 2009), the 2012 Judgment Amendments provided Watermaster with increased management flexibility and adaptability; and provided more discretion in making Basin management decisions. A key component of the Judgment Amendments was the new Water Resource Development Assessment (RDA) to be levied on all production. The RDA was designed to help address the potential future unavailability of imported replenishment water supplies, by allowing the Watermaster to collect RDA funds and purchase replenishment water for storage in the Basin to offset a future Replacement Water obligation (discussed in Section 6.2.2).

Storm Water Capture

During FY 2011-12, the Watermaster convened an Ad Hoc Committee on storm water capture to help address the local drought conditions that resulted in the historic low Key Well (representing groundwater elevation in the Main Basin) elevation in 2009. The Ad



Hoc Committee performed extensive research and coordinated closely with the Los Angeles County, Department of Public Works (DPW) to identify and prioritize several potential new and enhanced storm water capture projects.

Reduce Operating Safe Yield

The adjudicated water rights in the Main Basin are approximately 200,000 AF. Through adoption of an annual Operating Safe Yield the Main Basin Watermaster has the ability to reduce the amount of water rights available to Producers before they must pay an assessment for expensive imported water. The Operating Safe Yield has previously been set at 150,000 AF ten years in a row which has been about 75 percent of the adjudicated total. This action provides producers with an economic incentive to reduce demands.

Cyclic Storage

Cyclic Storage allows a producer who anticipates a Replacement Water obligation to also pre-purchase imported water and store it in the Main Basin to meet its future Replacement Water obligation. The use of Cyclic Storage helps increase groundwater levels, however, wet Replacement Water deliveries are deferred. Consequently, Cyclic Storage water will be applied to Replacement Water obligations for the short-term (one to three years), significantly reducing actual deliveries of Replacement Water. Therefore, with significant amounts of water stored in Cyclic Storage, setting “lower” Operating Safe Yields will have almost no short-term impacts on Basin water levels/supplies.

Conservation

Watermaster passed Resolution No. 03-14-260 declaring “drought conditions” and encouraged all Basin water producers to adopt reduced pumping and water conservation activities at the retail level. Due to conservation efforts in the Main Basin, production



decreased from 242,900 AF in FY 2012-13 to 168,400 AF in FY 2022-23, a total of 74,500 AF. Groundwater production was 189,300 AF in FY 2024-25. With less water being pumped from the Main Basin, this has helped maintain groundwater levels in the Main Basin.

Recycled Water for Replenishment

The Main Basin Watermaster has declared its support for a new recycled water supply project for Main Basin replenishment. When completed, the project could supply up to 100 percent of the overall imported replenishment water requirements.

Basinwide Low Water Vulnerability Assessment

During FY 2013-14, the Main Basin Watermaster initiated an evaluation of the potential impacts to groundwater production wells and local potable water supplies. The Watermaster also updated the basinwide information on water purveyor inter-connections in the event water supply from groundwater wells are reduced.

In-Lieu Program

During FY 2014-15, the Main Basin Watermaster re-instated the In-Lieu Program, where Watermaster funded a Producer's cost difference to take direct delivery of MWD imported water "in-lieu" of pumping from its groundwater wells. The In-Lieu Program provided imported water to the Basin, and preserved groundwater supply in the Basin.

Stormwater Augmentation Program

During FY 2015-16, the Main Basin Watermaster evaluated other ways to help manage the Main Basin water supplies. While Southern California remained in extreme drought,



northern California received above-average precipitation. As a result, replenishment water was made available. The Watermaster determined that during the previous five consecutive year drought from FY 2011-12 through 2015-16, nearly 400,000 acre-feet had been pumped from the Basin and not replaced by local rainfall and local runoff replenishment.

The Water Resource Development Assessment for Stormwater Augmentation Program (RDA II) was developed by the Main Basin Watermaster to help manage Main Basin water supplies under the perceived “worst case” hydrologic conditions, which was assumed to be two additional consecutive five-year droughts, using the same hydrologic conditions as the recent FY 2011-12 through 2015-16 severe drought. Based upon ten (10) additional consecutive years of drought, the new RDA II Program is intended to purchase imported replenishment water (when available), for stormwater augmentation, to maintain the Baldwin Park Key Well (Key Well) elevation above 180 feet by the end of the tenth year. This Key Well elevation essentially ensures continued Main Basin water supply to the Main Basin Producers under a worst case, 15-year sustained drought. The RDA II Program has an assessment of \$175 per AF on all FY 2024-25 production and is planned to be \$175 per AF on all FY 2025-26 production, with a potential to increase in the next three to five years. Main Basin Watermaster will use the RDA II funds to purchase untreated imported water to replenish the Basin for the “general benefit” of all Producers within the Main Basin. The RDA II untreated imported water will supplement local stormwater replenishment, enhance overall Main Basin conditions, and have “no right of recovery” using a water right, by any Main Basin producer.

Funding for the RDA II Program is based on the current year’s production. For example, assessments on FY 2024-25 production were levied in August 2025 and received by Watermaster by September 20, 2025. Main Basin Watermaster has entered into a Letter Agreement with Upper Water, MWD and Three Valleys District where Watermaster can purchase pre-delivered water over 10 years. This pre-delivered MWD water is purchased



out of MWD's Cyclic Storage account, and will be paid for by the Main Basin Watermaster, primarily using funds from the Resource Development Assessments from Upper Water and Three Valleys District producers.

Groundwater Supplies – Raymond Basin

The City relies on groundwater produced from the Raymond Basin as discussed in Section 6.2.2. The Raymond Basin (Basin Number 4-23 pursuant to DWR Bulletin 118) has been identified by DWR as a very low-priority groundwater basin partially due to the fact it is adjudicated. In that regard, the Raymond Basin is actively managed by the Raymond Basin Management Board and those management activities are described in detail in Section 6.2.2.

Recognizing the potential impacts of climate change on the Raymond Basin groundwater supplies (decreased local runoff and replenishment, along with increased groundwater production, may lead to decreased groundwater levels), the City has used climate tools available on the California Energy Commission's Cal-Adapt website (<https://cal-adapt.org/>) to identify potential future climate change cycles for the Raymond Basin. The Cal-Adapt website has been developed by the Geospatial Innovation Facility at the University of California, Berkeley with funding and advisory oversight by the California Energy Commission and California Strategic Growth Council.

To address the uncertainty in future greenhouse gas emissions, Cal-Adapt has developed a RCP 4.5 scenario and a RCP 8.5 scenario. RCP 4.5 represents a scenario in which greenhouse gas emissions peak around 2040, then decline and stabilize. RCP 8.5 represents a scenario in which emissions continue to strongly rise through 2050 and plateau around 2100. RCP 4.5 is a "medium" emissions scenario that models a future in which there is an effort made by societies to reduce greenhouse gas emissions, whereas



RCP 8.5 is a “business-as-usual” scenario. For the City’s climate change analysis, the RCP 4.5 scenario was selected.

The Cal-Adapt climate tools also incorporate several GCMs, which represent physical processes in the atmosphere, ocean, and land surface. These GCMs projected future climates under conditions such as warm/dry, cooler/wetter, and average simulations. For the City’s climate change analysis, the average condition GCM (CanESM2) was selected.

The climate tools available on the Cal-Adapt website were to simulate projected annual precipitation and annual average maximum temperature in the Raymond Basin. An electronic boundary of the Raymond Basin was submitted online through the Cal-Adapt website in a “KML” file format (i.e. Google Earth format) and data using several of the available climate tools was generated.

Based on the data generated by the Cal-Adapt simulations (see Appendix E), the average annual rainfall in the Raymond Basin is projected to be 26.1 inches through 2099, compared to historical average of 24.3 inches (from 1961 through 1990). In addition, the average maximum temperature is projected to be 82.7 degrees Fahrenheit compared to a historical average of 76.3 degrees Fahrenheit. Although there may be more precipitation in the future, it may be more likely to fall as rainfall compared to snowfall. The simulation does not denote the duration or intensity of the storms contributing to the annual precipitation. Notwithstanding, the San Gabriel River watershed (including the Rio Hondo, which is a tributary of the San Gabriel River) includes a complex and interconnected series of dams, reservoirs and replenishment basins to capture stormwater runoff. In an average to below average year of precipitation, over 95 percent of the precipitation in the watershed is retained within the watershed and is not lost to the ocean. Consequently, most if not all precipitation (whether it is rain or snowfall) likely will be captured and not adversely impacted by a potentially higher average annual temperature.



Recognizing these potential impacts to local hydrology resulting from climate change and the resultant impacts to the groundwater supplies, the Raymond Basin Management Board has taken (and may reinstate as needed) the following proactive actions to anticipate and circumvent the potential impacts of climate change. These actions will enable the City to continue use rely on the Raymond Basin as a reliable source of supply.

Temporary Reduction of Allowed Production

Historical prolonged droughts have caused groundwater levels to decrease resulting in the Raymond Basin Management Board to temporarily reduce the amount of groundwater which may be produced. The decreased production is designed to promote recovery of groundwater levels. At such time the groundwater levels have recovered the program may be suspended, but can be reinstated as needed in the event groundwater levels decrease in the future.

Recognizing allowed pumping is limited, the City along with other Raymond Basin producers have taken steps to reduce water demands to address the potential gap between supply and demand in the event demands cannot be entirely reduced. The City has production facilities in the Main Basin and has the ability to shift production, if needed. In addition, the City has a treated water connection and has access to MWD water as an additional source of supply.



4.3 DISTRIBUTION SYSTEM WATER LOSS

CWC 10631(d)(3).

- (d)(3)(A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.*
- (B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.*
- (C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.*

4.3.1 PREVIOUS FIVE YEARS DISTRIBUTION SYSTEM LOSSES

Distribution system water losses represent the potable water losses from the pressurized water distribution system and water storage facilities, up to the point of delivery to the customers. Sources of distribution system water loss can include: inaccurate metering due to faulty meters; water use not metered such as firefighting, flushing of the water system; and pipeline leaks.

The California Water Code Section 10608.34 requires “On or before January 1, 2024, and on or before January 1 of each year thereafter, each urban retail water supplier shall submit a completed and validated water loss audit report for the previous calendar year or the previous fiscal year...” The water loss audits must follow American Water Works Association (AWWA) guidance and be validated by a certified water audit validator. The City’s water loss audits were prepared and validated pursuant to DWR requirements. The annual water loss audit reports submitted by retail water agencies in California, including the City, are available on DWR’s WUEdata website (https://wuedata.water.ca.gov/awwa_plans).



The City's annual water loss audits identify real water losses (e.g. leaks and main failures) and apparent water losses (e.g. customer meter inaccuracies, systematic data handling errors in customer billing systems, and unauthorized consumption). The City's distribution system water losses are based on the sum of the real and apparent water losses. The City's average distribution system water losses represent approximately 8.0 percent of its total water demands. This average water loss factor was incorporated into the City's total potable water demand projections (Tables 4-2 and 4-3).

4.3.2 PROGRESS TOWARD MEETING THE WATER LOSS PERFORMANCE STANDARD

Consistent with the California Code of Regulations, Title 23, Sections 980 through 986, retail water suppliers are required to comply with Real Water Loss Performance Standards by January 1, 2028 (pursuant to SWRCB requirements). Until then, a supplier may, when calculating its Urban Water Use Objective (discussed further in Section 5.2.6), use real losses reported in the water loss audits provided to the Department of Water Resources (discussed in Section 4.3.1), rather than the standard-based budget calculated according to the equation described Section 970 of the California Code of Regulations.

Pursuant to the California Water Code Section 10631(d)(3)(C), a retail water supplier is required to provide data in its 2025 Plan demonstrating whether the retail water supplier met its Water Loss Performance Standard. The California Code of Regulations includes the following methods for compliance:

- Retail suppliers may have met their Real Water Loss Performance Standard if their 2025 or 2026 annual water loss audits (currently not available) show actual real water loss at or below the standard (California Code of Regulations Section 981[b]).



- Retail suppliers may still meet the Real Water Loss Performance Standard if, by January 1, 2028, their 2027 annual water loss audit shows actual real water loss at or below the standard (California Code of Regulations Section 981[a] and [b]).
- Apparent Water Loss Performance Standards are evaluated at the time compliance with the Real Water Loss Performance Standard is assessed (California Code of Regulations Section 981[d]).

The City's 2025 water loss audit is due by January 1, 2027 and was not available during the preparation, completion, and submittal of the City's 2025 Plan. However, Table 4-6 presents the City's Real and Apparent Water Loss Performance Standard, as well as the real and apparent water losses included in the City's most recent water loss audit.

The City will continue to improve data collection for assessing and reducing water losses while performing proactive measures to minimize real losses. City field personnel are trained to spot leaks and verify if water from fire hydrants is metered, permitted, or if the water is taken without authorization.

4.4 SUBMITTAL TABLES

The applicable standardized Submittal Tables referenced within Chapter 4 are provided below.



4.4.1 TABLE 4-1: TOTAL USES FOR POTABLE AND NON-POTABLE WATER-ACTUAL

Table 4-1 Total Uses for Potable and Non-Potable Water – Actual

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual Water Code Section 10631(d)(1)			
Use Type	Additional Description (as needed)	2025 Actual Water Use	
Drop down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool		Potable or Non-Potable (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
Single Family		Potable	7,010
Multi-Family		Potable	1,863
Commercial		Potable	2,284
Institutional/Governmental		Potable	937
Other (optional)	Fire Hydrants	Potable	1
Landscape		Potable	135
Distribution System Water Loss		Potable	1,064
Subtotal Potable			13294
Subtotal Non-Potable			0
Total			13,294
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES:			



4.4.2 TABLE 4-2: TOTAL USES OF POTABLE AND NON-POTABLE WATER—PROJECTED

Table 4-2 Total Uses for Potable and Non-Potable Water – Projected

Submittal Table 4-2 Retail: Total Uses for Potable, and Non-Potable Water — Projected Water Code Section 10631(d)(1)							
Use Type Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Projected Water Use (Report To the Extent that Records are Available)					
		Potable or Non-Potable (OPTIONAL) Drop down list	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 opt (AF)
Add additional rows as needed.							
Single Family		Potable	7,790	8,513	8,556	8,599	8,642
Multi-Family		Potable	2,070	2,262	2,273	2,285	2,296
Commercial		Potable	2,538	2,774	2,788	2,802	2,816
Institutional/Governmental		Potable	1,041	1,138	1,144	1,150	1,155
Other (optional)	Fire Hydrants	Potable	1	1	1	1	1
Landscape		Potable	151	164	165	166	167
Distribution System Water Loss		Potable	1,182	1,292	1,298	1,305	1,311
Subtotal Potable			14,773	16,144	16,225	16,308	16,388
Subtotal Non-Potable			0	0	0	0	0
Total			14,773	16,144	16,225	16,308	16,388
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.							
NOTES:							



4.4.3 TABLE 4-3: INCLUSION IN WATER-USE PROJECTIONS

Table 4-3 Inclusion in Water-Use Projections

Submittal Table 4-3 Retail: Inclusion in Water Use Projections Water Code Section 10631 (a), 10631 (d)(4)(A), and 10631 (d)(4)(B)	
Are Future Water Savings Included in Projections? Drop down list (y/n)	Yes
If "Yes" to above, state the section or page number , in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found. <i>Optional</i> Suppliers may complete Optional Submittal Table 4-4 R to quantify the expected savings.	Section 4.2.5 and Chapter 8
Are Lower Income Residential Demands Included In Projections? Drop down list (y/n)	Yes
<i>Optional</i> If the method for accounting Lower Income Residential Demands has been included, provide page number where this accounting can be found.	
DWR NOTES: Additional guidance is provided in Appendix K.	
NOTES:	

4.4.4 OPTIONAL TABLE 4-4: PASSIVE WATER SAVINGS PROJECTION

DWR has deemed Table 4-4 to be optional.

Table 4-4 Passive Savings Projection



4.4.5 TABLE 4-5: WATER LOSS AUDIT REPORTING

Table 4-5 Water Loss Audit Reporting

Submittal Table 4-5 Retail: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)		
Public Water System ID # Reported in Table 2-1 R	Reporting Period	Submitted to DWR Water Loss Audit Program (yes/no)
Report submittal status for all five years for each Public Water System as available. Add rows as needed		
CA1910003	2020	No
	2021	No
	2022	Yes
	2023	No
	2024	No
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES: The City has also prepared Water Loss Audits representing Calendar Year 2020, Calendar Year 2021, and Fiscal Year 2024-25 and will be submitting these audits to DWR.		



4.4.6 TABLE 4-6: PROGRESS TOWARD 2028 WATER LOSS STANDARD

Table 4-6 Progress Toward 2028 Water Loss Standard

Submittal Table 4-6 Retail: Progress Towards 2028 Water Loss Standard Water Code Section 10631(d)(3)(C)											
Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System? (y/n) If no, Supplier will not complete this row.	Real Water Loss					Apparent Water Loss				
		State Water Board Standard		Most Recent AWWA Water Loss Audit			State Water Board Standard		Most Recent AWWA Water Loss Audit		
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss Drop down list	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (AF)	Real Water Loss Per Unit per Day	2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (AF)	
Add additional rows as needed.											
CA1910003	Yes	19.0	Gallons per Service Connection per Day (GPSCD)	14958	792.144	47.3	44.4	Gallons per Service Connection per Day (GPSCD)	14958	162.426	9.7
								Gallons per Service Connection per Day (GPSCD)			
								Gallons per Service Connection per Day (GPSCD)			
<u>Water Board's Calculated Water Loss Standards</u>											
DWR NOTES: Units of measure (AF, CCF, MG) for Water Loss MUST remain consistent with units reported in Submittal Table 2-3. The units reported in Submittal Table 2-3 are used in this table's calculations.											
NOTES: Information used to complete the table above was based on the Water Loss Audit from FY 2022-23. The City has also prepared Water Loss Audits representing Calendar Year 2020, Calendar Year 2021, and Fiscal Year 2024-25 and will be submitting these audits to DWR.											



CHAPTER 5

SB X7-7 BASELINE, 2020 TARGETS, 2025 REPORTING

LAY DESCRIPTION – CHAPTER 5

SB X7-7 BASELINES, 2020 TARGETS, AND 2025 REPORTING

Chapter 5 (SB X7-7 Baselines, 2020 Targets, and 2025 Reporting of the City's 2025 Plan discusses and provides the following:

- The Water Conservation Act of 2009 (or SB X7-7) required the State of California achieve a 20 percent reduction in urban water use by the year 2020.
- SB X7-7 required urban water suppliers, including the City, to develop a “2020 Water Use Target” to assist the State of California to achieve the 20 percent reduction. The 2020 Water Use Target represents the amount of water each person should use per day (i.e. gallons per capita per day or GPCD) by the year 2020.
- The City previously determined its 2020 Water Use Target during the preparation of its 2015 Plan by completing standardized tables (or the SB X7-7 Verification Form) to demonstrate compliance with the Water Conservation Act of 2009. The City's 2020 Water Use Target was 238 GPCD.
- The City's per-capita water use during Fiscal Year 2019-20 was 230 GPCD. The City's confirmed 2020 Water Use Target was 238 GPCD. The City's per-capita water use during Fiscal Year 2019-20 met the 2020 Water Use Target.



5.1 REPORTING REQUIREMENTS FOR WHOLESALE SUPPLIERS

CWC 10608.12.

- (aj) *“Urban wholesale water supplier,” means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.*

CWC 10608.36.

Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

The City is not a wholesale agency and is not required by DWR to complete Section 5.1.

5.2 REPORTING REQUIREMENTS FOR RETAIL SUPPLIERS

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.

CWC 10608.12.

- (af) *“Urban retail water supplier” means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.*

The Water Conservation Act of 2009 (or SB X7-7) required the State of California achieve a 20 percent reduction in urban water use by the year 2020. SB X7-7 required urban



water suppliers, including the City, to develop a “2020 Water Use Target” to assist the State of California to achieve the 20 percent reduction. The 2020 Water Use Target represents the amount of water each person should use per day (i.e. gallons per capita per day or GPCD) by the year 2020.

The City previously determined its 2020 Water Use Target during the preparation of its 2015 Plan by completing standardized tables (or the SB X7-7 Verification Form) to demonstrate compliance with the Water Conservation Act of 2009. The City’s SB X7-7 Verification Form was also included in its 2020 Plan. The City’s 2020 Water Use Target was 238 GPCD.

5.2.1 SUPPLIER WAS NOT AN URBAN RETAIL WATER SUPPLIER

Section 5.2.1 is not applicable to the City.

The City was an urban retail water supplier during and before the 2020 Plan cycle.

5.2.2 SUPPLIER MET 2020 TARGET IN 2020

The City previously calculated its “2020 Water Use Target” in its 2015 Plan pursuant to the methodology provided by DWR. The City’s 2020 Water Use Target was confirmed to be 238 GPCD.

As discussed in the City’s 2020 Plan, the annual gross water use by the City during FY 2019-20 was 13,935 AF. In addition, the estimated population within the City’s service area for FY 2019-20 was 53,998. As a result, the City’s per-capita water use during FY 2019-20 was 230 GPCD. As shown in Table 5-1, the City’s per-capita water use during FY 2019-20 met the 2020 Water Use Target. The City also demonstrated compliance with



the 2020 Water Use Target by completing the SB X7-7 2020 Compliance Form (included in the 2020 Plan).

5.2.3 SUPPLIER DID NOT MEET 2020 TARGET IN 2020—NO CHANGE TO SERVICE AREA

Section 5.2.3 is not applicable to the City.

As indicated in Section 5.2.2, the City previously met its 2020 Water Use Target as part of the 2020 Plan.

5.2.4 SUPPLIER DID NOT MEET 2020 TARGET—CHANGE TO SERVICE AREA SINCE 2020

Section 5.2.4 is not applicable to the City.

As indicated in Section 5.2.2, the City previously met its 2020 Water Use Target as part of the 2020 Plan. In addition, the City has not had any changes to its service area since 2020.

5.2.5 FUNDING ELIGIBILITY

CWC 10608.56.

(a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.



If a retail water supplier does not achieve its 2020 Water Use Target, the retail water supplier is not eligible to receive a water grant or loan from the State of California until it complies. The following two exceptions to this are provided:

- Water Code Section 10608.56(c) states that a water supplier shall be eligible for a water loan or grant if it “has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per-capita reductions.”
- Water Code Section 10608.56(e) states that a water supplier can also be eligible for a water loan or grant if it “has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.”

As indicated in Section 5.2.2, the City previously met its 2020 Water Use Target as part of the 2020 Plan.

5.2.6 NEXUS TO STATE WATER BOARD URBAN WATER-USE OBJECTIVES (NOT REQUIRED FOR UWMPs)

SWRCB’s “Making Conservation A Way of Life Regulation” (under the California Code of Regulations, Title 23, Section 965 et seq) requires urban retail water suppliers to annually calculate and comply with an Urban Water Use Objective (UWUO); carry out commercial, industrial, and institutional (CII) performance measures; and provide progress reports. The regulation is expected to reduce inefficient water use and protect water supplies from the effects of rising temperatures and drier conditions due to climate change.

The Urban Water Use Objective is the sum of standard-based water use budgets for efficient residential indoor use, residential outdoor use, CII landscapes with dedicated irrigation meters (DIMs), and real water losses. Each budget is the product of the



applicable standard and the water supplier's unique characteristics (e.g., population). Water suppliers will be assessed for compliance with their overall objective, not each standards-based budget.

The residential indoor water use standard is based on 55 GPCD (until December 31, 2024), 47 GPCD (from January 1, 2025 to January 1, 2030), and 42 GPCD (beginning January 1, 2030). The residential outdoor water standard is based on a landscape efficiency factor (representing plant factors and irrigation efficiency) of 0.80 (until June 30, 2035), 0.63 (from July 1, 2035 to June 30, 2040), and 0.55 (beginning July 1, 2040). The standard for commercial, industrial, and institutional (CII) landscapes is based on a landscape efficiency factor of 0.80 (until June 30, 2035), 0.63 (from July 1, 2035 to June 30, 2040), and 0.45 (beginning July 1, 2040). Urban retail water suppliers are also required to comply with real water loss standards by January 1, 2028.

DWR has indicated that compliance with the Urban Water Use Objective requirements are under the authority of the SWRCB and that the requirements are not part of Urban Water Management Plan content requirements. However, the SWRCB uses the 2020 Water Use Targets as a back stop for the Urban Water Use Objective calculations. The Urban Water Use Objectives, together with excluded demands, are to be more efficient than the 2020 Water Use Targets.



5.3 SUBMITTAL TABLES

The applicable standardized Submittal Table referenced within Chapter 5 is provided below.

Table 5-1 SB X7-7 2020 Target Progress

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress Water Code Section 10608.40						
<input type="checkbox"/> Check the box if the Supplier was not an Urban Water Supplier during or before the 2020 UWMP reporting cycle. Proceed to the next table.						
Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	Only for suppliers that did not meet the Target in 2020 See DWR NOTES below.	
					Actual 2025 GPCD (From SB X7-7 Compliance Form)	Did Supplier meet the 2020 Target in 2025?
No	Individual Target	238	230	Yes		NA
DWR NOTES: Suppliers calculating a 2025 GPCD will need to complete and submit SB X 7-7 Compliance Tables to verify the use of SB X7-7 Methodologies. Suppliers that were part of a merger or consolidation since 2020 see Chapter 5 and Appendix P for guidance.						
NOTES:						



CHAPTER 6

NORMAL YEAR WATER SUPPLY CHARACTERIZATION

LAY DESCRIPTION – CHAPTER 6

NORMAL-YEAR WATER SUPPLY CHARACTERIZATION

Chapter 6 (Normal-Year Water Supply Characterization) of the City's 2025 Plan discusses and provides the following:

- The City's water supply sources include groundwater pumped from the Main Basin and Raymond Basin, and treated, imported surface water from Metropolitan Water District of Southern California purchased through Upper San Gabriel Valley Municipal Water District.
- The City's main source of water supply is groundwater pumped from the Main Basin.
- A tabulation of the City's historical water supplies is provided in Section 6.1.
- A discussion regarding the City's imported water supplies from Upper San Gabriel Valley Municipal Water District is provided. Information regarding imported water connections, capacities, reliability, and historical production is provided.
- A discussion regarding the City's groundwater supplies from the Main Basin and Raymond Basin is provided. Information regarding basin location, adjudication, management, water levels, water quality, water rights, and historical production is provided.
- The City's proposed future projects to maximize its water supply resources are discussed.
- The City's "energy intensity" is discussed and represents the quantity of energy consumed, measured in kilowatt hours, divided by the volume of water, measured



in acre-feet over a one-year period. The total energy intensity associated with the City's water management processes was estimated during FY 2024-25.

In this Chapter, the City will identify and describe each of its sources of water supply. In addition, the City will describe the following:

- Management of each water supply source;
- Current provisions of a basin adjudication or Groundwater Sustainability Plan (GSP), as applicable, pertaining to management of groundwater supplies;
- Measures the City is taking to develop potential new sources of water supply (as applicable); and
- Opportunities for exchanges and transfers on a long- or short-term basis.

The characterization of the City's water supply sources will account for the anticipated availability during a normal year, a single dry year, a five consecutive year drought, along with projections through FY 2049-50.

6.1 WATER SUPPLY ANALYSIS OVERVIEW

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:

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

(2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.



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

CWC 10631.

(h) *... 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).*

The City's water supply sources include groundwater pumped from the Main Basin and Raymond Basin, and treated, imported surface water from Metropolitan Water District of Southern California purchased through Upper San Gabriel Valley Municipal Water District. The City's main source of water supply is groundwater pumped from the Main Basin. A tabulation of the City's historical water supplies is provided below.



Fiscal Year	System Water Supply Sources (AF)				Total
	Groundwater			Purchased Water	
	East Raymond Basin	West Raymond Basin	Main San Gabriel Basin	MWD Imported Water	
2010-11	3,544	1,632	9,840	0	15,016
2011-12	3,526	1,157	11,716	0	16,399
2012-13	2,006	1,930	13,276	0	17,211
2013-14	1,449	1,899	14,104	0	17,452
2014-15	2,051	1,265	12,010	0	15,326
2015-16	1,887	1,022	9,460	0	12,369
2016-17	2,658	460	10,229	0	13,346
2017-18	1,783	534	12,100	0	14,416
2018-19	2,311	508	10,754	0	13,574
2019-20	1,837	536	11,562	0	13,935
2020-21	2,216	678	12,116	0	15,009
2021-22	2,179	621	11,480	0	14,280
2022-23	1,734	641	9,245	0	11,621
2023-24	2,060	286	9,528	0	11,873
2024-25	2,167	772	10,355	0	13,294

Source: Data provided by the City

6.1.1 SPECIFIC ANALYSIS APPLICABLE TO ALL WATER SUPPLY SOURCES

The section below provides a discussion of the following information to the extent practical:

- The City’s existing and planned sources of water supply are identified;
- Each source of supply is quantified in five-year increments through FY 2049-50;



- The anticipated supply availability under normal, single dry, and five consecutive dry years, and any other water year conditions included in the Drought Risk Assessment (see Chapter 7) are described;
- The management of each water supply in correlation with other identified supplies is described.
- Information pertinent to the reliability analysis, including climate change effects, is considered.

The City historically has relied on Main Basin and Raymond Basin, and treated, imported surface water from Metropolitan Water District of Southern California purchased through Upper San Gabriel Valley Municipal Water District. The following descriptions summarize the City's sources of supply (detailed descriptions are provided in Section 6.2).

Existing and Planned Sources of Supply

Purchased Treated Imported Water

The City has historically purchased treated imported water from the Upper Water, as described in Section 6.2.1. In addition, Section 6.2.1 provides a detailed discussion of the existing and planned supply of the treated imported water, including a description of the management and reliability of those treated imported water supplies. Table 6-8 summarizes the actual treated imported water supply for FY 2024-25. In addition, Table 6-9 summarizes the projected water supply, in five-year increments, through FY 2049-50 under varying water supply conditions.

Groundwater

The City has historically pumped groundwater from the Main Basin and Raymond Basin as described in Section 6.2.2. In addition, Section 6.2.2 provides a detailed discussion of



the existing and planned supply of the groundwater, including a description of the management and reliability of those groundwater supplies. Table 6-8 summarizes the actual groundwater supplies for FY 2024-25. In addition, Table 6-9 summarizes the projected water supply, in five-year increments, through FY 2049-50 under varying water supply conditions.

Surface Water

The City does not use surface water supplies to meet its water demands.

Storm Water

The City has historically received groundwater from the Main Basin and Raymond Basin. Management and use of the stormwater runoff from the San Gabriel River watershed, which is crucial to groundwater management, is described in Section 6.2.4. However, the City currently does not have its own program to beneficially use stormwater runoff as a direct source of supply.

6.1.2 SPECIAL CONSIDERATIONS

The City considered the issues described below when developing its planned sources of water supply.

6.1.2.1 CLIMATE CHANGE EFFECTS

Climate change has the possibility of impacting the availability of planned water supplies, particularly during a drought period. Section 4.2.5.6 of this Plan provides a discussion regarding climate change effects on the City's various sources of supply.



6.1.2.2 REGULATORY CONDITIONS AND PROJECT DEVELOPMENT

The City has considered the implications of emerging regulatory conditions and project development on the availability of planned water supplies. Section 1.4 provides a discussion of the reduced reliance on imported water supplies as well as the proposed Pure Water Southern California recycled water project.

6.1.2.3 OTHER LOCALLY APPLICABLE CRITERIA

There are no locally applicable criteria which applies to the City.

6.1.2.4 WHOLESALE AND RETAIL SUPPLIERS COORDINATION

Because the City relies on wholesale water supplies, the City has provided its 2025 Plan to Upper San Gabriel Valley Municipal Water District as discussed in Section 2.4.1.

6.2 WATER SUPPLY CHARACTERIZATION

6.2.1 PURCHASED OR IMPORTED WATER

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

The City can purchase treated, imported water from Metropolitan Water District of Southern California through Upper San Gabriel Valley Municipal Water District. MWD imports water from the Colorado River through the Colorado River Aqueduct, owned and operated by MWD, and the State Water Project, which utilizes the California Aqueduct for transmission to Southern California. Water delivered to Upper Water's sub-agencies can be treated at MWD's Weymouth Treatment Plant located in the City of La Verne.



The City can purchase treated, imported water directly from its USG-6 (20 cubic feet per second) connection. The City's purchases of treated, imported water from Upper Water over the past five years has been tabulated in Section 6.1. Over the past five years, the City has not purchased water from Upper Water. The City's projected purchases of treated, imported water from Upper Water, over the next 25 years in five-year increments, is provided in Table 6-9.

The City's treated imported water supplies from MWD, through Upper Water, may be impacted during a multi-year drought or other conditions which limits MWD from delivering sufficient water supplies to all of its member agencies, and consequently to the City. In anticipation of such a reduction in supplies, MWD developed a Water Supply Allocation Plan (WSAP) which is briefly described below. The WSAP provides a means of equitably providing reduced water supplies to each of MWD's member agencies for up to 10 levels of reduction representing up to a 50 percent reduction.

During calendar year 2007, critically dry conditions impacted MWD's water supply sources. In addition, a ruling in the Federal Courts in August 2007 provided protective measures for the Delta Smelt (and subsequently other aquatic species) in the Sacramento-San Joaquin River Delta resulting in restrictions on the availability of State Water Project water. As a result, MWD adopted a Water Supply Allocation Plan in February 2008 to allocate available water supplies to its member agencies. MWD revised the WSAP in December 2014.

The WSAP establishes ten different shortage levels and a corresponding Allocation to each member agency. Based on the shortage levels established by MWD, the WSAP provides a separate reduced Allocation to a member agency for its 1) Municipal and Industrial (M&I) retail demand and 2) replenishment demand. The WSAP formula considers historical local water production, full service treated water deliveries,



agricultural deliveries and water conservation efforts when calculating each member agency's Allocation.

In general, the WSAP process calculates total historical member agency demand. That historical demand is then compared to member agency projected local supply for a specific Allocation year. The balance required from MWD, less an Allocation reduction factor, is the member agency's "Water Supply Allocation" of imported water from MWD. When a member agency reduces its local demand through conservation or other means, the Allocation of imported water will increase. Depending on MWD's available supply, MWD can establish a specific WSAP shortage level. The shortage level causes a regional reduction and calculates an allocation for each of its member agency. Additional information about MWD's WSAP is provided in MWD's Regional 2025 UWMP which is incorporated by reference. The following is a summary of MWD's water shortage levels:

- Level 1 – Regional Percent Reduction of 5%
- Level 2 – Regional Percent Reduction of 10%
- Level 3 – Regional Percent Reduction of 15%
- Level 4 – Regional Percent Reduction of 20%
- Level 5 – Regional Percent Reduction of 25%
- Level 6 – Regional Percent Reduction of 30%
- Level 7 – Regional Percent Reduction of 35%
- Level 8 – Regional Percent Reduction of 40%
- Level 9 – Regional Percent Reduction of 45%
- Level 10 – Regional Percent Reduction of 50%

In response to a fourth consecutive year of below average rainfall and critically dry conditions, MWD declared a WSAP Allocation Level 3 for fiscal year 2015-16, which represented a regional reduction of 15 percent. MWD rescinded the WSAP for fiscal year 2016-17 and has not reinstated the WSAP since that time.



6.2.2 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.*
 - (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.*



MAIN SAN GABRIEL BASIN

Main Basin - Sustainable Groundwater Management Act

The Main San Gabriel Basin (Main Basin) is a sub-basin of the San Gabriel Valley Basin pursuant to DWR Bulletin 118, Basin Number 4-013. Pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA), the Main Basin was named as an adjudicated groundwater basin and is exempt from the requirements of developing a Groundwater Sustainability Plan and subsequently was designated a very-low-priority basin in DWR's 2019 SGMA Basin Prioritization report. In compliance with SGMA, the Main Basin Watermaster submits its Annual Report to DWR.

Main Basin - Adjudication

Main Basin – Long Beach Judgment

On May 12, 1959, the Board of Water Commissioners of the City of Long Beach, the Central Basin Municipal Water District (Central District), and the City of Compton, as plaintiffs, filed an action against San Gabriel and 24 other producers of groundwater from the San Gabriel Valley as defendants. This action sought a determination of the rights of the defendants in and to the waters of the San Gabriel River system and to restrain the defendants from an alleged interference with the rights of plaintiffs and persons represented by the Central District in such waters. After six years of study and negotiation a Stipulation for Judgment was filed on February 10, 1965, and the Judgment (Long Beach Judgment) was entered on September 24, 1965. Under the terms of the Long Beach Judgment, the water supply of the San Gabriel River system was divided at Whittier Narrows between San Gabriel Valley upstream and the coastal plain of Los Angeles County downstream. A copy of the Long Beach Judgment can be found in Appendix F. During water year 2018-19, the Water Replenishment District of Southern



California (WRD) intervened in the Long Beach Judgment for the purpose of assuming all of the requirements of the Plaintiffs and the City of Long Beach, Central District, and the City of Compton were dismissed from their collective responsibilities by the Court.

Under the terms of the Long Beach Judgment, the area downstream from Whittier Narrows (Lower Area), the plaintiffs and those they represent, are to receive a quantity of usable water annually from the San Gabriel River system comprised of usable surface flow, subsurface flow at Whittier Narrows and water exported to the Lower Area. This annual entitlement is guaranteed by the area upstream of Whittier Narrows (Upper Area), the defendants, and provision is made for the supply of Make-up Water by the Upper Area for years in which the guaranteed entitlement is not received by the Lower Area.

Make-up Water is imported water purchased by the Main Basin Watermaster and delivered to agencies in Central District to satisfy obligations under the Long Beach Judgment. The entitlement of the Lower Area varies annually, dependent upon the 10-year average annual rainfall in the San Gabriel Valley for the 10 years ending with the year for which entitlement is calculated.

The detailed operations described in the Long Beach Judgment are complex and requires continuous compilation of data so that annual determinations can be made to assure compliance with the Long Beach Judgment. In order to do this, a three-member Watermaster was appointed by the Court, one representing the Upper Area parties nominated by and through Upper Water, one representing the Lower Area parties nominated by and through WRD, and one jointly nominated by Upper Water and WRD. This three-member board is known as the San Gabriel River Watermaster (River Watermaster).

The River Watermaster meets periodically during the year to adopt a budget, to review activities affecting water supply in the San Gabriel River system area, to compile and



review data, to make determinations of usable water received by the Lower Area, and to prepare its annual report to the Court. The River Watermaster has rendered annual reports for the water years 1963-64 through 2024-25 and operations of the river system under that Court Judgment and through the administration by the River Watermaster have been satisfactory since its inception.

One major result of the Long Beach Judgment was to leave the Main Basin free to manage its water resources so long as it meets its downstream obligation to the Lower Area under the terms of the Long Beach Judgment. Upper Water intervened in the Long Beach case as a defendant to enforce the provisions of a Reimbursement Contract, which was incorporated into the Long Beach Judgment to assure that any Make-up Water obligations under the terms of the Long Beach Judgment would be satisfied.

Main Basin – Main Basin Judgment

The Upper Area then turned to the task of developing a water resources management plan to optimize the conservation of the natural water supplies of the area. Studies were made of various methods of management of the Main Basin as an adjudicated area and a report thereon was prepared for the Upper San Gabriel Valley Water Association, an association of water producers in the Main Basin. After due consideration by the Association, Upper Water was requested to file as plaintiff, and did file, an action on January 2, 1968, seeking an adjudication of the water rights of the Main Basin and its Relevant Watershed. After several years of study (including verification of annual water production) and negotiations, a stipulation for entry of Judgment was approved by a majority of the parties, by both the number of parties and the quantity of rights to be adjudicated. Trial was held in late 1972 and the Judgment (Main Basin Judgment) was entered on January 4, 1973. The Main Basin Judgment was most recently amended on June 21, 2012. A copy of the Main Basin Judgment can be found in Appendix G.



Under the terms of the Main Basin Judgment, all rights to the diversion of surface water and production of groundwater within the Main Basin and its Relevant Watershed were adjudicated. The Main Basin Judgment provides for the administration of the provisions of the Main Basin Judgment by a nine-member Main Basin Watermaster. Six of those members are nominated by water producers (producer members) and three members (public members) are nominated by the Upper Water and the San Gabriel Valley Municipal Water District (San Gabriel District), which overlie most of the Basin. The nine-member board employs a staff, an attorney and a consulting engineer. The Main Basin Watermaster holds public meetings on a regular monthly basis throughout the year.

The Main Basin Judgment does not restrict the quantity of water, which parties may extract from the Main Basin. Rather, it provides a means for replacing all annual extractions in excess of a Party's annual right to extract water with Supplemental Water. The Main Basin Watermaster annually establishes an Operating Safe Yield for the Main Basin which is then used to allocate to each Party its portion of the Operating Safe Yield which can be produced free of a Replacement Water Assessment. If a producer extracts water in excess of its right under the annual Operating Safe Yield, it must pay an assessment for Replacement Water, which is sufficient to purchase one acre-foot of Supplemental Water to be spread in the Main Basin for each acre-foot of excess production. All water production is metered and is reported quarterly to the Main Basin Watermaster.

In addition to Replacement Water Assessments, the Main Basin Watermaster levies an Administration Assessment to fund the administration of the Main Basin management program under the Court Judgment and a Makeup Obligation Assessment in order to fulfill the requirements for any makeup Obligation under the Long Beach Judgment and to supply fifty percent of the administration costs of the River Watermaster service. The Main Basin Watermaster levies an In-lieu Assessment and may levy special Administration Assessments.



Water rights under the Main Basin Judgment are transferable by lease or purchase so long as such transfers meet the requirements of the Judgment. There is also provision for Cyclic Storage Agreements by which Parties and non-parties may store imported supplemental water in the Main Basin under such agreements with the Main Basin Watermaster pursuant to uniform rules and conditions and Court approval.

The Main Basin Judgment provides that the Main Basin Watermaster will, insofar as practicable, spread imported water in the Main Basin to maintain the groundwater elevation at the Key Well above 200 feet. Under the terms of the Long Beach Judgment, any excess surface flows that pass through the Main Basin at Whittier Narrows to the Lower Area (which is then conserved in the Lower Area through percolation to groundwater storage) is credited to the Upper Area as Usable Surface Flow.

Main Basin - Description

The Main San Gabriel Basin is located within the San Gabriel Valley, which is located in southeastern Los Angeles County and is bounded on the north by the San Gabriel Mountains; on the west by the San Rafael and Merced Hills, on the south by the Puente Hills and the San Jose Hills, and on the east by a low divide between the San Gabriel River system and the Upper Santa Ana River system, as shown on Figure 3.

The San Gabriel River and its tributary, the Rio Hondo, drain an area of about 490 square miles upstream of Whittier Narrows. Whittier Narrows is a low gap between the Merced and Puente Hills, just northwest of the City of Whittier, through which the San Gabriel River and the Rio Hondo flow to the coastal plain of Los Angeles County. Whittier Narrows is a natural topographic divide and a subsurface restriction to the movement of groundwater between the Main Basin and the Coastal Plain. The approximately 490



square miles of drainage area upstream of Whittier Narrows consists of about 167 square miles of valley lands and about 323 square miles of mountains and foothills.

The Main Basin includes essentially the entire valley floor of the San Gabriel Valley with the exception of the Raymond Basin and Puente Basin. The boundaries of the Main Basin are the Raymond Basin on the northwest, the base of the San Gabriel Mountains on the north, the groundwater divide between San Dimas and La Verne and the lower boundary of the Puente Basin on the east, and the common boundaries between Upper Water and Central District through Whittier Narrows on the southwest. The common water supply of the Main Basin does not include the Raymond Basin, the area northerly of Raymond Hill Fault, which was adjudicated in the Pasadena v. Alhambra case (Superior Court of the County of Los Angeles, 1944). The Puente Basin, although tributary to the Main Basin, is not included in the Main Basin administered by the Main Basin Watermaster.

The Main Basin (administered by the Main Basin Watermaster) is a large groundwater basin replenished by stream runoff from the adjacent mountains and hills, by rainfall directly on the surface of the valley floor, subsurface inflow from Raymond Basin and Puente Basin, and by return flow from water applied for overlying uses. Additionally, the Main Basin is replenished with imported water. The Main Basin serves as a natural storage reservoir, transmission system and filtering medium for wells constructed therein.

There are three municipal wholesale water districts overlying and/or partially overlying the Main Basin. The three districts are Upper Water, San Gabriel District, and Three Valleys Municipal Water District (Three Valleys District).

Urbanization of the San Gabriel Valley began in the early part of the twentieth century, but until the 1940s, agricultural land use occupied more area than residential and commercial land use. After World War II, agricultural areas reduced rapidly and tend to



be located in the easterly portion of the Main Basin and along power transmission rights of way adjacent to the San Gabriel River. Agricultural plots are discontinuous and relatively small. There are several major industrial areas adjacent to the San Gabriel River and within other portions of the valley. The greatest area of land use in the valley is for residential and commercial purposes. DWR Bulletin 118 does not identify the Main Basin as being in overdraft.

Main Basin - Geology

The Main Basin consists of a roughly bowl-shaped depression of bedrock, filled over millions of years with alluvial deposits. This bowl-shaped depression is relatively deep; the elevation at the base of the groundwater reservoir declines from about 800 feet above mean sea level (MSL) in the vicinity of San Dimas, at the northeast corner of the Main Basin, to about 2,200 feet below MSL in the vicinity of South El Monte (DWR, 1966, Plate II).

Most of the alluvium deposited within this depression is debris from the San Gabriel Mountains, washed and blown down from the side of the mountains over time. This process has also resulted in the materials of the Main Basin varying in size from relatively coarse gravel nearer the mountains to fine and medium-grained sand containing silt and clay as the distance from the mountains increases. The principal water-bearing formations of the Main Basin are unconsolidated and semi-consolidated sediments, which vary in size from coarse gravel to fine-grained sands. The interstices between these alluvial particles throughout the Main Basin fill with water and transmit water readily to wells. The thickness of the water-bearing materials in the Main Basin ranges from 200 to 300 feet in the northeastern portion of the Main Basin near the mountains (DPW, 1934, page 141) to nearly 4,000 feet in the South El Monte area (DWR, 1966, page 31). The soils overlying the Main Basin average about six feet in depth. Soil depths are generally greater at the perimeter of the valley and decrease toward the center along the



San Gabriel River. These soils are residual, formed in place through chemical, mechanical and plant weathering processes. The infiltration rates of these soils are greater along the natural channels and their adjacent flood plains. Lower infiltration rates are found in the perimeter areas of the valley. Since the valley is mostly urbanized, a significant portion of the area has been paved and many miles of stream channel have been lined for flood control purposes, thus decreasing infiltration of water through streambeds. Detailed basin geology is discussed in the report entitled “Planned Utilization of Ground Water Basins, San Gabriel Valley, Appendix A: Geo-hydrology” (DWR, 1966).

Main Basin - Hydrology

The total fresh water storage capacity of the Main Basin is estimated to be about 9.5 million acre-feet. Of that, about 1,100,000 acre-feet have been used historically in Main Basin operations. The change in groundwater elevation at the Baldwin Park Key Well⁴ Key Well (Key Well) is representative of changes in groundwater in the Main Basin. One foot of elevation change at the Key Well is roughly the equivalent of about 8,000 acre-feet of water storage. The historical high groundwater elevation was recorded at over 329.1 feet in April 1916, at which time Main Basin storage was estimated to be about 8,700,000 acre-feet. The historical low was recorded in November 2018 at 169.4 feet, at which time Main Basin storage was estimated to be about 7,400,000 acre-feet. The Key Well hydrograph illustrates the cyclic nature of basin recharge and depletion. The hydrograph also illustrates the dramatic recharge capability of the Main Basin during wet periods.

⁴ The Baldwin Key Well is a water-level monitoring well located in the City of Baldwin Park used to determine when imported water may or may not be spread in the Basin.



Generally, water movement in the Main Basin is from the San Gabriel Mountains on the north to Whittier Narrows to the southwest. Groundwater movement in the northern and northeastern regions of the Main Basin is affected by faulting. For example, the Raymond Fault located in the northwesterly portion of the Main Basin separates the Raymond Basin from the Main Basin.

The Main Basin is an unconfined aquifer. Although clay deposits appear mixed with the soils in several locations in the Main Basin and there are various clay lenses throughout the Main Basin, they do not coalesce to form a single impermeable barrier for the movement of subsurface water. The Main Basin therefore operates as a single, unconfined aquifer. As previously mentioned, a thorough discussion of basin hydrogeology is contained in the report “Planned Utilization of Ground Water Basins, San Gabriel Valley, Appendix A: Geo-hydrology” (DWR, 1966).

Within the Main Basin there are a number of identified sub-basins. These include the Upper San Gabriel Canyon Basin, Lower San Gabriel Canyon Basin, Glendora Basin, Foothill Basin, Way Hill Basin and San Dimas Basin. In addition, the Puente Basin is tributary to the Main Basin from the southeast, between the San Jose and Puente Hills, but is not included in the Main Basin adjudication.

Main Basin – Groundwater Replenishment

The major sources of recharge to the Main Basin are direct penetration of rainfall on the valley floor, percolation of runoff from the mountains, percolation of imported water and return flow from applied water. Rainfall occurs predominantly in the winter months and is more intense at higher elevations and closer to the San Gabriel Mountains.

The magnitude of annual recharge from direct penetration of local rainfall and return flow from applied water is not easily quantifiable. Percolation of runoff from the mountains



and valley floor along with percolation of imported water has only been estimated. The DPW maintains records on the amount of local and imported water conserved in water spreading facilities and stream channels.

The San Gabriel River bisects the Main Basin. The San Gabriel River originates at the confluence of its west and east forks in the San Gabriel Mountains. It flows through the San Gabriel Canyon and enters the Main Basin at the mouth of the canyon north of the City of Azusa. The San Gabriel River flows southwesterly across the valley to Whittier Narrows, a distance of about 15 miles. It exits San Gabriel Valley at Whittier Narrows, and transverses the Coastal Plain in a southerly direction to reach the Pacific Ocean at Alamitos Bay near the City of Long Beach.

The San Gabriel River is joined and fed by tributary creeks and washes. In the Main Basin these include: Big Dalton Wash, which originates in the San Gabriel Mountains; Walnut Creek, which originates at the northeast end of the San Jose Hills; and San Jose Creek, which originates in the San Gabriel Mountains, but which travels around the southerly side of the San Jose Hills through the Puente Narrows before joining the San Gabriel River just above Whittier Narrows.

The channel of the San Gabriel River bifurcates in the upper middle portion of the Main Basin, forming a channel to the west of and parallel to the San Gabriel River, known as the Rio Hondo. Tributaries draining the westerly portion of the Main Basin, including Sawpit Wash, Santa Anita Wash, Eaton Canyon Wash, Rubio Wash and Alhambra Wash, all of which originate in the San Gabriel Mountains or the foothills, feed the Rio Hondo. The Santa Anita Wash, Eaton Canyon Wash, Rubio Wash and Alhambra Wash all cross the Raymond Basin area before entering the Main Basin. The channel of the Rio Hondo passes through Whittier Narrows westerly of the San Gabriel River, and then flows southwesterly to join the Los Angeles River on the Coastal Plain.



To protect residents of the San Gabriel Valley from flooding that can result during periods of intensive rainfall, the DPW and the U.S. Army Corps of Engineers (Corps of Engineers) have constructed an extensive system of dams, debris basins, reservoirs and flood control channels. The dams and reservoirs also operate as water conservation facilities. The dams and reservoirs that control the flow of the San Gabriel River and the Rio Hondo include: Cogswell Reservoir on the west fork of the San Gabriel River, San Gabriel Reservoir at the confluence of the west and east forks of the San Gabriel River, Morris Reservoir near the mouth of the San Gabriel Canyon, Santa Fe Reservoir in the northerly portion of the Main Basin and Whittier Narrows Reservoir at the southwestern end of the San Gabriel Valley.

Many of the stream channels tributary to the San Gabriel River have been improved with concrete banks (walls) and concrete-lined bottoms. These stream channel improvements have significantly reduced the area of previous stream channels and reduce Main Basin recharge. A number of off-stream groundwater replenishment facilities have been established along these stream channels to offset such reductions in recharge. Some of these facilities are accessible to imported water supplies, while some facilities receive only local runoff.

The paths of the surface streams are mirrored in the soils and in the direction of groundwater movement in the Main Basin. The tributary creeks and washes, carrying smaller amounts of water, generally flow toward the center of the San Gabriel Valley, while the direction of flow of the major streams, the San Gabriel River and the Rio Hondo, is from the mountains in the north to Whittier Narrows in the southwest. In similar fashion, the primary direction of groundwater movement in the Main Basin is from the north to the southwest, with contributing movement generally from the east and west toward the center of the Main Basin. The greatest infiltration and transmissivity rates of soils in the Main Basin are from north to south, with the maximum rates found in the center of the



valley along the stream channels. Generally, the Main Basin directs groundwater to the southwest through Whittier Narrows.

The Main San Gabriel Basin has a freshwater storage capacity of about 8.7 million acre-feet when the Key Well groundwater elevation is at 329.1 feet, of which about 125 feet of elevation change, or about 1,000,000 acre-feet, has been used for historical Basin operations. Local runoff is stored in a series of reservoirs operated by DPW and diverted into spreading grounds to replenish the groundwater supply. Groundwater recharge occurs every year and is exhibited as increasing water levels. High rainfall years can be identified as increases in the groundwater level of 30 feet or more in one year.

In addition to groundwater replenishment with local storm runoff, the Watermaster maintains records of each producer's water rights and annual production. Although there is no limit on the quantity of water that may be produced, production in excess of a water right is subject to a Replacement Water assessment. Watermaster uses funds collected from producers' overproduction to purchase imported water from municipal water districts. Upper Water and Three Valleys District obtain their water from MWD. San Gabriel District has its own contract for State Water Project (SWP) water. Watermaster coordinates purchase and delivery of imported water to replenish the ground water basin, thus offsetting the producers' overproduction and making the Basin whole.

Groundwater Management Plan

The Main Basin has been adjudicated and management of the local water resources within the Main Basin is based on that adjudication. Management of the water resources in the Main Basin is based upon Watermaster services under two Court Judgments:



River Watermaster⁵ and Main Basin Watermaster⁶. The City is a party to both Judgments and as such participates in these cases. The City also participates in the Main Basin management described in the Main Basin Watermaster document entitled “Five-Year Water Quality and Supply Plan.”

The following sections provide a description of the two Judgments and the Five-Year Water Quality and Supply Plan that make up the groundwater management plan for the Main Basin. In addition, this section describes Upper Water’s and San Gabriel Basin Water Quality Authority’s (WQA) policies to promote groundwater basin clean-up.

Operations of the Groundwater Basin

Through the Long Beach Judgment and the Main Basin Judgment, operations of the Main Basin are optimized to conserve local water to meet the needs of the parties of the Main Basin Judgment.

Typically, water producers within Upper Water rely upon groundwater from Main Basin for their water supply. The City of Alhambra has agreed to receive treated, imported water as part of the Cooperative Water Exchange Agreement (CWEA) to reduce the groundwater extractions from the western portion of the Main Basin and the associated drawdown concerns.

Imported water for groundwater replenishment is delivered through the flood control channels and diverted and spread at spreading grounds through Main Basin Watermaster’s agreement with DPW. Groundwater replenishment utilizes imported water

⁵ Board of Water Commissioners of the City of Long Beach, et al., v. San Gabriel Valley Water Company, et al., Los Angeles County Case No. 722647, Judgment entered September 24, 1965.

⁶ Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., Los Angeles County Case No. 924128, Judgment entered January 4, 1973.



and is considered Replacement Water under the terms of the Main Basin Judgment. In addition, it can be stored in the Main Basin through Cyclic Storage agreements, authorized by terms of the Main Basin Judgment, but such stored water may be used only to supply Supplemental Water to the Main Basin Watermaster.

The Main Basin Watermaster has entered into a Cyclic Storage Agreement with each of the three municipal water districts. One is with MWD and Upper Water, which permits MWD to deliver and store imported water in the Main Basin in an amount not to exceed 200,000 acre-feet for future Replacement Water use. The second Cyclic Storage Agreement is with Three Valleys District and permits Three Valleys District to deliver and store up to 50,000 acre-feet for future Replacement Water use. The third is with San Gabriel District and permits San Gabriel District to deliver and store up to 50,000 acre-feet for future Replacement Water use.

Imported Makeup Water has been delivered to lined stream channels and conveyed to the Lower Area. Makeup Water is required to be delivered to the Lower Area by the Upper Area when the Lower Area entitlement under the Long Beach Judgment exceeds the usable water received by the Lower Area. Imported water is used to fulfill the Makeup Water Obligation when the amount of Makeup Water cannot be fulfilled by reimbursing the Lower Area interests for their purchase of recycled water. The amount of recycled water for which reimbursement may be made as a delivery of Makeup Water is limited by the terms of the Long Beach Judgment to the annual deficiency in Lower Area Entitlement water or to 14,735 acre-feet, whichever is the lesser quantity.

Salt and Nutrient Management Plan

On February 9, 2009, the State Water Board adopted Resolution 2009-0011 that created the “Recycled Water Policy”. The Recycled Water Policy recognized that “...collapse of the Bay Delta ecosystem, climate change, and continuing population growth have



combined with a severe drought on the Colorado River, and failing levees in the Delta, to create a new reality that challenges California's ability to provide the clean water need for a healthy environment, a healthy population and a healthy economy, both now and in the future." The Recycled Water Policy encourages appropriate water recycling, water conservation and use of stormwater to increase water supplies within California.

The primary goal of the San Gabriel Valley Salt and Nutrient Management Plan (SNMP) is to assist the Main Basin Watermaster and participating/potential stakeholders to comply with the Recycled Water Policy regarding the use of the recycled water from municipal wastewater treatment facilities as a safe source of water supply, while maintaining the water quality objectives for salt and nutrients in the Basin Plan established by the Los Angeles Regional Water Quality Control Board. The primary objective of the SNMP is to comply with the specific requirements described in the Recycled Water Policy. They include:

- 1) Characterization of the Main Basin,
- 2) Identification of sources of salt, nutrients, and constituents of emerging concern (CECs) (when deemed necessary by the Recycled Water Policy) and their fate and transport,
- 3) Estimation of salt, nutrients, and CECs (if necessary) loadings and assimilative capacities,
- 4) Identification of water recycling and stormwater recharge/use goals and objectives,
- 5) Verification of compliance with Resolution No. 68-16 through antidegradation analyses, and
- 6) Development of a monitoring plan to verify compliance with the Basin water quality objectives.

The SNMP reviewed the geology, hydrology and hydrogeology of the San Gabriel Basin, along with the institutional and management structure for the San Gabriel Basin. Total



dissolved solids (TDS), Nitrate, Sulfate, and Chloride were identified as the primary constituents of concern. Sources of loading (precipitation, subsurface inflow, infiltration of applied water, storm runoff and untreated imported water replenishment) and unloading (groundwater pumping and subsurface outflow) were included in a spreadsheet computer model, along with average water quality data for TDS, Nitrate, Sulfate, and Chloride, on an annual basis.

The SNMP proposed to use the Main Basin Watermaster's existing Title 22 water quality monitoring program for groundwater and San Gabriel River water, with increased frequencies of monitoring for Total Dissolved Solids and nitrate, to satisfy the monitoring plan requirement of the SNMP. The following are recommendations for on-going salt and nutrient management in the San Gabriel Basin:

- Regularly update the SNMP spreadsheet data so that impacts of potential future projects on salt and nutrient loading may be evaluated.
- Continue to collect water quality data throughout the San Gabriel Basin.
- Continue to meet with stakeholders on a regular basis to coordinate San Gabriel Basin management activities with an emphasis on stormwater runoff replenishment and continued use of SWP water for groundwater replenishment

In-Lieu Program

During calendar year 2014, the ability to deliver Supplemental Water (State Water Project water and Colorado River water) to replenish the Basin was severely limited. Consequently, during fiscal year 2014-15, Watermaster developed and implemented a program to have Producers purchase additional treated imported water for direct delivery in-lieu of pumping groundwater (In-Lieu Program), in an effort to reduce the amount of groundwater pumped from the Basin. The Watermaster uses the In-Lieu Assessment on all production to fund the additional direct cost incurred by a producer participating in the



In-Lieu Program. Watermaster has implemented this program during fiscal year 2014-15 and 2015-16.

Supplemental Water Reliability Storage Program (RDA)

The 2012 Main Basin Judgment Amendments provided the Main Basin Watermaster with increased management flexibility and adaptability; and provided more discretion in making Basin management decisions. A key component of the Judgment Amendments was the new Water Resource Development Assessment to be levied on all production. The Supplemental Water Reliability Storage Program provides a process for the Main Basin Watermaster to generate funds to purchase and store Supplemental Water in the Basin to be used (applied) when there are limitations on the availability of Supplemental Water from the Responsible Agencies. As a result of the severe long-term drought conditions resulting in significant reductions on the quantity of local water replenishment to the Basin, the Main Basin Watermaster expanded RDA into the Supplemental Water Stormwater Augmentation Program described below.

Supplemental Water Stormwater Augmentation Program

The Water Resource Development Assessment for Stormwater Augmentation Program was developed by the Main Basin Watermaster to help manage Basin water supplies under the perceived “worst case” hydrologic conditions, which was assumed to be two additional consecutive 5-year droughts, using the same hydrologic conditions as the recent FY 2011-12 through 2015-16 severe drought. Based upon ten (10) additional consecutive years of drought, the new RDA II Program is intended to purchase imported replenishment water (when available), for stormwater augmentation, to maintain the Baldwin Park Key Well (Key Well) elevation above 180 feet by the end of the tenth year. This Key Well elevation essentially ensures continued Basin water supply to the Basin Producers under a worst case, 15-year sustained drought. The RDA II Program has an



assessment of \$175/AF on all FY 2024-25 production and is planned to also be \$175/AF on all FY 2025-26 production with a potential to increase in the next three to five years. The Main Basin Watermaster will use the RDA II funds to purchase untreated imported water to replenish the Main Basin for the “general benefit” of all Producers within the Main Basin. Unlike the original RDA (Supplemental Water Replenishment Storage Program), which is a Watermaster pre-purchase of Replacement Water, the RDA II untreated imported water will supplement local stormwater replenishment, enhance overall Basin conditions, and have “no right of recovery” using a water right, by any Main Basin producer.

MWD Letter Agreement

Since 2017, Watermaster, Upper Water, the Three Valleys District, and MWD entered into a series of letter agreements to pre-deliver untreated imported water in support of Basin management programs (Letter Agreement). Through these agreements, MWD has delivered a cumulative total of 405,517.5 acre-feet of imported water. While deliveries have varied depending on hydrological conditions and local stormwater capture, these agreements have provided a critical means of supplementing the Basin’s supplies over time.

During fiscal year 2023–24, Watermaster and Upper Water entered into a fourth agreement with MWD to pre-deliver an additional 87,000 acre-feet of untreated imported water during calendar year 2024. In addition, Watermaster and Three Valleys District entered into a separate agreement with MWD to pre-deliver about 35,000 acre-feet during calendar year 2024. During fiscal year 2024–25, Watermaster and Upper Water entered into a fifth agreement with MWD to pre-deliver an additional 86,000 acre-feet of untreated imported water during calendar year 2025.



Three Year Purchased Water Plan

On June 21, 2012, the Superior Court of the State of California for the County of Los Angeles (Court) approved certain proposed Judgment amendments. Some of these Judgment amendments help Watermaster address Supplemental Water supply concerns. One of the amendments, Exhibit H(3)(d), requires that "...on or before November 1 of each year, Watermaster shall prepare and distribute to the Responsible Agencies a three-year projection of its Supplemental Water purchases from each agency. Watermaster shall, to the extent feasible, coordinate the tentative schedule for delivery and payment of those purchases with each agency."

Judgment Amendment, Section 45(b)(7), allows Watermaster to "...levy an Assessment on all Pumping, as determined through Rules and Regulations ... to support the purchase, financing, and/or development of new or additional Supplemental Water sources, in cooperation with one or more Responsible Agencies as appropriate." Section 45(b)(7) established the "Water Resource Development Assessment" for the purchase or development of additional Supplemental Water supplies. Based on these Judgment amendments, Main Basin Watermaster also amended its Rules and Regulations to include a policy/criteria to develop the "Three-Year Purchased Water Plan" (Three-Year Plan). Under Section 26(d)(5) of the Rules and Regulations, the first priority for spreading of Supplemental Water is "...Supplemental Water ordered by Watermaster from Responsible Agencies for direct delivery to the Basin as Replacement Water...". Recognizing many Producers currently pre-purchase Supplemental Water for delivery into their Cyclic Storage accounts, those pre-purchases are considered to have the same priority as Replacement Water.



Exhibit M of Watermaster’s amended Rules and Regulations⁷ -provides the policy/criteria for the “Three-year Purchased Water Plan,” and requires Main Basin Watermaster to estimate Supplemental Water purchases from the Responsible Agencies for each of the three subsequent years. The policy/criteria indicate estimated Supplemental Water purchases may be based on the following:

- 1) *The first year shall be, at a minimum, the total Replacement Water requirement for the three Responsible Agencies (Upper Water, San Gabriel District, and Three Valleys.*
- 2) *The second and third years may be estimated as follows:*
 - a) *Operating Safe Yield (OSY) established by Watermaster for the current fiscal year and next succeeding years;*
 - b) *Alternative projections of the OSY;*
 - c) *Evaluation of potential wet, average, and dry hydrologic conditions;*
 - d) *Future groundwater production provided by or estimated for each producer; and*
 - e) *Depending on Basin conditions, Watermaster may consider additional factors as necessary.*

As a result of the negotiated pre-delivery of significant MWD imported replenishment water by Watermaster, and subsequently transferred by MWD to Upper Water and Three Valleys District, the above policy/criteria has been superseded by this delivery of imported water to supplement local rainfall and runoff replenishment.

Five-Year Water Quality and Supply Plan

The Main Basin Watermaster was created in 1973 to resolve water issues that had arisen among water users in the San Gabriel Valley. Main Basin Watermaster’s mission was to generally manage the water supply of the Main Basin. During the late 1970s and early

⁷ <https://www.watermaster.org/about-us> (Rules and Regulations)



1980s, significant groundwater contamination was discovered in the Main Basin. The contamination was caused in part by past practices of local industries that had carelessly disposed of industrial solvents referred to as Volatile Organic Compounds (VOCs) as well as by agricultural operations that infiltrated nitrates into the groundwater. Cleanup efforts were undertaken at the local, state, and federal level.

Local water agencies adopted a joint resolution in 1989 regarding water quality issues that stated Main Basin Watermaster should coordinate local activities aimed at preserving and restoring the quality of groundwater in the Main Basin. The joint resolution also called for a cleanup plan. In 1991, the Court granted Main Basin Watermaster the authority to control pumping for water quality purposes. Accordingly, Main Basin Watermaster added Section 28 to its Rules and Regulations regarding water quality management. The new responsibilities included development of a Five-Year Water Quality and Supply Plan⁸, updating it annually, submitting it to the California Regional Water Quality Control Board, Los Angeles Region, and making it available for public review by November 1 of each year.

Main Basin Watermaster prepares and annually updates the Five-Year Water Quality and Supply Plan in accordance with the requirements of the Section 28 Rules and Regulations. The objective is to coordinate groundwater-related activities so that both water supply and water quality in the Main Basin are protected and improved. Many important issues are detailed in the Five-Year Plan, including how Main Basin Watermaster plans to:

1. Monitor groundwater supply and quality;
2. Develop projections of future groundwater supply and quality;

⁸ <https://www.watermaster.org/reports>



3. Ensure adequate supplemental water is available for groundwater replenishment;
4. Review and cooperate on cleanup projects, and provide technical assistance to other agencies;
5. Assure that pumping does not lead to further degradation of water quality in the Basin;
6. Address Perchlorate, N-nitrosodimethylamine (NDMA), and other emerging contaminants in the Basin;
7. Develop a cleanup and water supply program consistent with the U.S. Environmental Protection Agency (USEPA) plans for its San Gabriel Basin Superfund sites; and
8. Coordinate and manage the design, permitting, construction, and performance evaluation of the Baldwin Park Operable Unit (BPOU) cleanup and water supply plan.

The Main Basin Watermaster, in coordination with Upper Water, has worked with state and federal regulators, along with local water companies to clean up water supplies. Section 28 of the Main Basin Watermaster's Rules and Regulations require all producers (including the City) to submit an application to 1) construct a new well, 2) modify an existing well, 3) destroy a well, or 4) construct a treatment facility. The Main Basin Watermaster prepares a report on the implications of the proposed activity. As a party to the Main Basin Judgment, the City reviews a copy of these reports and is provided the opportunity to submit comments on the proposed activity before the Main Basin Watermaster Board takes final action.

Water Quality Authority 406 Plan

The WQA was established by the State Legislature on February 11, 1993 to develop, finance and implement groundwater treatment programs in the Main Basin. Section 406



of the WQA Act requires the WQA “to develop and adopt a basinwide groundwater quality management and remediation plan” that is required to be consistent with the EPA’s National Contingency Plan (“NCP”) and Records of Decision (“ROD”) and all requirements of the Los Angeles Regional Water Quality Control Board (“LARWQCB”). According to the WQA Act, the Section 406 Plan, which is incorporated in this Plan by reference, must include:

- 1) Characterization of Basin contamination;
- 2) A comprehensive cleanup plan;
- 3) Strategies for financing the design, construction, operation and maintenance of groundwater cleanup facilities;
- 4) Provision for a public information program; and
- 5) Coordination of activities with federal, state, and local entities.

WQA reviews and adopts the Section 406 Plan on an annual basis and as necessary, makes revisions according to changing regulatory, political and/or funding environments. In support of the Section 406 Plan, WQA also adopts an annual FY budget (July 1 through June 30) which includes all projects (actual or planned) WQA is facilitating through its participation during that time period. The budget identifies the various funding sources, and combinations thereof, to ensure full funding for each project (capital and/or O&M) can be achieved.

Main Basin – Historical and Projected Basin Production

The City’s currently produces groundwater from the Main Basin. The City’s share of the Operating Safe Yield is 4.23099 percent. Over the past five years, the City has produced 9,425 AFY to 12,116 AFY (see Table 6-1), with an average of 10,545 AFY from the Main Basin. The City’s projected production from the Main Basin, over the next 25 years in five-year increments, is provided in Table 6-9.



As discussed above, the Main Basin is managed by the Main Basin Watermaster. The most recent amendments to the Main Basin Judgment were made in June 2012. Historical fluctuation of the Key Well elevation illustrates that since the Main Basin was adjudicated in 1973, it generally operated between an elevation 250 feet and 200 feet above MSL. Furthermore, at an elevation of 169 feet above MSL at the Key Well, which represents the historical low, the Main Basin has about 7,400,000 acre-feet of available storage. During the period of management under the Judgment, significant drought events have occurred from 1969 to 1977, 1983 to 1991, 1998 to 2004, 2006 to 2009, and 2011 to 2015. In each drought cycle the Main Basin has been managed to maintain water levels.

RAYMOND BASIN

Raymond Basin - Sustainable Groundwater Management Act

The Raymond Basin is identified as Basin Number 4-013 pursuant to DWR Bulletin 118. The Sustainable Groundwater Management Act of 2014, identifies the Raymond Basin as an adjudicated groundwater basin, is exempt from the requirements of developing a Groundwater Sustainability Plan and subsequently was designated a very-low-priority basin in DWR's 2019 SGMA Basin Prioritization report. In compliance with SGMA, the Raymond Basin Management Board submits its Annual Report to DWR.

Raymond Basin - Adjudication

In 1937, the City of Pasadena filed suit to adjudicate water rights of the Raymond Basin. A copy of the Raymond Basin adjudication is located in Appendix H. DWR was retained to prepare a Report of Referee which described the geology and hydrogeology of the Raymond Basin and identified the Safe Yield of the Raymond Basin as 21,900 acre-feet.



In 1950, the City of Pasadena requested the Safe Yield of the Raymond Basin to be re-determined. Subsequently, the Court issued a Modification of Judgment on April 29, 1955 increasing the Safe Yield of the Raymond Basin to 30,622 acre-feet. This is referred to as the “Decreed Right of 1955” and water rights for all parties are provided. On January 17, 1974, the second modification of the Raymond Basin Judgment was signed allowing Parties credit for spreading of canyon diversions in spreading grounds in the vicinity of the Arroyo Seco, Eaton Wash and Santa Anita Creek Canyon. On March 26, 1984, the third modification of the Raymond Basin Judgment was signed establishing the Raymond Basin Management Board as the Watermaster for the Raymond Basin.

The Raymond Basin Judgment adjudicated groundwater rights based on a long-term average yield of the Raymond Basin. The Raymond Basin Judgment allows a party to exceed its Decreed Right by no more than 10 percent, which will be deducted from the following year’s total allowable extraction. Conversely, a party is not allowed to carryover more than 10 percent of its Decreed Right to a subsequent year.

Raymond Basin – Description

The Raymond Basin is located in Los Angeles County about 10 miles north-easterly of downtown Los Angeles. Raymond Basin is a wedge in the northwesterly portion of the San Gabriel Valley and is bounded on the north by the San Gabriel Mountains, on the west by the San Rafael Hills and is separated from the Main San Gabriel Basin on the southeast by the Raymond Fault. The Raymond Basin is divided into an eastern unit, which is the Santa Anita sub-area, and the Western unit which is the Pasadena sub-area and the Monk Hill Basin. The location of the Raymond Basin and the subareas, as shown on Figure 4, the surface area of Raymond Basin is about 40.9 square miles. The principal streams in the Raymond Basin are the Arroyo Seco, Eaton Wash and Santa Anita Wash. The Arroyo Seco drains to the Los Angeles River, while Eaton Wash and Santa Anita Wash drain to the Rio Hondo, a tributary of the San Gabriel River.



The geology of the Raymond Basin is described in detail in the “Report of Referee” prepared in 1943 by the State of California Division of Water Resources. The Raymond Basin is roughly triangular in shape. Its northern boundary, about twelve miles in length, is formed by a portion of the southerly front of the San Gabriel Mountains. The western boundary of the Raymond Basin is about eight miles long and is also composed of the same Basement Complex rocks which form the mountains and are continuous at depth, together with a small area of marine Tertiary sediment at the southern end. The Raymond Fault, the southern boundary of the triangle, crosses the Valley floor for a distance of about nine miles, connecting a granitic spur from the mountains at the eastern end of the Raymond Basin with Tertiary sediments outcropping in its southwestern corner.

The Raymond Fault separates Raymond Basin from the Main San Gabriel Basin. The fault zone is not completely impervious and groundwater can flow across this boundary into the Main Basin, particularly in the northeasterly portion of the boundary. The source of natural groundwater supply to the Raymond Basin is direct rainfall, percolation from surface runoff from the northern and western sides, and presumably underground percolation of water from the mountain mass to the alluvium.

DWR describes the hydrogeology of the Raymond Basin in its Bulletin 118 report, Basin Number 4-023. According to the report, the water-bearing materials of the Raymond Basin are dominated by unconsolidated Quaternary alluvial gravel, sand, and silt deposited by streams flowing out of the San Gabriel Mountains. Younger alluvium typically follows active streambeds and reaches a maximum thickness of about 150 feet. Older alluvium generally thickens southward from the mountain front, reaching a maximum of about 1,140 feet near Pasadena, then thins to about 200 feet near the Raymond Fault. However, confined groundwater conditions have existed locally in the Raymond Basin, particularly along the Raymond Fault near Raymond Hill where layers of finer grained sediments become more abundant.



The Raymond Fault trends east-northeast and acts as a groundwater barrier along the southern boundary of the Raymond Basin. This fault acts as a complete barrier along its western end and becomes a less effective barrier at its eastward end. East of Santa Anita Wash, this fault ceases to be an effective barrier and the flow of groundwater southward into the Main Basin becomes essentially unrestricted. A north-trending divide paralleling the Eaton Wash separates both surface and subsurface water flow in the eastern portion of the Raymond Basin. The water level is higher on the eastern side of this divide, ranging from 300 feet higher in the north to about 50 feet higher in the south. Monk Hill, an emergent mound of consolidated bedrock within the Raymond Basin, causes groundwater to flow around it, but does not appreciably change the regional flow pattern. Groundwater elevation contour maps for the Raymond Basin are presented in the Raymond Basin Annual Reports⁹.

Natural recharge to the Raymond Basin is mainly from direct percolation of precipitation and percolation of ephemeral stream flow from the San Gabriel Mountains in the north. The principal streams bringing surface inflow are the Arroyo Seco, Eaton Creek and Santa Anita Creek. Some stream runoff is diverted into spreading grounds and some is impounded behind small dams allowing the water to infiltrate and contribute to groundwater recharge of the Raymond Basin. An unknown amount of underflow enters the Raymond Basin from the San Gabriel Mountains through fracture systems.

No recent estimates of available groundwater storage have been made for in the Raymond Basin. DWR (1971) study estimated the available stored water to be 1,000,000 acre-feet in 1970, leaving about 450,000 acre-feet of storage space available.

⁹ <https://www.raymondbasin.org/reports>



Groundwater quality within the Raymond Basin is generally good quality with regards to most constituents except for high fluoride concentrations in the foothills and high nitrate concentrations in the Monk Hill and Pasadena Subareas. Volatile Organic Compounds including Trichloroethylene (TCE) and Tetrachloroethylene (PCE) have been detected in the Raymond Basin (particularly near the Arroyo Seco). In 1997, Perchlorate was first detected in several monitoring wells at the National Aeronautics and Space Administration's (NASA) Jet Propulsion Laboratory (JPL) Superfund Site. Additionally, the Raymond Basin Management Board monitors for Hexavalent Chromium and other constituents to manage water quality effectively in the Raymond Basin.

Raymond Basin - Historical Production

The Decreed Right of 1955 provided the City with water rights to 2,118.0 AFY from the Pasadena Subarea and with water rights to 3,526.0 AFY from the Santa Anita Subarea. Due to recent multiple dry year conditions, the Raymond Basin Management Board has phased in a 30 percent reduction requirement over five years for all Decreed Rights to the Pasadena Subarea, beginning fiscal year 2009-10. As a result, the City's current adjusted right to the Pasadena Subarea is 1,482.6 AFY ($0.7 \times 2,118.0$ AFY). The Raymond Basin Management Board also implemented the 500-foot level limitation for all Decreed Rights to the Santa Anita Subarea in 2013. As a result, the City's adjusted right to the Santa Anita Subarea is 2,321.0 AFY. The City's total adjusted water right in the Raymond Basin is 3,803.6 AFY ($1,482.6$ AFY + $2,321.0$ AFY). Over the past five years, the City has produced 2,345 AFY to 2,939 AFY (see Table 6-1), with an average of 2,671 AFY from the Raymond Basin. The City's projected production from the Raymond Basin, over the next 25 years in five-year increments, is provided in Table 6-9.

6.2.3 SURFACE WATER

The City does not use surface water supplies to meet its water demands.



6.2.4 STORMWATER

The City does not directly use stormwater to meet its water demands.

6.2.5 WASTEWATER AND RECYCLED WATER

CWC 10633R.

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, and shall include all of the following:

- (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.*
- (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.*
- (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.*
- (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, potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.*
- (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.*
- (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.*



Discussion of wastewater collection, treatment, and recycled water use is included in this chapter. Municipal recycled water is municipal wastewater that has been treated at a municipal wastewater facility in a manner specified by the SWRCB-DDW to a specified quality to enable it to be used again for a beneficial purpose. Municipal wastewater must meet two requirements; it must be reused beneficially pursuant to Title 22 of the California Code of Regulations and it must be reused in accordance with a Regional Water Quality Control Board permit. Title 22 of the California Code of Regulations defines beneficial reuse of recycled water as “...the use of recycled water that has been transported from the point of treatment or production to the point of use without an intervening discharge to water of the State....”

The City currently does not have access to recycled water supplies due to the lack of infrastructure to convey recycled water to the City. Subject to the availability of recycled water, the City would construct transmission and distribution facilities to deliver recycled water to customers within its service area. Additional information regarding the potential use of recycled water is provided below.

6.2.5.1 RECYCLED WATER COORDINATION

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...

The City does not have access to recycled water due to the lack of infrastructure to convey recycled water supplies to the City. However, the City is a sub-agency, and is located within the service area, of Upper Water, which provides recycled water service.



Upper Water has developed a recycled water program to provide direct delivery of recycled water to serve non-potable demands in the southerly-most portion of its service area, thereby offsetting reliance on imported water supplies. Upper Water's recycled water program is in various stages ranging from completed projects to planned and conceptual options. Recycled water supply is obtained from the two water reclamation plants described in the Section 6.2.5.2.

6.2.5.2 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.

Wastewater generated by the City is treated by the Sanitation Districts of Los Angeles County (LACSD). Wastewater is collected within the City's local sewer collection system. The City's local sewers tie into one of LACSD's regional trunk sewers crossing through the City. The regional trunk sewer lines deliver wastewater to one or more water reclamation plants owned by LACSD for treatment. The water reclamation plants are not located within the City's service area. The water reclamation plants serving the City include the Whittier Narrows Water Reclamation Plant (WNWRP), the San Jose Creek Water Reclamation Plant (SJCWRP), and the A.K. Warren Water Resource Facility (formerly known as the Joint Water Pollution Control Plant), however, the percentage breakdown between these three plants in treating the City's wastewater is unknown. LACSD estimates approximately 69 gallons of wastewater is generated per person per day within LACSD's service area. Based on a 2025 population of approximately 54,700 within the City, the estimated amount of wastewater collected within the City's service



area is approximately 4,227 AFY, as shown in Table 6-2. As indicated previously and in Table 6-3, wastewater is not treated or disposed within the City's service area.

The WNWRP began operations in 1962 and has a treatment capacity of about 15 million gallons per day (MGD). During FY 2018-19, about 7.1 MGD of recycled water produced at the WNWRP is used at 29 different reuse sites. The WNWRP provides coagulated, filtered and disinfected tertiary effluent. All wastewater treated at the WNWRP meets recycled water standards. Approximately 99 percent of treated water at the WNWRP is reused in a recycled water project. The method of disposal when treated recycled water is not used (non-recycled) is discharge to the San Gabriel River/Rio Hondo and eventually flows to the ocean.

The SJCWRP, which began operations in 1971, has a treatment capacity of about 100 MGD and provides coagulated, filtered and disinfected tertiary effluent. Consequently, approximately 24 percent of treated water effluent from the SJCWRP would be available for subsequent recycled water projects. The SJCWRP plant serves a largely residential population of approximately 1 million people. The method of disposal when treated recycled water is not used (non-recycled) is discharge to the San Gabriel River/Rio Hondo and eventually flows to the ocean.

The A.K. Warren Water Resource Facility, which began operation in 1928 in the City of Carson, currently has a treatment capacity of about 400 MGD. The treatment level is primary and secondary treatment with disinfection. The plant serves a population of approximately 4.8 million people. Solids collected in primary and secondary treatment are processed in anaerobic digestion tanks where bacteria break down organic material and produce methane gas. Treated wastewater is ultimately disinfected prior to being discharged to the Pacific Ocean. All water discharged to the ocean is monitored to ensure compliance with applicable local, state, and federal standards for discharge water.



6.2.5.3 RECYCLED WATER SYSTEM DESCRIPTION

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.*

The City currently does not have access to recycled water supplies due to the lack of infrastructure to convey recycled water to the City. Subject to the availability of recycled water, the City would consider transmission and distribution facilities to deliver recycled water to customers within its service area. However, the City prepared the "Draft Recycled Water Feasibility Study" in November 2006 (See Appendix I), which identified potential recycled water customers within the City.

6.2.5.4 CURRENT, PROJECT, AND PROJECTED RECYCLED WATER USES

CWC 10633.

- (b) 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. 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.*
- (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.*
- (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.*



The City's "Draft Recycled Water Feasibility Study", November 2006, identified potential recycled water customers within the City based on recycled water use for large-volume irrigation purposes (e.g. municipal parks, fields, golf courses, etc.). Recycled water use factors were applied to overall water demands for these customers to determine the potential recycled water demands. A proposed recycled distribution water pipeline route was based on maximizing recycled water demands and minimizing pipeline and infrastructure costs (See Appendix I).

Although the City has identified potential uses for recycled water, the City does not anticipate it will have access to recycled water supplies over the next 25 years due to the lack of infrastructure to convey recycled water to the City. Therefore, Table 6-4 and Table 6-5 are intentionally blank.

6.2.5.5 ACTIONS TO ENCOURAGE AND OPTIMIZE FUTURE RECYCLED WATER USE

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, and shall include all of the following:

- (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.*

Due to the lack of infrastructure to convey recycled water to the City, the City is not planning or expanding recycled water use in the future within a specified timeframe, as



indicated in Table 6-6. Methods by the City to encourage and optimize future recycled water use are provided below.

The City's "Draft Recycled Water Feasibility Study" identified potential funding sources. Funding for construction, operation, maintenance, and replacement of facilities for the proposed City's recycled water distribution system would be obtained from federal, state, and local sources, including City revenues.

The City's "Draft Recycled Water Feasibility Study" also identified potential recycled water customers within the City (e.g. municipal parks, fields, golf courses, etc.) and a proposed recycled distribution water pipeline route was based on maximizing recycled water demands and minimizing pipeline and infrastructure costs. The Study also identified recycled water facilities, including recycled water distribution pipelines, booster pumps, reservoirs, and backflow prevention assemblies, and identified potential funding sources for these facilities. Although the proposed recycled water project is not projected to change any land use or planning designations of the proposed recycled customers, implementation of the proposed facilities may cause temporary and/or permanent changes to the physical environment during construction. However, the Study indicates mitigation measures are available for any potential air quality, water quality, hydrology, soils, traffic, land use, and aesthetics impacts from implementation of the proposed facilities.

The City's "Draft Recycled Water Feasibility Study" identified LACSD's WNWRP as the preferred source of recycled water (although all WNWRP recycled water is currently used). The WNWRP supplies recycled water to Upper Water's Phase IIA recycled water system (Whittier Narrows, Rosemead Extension, and the South El Monte Recycled Water Expansion Project).



Upper Water provides wholesale deliveries of recycled water to member agencies. Upper Water supplies treated recycled water through Upper Water's Phase I (Rose Hills), Phase IIA (Whittier Narrows, Rosemead, and South El Monte), Phase IIB (City of Industry), and La Puente Valley County Water District recycled water projects. Upper Water will continue to study future recycled water expansion projects, including recycled water deliveries to the City of Arcadia.

6.2.6 DESALINATED WATER OPPORTUNITIES

CWC 10631.

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

Main Basin

Groundwater produced from the Main Basin is low in TDS and does not require desalination. The SWRCB-DDW recommended TDS level is 500 milligrams per liter (mg/L) and water can be provided for long-term domestic use with TDS concentrations of up to 1,000 mg/L. Recent water quality data indicates the TDS values for the City's groundwater wells are less than 500 mg/L. Due to the high quality (low TDS concentration) of the groundwater, the City does not need to investigate the use of desalination to develop or reestablish a new long-term supply. The City is currently not considering the development of a desalinated water project. However, there may be opportunities for use of desalinated ocean water as a potential water supply source in the future, if needed, through coordination with other agencies that have ocean desalination programs.



Raymond Basin

The City pumps groundwater from the Raymond Basin which is low in TDS and does not require desalination. The SWRCB-DDW recommended level is 500 milligrams per liter and water can be provided for long-term domestic use with TDS concentrations of up to 1,000 mg/L. Recent water quality data indicates the TDS values for the City's groundwater wells are less than 500 mg/L. Due to the low TDS concentration of the groundwater from the Raymond Basin, the City does not need to investigate the use of desalination as a long-term supply. However, there may be opportunities for use of desalinated ocean water as a potential water supply source in the future, through coordination with other agencies that have ocean desalination programs.

6.2.7 WATER EXCHANGES AND TRANSFERS

CWC 10631.

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

6.2.7.1 EXCHANGES

Pursuant to DWR's 2025 Final Guidebook, "*Water exchanges are typically water delivered by one water user to another water user, with the receiving water user providing water in return at a specified time or when the conditions of the parties' agreement are met. Water exchanges can be strictly a return of water on a basis agreed upon by the participants or it can include payment and the return of water.*"

The City does not have any current or planned water exchange opportunities.



6.2.7.2 TRANSFERS

As a Party to the Main Basin Judgment, the City can pump from the Main Basin. The Main Basin Judgment does not restrict the quantity of groundwater that can be produced, but provides for a Replacement Water assessment for production in excess of water rights. In addition, the City has entered into a Cyclic Storage agreement, described in Section 6.2.2, with the Main Basin Watermaster to store imported water in the Main Basin for a period of up to five years to be used to offset a future Replacement Water requirement.

6.2.7.3 EMERGENCY INTERTIES

The City has emergency interties (or interconnections) with other water agencies that serve as short-term emergency exchange opportunities. Emergency interconnections are distribution system interconnections between water agencies for use during critical situations where one system or the other is temporarily unable to provide sufficient potable water to meet its water demands and/or fire protection needs. An emergency interconnection will allow a water system to continue serving water during critical situations such as local water supply shortages as a result of earthquakes, fires, prolonged power outages, and droughts. The City has the ability to receive water from interconnections with the following water agencies:

- Golden State Water Company (8-inches, two way)
- Sunny Slope Water Company (6-inches, two way)
- San Gabriel Valley Water Company (4-inches, two way)
- California American Water Company (8-inches, two way)
- MWD – USG-6 Connection (one way- in)



6.2.8 SUPPLY FROM STORAGE

Section 6.2.8 is not applicable. The City does not remove water from either surface storage or underground storage for use (including surface water placed into storage in a given year and retrieved in the following year).

6.2.9 OTHER

The City does not rely on any additional water supply sources.

6.2.10 FUTURE WATER PROJECTS

CWC 10631.

- (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.*

In partnership with the City of Sierra Madre, the City is currently developing a new joint well project (Goldring Well) located at the City of Arcadia Public Works Services Department property. This project is expected to yield over 2,000 gpm (with 1,000 gpm going to the City of Arcadia) from the Main Basin. The project is estimated to be completed by 2027.



The 2016 City of Arcadia Water Master Plan Update report also identified potential reservoir, pipeline, and booster station projects.

In addition to Decreed Rights in the Raymond Basin and groundwater extraction from the Main Basin, the City has the ability to obtain supplemental water supplies from the following sources:

- Cyclic storage provisions allow producers, including the City, to store supplemental water within the Main Basin for the purpose of supplying replacement water.
- The City can receive direct deliveries of treated imported water through its MWD connection, USG-6, which has a capacity of 20 cubic feet per second (about 14,500 acre-feet per year if used continuously). The City does not typically use service connection USG-6 because the City's current collective groundwater supplies are sufficient to meet water demands.

6.3 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.*

“Energy intensity” is defined as the quantity of energy consumed, measured in kilowatt hours (kWh), divided by the volume of water, measured in AF for a water management process over a one-year period. The information used to calculate the estimated energy intensity associated with the City’s water system is provided below. The energy intensity information is based on readily obtainable energy and water use data for the following water management processes: 1) extraction or diversion of water supplies; 2) placement into storage; 3) conveyance to distribution; 4) treatment; and 5) water system distribution.

The City has tabulated its energy intensity using readily obtainable energy consumption data obtained from monthly electricity bills from Southern California Edison (SCE) for the whole water system and the corresponding water use data obtained from available water meter readings. The City has reported the energy intensity associated with the water management processes which occur within its operational control. Because the City does not track individual energy usage for each water management process identified above, the City has estimated the energy intensity using the a “total utility approach” (i.e. sum of all water management processes). The total energy consumed was approximately 10,785,416 kWh during FY 2024-25. Although the total energy consumption reported includes electricity usage for general administration (e.g. at City Hall) which is not associated with any water management processes, the general administration energy usage is considered negligible compared to overall water system use and has not been netted out.



The total volume of water entering the potable water system was approximately 13,294 AF during FY 2024-25 and is consistent with the total volume of water provided in Table 4-1.

The total energy intensity associated with the City's water management processes is estimated at 2,490 kWh per million gallons. The energy intensity data and calculations based on the "total utility approach" are provided in Table O-1B below.

The City's water management processes do not include "consequential hydropower generation" where the energy generation is a direct consequence of water delivery (i.e. all water passing through the energy generation devices is delivered to users). The City's water management processes do not include "non-consequential hydropower generation" where the energy generation is not a direct consequence of water delivery (i.e. energy could be generated even if no water was being delivered to water users). In addition, the City's water management processes do not include any substantial "self-generated energy sources" including solar, wind, geothermal, biomass, co-generation, and diesel generator sources.



Table O-1B. Recommended Energy Reporting — Total Utility Approach

Optional Submittal Table O-1B: Recommended Energy Reporting - SINGLE DELIVERY PRODUCT - TOTAL UTILITY APPROACH				
Water Delivery Product drop down list (If delivering more than one type of product recommend using Table O-1C)	Retail Potable Deliveries	Only for Water Delivery Products Under the Urban Water Supplier's Operational Control		
Start Date of Reporting Period	7/1/2024	Sum of All Water Management Processes	Non-Consequential Hydropower	
End Date of Reporting Period	6/30/2025		Total Utility See DWR NOTES	Hydropower
Is upstream embedded energy in the values reported?	No			
Units of Measure for Water	AF			
Volume of Water Entering Process		13,294		13,294
Energy Consumed (kWh)		10,785,416		10,785,416
Energy Intensity (kWh/vol. converted to MG)		2,490	-	2,490
DWR NOTES:				
<p>Total Utility:The volume of water entered in the “Total Utility” column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from your volume in this table.</p>				
Quantity of Self-Generated Renewable Energy				
0 kWh				
Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)				
Combination of Estimates and Metered Data				
Data Quality Narrative:				
The total energy consumed was identified based on Southern California Edison (SCE) billing records. Although the total energy consumed includes electricity usage for general administration (which is not an identified water management process), general administration energy use is considered to be negligible compared to overall water system use and has not been netted out.				
Narrative:				
The total energy consumption includes energy associated with operating groundwater production wells and booster pumps to deliver water in the distribution system. Energy consumption is associated with operating groundwater water treatment. Energy consumption is also associated with plant lighting and air conditioning, and operating the Supervisory Control and Data Acquisition (SCADA) system and chlorination injection pumps.				
NOTES:				



6.4.2 TABLE 6-2: WASTEWATER COLLECTED WITHIN SERVICE AREA

Table 6-2 Wastewater Collected Within Service Area

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area				
Water Code Section 10633(a)				
<input type="checkbox"/>	Check the box if there is no wastewater collection system. Proceed to the next table.			
	Percentage of 2025 service area served by wastewater collection system (OPTIONAL)			
	Percentage of 2025 service area population served by wastewater collection system (OPTIONAL)			
Wastewater Collection			Recipient of Collected Wastewater	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? OPTIONAL Drop Down List	Volume of Wastewater Collected from UWMP Service Area 2025 (AF)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number Drop down list	Is WWTP Located Within UWMP Area? Drop Down List
Add additional rows as needed				
LACSD	Estimated	123	Whittier Narrows Water Reclamation Plant, Place ID 235826	No
LACSD	Estimated	821	San Jose Creek Water Reclamation Plant, Place ID 260156	No
LACSD	Estimated	3,283	A.K. Warren Water Resource Facility, Place ID 234156	No
Total Wastewater Received from UWMP Service Area in 2025:		4,227		
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.				
NOTES:				



6.4.4 TABLE 6-4: RECYCLED WATER DIRECT BENEFICIAL USES WITHIN SERVICE AREA

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

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area										
Water Code Section 10633 (c),(d),(e)										
<input checked="" type="checkbox"/>		Check box if recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.								
Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL) :										
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :										
Volume of Supplemental Water Added in 2025 (OPTIONAL) :										
Source of 2025 Supplemental Water (OPTIONAL) :										
Use Type Drop down list	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	Potential Recycled Water Use	
									Volume	Narrative page number (OPTIONAL)
Add additional rows as needed										
Subtotal Potable			0	0	0	0	0	0	0	
Subtotal Non-Potable			0	0	0	0	0	0	0	
Total			0	0	0	0	0	0	0	0
<p>DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.</p> <p>Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.</p> <p>Potential recycled water use: a description of the feasibility of these uses must be included in the narrative.</p> <p>Multiple Producers: If you have multiple recycled water producers, submit a separate table for each.</p>										
NOTES:										



6.4.5 TABLE 6-5: 2020 UWMP RECYCLED WATER-USE PROJECTION COMPARED TO 2025 ACTUAL

Table 6-5 2020 UWMP Recycled Water-Use Projection Compared to 2025 Actual

Submittal Table 6-5 Retail: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual Water Code Section 10633(e)		
<input checked="" type="checkbox"/>	Check the box if recycled water was not used in 2025 nor previously projected for use in 2020. Proceed to the next table.	
Use Type Drop Down list	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Add additional rows as needed		
Total	0	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3 Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.		
NOTES:		



6.4.6 TABLE 6-6: METHODS TO ENCOURAGE FUTURE RECYCLED WATER USE

Table 6-6 Methods to Encourage Future Recycled Water Use

Submittal Table 6-6 Retail: Methods to Encourage Future Recycled Water Use Water Code Section 10633(f)			
<input checked="" type="checkbox"/>	Check the box if the Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.2.5	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Add additional rows as needed			
Total (AF)			0
Unit Conversion to AF			0
DWR NOTES:			
Units of measure (AF, CCF, MG) MUST remain consistent with units reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
The unit conversion to Acre Feet addresses the Water Code's requirement that this value be provided in acre-feet.			
NOTES:			



6.4.7 TABLE 6-7: EXPECTED FUTURE WATER SUPPLY PROJECTS OR PROGRAMS

Table 6-7 Expected Future Water Supply Projects or Programs

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs Water Code Section 10631(f)							
<input type="checkbox"/>	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Proceed to the next table.						
<input checked="" type="checkbox"/>	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.						
Section 6.2.10	Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop Down list	Planned Implementation Year	Planned for Use in Year Type Drop Down List	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Add additional rows as needed							
New Groundwater Well (Goldring)	Yes	City of Sierra Madre	New Main Basin well	Potable	2027	All Year Types	1,600
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3.							
NOTES:							

6.4.8 TABLE 6-8: WATER SUPPLIES—ACTUAL

As discussed in Section 6.2, the City’s water supply sources consist of treated imported water purchased from Metropolitan Water District of Southern California through Upper Water (see Section 6.2.1) and groundwater from the Main and Raymond Basins (see Section 6.2.2). The actual quantities of the water supply sources available to the City during FY 2024-25 are summarized in Table 6-8. The reliable quantities of projected water supply sources available to the City in five-year increments through FY 2049-50 during normal or average years are summarized in Table 6-9. The reliability of these sources of



supply are addressed in Section 7.2.3, including during normal years, single dry years, and five consecutive year droughts.

The order of use of the City's projected reliable water supplies from FY 2024-25 through FY 2049-50 in five-year increments is based on historical practices, water supply availability, and the cost of water. It is anticipated the City will initially use groundwater produced from the Main Basin and the Raymond Basin. The City will also use treated imported water, if needed. It is important to note that the Main Basin is adjudicated (as discussed in Section 6.2.2) and that there is no limit to the amount of groundwater which can be produced annually. Consequently, in the event treated imported water may be limited, the City has the flexibility to increase groundwater production from the Main Basin.

The City's projected quantities of treated imported water supplies are based on historical long-term averages and available supplies during previous dry year conditions. The City's projected quantities of groundwater supplies from Main Basin are based on meeting the remainder of the City's total water demands. As noted above, in the event treated imported water may be limited, the City has the flexibility to increase groundwater production from the Main Basin. Consequently, it is anticipated the City will have sufficient water supplies available to meet projected demands.



Table 6-8 Water Supplies—Actual

Submittal Table 6-8 Retail: Water Supplies — Actual Water Code Section 10631(b)				
Water Supply	Additional Description (as needed)	2025		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed				
Groundwater (not desalinated)	East Raymond Basin	Potable	2,167	
Groundwater (not desalinated)	West Raymond Basin	Potable	772	
Groundwater (not desalinated)	Main Basin	Potable	10,355	
Purchased or Imported Water	MWD	Potable	0	
		Subtotal Potable	13,294	0
		Subtotal Non-Potable	0	0
		Total	13,294	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.				
NOTES:				

6.4.9 OPTIONAL TABLE 6-8DS: SOURCE DESALINATION BY SUPPLIER

As discussed in Section 6.2.6, the City is currently not considering the development of a desalinated water project. As a result, optional Table 6-8DS is not included.



CHAPTER 7

WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

LAY DESCRIPTION – CHAPTER 7

WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

Chapter 7 (Water Service Reliability and Drought Risk Assessment) of the City's 2025 Plan discusses and provides the following:

- FY 2019-20 represents an “average” or “normal” water year for the City in which the total amount of rainfall was similar to the historical average rainfall.
- A “single dry” year for the City was represented in FY 2017-18, in which the total amount of rainfall was below the historical average rainfall.
- A “five consecutive year drought” period for the City is represented from FY 2011-12 to FY 2015-16, where the total amount of rainfall during each of these years was less than the historical average rainfall.
- The City's current and projected water supplies available during normal years in five-year increments over the next 25 years are provided (through Fiscal Year 2049-50) as shown on Table 7-2.
- The City's current and projected water supplies available during single dry years in five-year increments over the next 25 years are provided (through Fiscal Year 2049-50) as shown on Table 7-3.
- The City's current and projected water supplies available during each year of a five consecutive year drought in five-year increments over the next 25 years are provided (through Fiscal Year 2049-50) as shown on Table 7-4.
- The reliability of the City's water supply sources, including a review of water supply constraints, is provided. A single dry year or a five consecutive year drought period



will not compromise the City's ability to provide a reliable supply of water to its customers.

- A Drought Risk Assessment is provided which includes an assessment of the City's water supply reliability over a five consecutive year drought period. The City's DRA assumes a five consecutive year drought from FY 2025-26 through FY 2029-30 and includes a review of water supplies, water uses, and water supply reliability for each water supply source during this period. The City's water system has experienced a prior five consecutive year drought with no limitation to its collective water supplies. However, the cost of those water supplies may have increased based on the mix of water supplies which are used. Consequently, the City has the ability to enact varying water shortage levels (see Chapter 8) to help educate its customers and provide an economic incentive for the retail customers to reduce their water consumption.

7.1 CONSTRAINTS ON WATER SOURCES CONSIDERATIONS

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.

Water Code Section 10634

The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Water Code Section 10635



(b)(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.

Water Code Section 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.

This section of the City’s UWMP describes the City’s ability to meet retail customer water demands by analyzing a variety of factors which affect the City’s water supply. This section assesses the City’s water service reliability during average years, single dry years, and during a five consecutive year drought period to meet the water needs of its customers. This section also includes the discussion of a Drought Risk Assessment which provides a mechanism for the City to evaluate the risk to its water supply under a drought lasting for the next five consecutive years.

7.1.1 SERVICE RELIABILITY - CONSTRAINTS ON WATER SOURCES

The City’s sources of supplies consist of groundwater pumped from the Main Basin and Raymond Basin, and treated, imported surface water from Metropolitan Water District of Southern California purchased through Upper Water, as described in Section 6.2. Although all of these supplies are managed, the following constraints may occur which the City has considered in this reliability analysis.

Main Basin

The City produces groundwater from the Main Basin. The groundwater historically had been impacted by contamination. However, the City has developed and implemented appropriate treatment (blending and/or treatment facilities) which have been approved by



SWRCB-DDW. These groundwater supplies are considered reliable both from a water quality and quantity standpoint.

Raymond Basin

The City produces groundwater from the Raymond Basin. The groundwater historically had been impacted by contamination. However, the City has developed and implemented appropriate treatment (blending and/or treatment facilities) which have been approved by SWRCB-DDW. These groundwater supplies are considered reliable both from a water quality and quantity standpoint.

Imported Water

The City also receives treated surface water from MWD through Upper Water. Water quality from MWD relating to supply reliability is addressed separately in MWD's 2025 Regional Urban Water Management Plan.

7.2 WATER SERVICE RELIABILITY 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.*



Information regarding the reliability of the City's water supplies is based on the historical precipitation data in the San Gabriel Valley. Historical annual precipitation in the San Gabriel Valley is discussed in Section 3.3 and is based on historical data collected from Station 159 (Monrovia). Furthermore, Section 4.2.5.6 of this Plan notes that potential future climate change impacts may result in an increase in the average annual precipitation within the City's service area, thus indicating use of historical data is a reasonable and conservative approach. As indicated in Section 3.3, the historical average rainfall in the vicinity of the City's service area is 19.9 inches. FY 2019-20 represents an average or normal water year for the City in which the total amount of rainfall was similar to the historical average rainfall. A single dry year for the City was represented in FY 2017-18, in which the total amount of rainfall was below the historical average rainfall. A five consecutive year drought period for the City is represented from FY 2011-12 to FY 2015-16, where the total amount of rainfall during each of these years was less than the historical average rainfall. Table 7-1 summarizes these "base years" for average, single dry, and five consecutive year drought and provides the total amount of water supplies available to the City during those base years. The following discussion assesses the water service reliability of the City's water supply sources.

Water Service Reliability - Imported Water

The City's treated imported water supplies from MWD, through Upper Water, may be impacted during a multi-year drought or other conditions which limits MWD from delivering sufficient water supplies to all of its member agencies, and consequently to the City. In anticipation of such a reduction in supplies, MWD developed a WSAP which is briefly described below. The WSAP provides a means of equitably providing reduced water supplies to each of MWD's member agencies for up to 10 levels of reduction representing up to a 50 percent reduction.



During calendar year 2007, critically dry conditions impacted MWD's water supply sources. In addition, a ruling in the Federal Courts in August 2007 provided protective measures for the Delta Smelt (and subsequently other aquatic species) in the Sacramento-San Joaquin River Delta resulting in restrictions on the availability of State Water Project water. As a result, MWD adopted a WSAP in February 2008 to allocate available water supplies to its member agencies. MWD revised the WSAP in December 2014.

The WSAP establishes ten different shortage levels and a corresponding Allocation to each member agency. Based on the shortage levels established by MWD, the WSAP provides a separate reduced Allocation to a member agency for its 1) Municipal and Industrial (M&I) retail demand and 2) replenishment demand. The WSAP formula considers historical local water production, full service treated water deliveries, agricultural deliveries and water conservation efforts when calculating each member agency's Allocation.

In general, the WSAP process calculates total historical member agency demand. That historical demand is then compared to member agency projected local supply for a specific Allocation year. The balance required from MWD, less an Allocation reduction factor, is the member agency's "Water Supply Allocation" of imported water from MWD. When a member agency reduces its local demand through conservation or other means, the Allocation of imported water will increase. Depending on MWD's available supply, MWD can establish a specific WSAP shortage level. The shortage level causes a regional reduction and calculates an allocation for each of its member agency. Additional information about MWD's WSAP is provided in MWD's Regional 2025 UWMP which is incorporated by reference. The following is a summary of MWD's water shortage levels:

Level 1 – Regional Percent Reduction of 5%

Level 2 – Regional Percent Reduction of 10%



- Level 3 – Regional Percent Reduction of 15%
- Level 4 – Regional Percent Reduction of 20%
- Level 5 – Regional Percent Reduction of 25%
- Level 6 – Regional Percent Reduction of 30%
- Level 7 – Regional Percent Reduction of 35%
- Level 8 – Regional Percent Reduction of 40%
- Level 9 – Regional Percent Reduction of 45%
- Level 10 – Regional Percent Reduction of 50%

In response to a fourth consecutive year of below average rainfall and critically dry conditions, MWD declared a WSAP Allocation Level 3 for fiscal year 2015-16, which represented a regional reduction of 15 percent. MWD rescinded the WSAP for fiscal year 2016-17 and has not reinstated the WSAP since that time.

Water Service Reliability - Groundwater

Main Basin

The Main Basin groundwater supplies are managed by the Main Basin Watermaster, as discussed in Section 6.2.2. During a normal year (FY 2019-20), the City met about 83 percent of its total demands with supplies from the Main Basin. During a single dry year (FY 2017-18), the City met about 84 percent of its total demands with supplies from the Main Basin. During a five consecutive year drought period (FY 2011-12 to FY 2015-16), the City met between 71 and 81 percent of its total demands with supplies from the Main Basin.



Raymond Basin

The Raymond Basin groundwater supplies are managed by the Raymond Basin Management Board, as discussed in Section 6.2.2. During a normal year (FY 2019-20), the City met about 17 percent of its total demands with supplies from the Raymond Basin. During a single dry year (FY 2017-2018), the City met about 16 percent of its total demands with supplies from the Raymond Basin. During a five consecutive year drought period (FY 2011-12 to FY 2015-16), the City met between 19 and 29 percent of its total demands with supplies from the Raymond Basin.

Water Service Reliability Summary

Table 7-1 shows the water supplies during the base years (for average year, single dry year and a five consecutive year drought). As a result of the City's diverse water supply portfolio, water supplies may be re-apportioned during a five consecutive year drought to meet the City's water demands.

7.2.1 WSRA YEAR-TYPE CHARACTERIZATION

7.2.1.1 TYPES OF YEARS

The City's base years for an average year, a single dry year, and a five consecutive year drought are discussed in Section 7.2 and are summarized in Table 7-1. As indicated in Chapter 6, the City's water supplies sources have been sufficient in meeting the City's historical water demands during an average year, a single dry year, and a five consecutive year drought. An average year was based on a historical year during the past 15 years with a total precipitation similar to the historical average precipitation in the vicinity of the City's service area. Because a single dry year or a five consecutive year drought period will not compromise the City's ability to provide a reliable supply of water to its customers,



a single dry year in this Plan was selected based one of the driest years during the past 15 years. The five consecutive year drought period was based on a period of five consecutive dry years during the past 15 years.

As indicated in Section 3.3, the historical average rainfall in the vicinity of the City's service area is 19.9 inches. FY 2019-20 represents an average or normal water year for the City in which the total amount of rainfall was similar to the historical average rainfall. A single dry year for the City was represented in FY 2017-18, in which the total amount of rainfall was less than the historical average rainfall. A five consecutive year drought period for the City is represented from FY 2011-12 to FY 2015-16, where the total amount of rainfall during each of these years was less than the historical average rainfall. Table 7-1 summarizes these "base years" for an average year, a single dry year, and a five consecutive year drought period and provides the total amount of water supplies available to the City during those base years.

7.2.1.2 SOURCES FOR WATER DATA

The monthly historical average temperatures (including minimum and maximum), monthly historical average rainfall, and monthly ETo in the vicinity of the City's service area are discussed in Section 3.3 Historical climate information was obtained from the WRCC, DPW, and from DWR's CIMIS.

7.2.2 WSRA SUPPLY AND DEMAND COMPARISON

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 primarily obtains its water supplies from groundwater wells located in the Main Basin. As discussed in Section 7.3 and shown in Table 7-2, Table 7-3, and Table 7-4, each of the City's water supply sources share the same base years. As previously discussed in Section 7.2.1, a single dry year or a five consecutive year drought period will not compromise the City's ability to provide a reliable supply of water to its customers.

The City's projected normal year water demands over the next 25 years are discussed in Section 4.2.6. The ratio of total water supplies (including potable and recycled water supplies) available to the City during a historical normal year in FY 2019-20 (or 13,935 AF) and during a historical single dry year in FY 2017-18 (or 14,416 AF) was used to estimate the City's projected water demands during single dry years. The ratio of water supplies available to the City during a historical normal year in FY 2019-20 (or 13,935 AF) and a historical five consecutive year drought period from FY 2011-12 to FY 2015-16 (or 16,399 AF, 17,211 AF, 17,452 AF, 15,326 AF, and 12,369 AF, respectively) was used to estimate the City's projected water demands during a five consecutive year drought period. The City's projected dry year water supplies over the next 25 years were based on the minimum supplies needed by the City to meet projected single-dry year demands. Table 7-2, Table 7-3, and Table 7-4 summarize the City's projected water demands and supplies over the next 25 years in five-year increments, including during normal years, single dry years, and a five consecutive year drought periods. These tables indicate the City can meet water demands during normal years, single dry years, and a five consecutive year drought periods over the next 25 years.



7.2.2.1 NORMAL YEAR

Table 7-2 summarizes the City's projected water demands and supplies over the next 25 years in five-year increments during normal years. Table 7-2 indicates the City can meet water demands during normal years over the next 25 years.

7.2.2.2 SINGLE DRY YEAR

Table 7-3 summarizes the City's projected water demands and supplies over the next 25 years in five-year increments during single dry years. Table 7-3 indicates the City can meet water demands during single dry years over the next 25 years.

7.2.2.3 FIVE CONSECUTIVE DRY YEARS

Table 7-4 summarizes the City's projected water demands and supplies over the next 25 years in five-year increments during five consecutive year drought periods. Table 7-4 indicates the City can meet water demands during five consecutive year drought periods over the next 25 years.

7.2.3 WSRA DESCRIPTION OF MANAGEMENT TOOLS AND OPTIONS

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.*



Main Basin

As noted in Section 6.2.2, the Main Basin is managed by the Main Basin Watermaster. During the period of management under the Judgment, significant drought events have occurred. In each drought cycle the Main Basin has been managed to maintain water levels. Therefore, based on historical and on-going management practices, the City will be able to rely on the Main Basin for adequate supply over the next 25 years under single dry years and a five consecutive year drought periods.

Section 6.2.2 provides a description of the management of groundwater resources in the Main Basin, as well as information on basin management. Chapter 6 also demonstrates the management structure of the Main Basin provides a reliable source of groundwater supply for the City during a normal year, a single-dry year and a five consecutive year drought. Historical data indicates the Main Basin has been well managed for the full period of the adjudication, resulting in a stable and reliable water supply. Basin management changes are discussed in Section 6.2.2, and include increased direct use of recycled water (see Section 6.2.5) and the planned use of treated recycled water for groundwater replenishment in the Main Basin to reduce the need to import water from other regions. Therefore, the groundwater supplies in the Main Basin are deemed reliable.

Raymond Basin

As noted in Section 6.2.2, the Raymond Basin is managed by the Raymond Basin Management Board. During the period of management under the Judgment, significant drought events have occurred. In each drought cycle the Raymond Basin has been managed to maintain water levels. Therefore, based on historical and on-going management practices, the City will be able to rely on the Raymond Basin for adequate supply over the next 25 years under single dry years and a five consecutive year drought periods.



Section 6.2.2 provides a description of the management of groundwater resources in the Raymond Basin, as well as information on basin management. Chapter 6 also demonstrates the management structure of the Raymond Basin provides a reliable source of groundwater supply for the City during a normal year, a single-dry year and a five consecutive year drought. Historical data indicates the Raymond Basin has been well managed for the full period of the adjudication, resulting in a stable and reliable water supply. Therefore, the groundwater supplies in the Raymond Basin are deemed reliable.

7.3 DROUGHT RISK ASSESSMENT

CWC 10612.

“Drought Risk Assessment” means a method that examines water shortage risks based on the driest five-year historic sequence for the agency’s water supply, as described in subdivision (b) of Section 10635.

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.

The City's sources of supplies consist of groundwater pumped from the Main Basin and Raymond Basin, and treated, imported surface water from Metropolitan Water District of Southern California purchased through Upper Water. The following discussion provides a Drought Risk Assessment which assesses the City's water supply reliability over a five consecutive year drought period. The City's DRA incorporates a five consecutive year drought from FY 2025-26 through FY 2029-30 and includes a review of water supplies, water uses, and water supply reliability.

7.3.1 DRA, DATA, METHODS, AND BASIS FOR WATER SHORTAGE CONDITIONS

The City's DRA was prepared using historical production data from the City's water supply sources. The following assumptions were considered during the preparation of the City's DRA for each year of the five consecutive year drought.

- The five consecutive year drought period associated with the 2025 Plan is based on five consecutive dry years from FY 2025-26 through FY 2029-30
- The projected water supplies available during each year of this five consecutive year drought are assumed to be identical to the water supplies produced during each year between FY 2011-12 and FY 2015-16 (which represents the most recent and historical five consecutive year drought).
- The projected demands during this five consecutive year drought are based on water demands from FY 2019-20 (a normal year) which were adjusted based on projected population over the next five years along with the ratio of the normal year



demands to actual demands over each year of the most recent and historical five consecutive year drought period (from FY 2011-12 and FY 2015-16).

- The projected demands were compared to the projected supplies to identify potential water supply deficits which may require implementation of the Water Shortage Contingency Plan (discussed further in Chapter 8).

The following methodologies were considered during the preparation of the City's DRA during for each year of the five consecutive year drought:

- Drought Year 1: The region had experienced an average to above average year of precipitation in the prior year. Water use in the prior year had been below average due to a reduce need for outdoor water use, the groundwater basin had been replenished from above average local stormwater runoff, and imported water supplies were not restricted.
- Drought Year 2: The region experienced a second year of below average precipitation and runoff. Retail customers increased water use for outdoor irrigation to compensate for lack of precipitation. Groundwater and imported water supplies have not been impacted.
- Drought Year 3: The region experienced a third year of below average precipitation and runoff. Retail customers increased water use for outdoor irrigation to compensate for lack of precipitation. Groundwater and imported water supplies have not been impacted. However, there is an increased demand on both groundwater and treated imported water.
- Drought Year 4: The region experienced a fourth year of below average precipitation and runoff. Groundwater supplies have not been impacted. However, there is an increased demand on groundwater.
- Drought Year 5: Fifth year of below average precipitation and runoff. Groundwater supplies have not been impacted. However, there is an increased demand on groundwater.



7.3.2 DRA INDIVIDUAL WATER SOURCE RELIABILITY

The City's DRA incorporates a five consecutive year drought based on five consecutive dry years commencing in FY 2025-26. The quantity of water supplies available for each year during this five consecutive year drought period included in the City's DRA is assumed to be the same as the quantity of water supplies produced by the City (i.e. demands) during the most recent and historical five consecutive year drought which occurred from FY 2011-12 through FY 2015-16. Production data for those years have been tabulated in Section 6.1. The following describes the anticipated reliability of each water source for each year of the five consecutive year drought based on recent experience.

Groundwater – Main Basin

The City receives water supplies from the Main Basin which is actively managed by the Main Basin Watermaster, as described in Section 6.2.2. Each year the Main Basin Watermaster reviews water supply conditions including local rainfall, groundwater levels, local stormwater runoff available for replenishment, imported water availability and the amount of imported water stored in the groundwater basin for future demands. The Watermaster identifies the annual amount of groundwater which may be pumped (such as an Operating Safe Yield) before more expensive imported water would need to be purchased from MWD through the Upper Water to replenish the Basin for all production in excess of the water rights. Regardless of the annual safe yield adopted there is never a restriction on the amount of water which may be pumped from the Main Basin, only the cost of producing the groundwater is impacted. The Main Basin Watermaster is not restricted as to when or how much untreated imported water be delivered to the Main Basin, only that it ultimately be delivered. In addition, the City has established an untreated imported water (cyclic) storage account in the Main Basin which the City may



draw upon to offset its potential future production in excess of its water rights. In doing so, the City reduces its need to purchase untreated imported water in the future in the midst of a drought when imported water supplies may be limited. The quantity of groundwater used (and reliably available) during the most recent and historical five consecutive year drought period have been tabulated in Section 6.1. During this period, the City was able to increase its production of its groundwater supplies from an adjudicated and managed groundwater basin. The City also had the ability to systematically implement aspects of its Water Shortage Contingency Plan (see Chapter 8). As a result of these collective actions (and experience during prior consecutive five-year droughts), the City does not anticipate a water supply shortage from the Main Basin.

Groundwater- Raymond Basin

The City receives water supplies from the Raymond Basin which is actively managed by the Raymond Basin Management Board, as described in Section 6.2.2. The Raymond Basin is adjudicated; however, the City's water rights are fixed each year. Consequently, the City cannot produce in excess of its own water rights or rights it may have leased from others. The City also has access to water supplies from Main Basin and treated imported water. The quantity of groundwater used (and reliably available) during the most recent and historical five consecutive year drought period have been tabulated in Section 6.1. The City manages its water supply portfolio to optimize the water supplies available each year and to avoid a water supply shortage. The City also had the ability to systematically implement aspects of its Water Shortage Contingency Plan (see Chapter 8). As a result of these collective actions (and experience during prior consecutive five-year droughts), the City does not anticipate a water supply shortage.



Imported Water

The City obtains imported water from the Metropolitan Water District of Southern California through Upper Water. Section 6.2.1 describes the planning conducted by the Metropolitan Water District of Southern California regarding treated imported water supplies available to the City. The reliability of MWD's supplies is also discussed in its 2025 Regional UWMP and is incorporated by reference. The City purchases treated imported water which is delivered directly within its distribution system. The City's purchases of treated, imported water over the past 15 years have been tabulated in Section 6.1. In the event of a drought which limits imported water supplies, the City will rely on its groundwater production and will pay the applicable assessments to purchase untreated imported water to be delivered in the future when supplies are available.

The imported water purchases by the City during the most recent and historical five consecutive year drought period have been tabulated in Section 6.1. Because the City's DRA assumes the most recent and historical five consecutive year drought scenario will be repeated over the next five years, it is assumed the quantity of treated imported water supplies purchased during the most recent and historical five consecutive year drought scenario will be available. Furthermore, this constitutes the minimum amount of treated imported water which may be available in a future five consecutive year drought absent MWD's programs which it has since implemented.

Summary

The City's water system has experienced a prior five consecutive year drought with no limitation to its collective water supplies. However, the cost of those water supplies may have increased based on the mix of supplies which are used. Consequently, the City has the ability to enact varying Demand Management Measures (see Chapter 9) to help



educate its customers and provide an economic incentive for the retail customers to reduce their water consumption.

7.3.3 DRA TOTAL WATER SUPPLY AND USE COMPARISON

Gross water use for the projected five consecutive year drought is shown on Table 7-5. Section 7.3.2 describes the water source reliability for each source of supply the City will rely on during a five consecutive year drought. The annual quantities are summed and are also provided on Table 7-5. The most important aspect of the City's water supplies is the groundwater which can be produced from a managed groundwater basin without restriction on the amount the City is allowed to produce. However, for the purposes of the City's DRA, as a worst-case scenario, the City has considered no water supply augmentation (as indicated in Table 7-5) from its groundwater supplies. When necessary, the City can implement various water shortage levels of its Water Shortage Contingency Plan (as discussed in Chapter 8) in order to reduce its water demands. The total water supplies available to the City shown in Table 7-5 are based on the quantity of supplies produced by the City (i.e. demands) during the most recent historical five consecutive drought period (from FY 2011-12 through FY 2015-16). As shown in Table 7-5, assuming no additional water supply benefits will be available from groundwater supplies, the City can implement various stages of its Water Shortage Contingency Plan to balance water demands with available supplies during each year of the projected five consecutive year drought.

OPTIONAL PLANNING TOOL WORKBOOK

DWR has deemed the "Planning Tool Worksheet" as optional and the City is not required by DWR to use the tool. The City has provided sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. The City has also been able to provide water service to meet maximum day water demands



for these years, including during the summer months. The City obtains the majority of its water supplies from managed groundwater basins which are not subject to seasonal fluctuation. Consequently, an evaluation regarding water supplies on a monthly basis was not considered.

7.4 SUBMITTAL TABLES

The applicable standardized Submittal Tables referenced within Chapter 7 are provided below.

7.4.1 OPTIONAL TABLE 7-1: BASIS OF WATER-YEAR DATA (WSRA)

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

Optional Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location: [insert location from UWMP]
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	% of Average Supply
Average Year	2020	13935	100%
Single-Dry Year	2018	14416	103.5%
Consecutive Dry Years 1st Year	2012	16399	117.7%
Consecutive Dry Years 2nd Year	2013	17211	123.5%
Consecutive Dry Years 3rd Year	2014	17452	125.2%
Consecutive Dry Years 4th Year	2015	15326	110.0%
Consecutive Dry Years 5th Year	2016	12369	88.8%
DWR NOTES: Supplier may use multiple versions of Submittal Table 7-1 R 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 Submittal Table 7-1 R, in the "Note" section of each submittal table, state that multiple versions of Submittal Table 7-1 R are being used and identify the particular water source that is being reported in each submittal table. Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the units of measure reported in Submittal Table 2-3.			
NOTES:			



7.4.2 TABLE 7-2: NORMAL-YEAR SUPPLY AND USE COMPARISON

Table 7-2 Normal-Year Supply and Use Comparison

Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 R)	14,773	16,144	16,225	16,308	16,388
Use totals (autofill from Submittal Table 4-2 R)	14,773	16,144	16,225	16,308	16,388
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					



7.4.3 TABLE 7-3: SINGLE-DRY-YEAR SUPPLY AND USE COMPARISON

Table 7-3 Single-Dry-Year Supply and Use Comparison

Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	15,283	16,701	16,785	16,871	16,954
Use totals	15,283	16,701	16,785	16,871	16,954
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES					



7.4.4 TABLE 7-4: MULTIPLE DRY YEARS SUPPLY AND USE COMPARISON

Table 7-4 Multiple Dry Years Supply and Use Comparison

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison Water Code Section 10635(a)						
		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	17,385	18,998	19,094	19,191	19,286
	Use totals	17,385	18,998	19,094	19,191	19,286
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	18,246	19,939	20,039	20,142	20,241
	Use totals	18,246	19,939	20,039	20,142	20,241
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	18,501	20,218	20,320	20,424	20,524
	Use totals	18,501	20,218	20,320	20,424	20,524
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	16,248	17,755	17,844	17,936	18,024
	Use totals	16,248	17,755	17,844	17,936	18,024
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	13,113	14,330	14,402	14,475	14,546
	Use totals	13,113	14,330	14,402	14,475	14,546
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.						
NOTES:						



7.4.5 TABLE 7-5: FIVE-YEAR DROUGHT RISK ASSESSMENT

Table 7-5 Five-Year Drought Risk Assessment

2026		Total
Total Water Use (AF)		15,993
Total Supplies (AF)		16,399
Surplus/Shortfall w/o WSCP Action		406
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit (AF)		
WSCP - use reduction savings benefit (AF)		
Revised Surplus/(shortfall)		
2027		Total
Total Water Use (AF)		17,150
Total Supplies (AF)		17,211
Surplus/Shortfall w/o WSCP Action		61
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit (AF)		
WSCP - use reduction savings benefit (AF)		
Revised Surplus/(shortfall)		
2028		Total
Total Water Use (AF)		17,760
Total Supplies (AF)		17,452
Surplus/Shortfall w/o WSCP Action		(308)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit (AF)		
WSCP - use reduction savings benefit (AF)		308
Revised Surplus/(shortfall)		0
2029		Total
Total Water Use (AF)		15,922
Total Supplies (AF)		15,326
Surplus/Shortfall w/o WSCP Action		(596)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit (AF)		
WSCP - use reduction savings benefit (AF)		596
Revised Surplus/(shortfall)		0
2030		Total
Total Water Use (AF)		13,113
Total Supplies (AF)		12,369
Surplus/Shortfall w/o WSCP Action		(744)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit (AF)		
WSCP - use reduction savings benefit (AF)		744
Revised Surplus/(shortfall)		0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.		
NOTES:		



CHAPTER 8

WATER SHORTAGE CONTINGENCY PLAN

LAY DESCRIPTION – CHAPTER 8

WATER SHORTAGE CONTINGENCY PLAN

Chapter 8 (Water Shortage Contingency Plan) of the City's 2025 Plan discusses and provides the following:

- The City's Water Shortage Contingency Plan is a detailed approach which presents how the City intends to act, or respond, in the case of an actual water shortage contingency.
- Preparation of the City's "Annual Water Supply and Demand Assessment" (or Annual Assessment) is discussed. The City is required to submit annually an Annual Assessment. The Annual Assessment includes a review of the City's "unconstrained" water demands for the current year and for a potential upcoming single dry year. Unconstrained water demands represent the City's water demands prior to any "response actions" the City may invoke pursuant to the City's Water Shortage Contingency Plan.
- The City will manage water supplies to minimize the adverse impacts of water shortages. The City's plan for water usage during periods of shortage is designed to incorporate six standard water shortage levels corresponding to progressive ranges from up to a 10, 20, 30, 40, and 50 percent shortage, and greater than a 50 percent shortage.
- For each declared water supply shortage level, customers will be required to reduce their consumption by the percentage specified in the corresponding water supply shortage level.



- For each declared water supply shortage level, the City has established response actions to reduce demand on water supplies and to reduce any shortage gaps in water supplies. These demand reduction actions include irrigation and other outdoor use restrictions, rate structure changes, and other water use prohibitions.
- The operational changes the City will consider in addressing water shortages on a short-term basis are discussed and include improved monitoring, analysis, and tracking of customer water usage to enforce demand reduction measures.
- The City's Emergency Response Plan is summarized. The Emergency Response Plan provides the management, procedures, and designated actions the City and its employees will implement during emergency situations (including catastrophic water shortages) resulting from natural disasters, system failures, and other unforeseen circumstances.
- The preparation of the City's seismic risk assessment and mitigation plan is discussed. The locations of earthquake faults in the vicinity of the City's water service area are provided.
- The effectiveness of the shortage response actions for each of the City's standard water shortage levels is presented. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands.
- The communication protocols implemented by the City when it declares any water shortage level are presented.
- The compliance and enforcement procedures associated with City's standard water shortage levels are presented.
- The legal authorities associated with City's standard water shortage levels are presented.
- The financial consequences associated with City's standard water shortage levels are presented.



- The City will evaluate the need for revising the Water Shortage Contingency Plan in order to resolve any water shortage gaps, as necessary. The steps necessary for the City to adopt and amend its Water Shortage Contingency Plan are presented.

The following Water Shortage Contingency Plan includes references to Chapters and Sections from the City of Arcadia’s 2025 Urban Water Management Plan:

8.1 WATER SUPPLY RELIABILITY ANALYSIS

CWC 10632.

(a)(1) The analysis of water supply reliability conducted pursuant to Section 10635.

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.

The City’s sources of supply were discussed in Section 6.2 of the 2025 Plan and consist of groundwater from Main and Raymond Basins, and treated imported water purchased from MWD through Upper Water. The Main and Raymond Basins are adjudicated and groundwater supplies are managed. The reliability of the various sources of supply are discussed in Chapter 7 of the 2025 Plan. Imported water supplies (treated) may be impacted in the event MWD implements its WSAP due to a water supply shortage. A seismic risk assessment and mitigation plan is discussed in Section 8.4.6.



8.2 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

CWC 10632.

(a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements

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.



By July 1st of every year, the City is required to submit an “Annual Water Supply and Demand Assessment” (Annual Assessment) in accordance with DWR’s guidance and requirements. The Annual Assessment includes a review of the City’s unconstrained water demands (i.e. water demands prior to any projected response actions the City may trigger under this Water Shortage Contingency Plan) for the current year and the upcoming (potential single dry) year. The Annual Assessment also includes information regarding anticipated shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the City’s Water Shortage Contingency Plan.

For each Annual Assessment, the City plans to prepare a preliminary assessment which evaluates the adequacy of its water supplies for the current and upcoming years by April of each year. The preliminary assessment will include a review of water supplies for at least a single dry year.

During the preparation of each Annual Assessment, the City will evaluate the adequacy of its water supplies for the current and upcoming years. The evaluation will include a review of water supplies for at least a single dry year.

8.2.1 DECISION-MAKING PROCESS

The City produces groundwater from the Main Basin as its primary source of water supply and that basin is managed on a fiscal year basis. Consequently, during the third quarter of each fiscal year the City will review its water demands from the initial six months along with the current groundwater basin conditions and local hydrology. This information will be used to help develop the Annual Assessment. A draft of the Annual Assessment will be circulated internally within the City for peer review and comment. Based on comments received, a redraft will be prepared and provided to City managers during the Spring of each year. The draft will subsequently be provided to the General Manager for final



review. If necessary, a final draft of the Annual Assessment will be provided to the City Council for review and included in the agenda as part of a City meeting such that it can be approved and any recommended specific shortage response actions may be enacted. The final Annual Assessment will be provided to DWR no later than July 1 of each year.

The Annual Assessments will be instrumental in providing guidance to the City for decisions regarding potential declarations of a water supply shortage and implementation of water reduction stages, instituting mandatory water restrictions, promoting water use efficiency and conservation programs, water rates and drought rate surcharges, and the necessity of pursuing alternative water supplies. This process will help ensure adequate water supplies resources are available to the City.

8.2.2 DATA AND METHODOLOGIES

The key data inputs and methodologies which will be evaluated by the City during the preparation of the Annual Assessment will include the following:

- 1) Evaluation Criteria: The locally applicable evaluation criteria used to prepare the Annual Assessment will be identified. The evaluation criteria will include, but is not limited to, an analysis of current local hydrology (including rainfall and groundwater levels), current water demands, a review of water system improvement plans which may impact infrastructure availability, and water quality regulations which may impact groundwater availability.
- 2) Water Supply: A description of each available water supply source will be provided. The descriptions will include a quantification of each available water supply source and will be based on review of current production capacities, historical production, Urban Water Management Plans, and prior water supply studies (including Water Supply Assessments and/or Master Plans).



- 3) Unconstrained Water Demand: The potential unconstrained water demands during the current year and the upcoming (potential single dry) year will be reviewed. The review will include factors such as weather, existing and projected land uses and populations, actual customer consumption and water use factors, monthly Urban Water Supplier Monthly Reports, existing water shortage levels (see Section 8.3), and existing water conservation ordinances (see Section 9.1).

- 4) Planned Water Use for Current Year Considering Dry Subsequent Year: The water supplies available to meet the demands during the current year and the upcoming (potential single dry) year will be considered and identified by each type of supply. The evaluation will include factors such as estimated water demands, weather, groundwater basin operating safe yields, water quality results, existing available pumping capacities, imported water allocations, contractual obligations, regulatory issues, use of emergency interconnections, and the costs associated with producing each water supply source.

- 5) Infrastructure Considerations: The capabilities of the water distribution system infrastructure to meet the water demands during the current year and the upcoming (potential single dry) year will be considered. Available production capacities (e.g. groundwater well capacities) and distribution system water losses (see Section 4.3) will be reviewed. In addition, capital improvement and replacement projects, as well as potential projects which may increase water system and production capacities (see Section 6.2.10), will be considered.



8.3 SIX STANDARD 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.

(a)(3)(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.

The City has a legal responsibility to provide water utility services, including water for residential, commercial, industrial, public authority, and for public fire hydrants and private fire services. The City will manage water supplies prudently to minimize the adverse impacts of water shortages. The City's plan for water usage during periods of shortage is designed to provide a minimum of 50 percent of normal supply during a severe or extended water shortage. Water shortage trigger mechanisms have been established to ensure that this policy is implemented.

For each declared water supply shortage level, customers will be required to reduce their water consumption by the percentage specified in the corresponding water supply shortage level.

The City's water conservation plan previously established eight (8) water shortage levels. A copy of City's water conservation plan is provided in Appendix J. In accordance with the California Water Code in which urban water suppliers are required to define six standard water shortage level, the City has developed the crosswalk illustrated below



(also included in the City's 2020 Plan) that translated the City's previously established shortage levels to the mandated standard shortage levels. Table 8-1 also provides a cross-reference between the City's previously established shortage levels and the mandated standard shortage levels.

Corresponding Relationships Between Supplier's Established Shortage Levels and the WSCP Mandated Shortage Levels

Established Level	Supply Condition/Shortage	WSCP Standard Level	Shortage Level
1		1	≤ to 10%
2	10%	2	10 to 20%
3	11 to 15%	3	20 to 30%
4	16 to 20%	4	30 to 40 %
5	21 to 25%	5	40 to 50 %
6	26 to 30%	6	> 50 %
7	31 to 40%		
8	41 to 50%		

8.4 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.

8.4.1 SUPPLY AUGMENTATION

As discussed in Chapter 6, the City's sources of water supply include groundwater produced from the Main Basin and Raymond Basin and imported surface water purchased from MWD through Upper Water. As noted in Section 8.2, the City is required to annually prepare and submit an Annual Assessment which will include a review of water supplies available to meet water demands for the current and upcoming years. If the City is currently in, or considers entering into, one of the standard water shortage levels identified in Section 8.3, the City will consider the water supply augmentation actions described below.

For each water shortage level discussed in Section 8.3, the City will consider supplementing its existing water supplies through purchase of additional imported water supplies. Due to previous critically dry conditions, MWD developed the "Water Supply Allocation Plan" whereby available supplies are equitably allocated to its member agencies, including Upper Water. The WSAP establishes ten different shortage levels and a corresponding drought allocation to each member agency. Based on the shortage level established by MWD, the WSAP provides a reduced drought allocation to a member agency for its Municipal and Industrial retail demand. The ratio of MWD water supply drought allocation to local water supply will change based on the WSAP stage. The MWD drought allocation can be used to make Full Service water deliveries at the Tier 1 rate up to a Tier 1 allocation. Any Full Service water delivered in excess of a drought allocation is subject to a penalty rate in addition to the normal rate paid for the water.



In addition to the WSAP, MWD describes supply augmentation actions in its Regional 2025 UWMP, which is incorporated by reference. MWD's primary first response to any gap between core supplies (from the State Water Project and Colorado River) and demand is to make optimal use of its supply augmentation options, consisting of drawing from flexible supply programs and storage reserves. MWD has developed and actively manages a portfolio of water supply programs including water transfer, storage, and exchange agreements. MWD pursues voluntary water transfer and exchange programs to help mitigate supply/demand imbalances and provide additional dry-year supply sources. In addition, MWD has developed significant storage capacity in reservoirs, conjunctive use, and other groundwater storage programs totaling approximately 6.0 million AF. Based on MWD's historical and on-going water supply and storage programs and management practices, the City can potentially rely on purchased imported water supplies from MWD through Upper Water for adequate supply augmentation in response to each of the standard water shortage levels identified in Section 8.3.

The City will consider supplementing its existing water supplies through production of additional groundwater from the Main Basin. As noted in Section 6.2.2, the Main Basin is managed by the Main Basin Watermaster. During the period of management under the Main Basin Judgment, significant drought events have occurred. In each drought cycle the Main Basin has been managed to maintain water levels. Parties to the Main Basin Judgment, including the City, are authorized to produce groundwater in excess of their rights and pay assessments for such production to the Main Basin Watermaster. The assessments are used to purchase untreated imported water to replenish the Main Basin. The Main Basin Watermaster purchases untreated imported water to replenish the Main Basin from MWD through Upper Water. An additional potential source of replenishment water is recycled water. Groundwater quality is carefully monitored and managed by the Main Basin Watermaster. Treatment facilities and/or blend plans have been developed by water agencies to meet potable water standards and to prevent the spread of any groundwater contamination. Groundwater quality in the Main Basin is not expected to



impact potable supplies or constrain supply reliability. Based on historical and on-going management practices, the City will be able to continue relying on the Main Basin for adequate supplies in response to each of the standard water shortage levels identified in Section 8.3.

8.4.2 DEMAND REDUCTION

The City may establish water shortage response actions to reduce demand on water supplies. These demand reduction actions include irrigation and other outdoor use restrictions, rate structure changes, and other water use prohibitions. Depending on the percent reduction in the City's water supply and corresponding water shortage level, regulations are made to conserve water and reduce the shortage gap in normal supply levels. Many demand reduction actions, identified as voluntary or mandatory conservation measures, are applicable to all levels of water shortages. The structure of water shortage levels are designed to strongly encourage customers with high per capita usage to achieve proportionally greater reduction than those with low usage. Violations of these demand reduction actions will be considered waste and an unreasonable use of water. Table 8-3 describes each demand reduction action and its effect on reducing the shortage gap.

Upon adoption of a water supply shortage stage, as described Table 8-1, the restrictions and mandatory water reduction demands will be effective immediately. A full listing of the restrictions/prohibitions associated with each shortage level is provided below.

Water Shortage Level 1

- (a) There shall be no hose washing of sidewalks, walkways, driveways, or parking areas.



- (b) There shall be no hose washing of a motor vehicle, except where the hose is fitted with a shut-off nozzle or similar device that causes the hose to cease dispensing water immediately when not in use.
- (c) No water shall be used to clean, fill or maintain levels in decorative fountains unless such water is part of a recirculating system.
- (d) No restaurant, hotel, cafe, cafeteria, bar or other public place where food or beverage is served or offered for sale, shall serve drinking water to any customer unless expressly requested by the customer.
- (e) No hotel or motel shall launder towels and linens of an occupied guestroom on a daily basis, unless expressly requested by the guest. The hotel or motel shall prominently display a notice in each guestroom of the guest's option not to have towels and linens laundered daily.
- (f) No customer of the Water Division shall permit water to leak from any facility on his premises.
- (g) No lawn, landscape, or other turf areas shall be watered or irrigated between the hours of 9:00 a.m. and 6:00 p.m. Pacific time.
- (h) No lawn, landscape, or other turf areas shall be watered or irrigated during and within 48 hours after measurable rainfall.
- (i) No lawn, landscape, or other turf areas shall be watered or irrigated more than 3 days per week, or such other number of days as the City Council may prescribe by resolution from time to time¹⁰. The three days per week shall be Tuesday, Thursday, and Saturday or such other days as the City Council may prescribe by resolution from time to time. Notwithstanding the foregoing, upon written application to and approval by the City's Public Works Services Director, an owner of property used primarily for commercial, industrial or institutional

¹⁰ Pursuant to Resolution No. 7430 adopted by City Council in May 2022, no lawn, landscape, or other turf areas shall be watered or irrigated more than two (2) days per week (on Tuesday and Saturday). From May to October, outdoor watering of lawn, landscape or other turf areas shall be limited to no more than 10 minutes per station on each day allowed. Resolution No, 7430 is provided in Appendix N.



- purposes may irrigate lawn, landscape or other turf areas of such property such number of days per week as approved by the Public Works Services Director if such owner provides evidence, to the satisfaction of the Public Works Services Director, that the owner has reduced overall bi-monthly water use for such property by at least twenty-five percent (25%) from the same bi-monthly period in 2013, or by such other measurement of reduction adopted by resolution of the City Council from time to time¹¹.
- (j) No lawn, landscape or other turf areas shall be watered in a wasteful manner. For example, in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
 - (k) Additional restrictions and conservation measures may be adopted from time to time by resolution of the City Council and shall become effective upon their adoption. Any and all such restrictions and measures shall be subject to all enforcement provisions, including without limitation fines and penalties, as are otherwise applicable to the provisions set forth in this Section.

Water Shortage Level 2

No use of water may be made contrary to the provisions of Water Shortage Level 1. No customer shall make, cause use or permit the use of water from the Water Division for any purpose in an amount in excess of eighty percent (80%) of the amount used during the base period as defined in this Urgency Ordinance.

¹¹ Pursuant to Resolution No. 7430 adopted by City Council in May 2022, an owner of property used primarily for commercial, industrial, or institutional purposes may not irrigate non-functional turf areas. "Non-functional turf" means turf that is solely ornamental and not regularly used for human recreational purposes or for civic or community events. Resolution No, 7430 is provided in Appendix N.



Water Shortage Level 3

No use of water may be made contrary to the provisions of Water Shortage Level 1. No customer shall make, cause, use or permit the use of water from the Water Division for any purpose in an amount in excess of seventy percent (70%) of the amount used during the base period as defined in this Urgency Ordinance.

Water Shortage Level 4

No use of water may be made contrary to the provisions of Water Shortage Level 1. No customer shall make, cause, use or permit the use of water from the Water Division for any purpose in an amount in excess of sixty percent (60%) of the amount used during the base period as defined in this Urgency Ordinance.

Water Shortage Level 5

No use of water may be made contrary to the provisions of Water Shortage Level 1. No customer shall make, cause, use or permit the use of water from the Water Division for any purpose in an amount in excess of fifty percent (50%) of the amount used during the base period as defined in this Urgency Ordinance.

Water Shortage Level 6

No use of water may be made contrary to the provisions of Water Shortage Level 1. No customer shall make, cause, use or permit the use of water from the Water Division for any purpose in an amount more than fifty (50%) of the amount used during the base period as defined in this Urgency Ordinance.



8.4.3 OPERATIONAL CHANGES

During a water supply shortage situation, the City will manage its water supply resources to provide sufficient water supplies capable of meeting the demands of its customers. Section 8.4.1 describes the City's water supply sources and water supply augmentation actions available. Section 8.4.2 describes the City's standard water shortage levels and associated demand reduction measures. The supply augmentation actions and demand reduction measures, when implemented, may potentially result in short-term operational changes which are necessary to allow the City to utilize all available water supply sources in response to water shortage situations.

As noted in Section 8.2, the City is required to annually prepare and submit an Annual Assessment which will include a review of the water supplies available to meet water demands for the current and upcoming years. Preparation of the Annual Assessment will assist the City in determining any potential operational changes. In addition, the City's standard water shortage levels and the associated demand reduction measures, in conjunction with the City's existing Demand Management Measures (discussed in Chapter 9), will be essential to the City in reducing water demands during any water shortage period. The operational changes the City will consider in addressing non-catastrophic water shortages on a short-term basis include the following:

- Improved monitoring, analysis, and tracking of customer water usage to enforce demand reduction measures
- Optimized production from existing available water supply sources
- Potential use of emergency supply sources, including emergency interconnections
- Potential blending of water supply resources
- Improved monitoring, maintenance, and repairs to reduce water distribution system losses



8.4.4 ADDITIONAL MANDATORY RESTRICTIONS

The mandatory restrictions which are implemented by the City to reduce customer demands are discussed in Section 8.4.2. There are no additional mandatory restrictions planned at this time.

8.4.5 EMERGENCY RESPONSE PLAN

Catastrophic water shortages are incorporated in the City's standard water shortage levels (identified in Section 8.3) and the associated demand reduction measures (described in Section 8.4.2). In addition to the water supply augmentation actions (Section 8.4.1) and potential operational changes (Section 8.4.3) which the City may consider in order to continue providing sufficient water supplies, the City will review and implement any necessary steps included in its "Emergency Response Plan".

The City's Emergency Response Plan (ERP), updated in 2021, provides the management, procedures, and designated actions the City and its employees will implement during emergency situations (including catastrophic water shortages) resulting from natural disasters, system failures and other unforeseen circumstances. The City's ERP (which is incorporated by reference) provides the guidelines for evaluating an emergency situation, procedures for activating an emergency response, and details of the different response phases in order to ensure that customers receive a reliable and adequate supply of potable water. The scope of the ERP includes emergencies which directly affect the water system and the ability to maintain safe operations (such as a chlorine release, and earthquake or a threat of contamination). The ERP also incorporates the following:



- Strategies and resources to improve resilience, including physical and cybersecurity
- Plans and procedures for responding to a natural hazard or malevolent act
- Actions and equipment to lessen the impact of a natural hazard or malevolent act
- Strategies to detect natural hazards or malevolent act

The City will review the ERP for procedures regarding the utilization of alternative water supply sources in response to water supply shortages, including during the standard water shortage levels. The City will also review applicable procedures described in the ERP regarding any necessary temporary shutdown of water supply facilities, including appropriate regulatory and public notifications.

8.4.6 SEISMIC RISK ASSESSMENT 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 prepared a “Local Hazard Mitigation Plan” in 2022. The Hazard Mitigation Plan identifies effective ways to assess the significant natural hazards (including earthquakes) that may affect the City and its residents. The Hazard Mitigation Plan provides resources, information, and strategies to reduce the City’s vulnerability to these hazards, while providing guidance for the coordination of mitigation activities throughout the City. The



Hazard Mitigation Plan includes mitigation projects necessary to reduce seismic risk to the City's water distribution system facilities (including its distribution system pipelines, groundwater wells, booster pumps, and storage reservoirs) and potential disruptions in providing water service. The City's Hazard Mitigation Plan is provided in Appendix K.

The County of Los Angeles prepared a "All-Hazards Mitigation Plan" in 2025 which identified methods to assess significant natural hazards (including earthquakes) affecting areas throughout Los Angeles County, and the mitigation strategies necessary to reduce risks, including seismic risk. The County's All-Hazards Mitigation Plan is provided in Appendix L.

The California Geological Survey has published the locations of numerous faults which have been mapped in the Southern California region. Although the San Andreas fault is the most recognized and is capable of producing an earthquake with a magnitude greater than 8 on the Richter scale, some of the lesser-known faults have the potential to cause significant damage. The locations of these earthquake faults in the vicinity of the City's water service area are provided in the figure below. The faults that are located in close proximity to and could potentially cause significant shaking in the City's water service area include the San Andreas fault, the Walnut Creek fault, the Whittier fault, the San Jose fault, the Raymond fault, the Cucamonga fault, the Chino fault, the Sierra Madre fault, and the East Montebello fault.



City and its employees will implement during emergency situations resulting from natural disasters, including during earthquakes, to ensure that customers receive a reliable and adequate supply of potable water. The City's ERP is referenced herein.

8.4.7 SHORTAGE RESPONSE ACTION EFFECTIVENESS

The effectiveness of the shortage response actions for each of the standard water shortage levels identified in Section 8.3 is evident in the City's historical ability to meet its customer's water demands in response to a water supply shortage. In addition, the City imposes water consumption regulations and restrictions, and supports local agencies in efforts to enforce regulations and prohibitions on water use. The effectiveness of each of the City's shortage response actions, in order to reduce any potential gaps between supply and demand, has been quantified in the expected demand reduction provided in Table 8-2 and Table 8-3.

Section 6.1 provides a tabulation of the City's historical annual water demands for each water supply source. During the past 15 years, the City experienced a five-year consecutive drought within its service area from FY 2011-12 to FY 2015-16. Throughout this extended dry year period, the City's annual water production ranged from 12,369 AF to 17,452 AF, with an average of approximately 15,751 AF. In addition, historical records indicate the City previously produced a maximum of up to 18,668 AF during FY 2006-07. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. In addition, the City has been able to provide water service to meet maximum day water demands for these years, including during the summer months.

The City's water demands during the most recent five years (from FY 2020-21 to FY 2024-25) averaged approximately 13,215 AFY. Due to conservation efforts and demand management measures (discussed in Chapter 9), the City's recent water demands have



been significantly less than its historical water demands, including during long-term droughts. The City's projected water demands (during normal, single dry, and multiple dry years) are provided in Section 7.2.3 and are anticipated to incorporate similar reductions in water use rates as a result of the shortage response actions, ongoing conservation efforts, and demand management measures. Because the City's projected water demands are similar to or less than its historical water demands, it is anticipated the City will be able to continue providing sufficient water supplies to its customers to meet projected water demands, including during long-term droughts. In addition, as discussed in Section 8.4.1, based on historical and on-going management practices, the City will be able to continue relying on its water supply sources from the Main Basin and Raymond Basin for adequate supply augmentation in response to each of the standard water shortage levels identified in Section 8.3.

Based on the City's ability in meeting water demands during past water supply shortages, adopted water shortage levels, adjusted operating safe yields, and long-term droughts, it is anticipated that the City will be able to continue providing sufficient water supplies to its customers during any of its standard water shortage levels. Although adequate supplies are anticipated, the cost of those water supplies may become incrementally more expensive. The City will enact varying levels of its water shortage contingency plan to encourage retail customers to reduce water consumption and at the same time reduce the need to use the more expensive water supplies. Notwithstanding, the effectiveness of each of the City's shortage response actions, in order to reduce any potential gaps between supply and demand, has been quantified in the expected demand reduction provided in Table 8-2 and Table 8-3. The effectiveness of the City's shortage response actions is based on the City's water demands prior to 2015 (unconstrained demands). The City reduced its water demands in 2015 in response to the Governor's April 1, 2015 Executive Order B-29-15 which mandated statewide reduction in water use of 25 percent. During this period, the City was able to reduce its water demands by approximately 29 percent. This historical water demand reduction was used to estimate the extent of water



use reductions for the City's Water Shortage Stages. The City's Water Shortage Levels 1, 2, 3, 4, 5, and 6 are expected to reduce water demands by up to 10%, 20%, 30%, 40%, 50%, and greater than 50%, respectively.

Emergency regulations previously adopted by the SWRCB pursuant to Executive Order N-7-22 (issued on March 28, 2022 by California Governor Gavin Newsom) required urban water suppliers to implement Level 2 of their Water Shortage Contingency Plans meant to address up to a 20% shortage of water supplies. The regulations also required urban water suppliers to establish a ban on irrigating non-functional turf at commercial, industrial, and institutional properties (including grass in front of or next to large industrial or commercial buildings). The ban did not include watering turf that is used for recreation or other community purposes, water used at residences or water to maintain trees. Pursuant to Executive Order N-5-23 issued on March 24, 2023 by California Governor Gavin Newsom, the requirement for urban water suppliers to implement Level 2 of their Water Shortage Contingency Plans was removed. As of June 5, 2024, SWRCB statewide water conservation emergency regulations have expired and there are no current statewide water conservation emergency regulations.

8.5 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.*



The City is required to submit an “Annual Water Supply and Demand Assessment” (Annual Assessment) in accordance with DWR’s guidance and requirements. The Annual Assessment will include a review of the City’s unconstrained water demands (i.e. water demands prior to any projected response actions the City may trigger under this WSCP) for the current year and the upcoming (potential single dry) year. The City will also include information regarding anticipated shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the City’s WSCP. See Section 8.2 for further discussion regarding the Annual Assessment.

The City will evaluate the projected supply and demand for water by its customers and shall recommend to the City Council the extent of the conservation required by the customers of the Water Division. The City Council will discuss the appropriate phase of water conservation be implemented, modified or rescinded. The City will publish information regarding the adoption of any resolution declaring a water shortage level in a daily newspaper of general circulation. The information provided will include the declared shortage level, response action associated with each shortage level, and any other relevant information relating to the resolution.

8.6 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.

It is unlawful and a misdemeanor for any customer to fail to comply with any provisions of the regulations and restrictions on water use set forth in the City’s Ordinance. The City



has implemented a three-step enforcement plan for the Phase I Prohibitions. Customers violating the mandatory prohibitions will be subject to the procedures and/or penalties as outlined below.

First Violation: For the first violation by any customer of the Water Division of any of the provisions discussed in Section 8.4.2, a surcharge penalty, in addition to the current water rate, is imposed in an amount equal to two times the current water rate for those billing units used in excess of base.

Second Violation: For the second violation by any customer of the Water Division of any of the provisions discussed in Section 8.4.2, a surcharge penalty, in addition to the current water rate, is imposed in an amount equal to three times the current water rate for those billing units used in excess of base.

Third Violation: For the third violation by any customer of the Water Division of any of the provisions discussed in Section 8.4.2, a surcharge penalty, in addition to the current water rate, is imposed in an amount equal to four times the current water rate for those billing units used in excess of base.

If any customer fails to comply with any provision of the regulations and restrictions on water use set forth in the City's Ordinance, the Water Division may reduce the amount of water provided to that customer to the level which that customer would be using said water if he were complying with the provisions. The reduction in water supplies may be applied in lieu of, or in addition to, any other penalties provided in this Chapter, in the discretion of the Water Division, and will be applied without regard to the status or nature of the customer.

The following procedural requirements shall apply with regard to an appeal:



- (a) An appeal may be filed within ten (10) working days after a final decision by the Water Division to the Water Appeals Board. The appeal should state the grounds upon which it is based, and what remedy, if any, the Appellant seeks.

8.7 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. [see below]*
- (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 Division 1, Section 350

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

In the event that the demand of water consumers cannot be satisfied without depleting a substantial amount of water supply needed for human consumption, sanitation, and fire protection, the City shall declare a water shortage emergency (in accordance with Water Code Chapter 3 commencing with Section 350 of Division 1 regarding water shortage emergencies). The City shall coordinate with any city or county within its service area for possible declaration of a local emergency, as defined in Section 8588 of the Government Code.



The City's Ordinance No. 2327 implements measures to ensure sufficient water supplies are available for sanitation, fire suppression, and domestic use. The City adopted Ordinance No. 2036 which added three water shortage levels, exceeding the State's requirement. The City incorporated more shortage levels to provide additional flexibility and prevent over-mandated water conservation by its customers.

8.8 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. [retail urban suppliers only]*

During periods of water supply shortages, state-mandated water use restrictions, or emergency conditions, the City may require its customers to reduce demands below levels projected under the current water rate structure. Under any of these circumstances, the City may experience a decrease in revenues that may result in insufficient funds to meet projected expenses.

The City's Water Fund, commonly referred to as "financial reserves", is comprised of an Operating Fund and Equipment Fund. The Water Fund is available to be used for water system expenditures to make up for shortfalls in water revenue. Based on the Cost of



Service Study, the City targets an Operating Fund equivalent to 90 days of operating expenses and has historically maintained an Equipment Fund (Facilities Reserve).

Revenue collected as a result of penalties imposed (discussed in Section 8.6) shall be used for, but not limited to the purchase of imported water, increasing water supplies, maintenance of the City's water system, and water conservation efforts including public education.

8.9 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.

The City employs a Management Analyst who is responsible for responding to reports of water waste or noncompliance. Upon receiving public reports, work orders will be generated and two written notices, which will include a date by which a customer must resolve violations, will be physically left at the property and sent by mail. In addition, courtesy phone calls may be made to follow up with the violator. The SFR water meter will be data logged showing hourly use over 7 days after the mailed deadline. If the violator is nonresponsive after review of the data log, then a citation will be issued for \$100. Subsequent violations may receive citations up to \$500.



8.10 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 City's Water Shortage Contingency Plan has been prepared as an adaptive management plan. As discussed in Section 8.9, the City will monitor and report on the implementation of the Water Shortage Contingency Plan. The City will review the implementation results for any current or potential shortage gaps between water supplies and demands. The City will evaluate the need for revising the Water Shortage Contingency Plan in order to resolve any shortage gaps, as necessary. The City will consider the following potential revisions in the event of a potential shortage gap:

- Implementation of additional public outreach, education, and communication programs (in addition to the programs discussed in Chapter 9).
- Implementation of more stringent water use restrictions under the standard water shortage levels (discussed in Section 8.4)
- Implementation of stricter enforcement actions and penalties (discussed in Section 8.6)
- Improvements to the water supply augmentation responses (discussed in Section 8.4.1), as well as any associated operational changes (discussed in Section 8.4.3) which may be required
- Incorporation of additional actions recommended by City staff or other interested parties



The City will use the monitoring and reporting data to evaluate the ability for these potential revisions to resolve any shortage gaps which may occur within the standard water shortage levels.

This Water Shortage Contingency Plan is adopted as part of the City's 2025 Urban Water Management Plan adoption process discussed in Section 10.3. It is anticipated the City will review, revise, and adopt an updated Water Shortage Contingency Plan as part of preparing its 2030 Urban Water Management Plan as necessary. However, the City will continue to review the monitoring and reporting data, and if needed, update the Water Shortage Contingency Plan more frequently. Any updates to the City's Water Shortage Contingency Plan will include a public hearing and adoption process by the City Council (see Section 8.12).

8.11 SPECIAL WATER FEATURE DISTINCTION

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.

The City's Water Shortage Contingency Plan defines "decorative water features" as water features which are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, but excluding pools and spas. In general, there are additional health and safety considerations in the water supplied to pools and spas compared to decorative water features. As a result, the City's Water Shortage Contingency Plan has reviewed the response actions, enforcement actions, and monitoring and reporting programs separately for decorative water features and for pools and spas, as applicable. As noted



under Water Shortage Level 1, “No water shall be used to clean, fill or maintain levels in decorative fountains unless such water is part of a recirculating system”.

8.12 PLAN ADOPTION, SUBMITTAL, AVAILABILITY, AND AMENDMENT PROCEDURES

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’s Water Shortage Contingency Plan is adopted as part of the City’s 2025 Urban Water Management Plan adoption process discussed in Chapter 10. The process for adopting the City’s Water Shortage Contingency Plan includes the following:

- The City will conduct a public hearing and make the Water Shortage Contingency Plan available for public inspection.
- The City will provide notification of the time and place of the public hearing to any city or county in which water is provided.
- The City will publish notice of public hearing in a newspaper once a week, for two successive weeks (with at least five days between publication dates).
- The City Council will adopt the 2025 Urban Water Management Plan and the Water Shortage Contingency Plan
- As part of submitting the 2025 Urban Water Management Plan to DWR, the City will also submit the Water Shortage Contingency Plan (electronically through DWR’s online submittal tool) within 30 days of adoption and by July 1, 2026. The City will submit a copy of the Water Shortage Contingency Plan to the California



State Library and to any city or county in which water is provided within 30 days of adoption. In addition, the City will make the Water Shortage Contingency Plan available for public review within 30 days of adoption.

If there are any subsequent amendments required, the process for adopting an amended Water Shortage Contingency Plan includes the following:

- The City will conduct a public hearing and make the amended Water Shortage Contingency Plan available for public inspection.
- The City Council will adopt the amended Water Shortage Contingency Plan
- The City will submit the amended Water Shortage Contingency Plan to DWR (electronically through DWR's online submittal tool) within 30 days of adoption

Additional information regarding the adoption, submittal, and availability of the City's Water Shortage Contingency Plan (and 2025 Urban Water Management Plan) is provided in Chapter 10.

8.13 RESOURCES AND REFERENCES

DWR's Final 2025 UWMP Guidebook provides a listing of resources and references which can be helpful during the preparation of a Water Shortage Contingency Plan.

8.14 SUBMITTAL TABLES

The applicable standardized Submittal Tables referenced within Chapter 8 are provided below.



8.14.1 TABLE 8-1: CROSS REFERENCE FOR STANDARD VS. SUPPLIER SHORTAGE LEVELS

Table 8-1 Cross-Reference for Standard vs. Supplier Shortage Levels

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)			
<input type="checkbox"/>	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	Percent Shortage Range	Suppliers Shortage Levels	Percent Shortage Range
1	Up to 10%	1, 2	Up to 10%
2	Up to 20%	3, 4	Up to 20%
3	Up to 30%	5, 6	Up to 30%
4	Up to 40%	7	Up to 40%
5	Up to 50%	8	Up to 50%
6	>50%	8	50%
NOTES:			



8.14.2 TABLE 8-2: SUPPLY AUGMENTATION AND OTHER ACTION

Table 8-2 Supply Augmentation and Other Actions

Submittal Table 8-2 Retail: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
1	Transfers	Volume	0	Not applicable (see Notes)
2	Transfers	Volume	0	Not applicable (see Notes)
3	Transfers	Volume	0	Not applicable (see Notes)
4	Transfers	Volume	0	Not applicable (see Notes)
5	Transfers	Volume	0	Not applicable (see Notes)
6	Transfers	Volume	0	Not applicable (see Notes)
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES: The City will consider increased production from the Main Basin using existing facilities to address increased demands. As noted on Table 8-3, the City plans to implement demand reduction measures in the event water supplies from existing sources are not sufficient to meet anticipated demands.				



8.14.3 TABLE 8-3: DEMAND-REDUCTION ACTIONS

Table 8-3 Demand-Reduction Actions

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B),(D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)	Penalty, Charge, or Other Enforcement? For Retail Suppliers Only Drop Down List
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)		
Add additional rows as needed					
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF		Yes
1	Other - Require automatic shut of hoses	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF		Yes
1	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF	Pursuant to Resolution No. 7430 adopted by City Council in May 2022, no lawn, landscape, or other turf areas shall be watered or irrigated more than two (2) days per week (on Tuesday and Saturday).	Yes
1	Landscape - Limit landscape irrigation to specific times	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF	No lawn, landscape, or other turf areas shall be watered or irrigated between the hours of 9:00 a.m. and 6:00 p.m. Pacific time.	Yes
1	Landscape - Prohibit certain types of landscape irrigation	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF	Pursuant to Resolution No. 7430 adopted by City Council in May 2022, an owner of property used primarily for commercial, industrial, or institutional purposes may not irrigate non-functional turf areas.	Yes
1	Landscape - Other landscape restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF	No irrigation during and within 48 hrs of measurable rainfall	Yes



1	CII - Lodging establishment must offer opt out of linen service	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF		Yes
1	CII - Restaurants may only serve water upon request	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF		Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF		Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF		Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,721 AF		Yes
2	Other	Volume	Collective reduction from all Shortage Level 2 actions is up to 3,442 AF	All actions under Shortage Level 1	Yes
3	Other	Volume	Collective reduction from all Shortage Level 3 actions is up to 5,163 AF	All actions under Shortage Level 2	Yes
4	Other	Volume	Collective reduction from all Shortage Level 4 actions is up to 6,884 AF	All actions under Shortage Level 3	Yes
5	Other	Volume	Collective reduction from all Shortage Level 5 actions is up to 8,605 AF	All actions under Shortage Level 4	Yes
6	Other	Volume	Collective reduction from all Shortage Level 6 actions is greater than 8,605 AF	All actions under Shortage Level 5	Yes

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

NOTES:



CHAPTER 9

DEMAND MANAGEMENT MEASURES

LAY DESCRIPTION – CHAPTER 9

DEMAND MANAGEMENT MEASURES

Chapter 9 (Demand Management Measures) of the City’s 2025 Plan discusses and provides the following:

- The City has implemented “Demand Management Measures” to reduce its water demands and achieve its water use targets (discussed in Chapter 5)
- The City’s Demand Management Measures include adoption of an ordinance to prevent water waste.
- The City’s Demand Management Measures include metering of all customer connections, including separate metering for single-family residential, commercial, industrial, large landscape and institutional/governmental facilities.
- The City’s Demand Management Measures include conservation pricing. The City’s current water rate structure is tiered to promote water conservation by customers.
- The City’s Demand Management Measures include public education and outreach programs regarding water conservation.
- The City’s Demand Management Measures include various actions to assess and manage water distribution system losses.
- Additional Demand Management Measures including rebate, conservation, and educational programs are discussed.
- A summary of the Demand Management Measures the City has implemented over the past five (5) years is provided. The City met the 2020 Water Use Target



(discussed in Chapter 5) through the implementation of these Demand Management Measures.

9.1 DEMAND MANAGEMENT MEASURES FOR RETAIL SUPPLIERS

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.*

9.1.1 IMPLEMENTATION OVER THE PAST FIVE YEARS

The City is committed to implementing water conservation programs and works collaboratively with Upper Water to provide water conservation programs for its residents.



As a sub-agency of Upper Water, the City's residents have the benefit of participating in Upper Water's conservation efforts. The highlights of DMM implementation over the past five years are described below.

As discussed in Section 9.1.3.1, the City has adopted and implemented Ordinance No. 2327 and Resolution 7430 concerning outdoor irrigation and prohibited water uses. New restrictions on outdoor irrigation and prohibited water uses were adopted.

As discussed in Section 9.1.3.2, the City metered all customer connections, including separate metering for single-family residential, commercial, large landscape, and institutional/governmental facilities during the past five years. Furthermore, if there was new development within the City, each facility was individually metered. Service charges for the City are based on the customers' connection size.

As discussed in Section 9.1.3.3, The City's Mandatory Water Conservation Program contains penalties for overuse of water during drought times that are based on the various stages enacted upon by resolutions passed by the Arcadia City Council. The City maintains a tiered rate structure for residential customers to promote water conservation. A water rate sheet showing current rates is provided in Appendix M.

As discussed in Section 9.1.3.4, The City informs and educates its customers on water conservation through its quarterly newsletters, water bills, bill stuffers, biannual postcards, social media websites, and the City's website. The City participates in numerous workshops throughout the year to promote water conservation (e.g. rain harvesting, leak detection, etc.) Upper Water partners with the Discovery Science Center and THINK Together to provide a free water conservation and sustainable watershed curriculum program for fourth through sixth graders at schools within Upper Water. In 2020, the program was proposed to expand to provide online options, as well as adding a seventh-grade curriculum.



As discussed in Section 9.1.3.5, the City utilizes WaterSmart Software that sends customized monthly to quarterly consumption reports to residents. WaterSmart can alert customers of irregular use, which may be caused by a leak. The City distributed water conservation literature that alerted customers to be on the lookout for water system leaks and to correct them promptly.

As a part of normal operation and maintenance of the water system, City staff performed preventive maintenance. This included regular checks on valves and meters, and pipeline maintenance. The City monitored the water system for losses by comparing water production to water sales.

As described in Section 9.1.3.6, the City employs a Management Analyst who manages the City's water conservation program, completing state mandated reports, enforcing ordinance, seeking grants, and conducting public outreach. The City plans to continue to provide water conservation programs and staffing support.

As discussed in Section 9.1.3.7, the City participates in a regional rebate program, which is available to the City's residential and commercial customers. There are rebates available for indoor plumbing including high efficiency clothes washers and toilets. Rebates are also available for outdoor plumbing including those for weather-based irrigation controllers, rotating sprinkler nozzles, and replacement of irrigated lawn with drought tolerant plants or other approved landscape options. The City's commercial customers are offered rebates for retrofitting certain high water-use fixtures/equipment with more water efficient models. The City plans to continue implementation of the programs described to promote water conservation.



9.1.2 IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

CWC 10631.

(e)(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.

As indicated in Section 5.2.2, the City previously met its 2020 Water Use Target as part of the 2020 Plan. The City met the 2020 Water Use Target through the implementation of the Demand Management Measures discussed in Section 9.1.3. Continued implementation of these Demand Management Measures will assist the City in meeting water use targets and objectives.

9.1.3 REQUIRED DEMAND MANAGEMENT MEASURES

9.1.3.1 WATER WASTE PREVENTION ORDINANCES

The City adopted Ordinance No. 2327 in April 2015 concerning outdoor irrigation and prohibited water uses. The water demand reduction actions associated with Ordinance No. 2327 are included under Water Shortage Level 1 described in Section 8.4.2.

As part of Ordinance No. 2327, the City Council is able to adjust the number of days per week in which lawn, landscape, or other turf areas can be watered or irrigated. In May 2022, the City adopted Resolution No. 7430 which includes the following updated provisions:



- In winter (November through April) no lawn, landscape, or other turf areas shall be watered or irrigated more than two (2) days per week, or such other number of days as the City Council may prescribe by resolution from time to time. The two days per week shall be Tuesday and Saturday or such other days as the City Council may prescribe by resolution from time to time.
- In summer (May through October) no lawn, landscape, or other turf areas shall be watered or irrigated more than two (2) days per week, or such other number of days as the City Council may prescribe by resolution from time to time. The two days per week shall be Tuesday and Saturday or such other days as the City Council may prescribe by resolution from time to time. Furthermore, outdoor watering of lawn, landscape or other turf areas shall be limited to no more than 10 minutes per station on each day allowed for such watering.
- Notwithstanding the foregoing, an owner of property used primarily for commercial, industrial, or institutional purposes may not irrigate non-functional turf areas. "Non-functional turf" means turf that is solely ornamental and not regularly used for human recreational purposes or for civic or community events. Non-functional turf does not include sports fields and turf that is regularly used for human recreational purposes or for civic or community events.

Copies of the resolution and ordinance are provided in Appendix N.

The City's service crews and meter readers also report wasteful uses of water, and residents are contacted regarding leaks and significant sprinkler run-off.



9.1.3.2 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... located within its service area.*

CWC 527.

- (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 is fully metered for all customer sectors, including separate meters for single-family residential, multifamily residential, commercial, institutional and governmental facilities. Furthermore, if there is new development within the City, each facility is individually metered. Service charges for the City are based on the customers' connection size. The City's system effectively promotes water conservation by being completely metered. The City is continuing to install radio frequency read meters. Further information regarding the City's service fees and conservation pricing is provided in Section 9.1.3.3.

9.1.3.3 CONSERVATION PRICING

The City's Mandatory Water Conservation Program, as outlined in its Municipal Code, contains penalties for overuse of water during drought times that are based on the various stages enacted upon by resolutions passed by the Arcadia City Council.

The City's water rate structure consists of two components; a monthly service charge and



a monthly water rate. The monthly water rate includes three tiers for single family residential customers and two tiers for multi-family residential customers. The City's rate structure is designed to proportionately allocate a greater share of the costs of service to those whose higher water usage generates additional costs to the water utility and promotes efficient water usage and conservation. A water rate sheet showing current rates is provided in Appendix M.

In addition, Upper Water implements conservation pricing to encourage subagencies to conserve water. Additional information regarding Upper Water's conservation pricing can be found in its 2025 Plan and is incorporated by reference.

9.1.3.4 PUBLIC EDUCATION AND OUTREACH

The City informs its customers about water conservation through its public information programs. The City has a quarterly newsletter that is sent to the City's customers, which provides information about water conservation on a seasonal basis. The City also prints water conservation messages periodically on its customer's water bills. In addition, the City's "Hot Sheet", which is mailed with the City's water bills (a two-sided, one-page leaflet), is also used to remind residents of useful water conservation tips, purposely focused on a bimonthly basis either on indoor or outdoor conservation practices. The City mails biannual postcards informing its customers of the City's Seasonal Watering Schedules. Lastly, the City is active on social media websites and the City's website contains additional useful information.

The City periodically holds public workshops to promote water conservation. The City provides rainwater harvesting workshops and hosts an annual Earth Day workshop on water conservation. The City's Water Conservation Program also hosts free workshops on leak detection to promote awareness during national Fix-a-Leak Week. In addition,



the City annually participates in the Wyland Foundation's National Mayor's Challenge for Water Conservation to spread awareness on good household water efficiency habits.

The City customers can also receive public information about water conservation through Upper Water's various public information programs. Upper Water offers conservation brochures, posters, activity booklets, public outreach display and workshops. Upper Water also raises awareness about water conservation through paid advertising, press releases, news ads and media events. The City participates annually in Upper Water's annual Water 101 Forum, a large-scale educational event focused on water conservation. Furthermore, the City along with the Los Angeles County Office of Education and Los Angeles County of Public Works participate in the annual Los Angeles County Environmental Education Fair (LAEEF), held at the Arboretum which is located in the City of Arcadia. City staff is able to continue its dissemination of water conservation information and related take home items by manning booths and speaking with area residents, school-age children and educators.

The City's customers receive educational tools regarding water conservation through Upper Water's school educational programs. Upper Water partners with the Discovery Science Center and THINK Together to provide a free water conservation and sustainable watershed curriculum program for fourth through sixth graders at schools within Upper Water. The City's customers may also participate in educational school programs through MWD, which has extensive educational programs that includes schools within the City's boundaries.

Upper Water directly offers school education programs in an effort to raise awareness of water issues. Upper Water started its school education programs in September 1992 and the materials and presentations meet state education framework requirements. The following is a list of Upper Water's school educational programs:



- “Water is Life” Art Contest
- Watershed Restoration Program
- Sustainable Watershed Education Program

9.1.3.5 PROGRAMS TO ASSESS AND MANAGE DISTRIBUTION SYSTEM REAL LOSS

The City’s estimated water system losses are discussed in Section 4.3. The City continues installing radio frequency read meters to provide secure and accurate meter data collection. The City repairs leaks within its distribution system on an as-needed basis. The City closely monitors its water production and consumption use tabulating the amount of “unaccounted for water”. The City has replaced many of its water meters with newer models, significantly reducing the water loss compared to previous years. The City’s current estimated “unaccounted for water” is less than one percent of the water demand. The City calculates the amount of “unaccounted for water” by finding the difference between the amount of water the City pumped and the amount of water sold to its customers. This program is effective in maintaining distribution systems that deliver water effectively and efficiently with the least amount of water loss. The amount of water conserved through the City’s system water audits, leak detection and repair program can be estimated by evaluating the average amount of “unaccounted for water”.

The City monitors customer’s water use through its computerized billing system. The City utilizes WaterSmart Software that sends customized monthly to quarterly consumption reports to residents. The City’s billing system automatically audits customer’s water bills and flags those bills that show unusual or high consumption. The City’s billing system alerts the City when a customer’s bill is flagged for high consumption and a customer can make a request to have a service representative inspect their system to make necessary repairs. In addition, City staff can review water usage bills to determine if “excessive water



use” occurred and can help customers individually determine the reason for the “excessive water use.

The City will continue these programs to assess and manage distribution system real losses.

9.1.3.6 WATER CONSERVATION PROGRAM COORDINATION AND STAFFING SUPPORT

The City’s Management Analyst is responsible for all aspects of environmental issues including water conservation measures for residents and business owners. The City’s Management Analyst coordinates public water awareness materials, public outreach events, seek grants, completing state mandated reports, speaks with residents/business owners who contact the City for water conservation information, and participates in the active dissemination of Upper Water efforts such as the High Efficiency Clothes Washer Rebate Program. The City has staff whose primary function is water conservation. Duties include outreach to various customer classes, response to customer inquiries, complaints, and provide assistance to business customers in achieving water use reduction. Staff will also work with field crews to enforce water conservation regulations.

As a member of Upper Water, the City can utilize Upper Water’s water conservation coordinator to promote water conservation issues and programs within the City. The water conservation coordinator does research on water management practices and advises retail water purveyors on water conservation matters. Upper Water’s water conservation coordinator is effective at informing the public on water awareness and is involved in public information programs and school education programs.

The water conservation coordinator employed by Upper Water promotes water conservation issues and programs. The position was created in 1992 as a full-time



position. The water conservation coordinator does research on water managements practices and advises the Upper Water Board Members and its subagencies, including the City, on water conservation matters. More information about Upper Water’s conservation coordinator can be found in its 2025 Plan, which is incorporated by reference.

9.1.3.7 OTHER DEMAND MANAGEMENT MEASURES

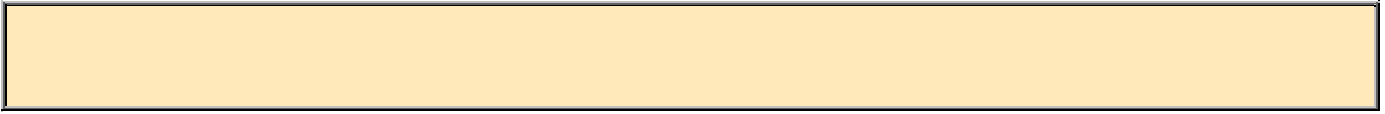
Rebate Programs

Upper Water, in partnership with MWD, implement region-wide rebate programs through MWD’s SoCal Water\$mart program. As a sub-agency of Upper Water, the City currently offers rebates to qualifying residential customers for high-efficiency washing machines, high-efficiency toilets, energy star dishwashers, weather-based irrigation controllers, rain barrels and pool covers. The rebate application, along with a list of qualifying appliances, are listed on MWD’s “Be Water Wise” website.

9.2 DEMAND MANAGEMENT MEASURES FOR WHOLESALE SUPPLIERS

CWC 10631.

- (e) *Provide a description of the supplier’s water demand management measures. This description shall include all of the following:*
- (2) *For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.*



The City is not a wholesale agency and is not required by DWR to complete Section 9.2.



CHAPTER 10

PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

LAY DESCRIPTION – CHAPTER 10

PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

Chapter 10 (Plan Adoption, Submittal, and Implementation) of the City's 2025 Plan discusses and provides the following:

- The steps the City has performed to adopt and submit its 2025 Plan are detailed
- The steps the City has performed to adopt and submit its Water Shortage Contingency Plan are detailed
- The City coordinated the preparation of its 2025 Plan with the Main San Gabriel Basin Watermaster, Upper Water, City of Monrovia, City of Pasadena, City of Sierra Madre, San Gabriel Valley Water Company, Golden State Water Company, California American Water Company, and Sunny Slope Water Company. The City notified these agencies at least sixty (60) days prior to the public hearing of the preparation of the 2025 Plan and invited these agencies to participate in the development of the 2025 Plan.
- The City provided a notice of the public hearing to the same agencies regarding the time, date, and place of the public hearing.
- The City published a newspaper notification of the public hearing, once a week for two successive weeks
- The City conducted a public hearing to discuss and adopt the City's 2025 Plan and City's Water Shortage Contingency Plan.
- Within 30 days of adoption, the City submitted the 2025 Plan and Water Shortage Contingency Plan to the California Department of Water Resources.



- Within 30 days of adoption, the City submitted all data tables associated with the 2025 Plan to the California Department of Water Resources.
- Within 30 days of adoption, the City submitted a copy of the 2025 Plan to the State of California Library.
- Within 30 days of adoption, the City submitted a copy of the 2025 Plan (and Water Shortage Contingency Plan) to the County of Los Angeles Registrar/Recorders office and the City Clerk's Office.
- Within 30 days after submittal of the 2025 Plan to the California Department of Water Resources, the City made the 2025 Plan (including the Water Shortage Contingency Plan) available at the City Clerk's Office and on the City's website.
- The steps the City will perform to amend the 2025 Plan and/or the Water Shortage Contingency Plan, if necessary, are provided.

10.1 PLAN COMPLETION TIMELINE

The data provided in the City's 2025 Plan and the Water Shortage Contingency Plan is provided on a FY basis through June 30, 2025 (as discussed in Section 2.5).

10.2 NOTICE OF PLAN PREPARATION

CWC 10621.

- (b) *Every urban water supplier required to prepare a plan shall ... at least 60 days prior to the public hearing on the plan ... notify any city or county within which the supplier provides waters supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.*



As discussed in Section 2.4.2., the City coordinated the preparation of the 2025 Plan with the Main San Gabriel Basin Watermaster, Upper Water, City of Monrovia, City of Pasadena, City of Sierra Madre, San Gabriel Valley Water Company, Golden State Water Company, California American Water Company, and Sunny Slope Water Company. The City notified these agencies, as well as to the cities and county within which the City provides water supplies, at least sixty (60) days prior to the public hearing of the preparation of the 2025 Plan and invited them to participate in the development of the Plan. A copy of the notification letters sent to these agencies is provided in Appendix D.

10.3 NOTICE OF PUBLIC HEARING

CWC 10642.

...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.

Government Code 6066.

Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

The City provided a notice of the public hearing to the County of Los Angeles Registrar Recorder, Main San Gabriel Basin Watermaster, Upper Water, City of Monrovia, City of Pasadena, City of Sierra Madre, San Gabriel Valley Water Company, Golden State Water Company, California American Water Company, and Sunny Slope Water Company. The notice includes the time and place of the public hearing. Copies of the notice of the public



hearing are provided in Appendix D. Table 10-1 summarizes the agencies which were provided notifications by the City.

The City encouraged the active involvement of the population within its service area prior to and during the preparation of the Plan. Pursuant to Section 6066 of the Government Code, the City published a notice of public hearing in the newspaper during the weeks of June 1, 2026 and June 8, 2026. A notice of public hearing was also provided to the City Clerk's office and was posted throughout the City of Arcadia and on the City's website. A copy of the published notice is provided in Appendix D. To ensure the draft 2025 Plan and the draft Water Shortage Contingency Plan were available for review, the City placed a copy at the City Clerk's Office located at City Hall, at the Public Works Services Center located at 11800 Goldring Road, and made a copy available for review on its website at www.ArcadiaCA.gov/UWMP.

10.4 PUBLIC HEARING AND ADOPTION

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.... 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.

Government Code Section 7291

...every local public agency... serving a substantial number of non- English-Speaking people, shall employ a sufficient number of qualified bilingual persons in public contact positions or as interpreters to assist those in such positions, to ensure provision of information and services in the language of the non-English-speaking person.



Prior to adopting the draft 2025 Plan and draft the Water Shortage Contingency Plan, the City held a public hearing on June 16, 2026 which included input from the community regarding the City's draft 2025 Plan and the draft Water Shortage Contingency Plan.

Following the public hearing, the City adopted both the draft 2025 Plan and the draft Water Shortage Contingency Plan (included in Chapter 8). A copy of the resolution adopting the 2025 Plan and the Water Shortage Contingency Plan is provided in Appendix O.

10.5 PLAN SUBMITTAL

CWC 10621.

- (e) *.Each urban water supplier shall update and submit its 2025 plan to the department by July 1, 2026...*

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.*

The City's submittal process for its 2025 Plan and the Water Shortage Contingency Plan is discussed below.



10.5.1 SUBMITTING A UWMP AND WATER SHORTAGE CONTINGENCY PLAN TO DWR

Within 30 days of adoption of the 2025 Plan by the City Council, the City submitted the adopted 2025 Plan (including the Water Shortage Contingency Plan) to DWR. The 2025 Plan and Water Shortage Contingency Plan were submitted through DWR's "Water Use Efficiency (WUE) Data Portal" website.

DWR developed a checklist which was used by the City to assist DWR with its determination that the City's 2025 Plan has addressed the requirements of the California Water Code. The City has completed the DWR checklist by indicating where the required CWC elements can be found within the City's 2025 Plan (See Appendix B).

10.5.2 ELECTRONIC DATA SUBMITTAL

CWC 10644.

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

Within 30 days of adoption of the 2025 Plan, the City submitted all data tables associated with the 2025 Plan through DWR's "Water Use Efficiency Data Portal" website.



10.5.3 SUBMITTING A UWMP, INCLUDING WSCP, TO THE CALIFORNIA STATE LIBRARY

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

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

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

California State Library
Government Publications Section
Attention: Coordinator, Urban Water Management Plans
900 N Street
Sacramento, CA 95814

10.5.4 SUBMITTING A UWMP TO CITIES AND COUNTIES

Within 30 days of adoption of the 2025 Plan (including the Water Shortage Contingency Plan) by the City Council, a copy of the 2025 Plan was submitted to the County of Los Angeles Registrar / Records office and the City Clerk's Office. A copy of the letter to the County of Los Angeles will be maintained in the City's file.



10.6 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.*

Within 30 days after submittal of the 2025 Plan to DWR, the City made the 2025 Plan (including the Water Shortage Contingency Plan) available at the City Clerk's Office located at City Hall during normal business hours and on the City's website.

10.7 NOTIFICATION TO PUBLIC UTILITIES COMMISSION

CWC 10621.

- (c) *An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.*

The City is not regulated by the California Public Utilities Commission.



10.8 PLAN IMPLEMENTATION

CWC 10643.

An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

The City will implement any schedules set forth in the adopted 2025 Plan.

10.9 AMENDING AN ADOPTED UWMP OR WATER SHORTAGE CONTINGENCY PLAN

CWC 10621.

(d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

CWC 10644.

(a)(1) 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.

The City's amendment process for its 2025 Plan is discussed below.

10.9.1 AMENDING A UWMP OR WSCP

If the City amends the adopted 2025 Plan, the City will conduct a similar notification and public hearing process for the amended 2025 Plan as discussed in Sections 10.2, 10.3, and 10.4. The amended Plan will undergo adoption by the City's governing board. Within



30 days of adoption, the amended Plan will then be submitted to DWR, the State of California Library, the County of Los Angeles Registrar / Records office, and the City Clerk's Office.

10.9.2 AMENDING A WATER SHORTAGE CONTINGENCY PLAN

CWC 10644.

- (a) *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...no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.*

If the City amends the adopted 2025 Plan (including the Water Shortage Contingency Plan), the amended Plan (and Water Shortage Contingency Plan) will undergo adoption by the City's governing board. Within 30 days of adoption, the amended Plan (and Water Shortage Contingency Plan) will then be submitted to DWR, the State of California Library, the County of Los Angeles Registrar / Records office, and the City Clerk's Office.

10.10 CALIFORNIA DEPARTMENT OF WATER RESOURCES REVIEW OF SUBMITTED PLANS

As discussed in Section 1.5, DWR will review the 2025 Plans to ensure that they address the California Water Code requirements. Following DWR's review, water suppliers will be notified of the results of the review via a formal review letter. These review letters will also be available to the public on DWR's WUEdata portal. In cases where DWR finds that a Plan does not properly address item(s) in the Water Code, DWR will reach out to the water supplier to discuss needed corrections and correction procedures.



10.11 SUBMITTAL TABLES

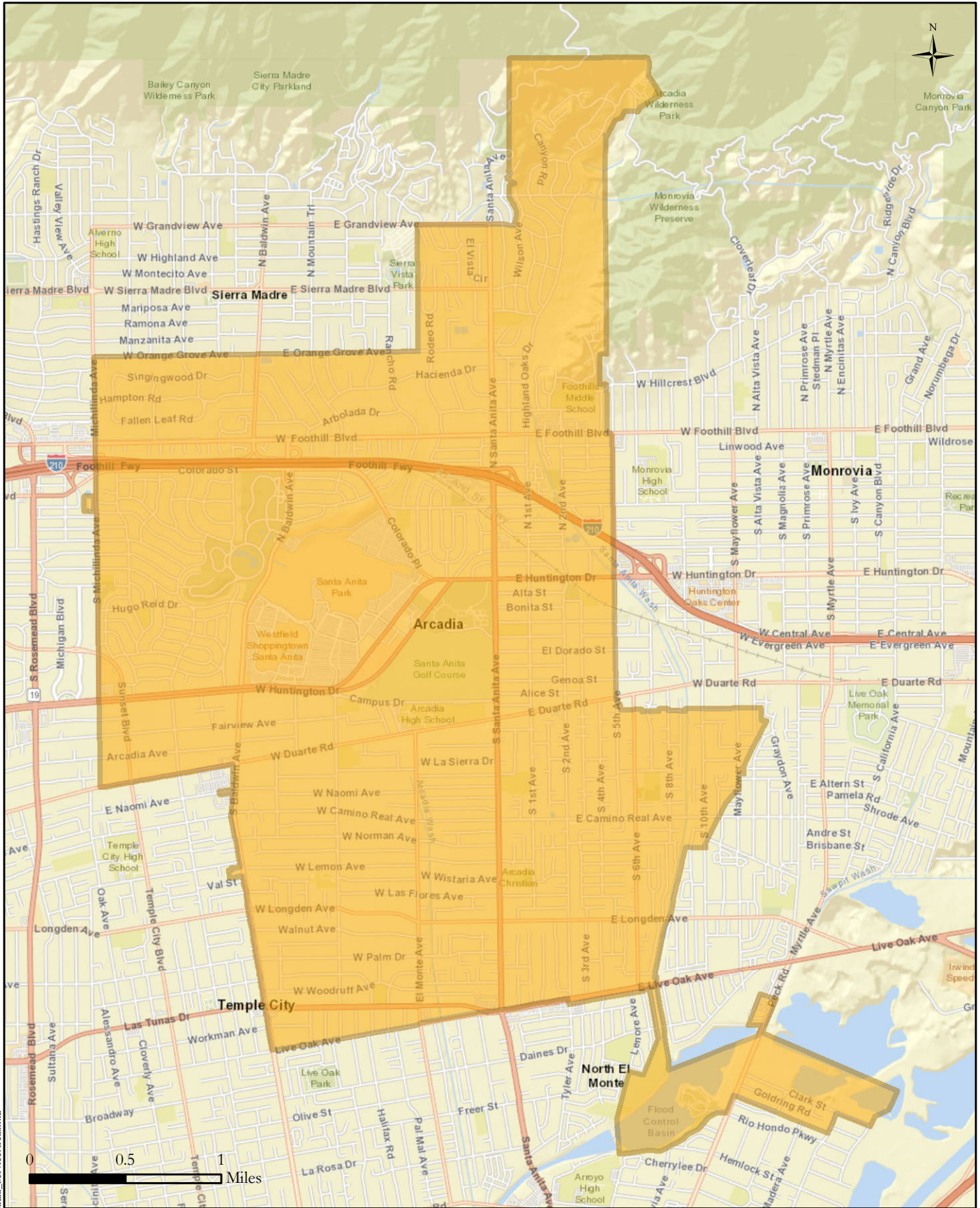
The applicable standardized Submittal Tables referenced within Chapter 10 are provided below.

10.11.1 SUBMITTAL TABLE 10-1: NOTIFICATION TO CITIES AND COUNTIES

Table 10-1 Notification to Cities and Counties

Submittal Table 10-1 Retail: Notification to Cities and Counties		
Water Code Section 10621(b) and 10642		
City Name	60 Day Notice Drop Down (yes/no)	Notice of Public Hearing Drop Down (yes/no)
Add additional rows as needed		
Arcadia	Yes	Yes
Monrovia	Yes	Yes
Sierra Madre	Yes	Yes
Pasadena	Yes	Yes
County Name Drop Down List	60 Day Notice Drop Down (yes/no)	Notice of Public Hearing Drop Down (yes/no)
Add additional rows as needed		
Los Angeles County	Yes	Yes
NOTES:		

FIGURE 1

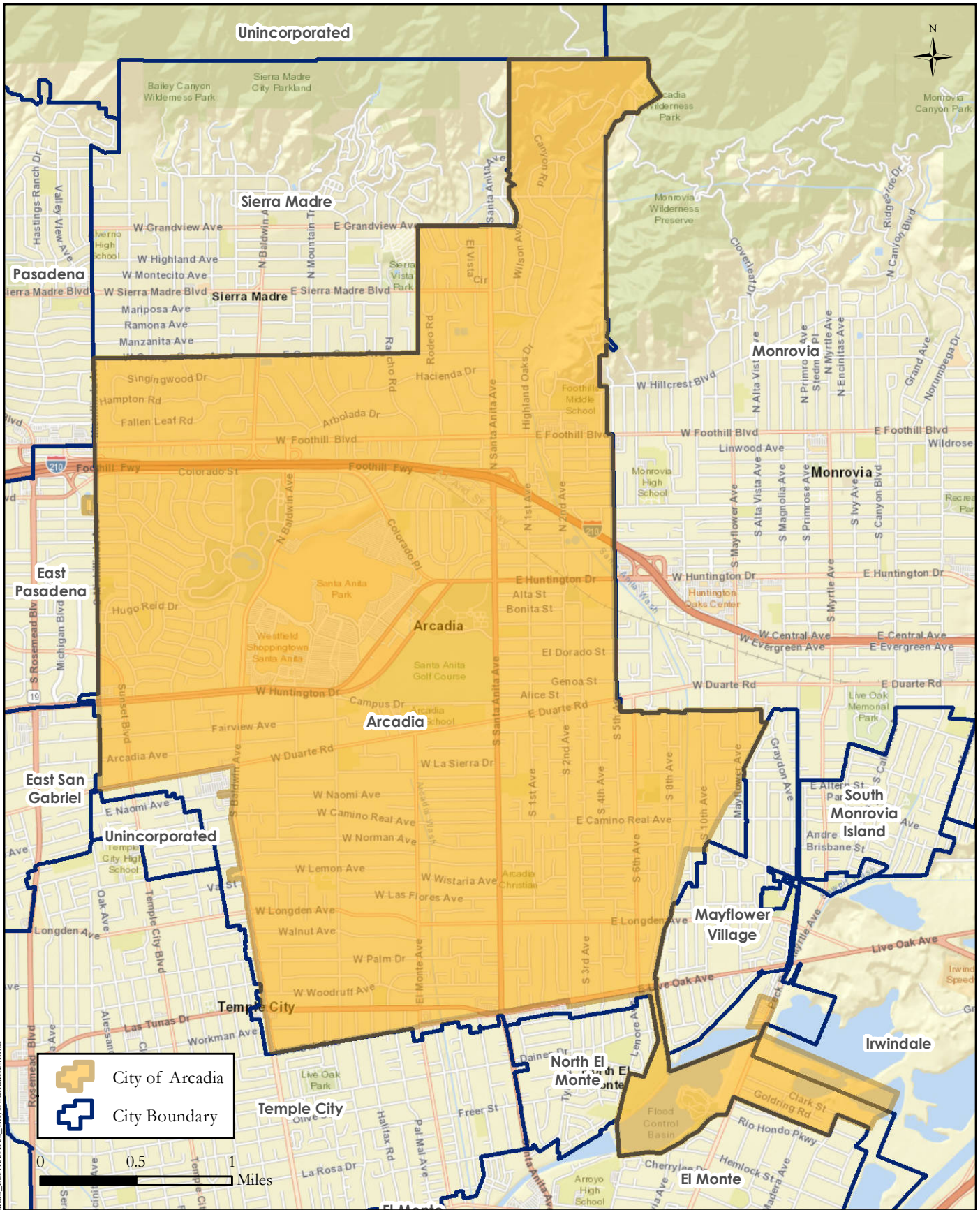


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**CITY OF ARCADIA
WATER SERVICE AREA**

FIGURE 2



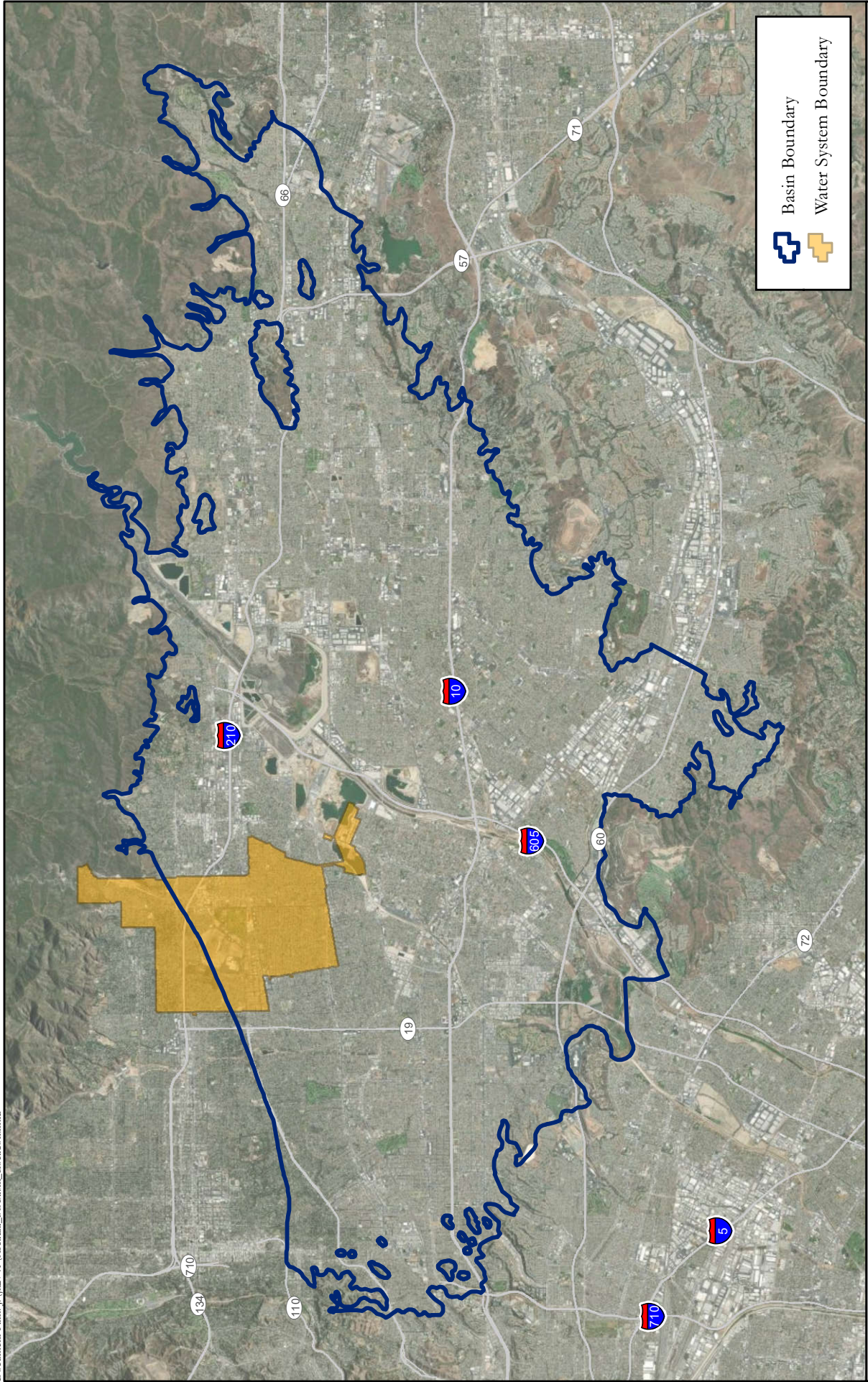
Document Path: \\jpa2741\Arcadia_ServiceArea_CityBoundaries.mxd

-  City of Arcadia
-  City Boundary

0 0.5 1 Miles

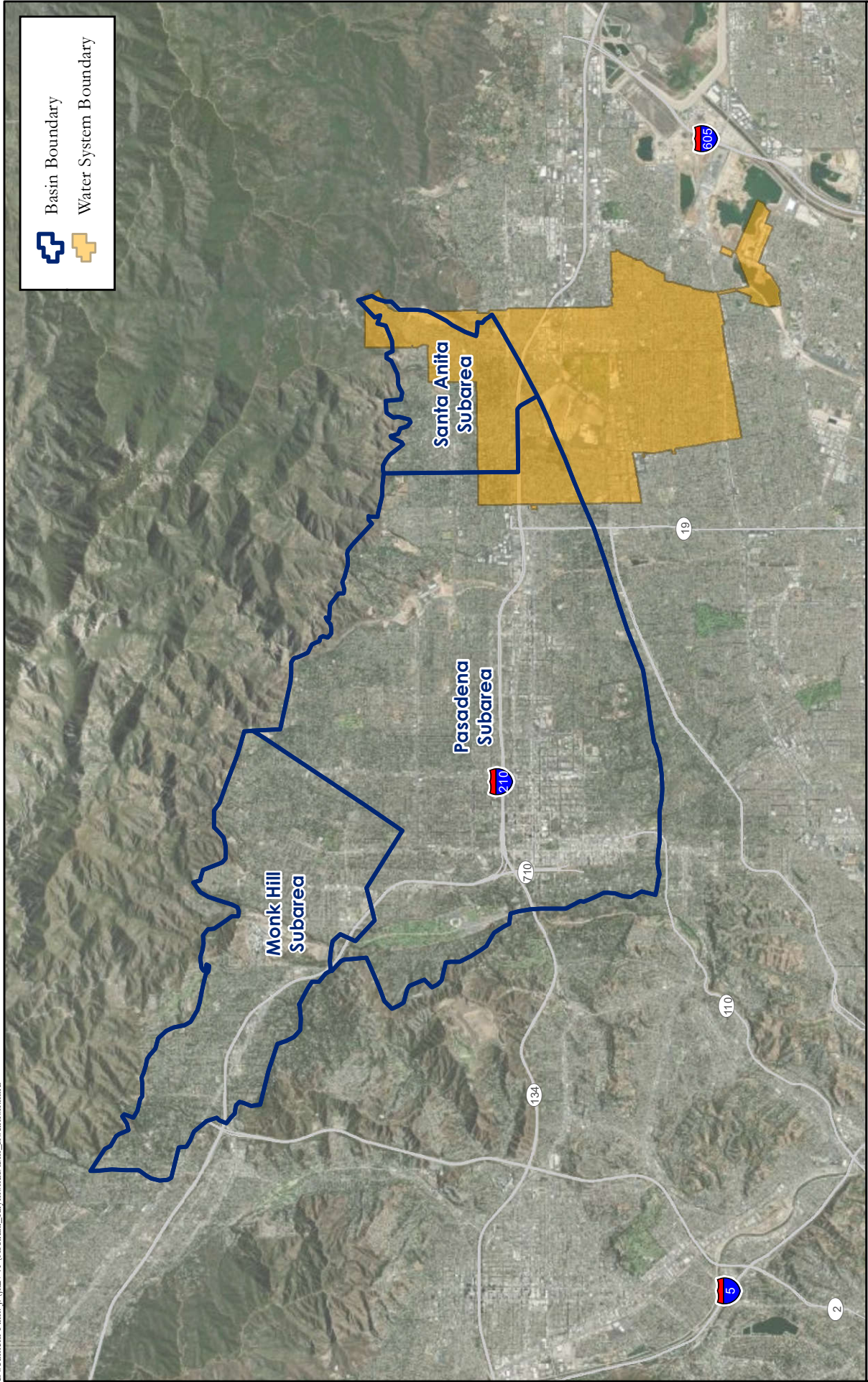


**CITY OF ARCADIA
WATER SERVICE AREA
AND CITY BOUNDARIES**



**CITY OF ARCADIA
MAIN SAN GABRIEL BASIN LOCATION**





CITY OF ARCADIA
RAYMOND BASIN LOCATION

