SAN GABRIEL VALLEY WATER COMPANY

SAN GABRIEL VALLEY
WATER COMPANY

JUNE 2021

FINAL 2020 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY

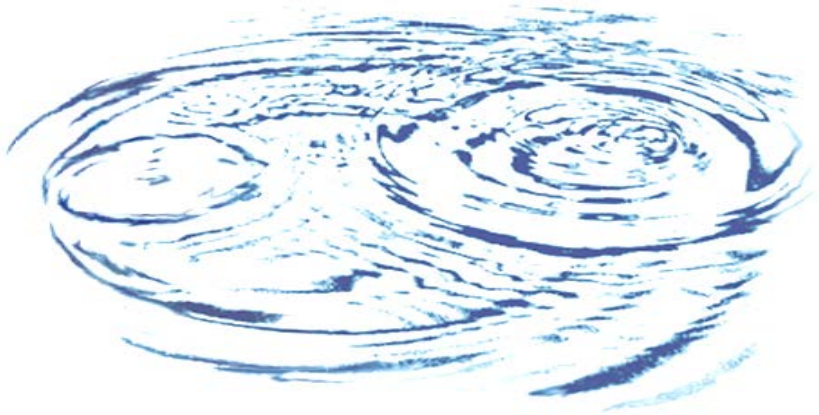
STETSON
ENGINEERS INC.

Northern California • Southern California • Arizona • Colorado • Oregon

SAN GABRIEL VALLEY
WATER COMPANY

San Gabriel Valley Water Company
Los Angeles County Division

2020
Urban Water Management Plan
and
Water Shortage Contingency Plan



JUNE 2021

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AB	Assembly Bill
AF	Acre-feet
AFY	Acre-feet per year
Annual Assessment	Annual Water Supply and Demand Assessment
Association	San Gabriel Valley Water Association
AWWA	American Water Works Association
BPOU	Baldwin Park Operable Unit
ccf	Hundred Cubic Feet
CECs	Constituents of emerging concern
Central District	Central Basin Municipal Water District
CIMIS	California Irrigation Management Information System
CPUC	California Public Utilities Commission
Corps of Engineers	U.S. Army Corps of Engineers
Court	Superior Court of the State of California for the County of Los Angeles
CWC	California Water Code
CWEA	Cooperative Water Exchange Agreement
CY	Calendar Year
DACs	Disadvantaged Communities
Delta	Sacramento-San Joaquin Delta
DOF	Department of Finance
DPW	Los Angeles County Department of Public Works
DRA	Drought Risk Assessment
DMMs	Demand Management Measures
DWA	Division of Water Audits
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
gpm	Gallons per minute
GSP	Groundwater Sustainability Plan
JWPCP	Joint Water Pollution Control Plant
Key Well	Baldwin Park Key Well
KML	Keyhole Markup Language
LACSD	Los Angeles County Sanitation Districts
LARWQCB	Los Angeles Regional Water Quality Control Board
LVL	Leo J. Vander Lans Advanced Water Treatment Facility
M&I	Municipal and Industrial
Main Basin	Main San Gabriel Basin
Main Basin Watermaster	Main San Gabriel Basin Watermaster
MCL	Maximum contaminant level
MGD	Million gallons per day
MSL	Mean Sea Level

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MWD	Metropolitan Water District of Southern California
NCP	National Contingency Plan
NDMA	N-nitrosodimethylamine
OSY	Operating Safe Yield
PCE	Perchloroethylene
PFAS	Poly-Fluoroalkyl Substances
Plan	Urban Water Management Plan
RCP	Representative Concentration Pathway
RDA	Water Resource Development Assessment or Supplemental Water Reliability Storage Program
RDA II	Water Resource Development Assessment for Stormwater Augmentation Program or Supplemental Water Stormwater Augmentation Program
RDM	Robust Decision Making
River Watermaster	San Gabriel River Watermaster
ROD	Record of Decision
RRA	Risk and Resilience Assessment
San Gabriel	San Gabriel Valley Water Company
SB	Senate Bill
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SGMA	Sustainable Groundwater Management Act of 2014
SGVMWD	San Gabriel Valley Municipal Water District
SJCWRP	San Jose Creek Water Reclamation Plant
SNMP	San Gabriel Valley Salt and Nutrient Management Plan
SWP	State Water Project
SWRCB	State Water Resources Control Board
SWRCB - DDW	State Water Resources Control Board – Division of Drinking Water
TCE	Trichloroethylene
TDS	Total Dissolved Solids
Three-Year Plan	Three-Year Purchased Water Plan
TVMWD	Three Valleys Municipal Water District
USEPA	U.S. Environmental Protection Agency
Upper District	Upper San Gabriel Valley Municipal Water District
UWMP	Urban Water Management Plan
VOCs	Volatile Organic Compounds
WIN	Water Independence Now
WNWRP	Whittier Narrows Water Reclamation Plant
WQA	Water Quality Authority
WRCC	Western Regional Climate Center
WRD	Water Replenishment District of Southern California, or Central Basin Watermaster
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WUCA	Water Utility Climate Alliance
WUE	Water Use Efficiency

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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 Code[1]) 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.*"

San Gabriel Valley Water Company (San Gabriel) 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 San Gabriel) 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.

San Gabriel's most recent update was its 2015 UWMP (or 2015 Plan) which was submitted to, and approved by, the California Department of Water Resources (DWR). Urban water suppliers (including San Gabriel) are required to complete and submit their 2020 UWMPs to DWR by July 1st, 2021.

[1] References to CWC Sections in this 2020 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. San Gabriel's 2020 UWMP (or 2020 Plan) was prepared consistent with the CWC and the recommended organization provided in DWR's Final "Urban Water Management Plan Guidebook 2020" (Final 2020 UWMP Guidebook), dated April 2021.

The UWMP provides urban water suppliers (including San Gabriel) 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 2020 UMWP incorporates water supply reliability determinations resulting from potential prolonged drought, regulatory revisions, and/or changing climatic conditions.

San Gabriel's 2020 Plan consists of the following Chapters:

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

A lay description is presented at the beginning 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 San Gabriel's 2020 Plan discusses and provides the following:

- An overall lay description of the 2020 Plan, including California Water Code and Urban Water Management Plan Act requirements, is provided. San Gabriel is required to prepare an Urban Water Management Plan.
- San Gabriel's 2020 Plan was prepared consistent with the recommended organization provided in DWR's Final "Urban Water Management Plan Guidebook 2020", dated April 2021. A description regarding the organization of the 2020 Plan, including a summary of each Chapter, is provided. San Gabriel's Water Shortage Contingency Plan (discussed in Chapter 8) is also included in the 2020 Plan.
- The 2020 Plan incorporates DWR's water use and supply tables (standardized tables) for the reporting and submittal of UWMP data. These tables are included within the respective sections of the 2020 Plan and in Appendix A.
- San Gabriel's coordination efforts with other planning agencies are discussed, including coordination efforts with Central Basin Municipal Water District, Upper San Gabriel Valley Municipal Water District, and the Southern California Association of Governments
- San Gabriel's eligibility to receive grants and loans administered by the State of California and/or DWR, as a result of preparing the 2020 Plan, is discussed.
- Information is provided which demonstrates San Gabriel's prior, continued, and projected reduction on imported water supplies obtained (either directly or indirectly) from the Sacramento-San Joaquin Delta (Delta). San Gabriel has

reduced its reliance on imported water supplies for Calendar Year 2015 and Calendar Year 2020. In addition, San Gabriel is projected to continue reducing its reliance on the Delta water supplies through Calendar Year 2045.

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

1.1 RECOMMENDED UWMP ORGANIZATION

San Gabriel's 2020 Urban Water Management Plan (2020 Plan) was prepared consistent with the recommended organization provided in DWR's Final "Urban Water Management Plan Guidebook 2020" (Final 2020 UWMP Guidebook), dated April 2021. San Gabriel's 2020 Plan consists of the following Chapters:

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

Pursuant to CWC requirements, San Gabriel's 2020 Plan incorporates DWR's water use and supply tables (standardized tables) for the reporting and submittal of UWMP data. DWR's standardized tables are provided within the body of the 2020 Plan text as well as

in Appendix A. San Gabriel also submitted the UWMP data (standardized tables) electronically through DWR's Online Submittal Tool.

San Gabriel's 2020 Plan also provides supporting documents (appendices) including notification letters of the Plan update, public notice of the Plan hearing, and adoption resolution from San Gabriel's governing body. Further discussions regarding these supporting documents are provided within the individual Chapters of the San Gabriel's 2020 Plan.

1.2 UWMPS IN RELATION TO OTHER EFFORTS

San Gabriel is a public water utility regulated by the California Public Utilities Commission (CPUC). San Gabriel is also a sub-agency of Upper San Gabriel Valley Municipal Water District (Upper District), a wholesale water agency. Upper District prepared a 2020 Plan which is incorporated in San Gabriel's 2020 Plan by reference. In addition, San Gabriel provided its 2020 Plan to Upper District 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.

San Gabriel is also a sub-agency of Central Basin Municipal Water District (Central District), a wholesale water agency. Central District prepared a 2020 Plan which is incorporated in San Gabriel's 2020 Plan by reference. In addition, San Gabriel provided its 2020 Plan to Central District 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.

1.3 UWMPS AND GRANT OR LOAN ELIGIBILITY

Pursuant to DWR's Final 2020 UWMP Guidebook:

"*In order 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 in order 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 following sections of the Water Code are pertinent to Suppliers considering pursuit of grants or loans*."

San Gabriel's 2020 Plan has been prepared in order to meet eligibility requirements for grants and loans administered by the State and/or DWR.

1.4 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 2015 and 2020 UWMPs 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).

San Gabriel has reduced its reliance on imported water supplies for CY 2015 and CY 2020. In addition, San Gabriel is projected to continue reducing its reliance on imported water supplies through CY 2045. A further discussion which demonstrates San Gabriel's measurable reduction in imported water reliance and improvement in regional self-reliance is provided in Appendix B.

1.5 TIPS FOR UWMP PREPARERS

San Gabriel's 2020 Plan (which includes San Gabriel's 2020 Water Shortage Contingency Plan (WSCP)) is considered an update to San Gabriel's 2015 Plan. However, the 2020 Plan and the WSCP are considered stand-alone documents. As discussed in Section 1.1, San Gabriel's 2020 Plan was prepared consistent with the recommended organization provided in DWR's Final 2020 UWMP Guidebook.

A checklist of specific UWMP requirements is included in Appendix C. 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 San Gabriel's 2020 Plan discusses and provides the following:

- The basis for preparing an Urban Water Management Plan is provided. San Gabriel is required to prepare the 2020 Plan because it is an "urban water supplier" (San Gabriel serves more than 3,000 customers and it supplies more than 3,000 acre-feet of water annually to its customers for municipal purposes)
- San Gabriel is a "Public Water System" and is regulated by the State Water Resources Control Board - Division of Drinking Water. San Gabriel's Public Water System number is provided in Table 2-1.
- San Gabriel's Plan has been prepared as an "individual" plan rather than a "regional" plan in an effort to provide information specific to San Gabriel to best inform its employees, management and customers.
- Information presented in San Gabriel's 2020 Plan is provided on "calendar year" basis which is from January 1 through December 31.
- Water quantities presented in San Gabriel's 2020 Plan are provided on an "acre-foot" basis.
- San Gabriel's coordination and outreach efforts with wholesale water agencies, other retail water agencies, and the community are described. San Gabriel coordinated the preparation of its 2020 Plan with the Amarillo Mutual Water

Company, Central District, Del Rio Mutual Water Company, Hemlock Mutual Water Company, La Puente Valley County Water District, Upper District, and Valley County Water District.

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

2.1 PLAN PREPARATION

As discussed in Section 1.1, San Gabriel's 2020 Plan was prepared consistent with the recommended organization provided in DWR's Final 2020 UWMP Guidebook. Pursuant to DWR's Final 2020 UWMP Guidebook:

"*The California Water Code (Water Code) specifies several requirements for preparing a UWMP, including who is required to prepare a UWMP; how to prepare a UWMP, depending on whether the Supplier choses to participate in a regional or individual planning effort; selection of reporting year-type; and coordination, notification, and outreach.*"

Pursuant to California Water Code requirements, San Gabriel's 2020 Plan incorporates DWR's water use and supply tables (standardized tables) for the reporting and submittal of UWMP data.

2.2 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 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.

San Gabriel's 2020 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 (AF) 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 2020 Plans be submitted by July 1, 2021.

San Gabriel 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. San Gabriel's 2020 Plan is an update to San Gabriel's 2015 Plan.

2.2.1 PUBLIC WATER SYSTEMS

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.

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, San Gabriel's 2020 Plan incorporates DWR's standardized tables for the reporting and submittal of UWMP data. The standardized tables are provided within the body of the 2020 Plan text as well as in Appendix A. San Gabriel also submitted the UWMP data (from the standardized tables) electronically through DWR's Online Submittal Tool.

In addition, San Gabriel 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 San Gabriel serves potable water to more than 3,000 customers and supplies more than 3,000 AFY. Table 2-1 provides San Gabriel's Public Water System name and number.

2.2.2 SUPPLIERS SERVING MULTIPLE SERVICE AREAS / PUBLIC WATER SYSTEMS

This 2020 Plan addresses San Gabriel Valley Water Company's Los Angeles County Division Public Water System. Table 2-1 provides San Gabriel's Public Water System name and number.

A separate 2020 Plan was prepared for San Gabriel Valley Water Company's Fontana Water Company Division.

Table 2-1 Public Water Systems

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
Add additional rows as needed			
CA1910039	San Gabriel Valley Water Company - El Monte	46,346	32,960
CA1910189	San Gabriel Valley Water Company - Montebello	1,581	672
	TOTAL	47,927	33,632
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES: Approximately 98% of the total water supplied was to the El Monte system and 2% was supplied to the Montebello system. The "Volume of Water Supplied 2020" includes recycled water supplies of 1,502 AF. Source for "Number of Municipal Connections 2020": https://sdwis.waterboards.ca.gov/PDWW/			

2.3 REGIONAL PLANNING

San Gabriel has developed its 2020 Plan reporting solely on its service area to address all requirements of the California Water Code. San Gabriel's 2020 Plan was not developed as a Regional Plan.

2.4 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

As shown in Table 2-2, San Gabriel's 2020 Plan is an "Individual UWMP". San Gabriel has developed its 2020 Plan reporting solely on 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). San Gabriel notified and coordinated with appropriate regional agencies and constituents (See Section 2.6).

Table 2-2 Plan Identification Type

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

2.4.1 REGIONAL UWMP

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, San Gabriel's 2020 Plan was developed as an "Individual UWMP" and not part of a Regional Plan.

2.4.2 REGIONAL ALLIANCE

CWC 10608.20.

(a)(1) …Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28…

CWC 10608.28.

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

(1) Through an urban wholesale water supplier.
(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).
(3) Through a regional water management group as defined in Section 10537.
(4) By an integrated regional water management funding area.
(5) By hydrologic region.
(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

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

As indicated in Table 2-2, San Gabriel's 2020 Plan was developed as an "Individual UWMP" and not part of a Regional Alliance.

2.5 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.

2.5.1 FISCAL OR CALENDAR YEAR

The data provided in San Gabriel's 2020 Plan is reported on a calendar year (CY) basis, unless noted otherwise, as shown in Table 2-3.

Table 2-3 Supplier Identification

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
01/01	
Units of measure used in UWMP * (select from drop down)	
Unit	AF
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*	
NOTES:	

2.5.2 REPORTING COMPLETE 2020 DATA

The data provided in San Gabriel's 2020 Plan is provided on a calendar year basis through December 31, 2020.

2.5.3 UNITS OF MEASURE

As shown in Table 2-3, the data provided in San Gabriel's 2020 Plan is reported in units of acre-feet (AF), unless noted otherwise.

2.6 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).

2.6.1 WHOLESALE AND RETAIL COORDINATION

San Gabriel is a sub-agency of Upper District, a wholesale agency. As indicated in Table 2-4, San Gabriel has provided its 2020 Plan to Upper District 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.

In addition, San Gabriel is also a sub-agency of Central District, a wholesale agency. As indicated in Table 2-4, San Gabriel has provided its 2020 Plan to Central District 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.

Table 2-4 Water Supplier Information Exchange

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

2.6.2 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…

San Gabriel is a retail water supplier that serves all or portions of the Cities of Arcadia, Baldwin Park, El Monte, Industry, Irwindale, La Puente, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, South El Monte, West Covina,

Whittier, and unincorporated areas of Los Angeles County including Hacienda Heights and South San Gabriel. San Gabriel 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, San Gabriel coordinated the preparation of the Plan with Amarillo Mutual Water Company, California Domestic Water Company, Central District, Del Rio Mutual Water Company, Hemlock Mutual Water Company, La Puente Valley County Water District, Upper District, and Valley County Water District. As discussed in Section 10.2, San Gabriel notified these agencies, as well as the cities and county within which San Gabriel provides water supplies, at least sixty (60) days prior to the public hearing of the preparation of the 2020 Plan and invited them to participate in the development of the 2020 Plan. A copy of the notification letters sent to these agencies is provided in Appendix D.

2.6.3 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 San Gabriel provides water supplies San Gabriel was reviewing and considering amendments (updates) to the previous 2015 Plan, and as a result prepare the 2020 Plan. Notification was provided at least 60 days prior to the public hearing (see Appendix D).

CHAPTER 3

SYSTEM DESCRIPTION

LAY DESCRIPTION – CHAPTER 3

SYSTEM DESCRIPTION

Chapter 3 (System Description) of San Gabriel's 2020 Plan discusses and provides the following:

- A description of San Gabriel's service area is provided. San Gabriel provides public utility water service within its service area which includes all or portions of the Cities of Arcadia, Baldwin Park, El Monte, Industry, Irwindale, La Puente, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, South El Monte, West Covina, Whittier, and unincorporated areas of Los Angeles County including Hacienda Heights and South San Gabriel.
- San Gabriel's water service area encompasses an area of approximately 45 square miles. The location of San Gabriel's water service area is provided in Figure 1.
- A description regarding San Gabriel's water service area climate is provided. The monthly historical average temperatures (including minimum and maximum), monthly historical average rainfall, and monthly evapotranspiration (ETo) in the vicinity of San Gabriel's service area is summarized. The sources of the climate information are also discussed.
- The population within San Gabriel's water service area is discussed and projected. The sources of the population information are also discussed. San Gabriel provides water service to an area with a current population of 256,335. San Gabriel is projected to have a population of approximately 273,024 by CY 2045.

- A discussion of land use information used by San Gabriel to develop the 2020 Plan is provided. San Gabriel reviewed the current and projected land uses within its service area. San Gabriel 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.

San Gabriel is an investor-owned public utility water company subject to the regulatory jurisdiction of the CPUC. San Gabriel provides public utility water service within its service area which includes all or portions of the Cities of Arcadia, Baldwin Park, El Monte, Industry, Irwindale, La Puente, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, South El Monte, West Covina, Whittier, and unincorporated areas of Los Angeles County including Hacienda Heights and South San Gabriel. San Gabriel's CPUC-approved service area, which encompasses approximately 45 square miles, is shown on Figure 1.

San Gabriel currently derives its groundwater supplies from groundwater wells that produce water from two groundwater basins, the Main San Gabriel Basin (Main Basin) and the Central Basin, with the Main Basin as San Gabriel's primary groundwater source. San Gabriel's water supply sources also include recycled water and a connection with the Metropolitan Water District of Southern California (MWD) for delivery of treated imported water.

San Gabriel is a sub-agency of two wholesale water agencies, Upper District and Central District. Upper District and Central District have prepared 2020 Plans which are incorporated by reference.

3.2 SERVICE AREA BOUNDARY MAPS

As discussed in Section 3.1, San Gabriel's service area covers approximately 45 square miles encompassing all or portions of the Cities of Arcadia, Baldwin Park, El Monte, Industry, Irwindale, La Puente, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, South El Monte, West Covina, Whittier, and unincorporated areas of Los Angeles County including Hacienda Heights and South San Gabriel. A service area boundary map is provided in Figure 1. San Gabriel's water service area boundary relative to vicinity municipal boundaries is also provided in Figure 2.

San Gabriel's service area map was submitted online through DWR's Population Tool in a Keyhole Markup Language (KML) file format (i.e., Google Earth format). The KML file 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 San Gabriel'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 Minimum Temperature (F)	Average Maximum Temperature (F)	Average Total Precipitation (Inches)	ETo (Inches)
January	55.6	42.1	69.2	3.6	2.17
February	57.0	43.8	70.3	3.8	2.54
March	58.9	46.1	71.7	2.9	3.85
April	62.1	49.3	75.0	1.2	4.61
May	65.7	53.7	77.7	0.3	5.21
June	69.9	57.4	82.4	0.1	6.00
July	74.9	61.2	88.5	0.0	6.58
August	75.6	61.7	89.5	0.1	6.38
September	73.9	59.7	88.1	0.3	4.95
October	68.2	54.0	82.2	0.5	3.55
November	61.0	46.6	75.4	1.6	2.48
December	55.9	42.1	69.7	2.3	1.90
Annual	64.7	51.2	78.3	16.7	50.22

Source:

Historical average monthly temperature and precipitation information was obtained from the Western Regional Climate Center (http://www.wrcc.dri.edu/) and is based on data collected from Station 047785 (San Gabriel Fire Department) from 1939 through 2015. Historical monthly average ETo information was obtained from the California Irrigation Management Information Systems (http://wwwcimis.water.ca.gov) and is based on data collected from Station 159 (Monrovia).

The historical average rainfall in the vicinity of San Gabriel's service area is 16.7 inches. San Gabriel'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 an average year, a single dry year and a five consecutive year drought, based on historical data and projected demands. Precipitation within the vicinity of San Gabriel's service area is discussed further in Section 7.2.

A discussion of San Gabriel's sources of supply, how those sources may be impacted by climate change, and the proactive actions San Gabriel and other local/regional water managers may take to address the potential climate change on water supplies is provided in Section 4.5.

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.

San Gabriel provides water service to an area with a current population of 256,335. Table 3-1 presents the current and projected population of the area encompassed by the San Gabriel service area from CY 2020 through CY 2045. San Gabriel is projected to have a population of 273,024 by CY 2045.

San Gabriel initially reviewed the available historical populations within its service area for population growth trends. San Gabriel determined historical U.S. Census populations within its service area using DWR's Population Tool (https://wuedata.water.ca.gov/). San Gabriel's service area boundary was uploaded to DWR's Population Tool in a "KML" file format (i.e., Google Earth format). The KML file was originally created in a GIS shapefile format and converted into a KML format. The uploaded KML file represents San Gabriel's service area boundary from 1990 to present (2020). DWR's Population Tool utilized U.S. Census data from 1990, 2000, and 2010. The calculated CY 2020 population (discussed in Section 5.4) was used to determine compliance with San Gabriel's SB X7-7 water use target for 2020 (discussed in Section 5.5).

Projected populations in San Gabriel's service area were based on growth rate projections obtained from data provided by the Southern California Association of Governments (SCAG). The data provided by SCAG was based on their "*The 2020-2045 Regional Transportation Plan / Sustainable Communities Strategy of the SCAG*", dated September 2020, and incorporates demographic trends, existing land use, general plan land use policies, and input and projections through the year 2045 from the Department of Finance (DOF) and the US Census Bureau for counties, cities and unincorporated areas within Southern California.

Table 3-1 Population – Current and Projected

Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	256,335	259,897	263,508	267,169	270,081	273,024
NOTES: The 2020 population and the population projected through 2045 were obtained from data in SCAG's 2020-2045 Regional Transportation Plan (See Section 3.4.1 and Section 5.4.1).						

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 affect San Gabriel'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.

San Gabriel reviewed the current and projected land uses within its service area during the preparation of this 2020 Plan. Information regarding current and projected land uses is included in the Los Angeles County 2035 General Plan. The existing land uses within San Gabriel's service area include residential (single-family and multi-family), commercial, industrial, institutional, and landscape. The projected land uses within San Gabriel's service area are expected to remain similar to the existing land uses. In addition, although mostly built-out, the projected population within San Gabriel'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 San Gabriel's service area, which includes the different land uses, is provided in Section 4.2. As discussed in Section 2.6, San Gabriel coordinated the preparation of the 2020 Plan with the Cities of Arcadia, Baldwin Park, El Monte, Industry, Irwindale, La Puente, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, South El Monte, West Covina, and Whittier, the County of Los Angeles, and other agencies.

As discussed in Section 3.4, San Gabriel obtained data from the Southern California Association of Governments document entitled "*The 2020-2045 Regional Transportation Plan / Sustainable Communities Strategy of the SCAG*", dated September 2020. Projected populations in San Gabriel'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 2045 from the Department of Finance and the US Census Bureau for counties, cities and unincorporated areas within Southern California.

CHAPTER 4

WATER USE CHARACTERIZATION

LAY DESCRIPTION – CHAPTER 4

WATER USE CHARACTERIZATION

Chapter 4 (Water Use Characterization) of San Gabriel's 2020 Plan discusses and provides the following:

- San Gabriel provides water service to individual "water use sectors". These water use sectors include single-family residential, multi-family, commercial, institutional (and governmental), landscape and industrial. Individual descriptions for these water use sectors are provided in Section 4.2.1.
- San Gabriel's total water demands (including potable and recycled water) over the past 10 years have ranged from 31,749 AFY to 42,150 AFY, with an average of 35,637 AFY. San Gabriel currently measures its water use through meter data and billing records.
- San Gabriel 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 San Gabriel's projected water demands.
- San Gabriel's current and projected water demands are provided in five-year increments over the next 25 years are provided (through Calendar Year 2045) as shown on Table 4-3.
- San Gabriel's water demand projections incorporate water savings which are the result of implementation of new plumbing codes along with consumer awareness of the need to conserve water.

- The projected water demands for lower income households are identified and are included in San Gabriel's total projected water demands
- San Gabriel's sources of water supply and how those sources may be impacted by climate change are discussed. The proactive actions San Gabriel and other local/regional water managers may take to address the potential climate change impacts on water supplies are also discussed.
- San Gabriel will be able to provide sufficient water supplies to meet the projected water demands of its customers, including during a five consecutive year drought period.

4.1 NON-POTABLE VERSUS POTABLE WATER USE

The Water Code requires a description and quantification of water uses within San Gabriel's service area, including both non-potable and potable water. Recycled water (non-potable) demands are addressed in Section 6.5; however, a summary is provided in Table 4-3. Furthermore, Chapter 4 addresses San Gabriel's potable water demands.

4.2 PAST, CURRENT, AND PROJECTED WATER USES 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.

(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.

San Gabriel's current and projected water demands are provided in five-year increments over the next 25 years (through CY 2045) in Tables 4-1, 4-2, and 4-3. San Gabriel's total water demands were projected based on a review of the SB X7-7 calculations which are discussed in Chapter 5 (including the SB X7-7 water use target for 2020), current water use factors based on recent water demands, and the total population projections based on land use trends within San Gabriel.

San Gabriel provides water service to individual "water use sectors" as identified by the California Water Code. The water use sectors supplied by San Gabriel are discussed in Section 4.2.1. The water use for each of these sectors during CY 2020 is provided in Table 4-1. The projected water use for each individual water use sector is provided in Table 4-2 and is based on the percentage breakdown of water use from each individual water use sector in CY 2020 (the percentages were then applied to the projected total water use).

Table 4-1 Demands for Potable and Non-Potable Water - Actual

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable[1] Water - Actual			
Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume[2]
Add additional rows as needed			
Single Family		Drinking Water	13,840
Multi-Family		Drinking Water	5,448
Commercial		Drinking Water	6,443
Industrial		Drinking Water	1,783
Institutional/Governmental		Drinking Water	2,234
Landscape		Drinking Water	504
Losses		Drinking Water	1,878
		TOTAL	32,130

[1] *Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.*

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

NOTES: Recycled water demands are provided in Table 4-3 and Table 6-4.

Table 4-2 Use for Potable and Non-Potable Water - Projected

Submittal Table 4-2 Retail: Use for Potable and Non-Potable[1] Water - Projected						
Use Type	Additional Description (as needed)	Projected Water Use[2] *Report To the Extent that Records are Available*				
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family		15,133	15,214	15,296	15,336	15,378
Multi-Family		5,958	5,989	6,021	6,037	6,053
Commercial		7,046	7,083	7,121	7,140	7,159
Industrial		1,950	1,960	1,971	1,976	1,981
Institutional/Governmental		2,443	2,456	2,469	2,476	2,482
Landscape		551	554	557	558	560
Losses		2,054	2,065	2,076	2,081	2,087
	TOTAL	35,135	35,321	35,511	35,604	35,700

[1] *Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.*

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

NOTES:

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

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable *From Tables 4-1R and 4-2 R*	32,130	35,135	35,321	35,511	35,604	35,700
Recycled Water Demand[1] *From Table 6-4*	1,502	1,800	2,100	2,400	2,700	3,000
Optional Deduction of Recycled Water Put Into Long-Term Storage[2]						
TOTAL WATER USE	33,632	36,935	37,421	37,911	38,304	38,700

[1] Recycled water demand fields will be blank until Table 6-4 is complete

*[2] Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier **may** deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.*

NOTES:

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, San Gabriel'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. Single-family residential water demands are included in retail demands.)

- Multi-family
  (Multiple dwelling units are contained within one building or several buildings within one complex. Multi-family residential water demands are included in retail demands.)

- 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.)

- Industrial
  (Industrial users are defined as water users that are primarily a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development. Industrial 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 WATER USE SECTORS IN ADDITION TO THOSE LISTED IN WATER CODE

San Gabriel's service area does not include other water demand sectors which are not listed in the California Water Code (including exchanges, surface water augmentation, transfers, and wetlands or wildlife habitat).

4.2.3 PAST WATER USE

Chapter 6 provides a discussion of the sources of water supply San Gabriel uses to meet its water demands. Section 6.1 provides a tabulation of San Gabriel's historical annual water demands for each water supply source. Over the past ten years, San Gabriel's total water demands (including potable and recycled water) have ranged from 31,749 AFY to 42,150 AFY, with an average of 35,637 AFY. In addition, San Gabriel recently experienced a five consecutive year drought within its service area from CY 2011 to CY 2015. San Gabriel also reviewed its historical water demands to determine the projected water demands and water supply reliability (discussed in Chapter 7). San Gabriel 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 DISTRIBUTION SYSTEM WATER LOSS

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…

(J) Distribution system water loss.

CWC 10631.

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

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

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

Distribution system water losses 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 October 1, 2017, and on or before October 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. San Gabriel has completed the annual water loss audit process through October 1, 2020, as required by the California Water Code (i.e. San Gabriel has completed water loss audits representing calendar years 2016, 2017, 2018, and 2019). San Gabriel'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 San Gabriel (provided in Appendix E), are available on DWR's website (https://wuedata.water.ca.gov/awwa_plans).

San Gabriel'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). San Gabriel's distribution system water losses are based on the sum of the real and apparent water losses and are summarized in Table 4-4 for the past five years. Over the past five years, San Gabriel's average distribution system water losses represent approximately 5.0 percent of its total water demands. This average water loss factor was incorporated into San Gabriel's total potable water demand projections (Tables 4-2 and 4-3).

Table 4-4 12 Month Water Loss Audit Report

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss [1,2]
01/2016	3,481
01/2017	1,297
01/2018	594
01/2019	627
01/2020	1,878
[1] Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. ***[2] Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*	
NOTES: The "Volume of Water Loss" quantities for FY 2016-17 through FY 2018-19 were obtained from the annual AWWA Water Loss Audits (and based on the combination of apparent losses and real losses). Because the AWWA water loss audits were reported on a calendar year basis, half of the water loss during each calendar year was applied to the water losses for the corresponding fiscal year (to estimate the water losses for the entire fiscal year), pursuant to direction from DWR staff. The AWWA Water Loss Audit for calendar year 2020 will be prepared by October 2021. The "Volume of Water Loss" quantities for FY 2015-16 and for FY 2019-20 were estimated based on metered water production less metered water deliveries to customers.	

The California Water Code Section 10608.34 directs the SWRCB to "adopt rules requiring urban retail water suppliers to meet performance standards for the volume of water losses." Pursuant to this law, and as discussed above, urban retail water suppliers (including San Gabriel) have been submitting water loss audits to DWR annually since October 2017. Pursuant to Assembly Bill (AB) 1668 and (SB) Senate Bill 606, urban retail

water suppliers are required to calculate an "urban water use objective", which includes indoor, outdoor, commercial, industrial and institutional irrigation uses and allowed system water loss, by the year 2024. In addition, by calendar year 2028, urban retail water suppliers are required to comply with individual volumetric standards (based on an economic model) for leak detection and repair actions. The goal of the proposed water loss standards is to reduce collective water losses throughout California by approximately 40 percent. San Gabriel will continue to develop its water loss standard and urban water use objective pursuant to SWRCB requirements.

4.2.5 CURRENT WATER USE

San Gabriel currently measures its water use through meter data and billing records. The water use for San Gabriel's individual water use sectors during CY 2020 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 4-3. San Gabriel's total water uses during CY 2020 have been reviewed for compliance with the SB X7-7 water use target for 2020 adopted in San Gabriel's 2015 Plan (discussed in Section 5.5).

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 San Gabriel is not required by DWR to use the tool. Section 6.1 provides a tabulation of San Gabriel's historical annual water uses for each water supply source. During the past 10 years, San Gabriel experienced a five consecutive year drought within its service area from CY 2011 to CY 2015. Historical records indicate San Gabriel's annual water demands had been greater prior to CY 2011. San Gabriel 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, San Gabriel 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 San Gabriel's water supply sources is provided in Chapter 7.

4.2.6 PROJECTED WATER USE

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. 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).

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.

San Gabriel's projected water demands are provided in five-year increments over the next 25 years (through CY 2045) in Table 4-3. San Gabriel'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 San Gabriel's water use sectors are provided in Table 4-2.

San Gabriel's water demands were projected based on a review of the SB X7-7 calculations discussed in Chapter 5 (including the SB X7-7 water use target for 2020), existing water use factors based on recent water demands, and the total population projections based on land use trends within San Gabriel. 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 CY 2020 (the percentages were then applied to the projected total water demands). A discussion of San Gabriel's water supplies from Upper District and Central District, wholesale suppliers, are discussed in Section 6.2. As discussed in Section 2.6, San Gabriel has coordinated its water demand projections with both Upper District and Central District for each water use sector.

San Gabriel's water demand projections incorporate water savings, or "passive savings", which are the result of implementation of new plumbing codes along with consumer awareness of the need to conserve water. San Gabriel's Rule No. 14.1 "Water Shortage Contingency Plan" (discussed in Section 9.2) includes methods for current and ongoing reduction in water use and water waste. Prior to adoption of Rule No. 14.1, San Gabriel's water use rate ranged from approximately 151 gallons per capita day to 171 gallons per capita day (from CY 1995 through CY 2004). As identified in Section 5.5, San Gabriel's actual water use rate during CY 2020 was 112 gallons per capita per day which is a decrease of up to 59 gallons per capita per day from the recent historical water use and includes passive savings. San Gabriel'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 4-5, estimated future water savings have been considered as part of San Gabriel's water use projections.

Table 4-5 Inclusion in Water Use Projections

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Section 4.2.6 and Chapter 8
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

4.2.7 CHARACTERISTIC FIVE-YEAR WATER USE

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:

(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.

San Gabriel's projected water demands are provided in five-year increments over the next 25 years (and through CY 2045) in Table 4-3. San Gabriel's projected water demands and water supplies during a normal year, a single dry year, and a five consecutive year drought over the next 25 years (and through CY 2045) are provided in Chapter 7.

San Gabriel's "Drought Risk Assessment" (DRA) for the next five years (from CY 2021 through CY 2025) is discussed in Section 7.3. The DRA includes San Gabriel's projected annual water demands and supplies for each of the next five years and was prepared based on the five driest consecutive years on record. The DRA provides an assessment of San Gabriel's water service reliability during a drought lasting five years. The DRA reflects anticipated water demands and supplies prior to any expected benefits associated with water supply shortage responses included in San Gabriel's Water Shortage Contingency Plan (provided in Chapter 8). In addition to historical drought hydrology, San Gabriel considered impacts to water supplies and demands based on climate change conditions (discussed in Section 4.5) and anticipated regulatory changes, including the urban water use objectives (discussed in Section 4.2.4)

4.3 WORKSHEETS AND REPORTING TABLES

San Gabriel's current and projected water demands, including the water demands for each of San Gabriel's water use sectors, are provided in five-year increments over the next 25 years (and through CY 2045) in Tables 4-1, 4-2, and 4-3.

4.3.1 OPTIONAL PLANNING TOOL USE ANALYSIS WORKSHEET

As discussed in Section 4.2.5, DWR has deemed the "Planning Tool Worksheet" as optional and San Gabriel is not required by DWR to use the tool. San Gabriel has provided sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. San Gabriel has also 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 San Gabriel's water supply sources is provided in Chapter 7.

4.3.2 DWR 2020 UWMP SUBMITTAL TABLES

San Gabriel's current water demands for each of the water use sectors during CY 2020 are provided in Table 4-1. San Gabriel's projected water demands for each of the water use sectors, in five-year increments over the next 25 years (and through CY 2045), are provided in Table 4-2. San Gabriel's total projected water demands, including potable and recycled water, in five-year increments over the next 25 years (and through CY 2045), are summarized in Table 4-3. San Gabriel's distribution system water losses over the past five years, based on the sum of the real and apparent water losses, are summarized in Table 4-4. San Gabriel's annual AWWA water loss audits are provided in Appendix E.

4.4 WATER USE FOR LOWER INCOME HOUSEHOLDS

CWC 10631.1.

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

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.

San Gabriel's water demands projections provided in Table 4-3 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. The total number of lower income households within San Gabriel's service area was estimated based on billing records provided by San Gabriel, a review of the Los Angeles County 2035 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 Communities[2] (DACs), including block groups, tracts, and places, provided by DWR. The estimated number of lower income households located within San Gabriel's service area is approximately 48.6 percent of the total number of households. As indicated in Table 4-2, the total projected residential (single family) water demands within San Gabriel in 2045 is estimated at about 21,431 AFY. Based on a 48.6 percent use factor of total residential water demands, the projected water demand for lower income households will be about 10,415 AFY by the CY 2045. The projected water demands for lower income households were included in San Gabriel's total projected water demands, as indicated in Table 4-5.

4.5 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 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…

(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 San Gabriel'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 San Gabriel's water supply sources. Chapter 8 provides a detailed discussion of San Gabriel'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 San Gabriel's sources of supply, how those sources may be impacted by climate change, and the proactive actions San Gabriel and other local/regional water managers may take to address the potential climate change impacts on water supplies.

Imported Water Supplies

San Gabriel can purchase treated imported water as discussed in Section 6.2.1 and relies on the Main Basin Watermaster and the Central Basin Watermaster to manage the groundwater supplies of the Main Basin and Central Basin, respectively. Consequently, San Gabriel directly and/or indirectly relies on the Metropolitan Water District of Southern California for those imported water supplies. MWD has prepared a Regional 2020 Urban Water Management Plan which includes a discussion (Section 2.6 in MWD's 2020

[3] www.merriam-webster.com

UWMP) of the reliability of its water supplies and the impacts of climate change and is incorporated by reference in this Plan. Furthermore, San Gabriel is a sub-agency of Upper District and Central District, which have 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 San Gabriel Basin

San Gabriel 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 San Gabriel Basin Watermaster (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), San Gabriel has used climate tools available on the California' Energy Commission's Cal-Adapt (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 San Gabriel'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 San Gabriel'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 F), the average annual rainfall in the Main Basin is projected to be 20.06 inches over the next 25 years (through 2045), compared to historical average of 18.53 inches (from 1950 through 2019). In addition, the average maximum temperature is projected to be 82.0 degrees Fahrenheit compared to a historical average of 78.5 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 San Gabriel to use 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 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 (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 Main Basin 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 Main Basin 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 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 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 Main Basin water levels/supplies.

Conservation

The Main Basin Watermaster passed Resolution No. 03-14-260 declaring "drought conditions" and encouraged all Main 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 182,800 AF in FY 2015-16, a total of 60,100 AF. Groundwater production was 192,600 AF in FY 2019-20. 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 Main Basin 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 the Main Basin 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 Main Basin 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 $140 per AF on all FY 2019-20 production and is planned to increase to $175 per AF on all FY 2020-21 production. 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 2019-20 production were levied in August 2020 and received by the Main Basin Watermaster by September 20, 2020. Main Basin Watermaster has adopted a plan to purchase a minimum of 31,000 acre-feet in December 2020; 33,551 acre-feet in December 2021; 27,800 acre-feet in December 2022; and 30,000 acre-feet in December 2023, under an MWD Letter Agreement which includes Upper District and Three Valleys District. 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 District and Three Valleys District producers.

Groundwater Supplies – Central Basin

San Gabriel relies on groundwater produced from the Central Basin as noted in Section 6.2.2 of this UWMP. As previously noted, the Central Basin has been identified by DWR as a very low-priority groundwater basin partially due to the fact it is adjudicated. In that regard, the Central Basin is actively managed by the Water Replenishment District of

Southern California (WRD) which serves as the Central Basin Watermaster and those management activities are described in detail in Section 6.2.2.

Recognizing the potential impacts of climate change on the Central Basin groundwater supplies (decreased local runoff and replenishment, along with increased groundwater production, may lead to decreased groundwater levels), San Gabriel 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 Central 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 San Gabriel'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 San Gabriel'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 Central Basin. An

electronic boundary of the Central 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 F), the average annual rainfall in the Central Basin is projected to be 14.90 inches over the next 25 years (through 2045), compared to historical average of 13.72 inches (from 1950 through 2019). In addition, the average maximum temperature is projected to be 78.4 degrees Fahrenheit compared to a historical average of 75.4 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 Central 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 Central 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 San Gabriel to use rely on the Central Basin as a reliable source of supply.

Recycled Water Groundwater Replenishment

The WRD has actively used recycled water for groundwater replenishment for many decades. Historically the recycled water replenishment was supplemented with untreated imported water replenishment as part of Central Basin management. However, WRD has

also established the Water Independence Now (WIN) program. The WIN program includes a treatment facility (previously referred to as the Groundwater Reliability Improvement Program) which includes ultrafiltration, reverse osmosis, and ultraviolet disinfection and advanced oxidation to treat recycled water by significantly reducing the total dissolved solids concentration. This action with gradually help to improve the water quality of the Central Basin, plus reduce or eliminate the future need to purchase untreated imported water.

Water Storage Programs

The Central Basin Adjudication allows Parties to the Judgment to pump up to 20 percent more of its annual Allowed Pumping Allocation plus any carry-over water rights as described in Section 6.2.2. In addition, the Central Basin Judgment includes an amendment which implemented a water storage program. A party may store up to 50 percent of the party's Allowed Pumping Allocation in an Individual Storage Account and 150 percent of the party's Allowed Pumping Allocation in a Community Storage Account if space is available. The amendments also allow parties to convert unused Allowed Pumping Allocation to stored water and revised the amount of carryover to be equal to 60 percent of the party's Allowed Pumping Allocation minus the amount of carryover water set aside for storage. The purpose of the storage program creates an added reliability in water supply from the Central Basin.

CHAPTER 5

SB X7-7 BASELINES, TARGETS, AND 2020 COMPLIANCE

LAY DESCRIPTION – CHAPTER 5

SB X7-7 BASELINES, TARGETS, AND 2020 COMPLIANCE

Chapter 5 (SB X7-7 Baselines, Targets, and 2020 Compliance) of San Gabriel's 2020 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 San Gabriel, 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.
- San Gabriel 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. San Gabriel's SB X7-7 Verification Form has not been modified and is included as part of this 2020 Plan as Appendix G. San Gabriel's 2020 Water Use Target is 142 GPCD.
- San Gabriel's 2020 Plan incorporates the 2020 Water Use Target and determines compliance based on actual water use.
- The population within the San Gabriel's service area during Calendar Year 2020 is estimated at 256,335. San Gabriel's population was estimated using the California Department of Water Resources' online "Population Tool" which

incorporates United States Census data in a Geographic Information Systems (or GIS) format to estimate the population within San Gabriel's service area.

- San Gabriel's "gross water" use represents the total volume of water entering its distribution system from its water supply sources. San Gabriel's gross water use excludes recycled water deliveries or water conveyed to another supplier. San Gabriel's annual gross water during Calendar Year 2020 was 32,130 AF.
- San Gabriel's per-capita water use is based on the gross water use divided by the population. San Gabriel's per-capita water use during Calendar Year 2020 was 112 GPCD. San Gabriel's confirmed 2020 Water Use Target is 142 GPCD. San Gabriel's per-capita water use during Calendar Year 2020 meets the 2020 Water Use Target.
- San Gabriel has also demonstrated compliance with the 2020 Water Use Target by completing the SB X7-7 2020 Compliance Form (provided in Appendix H).

5.1 GUIDANCE FOR WHOLESALE SUPPLIERS

CWC 10608.12.

(l) "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.

San Gabriel is not a wholesale agency and is not required by DWR to complete Section 5.1.

5.2 SB X7-7 FORMS AND SUMMARY TABLES

San Gabriel's previously calculated "Baseline" water uses and a "2020 Water Use Target" in its 2015 Plan. There were two different Baseline periods identified (including a "10-year Baseline" period and a "5-year Baseline" period). The average water use for each of

these two Baseline periods, expressed in gallons per capita per day (GPCD), represents the Baseline water use for each period.

A 10-year Baseline period was identified by San Gabriel and information regarding the starting year, ending year, and average water use rate during this period is provided in Table 5-1. San Gabriel determined its 2020 Water Use Target by incorporating 95 percent of the regional use target for the South Coast Hydrologic Region.

According to Section 10608.22 of the California Water Code, if an urban retail water supplier's 5-year Baseline period water use is greater than 100 GPCD, the calculated 2020 Water Use Target may need to be reduced. A 5-year Baseline period was identified by San Gabriel and information regarding the starting year, ending year, and average water use rate during this period is provided in Table 5-1. The average water use rate during the identified 5-year Baseline period was greater than 100 GPCD. As a result, the 5-year Baseline period was used to determine if the 2020 Water Use Target required any adjustments.

San Gabriel's calculated 2020 Water Use Target was compared with the 95 percent of the average water use within the 5-year Baseline to determine if any adjustments were required. The Baseline water uses were used to confirm San Gabriel's 2020 Water Use Target (which represents the per capita water use target for 2020 pursuant to SB X7-7).

5.2.1 SB X7-7 VERIFICATION FORM (BASELINES AND TARGETS)

San Gabriel's service area has not changed (i.e., expansion or contraction) since the 2015 Plan was prepared. San Gabriel's 2020 Plan incorporates the Baseline water uses and 2020 Water Use Target calculated in the 2015 Plan. San Gabriel previously prepared standardized tables (SB X7-7 Verification Form) to demonstrate compliance with the Water Conservation Act of 2009 in its 2015 Plan, including compliance with San Gabriel's 2015 Interim Water Use Target. San Gabriel's SB X7-7 Verification Form has not been modified and is included as part of this 2020 Plan as Appendix G.

5.2.2 SB X7-7 2020 COMPLIANCE FORM

San Gabriel's compliance with its 2020 Water Use Target is summarized in the following sections. San Gabriel has also demonstrated compliance with the 2020 Water Use Target by completing the SB X7-7 2020 Compliance Form (provided in Appendix H).

5.2.3 SUBMITTAL TABLES 5-1 AND 5-2

Summary information from the SB X7-7 Verification Form and from the SB X7-7 2020 Compliance Form is provided in Tables 5-1 and 5-2 below.

Table 5-1 Baselines and Targets Summary from SB X7-7 Verification Form

Submittal Table 5-1 Baselines and Targets Summary From SB X7-7 Verification Form *Retail Supplier or Regional Alliance Only*				
Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	*1995*	*2004*	*161*	*142*
5 Year	*2003*	*2007*	*152*	
**All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*				
NOTES:				

Table 5-2 2020 Compliance from SB X7-7 2020 Compliance Form

Submittal Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form *Retail Supplier or Regional Alliance Only*				
2020 GPCD				
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* *(Adjusted if applicable)*	2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
112	*0*	*112*	*142*	*Y*
**All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)*				
NOTES:				

5.2.4 REGIONAL UWMP/REGIONAL ALLIANCE

As discussed in Section 2.4, San Gabriel's 2020 Plan was not developed as part of a Regional Alliance. Information from San Gabriel's 2020 Plan is not required to be reported in a Regional Alliance report.

5.3 BASELINE AND TARGET CALCULATIONS FOR 2020 UWMPS

5.3.1 SUPPLIER SUBMITTED 2015 UWMP, NO CHANGE TO SERVICE AREA

The general requirements associated with determining the Baseline periods, Baseline water uses, and 2020 Water Use Target were previously provided by DWR. Based on the requirements, San Gabriel calculated the Baseline water uses and 2020 Water Use

Target in its 2015 Plan. San Gabriel's service area has not changed (i.e. expansion or contraction) since the 2015 Plan was prepared. San Gabriel's 2020 Plan incorporates the Baseline water uses and 2020 Water Use Target calculated in the 2015 Plan. San Gabriel's SB X7-7 Verification Form is included in Appendix G.

As discussed in Section 5.2.1, San Gabriel prepared standardized tables (SB X7-7 Verification Form) to demonstrate compliance with the Water Conservation Act of 2009. San Gabriel's SB X7-7 Verification Form is provided in Appendix G and includes Baseline water uses and the 2020 Water Use Target. A summary of the Baseline water uses and 2020 Water Use Target is provided below.

The California Water Code allows an urban water supplier to calculate up to a 15-year Baseline period if at least 10 percent of its 2008 retail water demands were met through recycled water deliveries within its service area, otherwise calculation of a 10-year Baseline period is required. San Gabriel's recycled water deliveries were less than 10 percent of its retail water demands during CY 2008. Consequently, a 10-year Baseline period was identified by San Gabriel and information regarding the starting year, ending year, and average water use rate during this period is provided in Table 5-1. Water systems could potentially identify their 2020 Water Use Target by calculating 80 percent of the 10-year Baseline water use.

According to Section 10608.22 of the California Water Code, if an urban retail water supplier's 5-year Baseline period water use is greater than 100 GPCD, the calculated 2020 Water Use Target may need to be reduced. A 5-year Baseline period was identified by San Gabriel and information regarding the starting year, ending year, and average water use rate during this period is provided in Table 5-1. The average water use rate during the identified 5-year Baseline period was greater than 100 GPCD. As a result, the 5-year Baseline period was used to determine whether the 2020 Water Use Target required any adjustments.

San Gabriel's calculated 2020 Water Use Target was compared with the 95 percent of the average water use within the 5-year Baseline to determine whether any adjustments were required. San Gabriel's confirmed 2020 Water Use Target is 142 GPCD and is summarized in Table 5-1.

5.4 METHODS FOR CALCULATING POPULATION AND GROSS WATER USE

5.4.1 SERVICE AREA POPULATION

CWC 10608.20.

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

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

CWC 10644.

(a)(2) The plan… shall include any standardized forms, tables, or displays specified by the department.

A discussion regarding San Gabriel's compliance with the 2020 Water Use Target is provided in Section 5.5. Compliance with the 2020 Water Use Target is based on the total estimated population within San Gabriel's water service during CY 2020. Because U.S. Census 2020 population data was not available during the preparation of the 2020 Plan, San Gabriel reviewed the methodologies recommended by DWR to estimate the CY 2020 population. The population methodology used by San Gabriel in the 2020 Plan is provided below.

San Gabriel initially reviewed the available historical population within its service area for population growth trends. San Gabriel determined historical U.S. Census population

within its service area using DWR's Population Tool (https://wuedata.water.ca.gov/). San Gabriel's service area boundary was uploaded to DWR's Population Tool in a "KML" file format (i.e. Google Earth format). The KML file was originally created in a GIS shapefile format and converted into a KML format. The uploaded KML file represents San Gabriel's service area boundary from 1990 to present (2020). DWR's Population Tool utilized U.S. Census data from 1990, 2000, and 2010, along with San Gabriel's service area boundary, to estimate the population served by San Gabriel in the years 1990, 2000, and 2010.

DWR's Population Tool was also used to estimate the 2020 population within San Gabriel's service area. The total number of service connections within San Gabriel's service area (including residential, commercial, and industrial connections) in the years 2010 and 2020 were entered into the Population Tool. Based on the historical U.S. Census populations (from 1990, 2000, and 2010) and available data regarding total service connections for those corresponding years, DWR's Population Tool estimated the population within San Gabriel's service area for CY 2020 (using the service connection data for CY 2020) to be approximately 256,335. The CY 2020 population is consistent with the historical population growth trends. San Gabriel's CY 2020 population is presented in Table 3 of the SB X7-7 2020 Compliance Form.

5.4.2 GROSS WATER USE

CWC 10608.12.

(h) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.
(2) The net volume of water that the urban retail water supplier places into long-term storage.
(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.
(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

California Code of Regulations Title 23 Division 2 Chapter 5.1 Article 1, Section 596.

(a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculation of its gross water use to avoid a disproportionate burden on another customer sector.

Gross water use represents the total volume of water entering a distribution system (but excludes recycled water deliveries, water placed into long term storage, water conveyed to another supplier, water delivered for agricultural use, and process water if there is a substantial percentage used for industrial purposes) over a 12-month period. San Gabriel's annual gross water use amounts are based on the total amount of water entering San Gabriel's distribution system from its water supply sources (including groundwater production wells and purchased imported water connections). The annual gross water use by San Gabriel during CY 2020 was 32,130 AF.

The annual gross water use amounts within San Gabriel for each year of the Baseline periods (discussed in Section 5.2) are provided in SB X7-7 Verification Form, Table 4 (Appendix G). A further discussion of the Baseline periods is provided in Section 5.2.

San Gabriel currently does not use indirect recycled water within its service area. San Gabriel is not required by DWR to complete SB X7-7 Verification Form, Table 4-B.

Industrial process water is not subtracted from San Gabriel's gross water use provided in SB X7-7 Verification Form, Table 4. San Gabriel is not required by DWR to complete SB X7-7 Verification Form, Table 4-C.1, Table 4-C.2, Table 4-C.3, Table 4-C.4, and Table 4-D.

5.5 2020 COMPLIANCE DAILY PER CAPITA WATER USE (GPCD)

CWC 10608.12.

(f) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

CWC 10608.20.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010… compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

As discussed in Section 5.5, the annual gross water use by San Gabriel during CY 2020 was 32,130 AF. As discussed in Section 5.4.1, the estimated population within San Gabriel's service area for CY 2020 is 256,335. As a result, San Gabriel's per-capita water use during CY 2020 was 112 GPCD. As discussed in Section 5.4.2, San Gabriel's confirmed 2020 Water Use Target is 142 GPCD. San Gabriel's per-capita water use during CY 2020 meets the 2020 Water Use Target and is in compliance. San Gabriel has also demonstrated compliance with the 2020 Water Use Target by completing the SB X7-7 2020 Compliance Form (provided in Appendix H).

5.5.1 2020 ADJUSTMENTS FOR FACTORS OUTSIDE OF SUPPLIER'S CONTROL

CWC 10608.24.

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

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

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

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

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

Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, Methodology 4.

This section discusses adjustments to compliance-year GPCD because of changes in distribution area caused by mergers, annexation, and other scenarios that occur between the baseline and compliance years.

San Gabriel has determined its compliance with the 2020 Water Use Target without adjusting its annual gross water use during CY 2020.

5.5.2 SPECIAL SITUATIONS

San Gabriel's 2020 Plan incorporates the Baseline water uses and 2020 Water Use Target calculated in the 2015 Plan. There were no special situations that required San Gabriel to recalculate the Baseline water uses and 2020 Water Use Target.

5.5.3 IF SUPPLIER DOES NOT MEET 2020 TARGET

San Gabriel's per-capita water use during CY 2020 meets the 2020 Water Use Target and is in compliance.

5.6 REGIONAL ALLIANCE

As discussed in Section 2.4, San Gabriel's 2020 Plan was not developed as part of a Regional Alliance. Information from San Gabriel's 2020 Plan is not required to be reported in a Regional Alliance report.

CHAPTER 6

WATER SUPPLY CHARACTERIZATION

LAY DESCRIPTION – CHAPTER 6

WATER SUPPLY CHARACTERIZATION

Chapter 6 (Water Supply Characterization) of San Gabriel 2020 Plan discusses and provides the following:

- San Gabriel's water supply sources include: groundwater pumped from the Main San Gabriel Basin and Central Basin; treated, imported surface water purchased from Metropolitan Water District of Southern California through Central Basin Municipal Water District; and recycled water.
- San Gabriel's main source of water supply is groundwater pumped from the Main Basin.
- A tabulation of San Gabriel's historical water supplies is provided in Section 6.1.
- A discussion regarding San Gabriel's imported water supplies from Central Basin Municipal Water District is provided. Information regarding imported water connections, capacities, reliability, and historical production is provided.
- A discussion regarding San Gabriel's groundwater supplies from the Main Basin and Central Basin is provided. Information regarding basin location, adjudication, management, water levels, water quality, water rights, and historical production is provided.
- A discussion regarding San Gabriel's recycled water supplies is provided. San Gabriel's recycled water supplies are produced by Los Angeles County Sanitation Districts. San Gabriel uses recycled water for landscape irrigation, including nurseries, golf courses, parks, and schools.

- San Gabriel's proposed future projects to maximum its water supply resources are discussed.
- San Gabriel'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 San Gabriel's water management processes was estimated during CY 2020.

In this Chapter, San Gabriel will identify and describe each of its sources of water supply. In addition, San Gabriel 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 San Gabriel 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 San Gabriel'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 CY 2045.

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) 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).

San Gabriel's water supply sources include: groundwater pumped from the Main Basin and Central Basin; treated, imported surface water purchased from Metropolitan Water District of Southern California through Central District; and recycled water. San Gabriel's main source of water supply is groundwater pumped from the Main Basin. A tabulation of San Gabriel's historical water supplies is provided below.

Calendar Year	System Water Supply Sources (AF)					Total
	Potable Water				Recycled Water	
	Groundwater		MWD Imported Water	Subtotal		
	Main Basin Groundwater	Central Basin Groundwater				
2011	33,679	997	0	34,676	1,949	36,625
2012	35,258	36	0	35,294	2,390	37,684
2013	39,646	22	0	39,668	2,482	42,150
2014	38,552	19	0	38,571	2,547	41,118
2015	29,567	1,644	0	31,211	1,635	32,846
2016	29,207	1,624	0	30,831	1,831	32,663
2017	30,666	1,730	0	32,396	1,647	34,043
2018	30,428	1,758	0	32,186	1,677	33,863
2019	29,120	1,268	0	30,389	1,360	31,749
2020	32,081	49	0	32,130	1,502	33,632

Source: Data provided by San Gabriel Valley Water Company

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:

- San Gabriel's existing and planned sources of water supply are identified;
- Each source of supply is quantified in five-year increments through CY 2045;
- 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.

San Gabriel historically has relied on groundwater pumped from the Main Basin and Central Basin; treated, imported surface water purchased from Metropolitan Water District of Southern California through Central District; and recycled water purchased from the Los Angeles County Sanitation Districts. The following descriptions summarize San Gabriel's sources of supply (detailed descriptions are provided in Section 6.2).

Existing and Planned Sources of Supply

Purchased Treated Imported Water

San Gabriel historically has not purchased treated imported water from the Central District, 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 CY 2020. In addition, Table 6-9 summarizes the projected water supply, in five-year increments, through CY 2045 under varying water supply conditions.

Groundwater

San Gabriel has historically pumped groundwater from the Main Basin and Central 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 CY 2020. In addition, Table 6-9 summarizes the projected water supply, in five-year increments, through CY 2045 under varying water supply conditions.

Surface Water

San Gabriel does not use surface water supplies to meet its water demands.

Storm Water

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

Wastewater and Recycled Water

San Gabriel has historically purchased recycled water supplies from the Los Angeles County Sanitation Districts, Upper District, and Central District, as described in Section 6.2.5. In addition, Section 6.2.5 provides a detailed discussion of the existing and planned use of the recycled water, including a description of the management and reliability of those recycled water supplies. Table 6-8 summarizes the actual recycled water supplies for CY 2020. In addition, Table 6-9 summarizes the projected recycled water supply, in five-year increments, through CY 2045 under varying water supply conditions.

6.1.2 OTHER CHARACTERIZATION CONSIDERATIONS

A description of San Gabriel's water system along with a map of its service area is included in Chapter 3. In addition, the agencies which manage the water supplies used

by San Gabriel are identified in Section 6.2.1 (imported water), 6.2.2 (groundwater), 6.2.3 (surface water), 6.2.4 (stormwater), and 6.2.5 (recycled water).

6.1.3 OPTIONAL PLANNING TOOL

As discussed in Section 4.2.5, 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 San Gabriel is not required by DWR to use the tool. Section 6.1 provides a tabulation of San Gabriel's historical annual water uses for each water supply source. During the past 10 years, San Gabriel experienced a five consecutive year drought within its service area from CY 2011 to CY 2015. Historical records indicate San Gabriel's annual water demands had been greater prior to CY 2011. San Gabriel 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, San Gabriel 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 San Gabriel's water supply sources is provided in Chapter 7.

6.2 NARRATIVE SECTIONS FOR SUPPLIER'S UWMP WATER SUPPLY CHARACTERIZATION

6.2.1 PURCHASED OR IMPORTED WATER

CENTRAL BASIN MUNICIPAL WATER DISTRICT

San Gabriel can purchase treated, imported surface water supplies from MWD through Central District. San Gabriel owns a 15 cubic feet per second connection designated CENB-40, which can supply up to 6,735 gallons per minute (gpm) from MWD's Middle Feeder. San Gabriel plans to use treated imported water only as an emergency water

supply source. San Gabriel's purchases of water from Central District over the past five years have been tabulated in Section 6.1. Over the past five years, San Gabriel has not purchased water from Central District. San Gabriel's projected purchases of water from Central District, over the next 25 years in five-year increments, is provided in Table 6-9.

San Gabriel's treated imported water supplies from MWD, through Central District, 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 San Gabriel. 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 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 2020 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 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 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 GSP 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 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 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 I. During water year 2018-19, the 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 District, one representing the Lower Area parties nominated by and through WRD, and one jointly nominated by Upper District 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 2019-20 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 District 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 San Gabriel Valley Water Association (Association), an association of water producers in the Main Basin. After due consideration by the Association, Upper District 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 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 J.

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 Upper District and the San Gabriel Valley Municipal Water District (SGVMWD), 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 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 distributary, 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 District 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 District, SGVMWD, and Three Valleys Municipal Water District (TVMWD).

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 Well[4] 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. Data from the Key Well hydrograph indicates the cyclic nature of basin recharge and depletion and the dramatic recharge capability of the Main Basin during wet periods.

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

[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.

tributary to the Main Basin from the southeast, between the San Jose and Puente Hills, but is not included in the Main Basin Judgment.

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 Los Angeles County Department of Public Works 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 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 Main 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 Main Basin 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. The Main Basin Watermaster uses funds collected from producers' overproduction to purchase imported water from municipal water districts. Upper District and TVMWD obtain their water from MWD. SGVMWD has its own contract for SWP water. The Main Basin 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 Watermaster[5] and Main Basin Watermaster[6]. San Gabriel is a party to both Judgments and as such participates in these cases. San Gabriel 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 District'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 District 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.

[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.

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 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 District, 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 TVMWD and permits TVMWD to deliver and store up to 50,000 acre-feet for future Replacement Water use. The third is with SGVMWD and permits SGVMWD 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. 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 Total Dissolved Solids (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 TDS 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 (SWP) water and Colorado River water) to replenish the Basin was severely limited. Consequently, during fiscal year 2014-15, the Main Basin 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 Main Basin 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. The Main Basin 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 (RDA) to be levied on all production. The Supplemental Water Reliability Storage Program (RDA) 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 (RDA II) described below.

Supplemental Water Stormwater Augmentation Program (RDA II)

The Water Resource Development Assessment for Stormwater Augmentation Program (RDA II) 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 $140/AF on all FY 2019-20 production and is planned to increase to

$175/AF on all FY 2020-21 production. 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 Main Basin 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

In 2017, Main Basin Watermaster and Upper District negotiated the pre-delivery of 80,000 acre-feet of imported replenishment water from MWD (Letter Agreement). All 80,000 acre-feet was to be stored in MWD's cyclic storage account. This pre-delivered MWD water would be paid for over a 5-year payment schedule (starting in December of fiscal year 2017-18), by the Main Basin Watermaster, using annual Replacement Water assessments, RDA funds within Upper District and TVMWD (Responsible Agency) area and revenue from transfers into producer cyclic storage, and applying those funds to purchase the pre-delivered water on an annual basis.

In 2019, an extension to the MWD Letter Agreement was developed. Under the extension, MWD planned a new delivery of about 110,000 acre-feet to its Cyclic Storage account during calendar year 2019. The 110,000 acre-feet would be paid for over a similar 5-year payment schedule starting in December 2019. These cyclic storage deliveries and payments will be made by Main Basin Watermaster to MWD, through Upper District and TVMWD.

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 the Main Basin 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 the Main Basin 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 the Main Basin 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 the Main Basin Watermaster's amended Rules and Regulations[7] 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:

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

1) *The first year shall be, at a minimum, the total Replacement Water requirement for the three Responsible Agencies (Upper District, 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 the Main Basin Watermaster, and subsequently transferred by MWD to Upper District and TVMWD, 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 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 Plan[8], 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;
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] https://www.watermaster.org/reports

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 District, 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 San Gabriel) 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, San Gabriel 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 requirement 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 clean up;
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

San Gabriel currently produces groundwater from the Main Basin. San Gabriel's share of the Operating Safe Yield is 10.49247 percent. Over the past five years, San Gabriel has produced 29,120 AFY to 32,081 AFY, with an average of 30,300 AFY from the Main Basin. San Gabriel'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.

CENTRAL BASIN

Central Basin - Sustainable Groundwater Management Act

The Central Basin is a subbasin of the Coastal Plain of Los Angeles Groundwater Basin pursuant to DWR Bulletin 118, Basin Number 4-11.04. Pursuant to the Sustainable Groundwater Management Act of 2014, the Central 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 Central Basin Watermaster (which is WRD), submits its Annual Report to DWR.

Central Basin - Adjudication

On January 2, 1962, the Central and West Basin Water Replenishment District (now WRD) filed Case No. 786,656 in the Superior Court, County of Los Angeles, naming more than 700 parties as defendants. It sought to adjudicate water rights of groundwater and regulate pumping from the Central Basin. By September 1962, a proposed agreement had been approved by a sufficient number of water producers (producers owning over 75 percent of the Assumed Relative Rights within Central Basin) to guarantee control over groundwater pumping in Central Basin. On September 28, 1962, the Court signed the "Order Pursuant to Stipulation and Interim Agreement and Petition for Order" and appointed the Department of Water Resources as Watermaster.

Subsequently, a stipulated judgment was drafted. Approval was received by public utility water companies and other producers representing well over 200,000 AF, or 75 percent, of the total rights within Central Basin. This was a prerequisite to filing the stipulated judgment with the Court. On May 17, 1965, the case went to trial before Judge Edmund M. Moor. Following testimony on engineering, geology, hydrology, and safe yield of Central Basin and arguments on water right entitlement, the case was continued to

August 25, 1965. Shortly thereafter, Judge Moor appointed DWR as Watermaster. The final Judgment was signed on October 11, 1965 and became effective on October 1, 1966.[9]

The Judgment was amended on March 21, 1980, to provide for a transition in the administrative year from a water year (October 1 to September 30) to a fiscal year (July 1 to June 30). Under the Judgment, this transition in turn contained a "short" administrative year of nine months (from October 1, 1980 to June 30, 1981). The administrative year starting July 1, 1981 was on a fiscal year basis.
The Judgment was again amended on July 19, 1985, modifying the annual budget ($20 minimum assessment) and exchange pool provisions. The second amended Judgment of May 6, 1991 modified the carryover and overproduction provisions (to 20 percent of allowed pumping allocation or 20 AF, whichever is greater, from 10 percent of allowed pumping allocation or 10 AF), and defined drought carryover, and provided for exemptions for extractors of contaminated groundwater.

In December 2013, the Central Basin Judgment was amended ("Third Amended" Central Basin Judgment) to confirm the retirement of DWR as the Watermaster of Central Basin. The Judgment established three separate bodies to assist the Court in the administration and enforcement of the provisions and stipulations of the Judgment. The first body is the Administrative Body, which administers Watermaster accounting and financial reporting activities. WRD was appointed by the Court for this role. The second body is the Water Rights Panel, which enforces issues related to groundwater production rights as defined by the Judgment. The Water Rights panel comprises of seven elected water rights holders within the Central Basin. The third administrative body is the Storage Panel, which reviews and approves groundwater storage efforts. The Storage Panel is

[9] Central and West Basin Water Replenishment District, etc. v. Charles E. Adams, et al, Los Angeles County Case No. 786,656.

comprised of the Water Rights Panel and the WRD Board of Directors. A copy of the Central Basin Judgment is provided in Appendix K.

The Court approved 2013 Judgment amendments also implemented a water storage program. The amendment states, "…a party may store up to 200 percent of the party's Allowed Pumping Allocation, if space is available." In addition, the amendments allow parties to convert unused Allowed Pumping Allocation to stored water and revised the amount of carryover to be equal to 100 percent of the party's Allowed Pumping Allocation minus the amount of carryover water set aside for storage, as noted above. The purpose of the storage program creates an added reliability in water supply from the Central Basin. In addition, the amendments allow for transfer of water between Central Basin and West Basin by permitting parties with water rights in Central Basin to increase production in Central Basin, while another party decreases production in West Basin by the corresponding amount.

Under the Judgment, water rights are fixed and do not vary year to year. Water producers cannot exceed their water rights by more than 20 percent or 20 AF, whichever is greater, in any year and an adjustment is made the following year. In addition, water producers cannot carry over more than 20 percent or 20 AF, whichever is greater, of their water rights for use in the following year. In addition, the Central Basin Judgment includes an amendment which implemented a water storage program. A party may store up to 50 percent of the party's Allowed Pumping Allocation in an Individual Storage Account and 150 percent of the party's Allowed Pumping Allocation in a Community Storage Account if space is available. The amendments also allow parties to convert unused Allowed Pumping Allocation to stored water and revised the amount of carryover to be equal to 60 percent of the party's Allowed Pumping Allocation minus the amount of carryover water set aside for storage. The purpose of the storage program creates an added reliability in water supply from the Central Basin.

Basin - Description

Central Basin is one of two groundwater basins in the Coastal Plain of Los Angeles County. It is comprised of Quaternary-age sediments (less than 1.8 million years old) of gravel, sand, silt, and clay that were deposited from the erosion of nearby hills and mountains, and from historical beaches and shallow ocean floors that covered the area in the past. Underlying these Quaternary sediments are basement rocks such as the Pliocene Pico Formation that generally do not provide sufficient quantities of groundwater for pumping. Separating the Central Basin from the West Coast Basin is the NIU, a series of discontinuous faults and folds that form a prominent line of northwest trending hills including the Baldwin Hills, Dominguez Hills, and Signal Hill.

Central Basin covers approximately 270 square miles and is bounded on the north by the Hollywood Basin and the Elysian, Repetto, Merced, and Puente Hills, to the east by the Los Angeles County/Orange County line, and to the south and west by the NIU. The location of the Central Basin is provided in Figure 4. DWR divided the Central Basin into four sections: the Los Angeles Forebay, the Montebello Forebay, the Whittier Area, and the Pressure Area. Pursuant to DWR Bulletin 118 (for Basin Number 4-11.04), the total storage capacity of the Central Basin is estimated at approximately 13,800,000 AF.

The aquifers of Central Basin received their water supply primarily from the surface and subsurface inflow of water from the San Gabriel Valley. The water originates as rainfall in the San Gabriel Mountains, the runoff from which is conveyed to the Los Angeles River, the Rio Hondo, and the San Gabriel River. The Los Angeles River enters Central Basin through the Los Angeles Narrows, crosses the Los Angeles Forebay Area, and proceeds south across Central Basin, exiting Central Basin through the Dominguez Gap in West Basin. The Rio Hondo, enters Central Basin at Whittier Narrows parallel to the San Gabriel River, proceeds southwesterly across the Montebello Forebay Area and joins the Los Angeles River midway across the Basin. The San Gabriel River also enters Central

Basin through the Whittier Narrows, crosses the Montebello Forebay, and runs south to the Pacific Ocean near Long Beach at the Orange County line.

As the Rio Hondo and San Gabriel River flow through the Upper San Gabriel Valley toward Whittier Narrows, much of their flow percolates into the Main Basin. This water crosses the Whittier Narrows and enters Central Basin as subsurface flow into the aquifers of Central Basin. At the same time, the surface flows of the Rio Hondo and the San Gabriel River percolate downward into the aquifers of Central Basin in the Montebello Forebay. In the Montebello Forebay, the underground aquifers merge and are unconfined, and thus are capable of receiving large quantities of water from percolation through the sand and gravel surface of the forebay area.

The Los Angeles Forebay area is also favorably situated for percolation from the flows of the Los Angeles River, but the Los Angeles Forebay has been largely eliminated as a source of freshwater replenishment to Central Basin, due to lining of the Los Angeles River channel and the impervious surface in the forebay area. In the Montebello Forebay area, by contrast, flood flows have been largely controlled through the construction of the Whittier Narrows Dam, and the river channels have not been lined in the area, so percolation still occurs.

Groundwater in the Central Basin provides a substantial portion of the water supply needed by residents and industries in the overlying area. Groundwater occurs in the pore spaces of the sediments in the basin. The major aquifers identified in Central Basin include the following, from shallowest to deepest: a) the Gaspur and semi-perched aquifers of the Holocene Alluvium Formation; b) the Exposition, Artesia, Gage, and Gardena aquifers of the Upper Pleistocene Lakewood Formation; c) the Hollydale, Jefferson, Lynwood, and Silverado aquifers of the Lower Pleistocene Upper San Pedro Formation; and d) the Sunnyside Aquifer of the Lower Pleistocene Lower San Pedro Formation.

WRD's Leo J. Vander Lans Advanced Water Treatment Facility (LVL) was built in 2003 and expanded in 2014. The facility is located in the City of Long Beach and currently produces about 8 MGD of advanced treated water for injection at the Alamitos Barrier in Long Beach. The LVL also injects tertiary treated recycled water from the Los Angeles County Sanitation District's Long Beach Water Reclamation Plant. By injecting the LVL's advanced treated water and effluent from the Long Beach Water Reclamation Plant, groundwater supply is replenished and seawater intrusion is prevented.

The WRD Board of Directors established the Water Independence Now (WIN) program in 2003 to protect the security of the region's groundwater supplies. The WIN program is comprised of various projects that include expansions to existing water treatment facilities, spreading activities, and stormwater capture. The largest component of the WIN program is the Albert Robles Center for Water Recycling & Environmental Learning (formerly the Groundwater Reliability Improvement Program), which was completed in 2019. The purpose of the Albert Robles Center is to reduce demand for imported water at the Rio Hondo and San Gabriel Coastal Spreading Grounds. The Albert Robles Center includes ultrafiltration, reverse osmosis, and ultraviolet disinfection and advanced oxidation to treat recycled water by significantly reducing the total dissolved solids concentration.

Groundwater quality is monitored by WRD. Groundwater in the Central Basin is currently contaminated with natural metals such as arsenic, iron and manganese, VOCs, including trichloroethylene (TCE) and perchloroethylene (PCE), 1,4-Dioxane, Perchlorate, and Per- and Poly-Fluoroalkyl Substances (PFAS). In addition, TDS concentrations exceed drinking water quality standards. Wellhead treatment is necessary in these areas to allow delivery of the groundwater for potable purposes.

As previously discussed, DWR divided the Central Basin into four sections: the Los Angeles Forebay, the Montebello Forebay, the Whittier Area, and the Pressure Area.

Below is a discussion of groundwater level changes, pursuant to WRD's 2020 Engineering Survey and Report.

- In the Los Angeles Forebay, the water level high was observed in 1938 with an elevation of approximately 70 feet above mean sea level (msl) and by 1962, the water levels had fallen by 180 feet to an elevation of 109 feet below msl due to over pumping and lack of recharge. Water levels have improved since then due to pumping rights adjudication and managed aquifer recharge. In 2019, the groundwater levels were at an elevation of 20.3 feet below msl.

- In the Montebello Forebay, the water level high was observed in 1942 with an elevation of approximately 137.8 feet above mean sea level (msl) and by 1958, the water levels had fallen by 117 feet to an elevation of 20.9 feet above msl due to over pumping and lack of recharge. Water levels have improved since then due to pumping rights adjudication and managed aquifer recharge. In 2019, the groundwater levels were at an elevation of 72.9 feet above msl.

- In the Pressure Area, the water level high was observed in 1935 at about 10 feet above msl when they began to continually decline by over 110 feet until the observed low of about 120 feet below msl in 1961 due to over pumping and lack of recharge. Groundwater levels improved during the early 1960s due to replenishment operations. Between 1995 and 2007, there were 100-foot swings in water levels as a result of seasonal pumping from producers. Water levels have improved since then due to pumping rights adjudication and managed aquifer recharge. In 2019, the groundwater levels were at elevations between 75 and 91.1 feet below msl.

- Long-term hydrographs and records were not maintained for the Whittier Area; however, groundwater levels have been tracked from recently constructed monitoring wells.

Central Basin - Historical and Projected Basin Production

San Gabriel currently produces groundwater from the Central Basin. San Gabriel's current Allowed Pumping Allocation in the Central basin is 2,565.35 AFY. San Gabriel's production over the past five years has been tabulated in Section 6.1. Over the past five years, San Gabriel has produced 49 AFY to 1,758 AFY, with an average of 1,286 AFY from the Central Basin. San Gabriel's projected production from the Central Basin, over the next 25 years in five-year increments, is provided in Table 6-9.

Table 6-1 Groundwater Volume Pumped

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
☐	All or part of the groundwater described below is desalinated.					
Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Add additional rows as needed						
Alluvial Basin	Main Basin	29,207	30,666	30,428	29,120	32,081
Alluvial Basin	Central Basin	1,624	1,730	1,758	1,268	49
	TOTAL	30,831	32,396	32,186	30,388	32,130
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

6.2.3 SURFACE WATER

San Gabriel does not use surface water supplies to meet its water demands.

6.2.4 STORMWATER

San Gabriel does not directly use stormwater to meet its water demands.

6.2.5 WASTEWATER AND RECYCLED WATER

CWC 10633.

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

Achieving maximum use of all available recycled water is one of San Gabriel's water management goals. Recycled water could be used for groundwater recharge and storage as well as direct use by customers who are equipped and able to use recycled water. San Gabriel strongly supports the use of recycled water and provides recycled water to customers in its service area who are able to use it, when it is made available. San Gabriel serves recycled water to numerous customers in the Main Basin and Central Basin, both located in Los Angeles County.

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…

San Gabriel has supplied recycled water to customers for non-potable irrigation uses since the mid-1990s. San Gabriel's recycled water supply is produced by Los Angeles County Sanitation Districts' San Jose Creek Water Reclamation Plant (SJCWRP) and Whittier Narrows Water Reclamation Plant (WNWRP). San Gabriel purchases these recycled water supplies from LACSD, Upper District, and Central District. San Gabriel has coordinated the preparation of its 2020 Plan with LACSD.

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 within San Gabriel's service area is treated by LACSD. Wastewater is collected within the sewer collection systems of Cities located within San Gabriel's service area. The local sewers tie into LACSD's regional trunk sewers. The regional trunk sewer lines deliver wastewater to one or more water reclamation plants owned by LACSD for treatment. The water reclamation plants serving San Gabriel's service area include SJCWRP, WNWRP, and the Joint Water Pollution Control Plant (JWPCP). SJCWRP and WNWRP are located within San Gabriel's service area; however; the water reclamation plants are wholly owned and operated by LACSD. The percentage breakdown between the three LACSD plants in treating the wastewater from San Gabriel's customers is unknown. LACSD estimates approximately 69 gallons per person per day of wastewater is generated within LACSD's service area. Based on a CY 2020 population of 256,335 within San Gabriel's service area, the estimated amount of wastewater collected within San Gabriel's service area is approximately 17.7 million gallons per day (about 19,800 AFY), as shown in Table 6-2. As indicated previously and in Table 6-3, SJCWRP and WNWRP are located within San Gabriel's service area; however, both water reclamation plants are wholly owned and operated by LACSD. JWPCP is located outside of San Gabriel's service area.

LACSD's JWPCP, which began operation in 1928, currently has a treatment capacity of about 300 MGD. The treatment level is primary and secondary treatment with disinfection. Solids collected in primary and secondary treatment with disinfection. The JWPCP plant serves a population of approximately 3.5 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. Though highly treated, effluent from the JWPCP does not meet recycled water standards and is therefore not re-used for such purposes. However, all water discharged to the ocean is monitored to ensure compliance with applicable local, state, and federal standards for discharge water.

The WNWRP began operations in 1962 and has a treatment capacity of about 15 MGD. The WNWRP provides coagulated, filtered, and disinfected tertiary effluent. All wastewater treated at the WNWRP meets recycled water standards. 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. 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.

Table 6-2 Wastewater Collected Within Area in 2020

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system *(optional)*					
	Percentage of 2020 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
LACSD	Estimated	400	LACSD	WNWRP	Yes	No
LACSD	Estimated	4,000	LACSD	SJCWRP	Yes	No
LACSD	Estimated	15,400	LACSD	JWPCP	No	No
Total Wastewater Collected from Service Area in 2020:		19,800				
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3* **.**						
NOTES:						

Table 6-3 Wastewater Treatment and Discharge within Service Area in 2020

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020											
☐	**No wastewater is treated or disposed of within the UWMP service area.** The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)* [2]	Method of Disposal ***Drop down list***	Does This Plant Treat Wastewater Generated Outside the Service Area? ***Drop down list***	Treatment Level ***Drop down list***	2020 volumes [1]				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
WNWRP	San Gabriel River	San Gabriel River		River or creek outfall	Yes	Tertiary	7,947	12	199	7,736	
SJCWRP	San Gabriel River	San Gabriel River		River or creek outfall	Yes	Tertiary	49,045	6,523	1,303	41,219	
						Total	56,992	6,535	1,502	48,955	0

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

NOTES: The SJCWRP and the WNWRP are located within San Gabriel's service area; however; both water reclamation plants are wholly owned and operated by LACSD. Information regarding "2020 volumes" is estimated based on the "30th Annual Status Report on Recycled Water Use FY 2018-19", prepared by LACSD. Recycled water volumes (within the serviced area) are for calendar year 2020. Because San Gabriel does not own the water reclamation plant, information regarding "Instream Flow Permit Requirement" is not available and is not applicable.

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.

San Gabriel has supplied recycled water to customers for non-potable irrigation uses since the mid-1990s. Recycled water users within San Gabriel's service area include schools, landscape nurseries, Southern California Edison, Walmart, Grant Rea Park in the City of Montebello, the Whittier Narrows Recreation Area, Whittier Narrows Golf Course, Los Angeles County's Sorenson Park and Public Library, and portions of the Rio

Hondo Community College. Recycled water supply is produced by LACSD's SJCWRP and WNWRP. San Gabriel purchases these recycled water supplies from LACSD, Upper District, and Central District. Use of recycled water allows San Gabriel to reduce the amount of groundwater production required from the Main San Gabriel and Central Basins and from imported water purchases. The amount of recycled water supplied by San Gabriel is provided in Table 6-4.

Upper District is implementing a phased recycled water program which will ultimately supply up to approximately 5,000 AFY of available recycled water supplies to customers within Upper District's service area. San Gabriel, which is located within Upper District's service area, could potentially receive additional recycled water supplies from the project.

Phase IIA of Upper District's recycled water program currently provides recycled water service to San Gabriel's customers in the South El Monte and Whittier Narrows area. An extension to the existing Phase IIA system was completed in 2011 and provides recycled water service to San Gabriel's customers in the City of Rosemead.

Central District's recycled water program currently provides recycled water service to San Gabriel's customers in the City of Whittier and unincorporated areas of Los Angeles County.

Based on a June 13, 2006 "Agreement between Upper District, San Gabriel, and the County of Los Angeles Department of Parks and Recreation (LADPR)", San Gabriel can purchase up to 4,675 AFY of recycled water from LACSD, if available, through Upper District. In addition, LADPR is allowed to purchase up to 2,900 AFY of this recycled water from San Gabriel. Purchase of recycled water by LADPR would be used for irrigation in the Whittier Narrows Recreation Area, which is located within San Gabriel's service area.

6.2.5.4 POTENTIAL, CURRENT, 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.

San Gabriel's "2018 Water System Master Plan" identified potential recycled water customers within San Gabriel 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 (See Appendix L).

San Gabriel uses recycled water for landscape irrigation, including nurseries, golf courses, parks, and schools. San Gabriel plans to increase recycled water use within its service area by expanding the recycled water system to additional landscape irrigation areas not currently using recycled water.

Future recycled water use projections are based on current recycled water use and planned recycled water projects. As shown in Table 6-4, the current and projected deliveries reflect the volume of municipal recycled wastewater from SJCWRP and WNWRP to customers through San Gabriel's recycled water distribution system.

San Gabriel plans to continue to increase delivery capacity and expand the recycled water system to serve additional customers. Because San Gabriel is reliant on groundwater from the Main Basin, the economic value of a recycled water system continues to increase. Any additional recycled water supplies that can offset potable water demand will make these projects more viable.

San Gabriel's 2015 Plan projected recycled water use in 2020 to be 2,586 AF. San Gabriel's recycled water use in 2020 was 1,502 AF. Table 6-5 provides a comparison of the 2015 Plan projection to the actual 2020 use.

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

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

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

Name of Supplier Producing (Treating) the Recycled Water:	Los Angeles County Sanitation District
Name of Supplier Operating the Recycled Water Distribution System:	San Gabriel Valley Water Company
Supplemental Water Added in 2020 (volume) *Include units*	0
Source of 2020 Supplemental Water	N/A

Beneficial Use Type *Insert additional rows if needed.*	**Potential** Beneficial Uses of Recycled Water (Describe)	Amount of **Potential** Uses of Recycled Water (Quantity) *Include volume units* [1]	General Description of 2020 Uses	Level of Treatment *Drop down list*	2020 [1]	2025 [1]	2030 [1]	2035 [1]	2040 [1]	2045 [1] (opt)
Agricultural irrigation				Tertiary	15	18	21	23	26	29
Landscape irrigation (exc golf courses)	Schools, Parks, City Landscape		Schools, Parks, City Landscape	Tertiary	1,157	1,386	1,617	1,849	2,080	2,310
Golf course irrigation				Tertiary	330	396	462	528	594	661
Commercial use										
Industrial use										
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment										
Wetlands or wildlife habitat										
Groundwater recharge (IPR)										
Reservoir water augmentation (IPR)										
Direct potable reuse										
Other (Description Required)										
				Total:	1,502	1,800	2,100	2,400	2,700	3,000
				2020 Internal Reuse						

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

NOTES:

Table 6-5 2015 Recycled Water Use Projection Compared to 2020 Actual

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual		
☐	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.	
Beneficial Use Type	**2015 Projection for 2020 [1]**	**2020 Actual Use [1]**
Insert additional rows as needed.		
Agricultural irrigation	28	15
Landscape irrigation (exc golf courses)	2,158	1,156
Golf course irrigation	400	331
Commercial use		
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)		
Total	2,586	1,502
[1] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.		
NOTE:		

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.

San Gabriel plans to continue to increase delivery capacity and expand the recycled water system to serve additional customers. Because San Gabriel is reliant on imported water supplies from MWD through Upper District and Central District, the economic value of a recycled water system continues to increase. Any additional water supplies that can offset imported water purchases will make these projects more viable. As discussed previously, San Gabriel's "2018 Water System Master Plan" identified potential recycled water customers within San Gabriel based on recycled water use for large-volume irrigation purposes (e.g. municipal parks, fields, golf courses, etc.). San Gabriel is evaluating the following potential methods to expand future recycled water use. These potential methods are tabulated in Table 6-6.

- As a retail water supplier, San Gabriel will offer its customers (with non-potable water demands) an economic incentive to convert its use to recycled water. For example, a commodity rate schedule for recycled water with unit rates below a potable water supply encourages customers with non-potable water demands to use recycled water.
- As a sub-agency of Upper District and Central District, San Gabriel will investigate the availability of financial assistance for plumbing retrofits necessary to receive recycled water.
- San Gabriel will evaluate the viability of making conversion to recycled water mandatory for those customers with non-potable supplies that are in proximity to an existing or planned recycled water pipeline.

Table 6-6 Methods to Expand Future Recycled Water Use

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.2.5	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
Add additional rows as needed			
Retrofits	Retrofit landscape irrigation systems	Ongoing	750
Recycled Water Distribution System Expansion	Expand existing reycycled water distribution system	Ongoing	750
		Total	1,500
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES:			

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 San Gabriel's groundwater wells are less than 500 mg/L. Due to the high quality (low TDS concentration) of the groundwater, San Gabriel does not need to investigate the use of desalination to develop or reestablish a new long-term supply. 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, or through a regional alliance.

Central Basin

The average TDS concentrations for the Central Basin groundwater is less than its secondary MCL of 1,000 mg/l, based on most recent available data in San Gabriel's groundwater wells. Consequently, San Gabriel has not needed to investigate the use of desalination to develop or reestablish a new long-term supply. However, there may be opportunities for use of desalinated ocean water as a future potential water supply source, if needed, through coordination with other agencies that have ocean desalination programs, or through a regional alliance.

6.2.7 WATER EXCHANGES AND TRANSFERS

CWC 10631.

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

6.2.7.1 EXCHANGES

Pursuant to DWR's 2020 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.*"

San Gabriel is under agreement as part of the BPOU Project Agreement to implement the USEPA's cleanup remedy, which involves the treatment of groundwater produced from the City of Industry's Well No. 5. An equal amount of treated water is sent through San Gabriel's distribution system to supply the City of Industry. The amount of water treated by San Gabriel for the City of Industry is accounted for under the City of Industry's Main Basin water rights. San Gabriel can use any additional water produced by Well No.5 which is not required by the City of Industry.

6.2.7.2 TRANSFERS

Pursuant to DWR's 2020 Final Guidebook, "*The Water Code defines a water transfer as a temporary or long-term change in the point of diversion, place of use, or purpose of use due to a transfer, sale, lease, or exchange of water or water rights.*"

As discussed in Section 6.2.2, 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 individual 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. San Gabriel is able to utilize the transfer opportunities available for Main Basin water when necessary.

6.2.7.3 EMERGENCY INTERTIES

San Gabriel has emergency interconnections with other water agencies that serve as short-term emergency exchange opportunities. Emergency interties (or 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. San Gabriel has the ability to receive water from interconnections with the following water agencies:

- City of Arcadia (two way)
- City of Montebello (two way)
- City of Pico Rivera (two way) (two connections)
- City of Santa Fe Springs (one way to San Gabriel)
- Suburban Water Systems (two way) (three connections)
- Suburban Water Systems (one way to San Gabriel)
- Valley County Water District (two way)
- City of Whittier (two way)

6.2.8 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.

San Gabriel obtains potable water from local groundwater production and imported water supplies as well as recycled water for non-potable demands. These water supply sources will allow San Gabriel to provide sufficient water service now, and in the future. Furthermore, San Gabriel plans to construct new groundwater production wells to replace existing wells as necessary. In addition, San Gabriel plans to investigate opportunities to expand use of recycled water within its service area.

Table 6-7 Expected Future Water Supply Projects or Programs

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☑	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
Section 6.2.8	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Supplier* *This may be a range*
	Drop Down List (y/n)	*If Yes, Supplier Name*				
Add additional rows as needed						
Construction of Additional Groundwater Wells	No		Construction of additional groundwater wells in the Main Basin and Central Basin	Ongoing	All Year Types	2,000 AFY for each well
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

6.2.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

CWC 10631.

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

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

(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).

6.2.9.1 DESCRIPTION OF SUPPLIES

As discussed in Section 6.2, San Gabriel water supply sources consist of treated imported water purchased from Central District (see Section 6.2.1), groundwater from the Main Basin and Central Basin, and recycled water (see Section 6.2.5). The actual quantities of the water supply sources available to San Gabriel during CY 2020 are summarized in Table 6-8. The reliable quantities of projected water supply sources available to San Gabriel in five-year increments through CY 2045 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 San Gabriel's projected reliable water supplies from CY 2020 through CY 2045 in five-year increments is based on historical practices, water supply availability, and the cost of water. It is anticipated San Gabriel will initially use groundwater produced from the Main Basin and Central Basin. At the same time San Gabriel will continue to use recycled water for non-potable demands. San Gabriel will also use treated imported water. It is important to note that the Main Basin and Central Basin are adjudicated (as discussed in Section 6.2.2) however while there is no limit to the amount of groundwater which can be produced annually from the Main Basin, the Central Basin water rights are fixed and do not vary year to year. Consequently, in the event local treated surface water and/or treated imported water may be limited, San Gabriel has the flexibility to increase groundwater production only from the Main Basin.

6.2.9.2 QUANTIFICATION OF SUPPLIES

The actual quantities of the water supply sources available to San Gabriel during CY 2020 are summarized in Table 6-8. The reliable quantities of projected water supply sources available to San Gabriel in five-year increments through CY 2045 during 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.

San Gabriel's projected quantities of treated imported water supplies and/or local surface water supplies are based on historical long-term averages and available supplies during previous dry year conditions. San Gabriel's projected quantities of recycled water supplies to meet non-potable demands are based on historical long-term averages. San Gabriel's projected quantities of groundwater supplies from the Main Basin and Central Basin are based on meeting the remainder of San Gabriel's total water demands. As noted above, in the event local treated surface water and/or treated imported water may be limited, San Gabriel has the flexibility to increase groundwater production from the Main Basin as well as the Central Basin through leasing of additional water rights. Consequently, it is anticipated San Gabriel 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 Supply	Additional Detail on Water Supply	2020		
Drop down list May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Groundwater (not desalinated)	Main Basin	32,081	Drinking Water	
Groundwater (not desalinated)	Central Basin	49	Drinking Water	
Recycled Water		1,502	Recycled Water	
	Total	33,632		0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*				
NOTES:				

Table 6-9 Water Supplies – Projected

Submittal Table 6-9 Retail: Water Supplies — Projected											
Water Supply		Projected Water Supply * Report To the Extent Practicable									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	2025		2030		2035		2040		2045 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Groundwater (not desalinated)	Main Basin	33,385		33,371		33,361		33,254		33,200	
Groundwater (not desalinated)	Central Basin	1,750		1,950		2,150		2,350		2,500	
Recycled Water		1,800		2,100		2,400		2,700		3,000	
Purchased or Imported Water	Central Basin Municipal Water District	0		0		0		0		0	
Total		36,935	0	37,421	0	37,911	0	38,304	0	38,700	0
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.											
NOTES: Imported water supplies from Central Basin Municipal Water District are available to San Gabriel for emergency purposes.											

6.2.10 SPECIAL CONDITIONS

San Gabriel considered the issues described below when developing its planned sources of water supply.

6.2.10.1 CLIMATE CHANGE EFFECTS

Climate Change has the possibility of impacting the availability of planned water supplies, particularly during a drought period. Section 4.5 of this Plan provides a discussion regarding climate change effects on San Gabriel's various sources of supply.

6.2.10.2 REGULATORY CONDITIONS AND PROJECT DEVELOPMENT

San Gabriel has considered the implications of changing regulatory conditions and project development on the availability of planned water supplies. Section 1.4 provides a

discussion on the reduced reliance on imported water supplies and the proposed Carson recycled water project to augment groundwater supplies.

6.2.10.3 OTHER LOCALLY APPLICABLE CRITERIA

There are no locally applicable criteria which applies to San Gabriel.

6.3 SUBMITTAL TABLES COMPLETION USING THE OPTIONAL PLANNING TOOL

As discussed in Section 4.2.5, 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 San Gabriel is not required by DWR to use the tool. Section 6.1 provides a tabulation of San Gabriel's historical annual water uses for each water supply source. During the past 10 years, San Gabriel experienced a five consecutive year drought within its service area from CY 2011 to CY 2015. Historical records indicate San Gabriel's annual water demands had been greater prior to CY 2011. San Gabriel 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, San Gabriel 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 San Gabriel's water supply sources is provided in Chapter 7.

6.4 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 San Gabriel'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.

San Gabriel 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. San Gabriel has reported the energy intensity associated

with the water management processes which occur within its operational control. Because San Gabriel does not track individual energy usage for each water management process identified above, San Gabriel 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 36,222,716 kWh during CY 2020. Although the total energy consumption reported includes electricity usage for general administration (e.g. at San Gabriel's headquarters) 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 32,130 AF during CY 2020 and is consistent with the total volume of water provided in Table 4-1 (less recycled water supplies).

The total energy intensity associated with San Gabriel's water management processes is estimated at 1,127 kWh/AF. The energy intensity data and calculations based on the "total utility approach" are provided in Table O-1B below.

San Gabriel's water management processes 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). Pursuant to DWR guidance, the consequential hydropower generation has been netted from the total amount of "Energy Consumed (kWh)" shown in Table O-1B below. San Gabriel'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, San Gabriel'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

Urban Water Supplier: *San Gabriel Valley Water Company*

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

Retail Potable Deliveries

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/2020	**Urban Water Supplier Operational Control**		
End Date	12/31/2020			
☐ Is upstream embedded in the values reported?		**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
Water Volume Units Used	*AF*	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (volume unit)		*32,130*	*0*	*32130*
Energy Consumed (kWh)		*36222716*	*0*	*36222716*
Energy Intensity (kWh/volume)		*1127.4*	*0.0*	*1127.4*

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.

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 San Gabriel's 2020 Plan discusses and provides the following:

- Calendar Year 2020 represents an "average" or "normal" water year for San Gabriel in which the total amount of rainfall was similar to the historical average rainfall.
- A "single dry" year for San Gabriel was represented in Calendar 2017, in which the total amount of rainfall was below the historical average rainfall.
- A "five consecutive year drought" period for San Gabriel is represented from Calendar Year 2011 to Calendar Year 2015, where the total amount of rainfall during each of these years was less than the historical average rainfall.
- San Gabriel's current and projected water supplies available during normal years in five-year increments over the next 25 years are provided (through Calendar Year 2045) as shown on Table 7-2.
- San Gabriel's current and projected water supplies available during single dry years in five-year increments over the next 25 years are provided (through Calendar Year 2045) as shown on Table 7-3.
- San Gabriel'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 Calendar Year 2045) as shown on Table 7-4.

- The reliability of the San Gabriel'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 San Gabriel's ability to provide a reliable supply of water to its customers.
- A Drought Risk Assessment (or DRA) is provided which includes an assessment of San Gabriel's water supply reliability over a five consecutive year drought period. San Gabriel's DRA assumes a five consecutive year drought from Calendar Year 2021 through Calendar Year 2025 and includes a review of water supplies, water uses, and water supply reliability for each water supply source during this period. San Gabriel'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, San Gabriel 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 INTRODUCTION

This section of San Gabriel's UWMP describes San Gabriel's ability to meet retail customer water demands by analyzing a variety of factors which affect San Gabriel's water supply. This section assesses San Gabriel'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 San Gabriel to evaluate the risk to its water supply under a drought lasting for the next five consecutive years.

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 San Gabriel'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 047785 (San Gabriel Fire Department). Furthermore, Section 4.5 of this Plan notes that potential future climate change impacts may result in an increase in the average annual precipitation within San Gabriel'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 San Gabriel's service area is 16.7 inches. CY 2020 represents an average or normal water year for San Gabriel in which the total amount of rainfall was similar to the historical average rainfall. A single dry year for San Gabriel was represented in CY 2017, in which the total amount of rainfall was below the historical average rainfall. A five consecutive year drought period for San Gabriel is represented from CY 2011 to CY 2015 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 San Gabriel during those base years. The following discussion assesses the water service reliability of San Gabriel's water supply sources.

Water Service Reliability - Imported Water

San Gabriel's treated imported water supplies from MWD, through Central District, 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 San Gabriel. 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 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 2020 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 (CY 2020), San Gabriel met about 100 percent of its total demands with supplies from the Main Basin. During a single dry year

(CY 2017), San Gabriel met about 95 percent of its total demands with supplies from the Main Basin. During a five consecutive year drought multiple dry year period (CY 2011 to CY 2015), San Gabriel met between 95 and 100 percent of its total demands with supplies from the Main Basin.

Central Basin

The Central Basin groundwater supplies are managed by WRD, as discussed in Section 6.2.2. During a normal year (CY 2020), San Gabriel met about 0 percent of its total demands with supplies from the Central Basin. During a single dry year (CY 2017), San Gabriel met about 5 percent of its total demands with supplies from the Central Basin. During a five consecutive year drought multiple dry year period (CY 2011 to CY 2015), San Gabriel met between 0 and 5 percent of its total demands with supplies from the Central Basin. San Gabriel is constructing ion exchange and ultraviolet treatment to remove contamination from its Central Basin wells. Once completed, San Gabriel anticipates increased production from the Central Basin in the coming years.

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 San Gabriel diverse water supply portfolio, water supplies may be re-apportioned during a five consecutive year drought to meet San Gabriel's water demands.

7.2.1 SERVICE RELIABILITY - CONSTRAINTS ON WATER SOURCES

CWC 10631.

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

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

Groundwater

San Gabriel produces groundwater from the Main Basin and Central Basin. The groundwater historically had been impacted by contamination. However, San Gabriel 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

San Gabriel also receives treated surface water from MWD through Central District. Water quality from MWD relating to supply reliability is addressed separately in MWD's 2020 Regional Urban Water Management Plan.

7.2.2 SERVICE RELIABILITY - YEAR TYPE CHARACTERIZATION

7.2.2.1 TYPES OF YEARS

San Gabriel'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, San Gabriel's water supplies sources have been sufficient in meeting San Gabriel'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 10 years with a total precipitation similar to the historical average precipitation in the vicinity of San Gabriel's service area. Because a single dry year or a five consecutive year drought period will not compromise San Gabriel'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 10 years. The five consecutive year drought period was based on a period of five consecutive dry years during the past 10 years.

As indicated in Section 3.3, the historical average rainfall in the vicinity of San Gabriel's service area is 16.7 inches. CY 2020 represents an average or normal water year for San Gabriel in which the total amount of rainfall was similar to the historical average rainfall. A single dry year for San Gabriel was represented in CY 2017, in which the total amount of rainfall was less than the historical average rainfall. A five consecutive year drought period for San Gabriel is represented from CY 2011 to CY 2015, 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 San Gabriel during those base years.

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

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	**Base Year** If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	**Available Supplies if Year Type Repeats**	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	**% of Average Supply**
Average Year	2020	33,632	100%
Single-Dry Year	2017	32,396	96.3%
Consecutive Dry Years 1st Year	2011	36,625	108.9%
Consecutive Dry Years 2nd Year	2012	37,684	112.0%
Consecutive Dry Years 3rd Year	2013	42,150	125.3%
Consecutive Dry Years 4th Year	2014	41,118	122.3%
Consecutive Dry Years 5th Year	2015	32,846	97.7%

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

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

NOTES:

7.2.2.2 SOURCES FOR WATER DATA

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

7.2.3 WATER SERVICE RELIABILITY – 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.

San Gabriel 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 San Gabriel'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 San Gabriel's ability to provide a reliable supply of water to its customers.

As previously discussed in Section 4.2.6, San Gabriel projected normal year water demands over the next 25 years, in five-year increments, were based on San Gabriel's 2020 Water Use Target of 142 GPCD for potable water demands. The ratio of total water supplies (including potable and recycled water supplies) available to San Gabriel during a historical average year in CY 2020 (or 33,632 AF) and during a historical single dry year

in CY 2017 (or 34,043 AF) was used to estimate San Gabriel's projected water demands during single dry years. The ratio of water supplies available to San Gabriel during a historical average year in CY 2020 (or 33,632 AF) and a historical a five consecutive year drought period from CY 2011 to CY 2015 (or 36,625 AF, 37,684 AF, 42,150 AF, 41,118 AF, and 32,846 AF, respectively) was used to estimate San Gabriel's projected water demands during a five consecutive year drought period. San Gabriel's projected dry year water supplies over the next 20 years were based on the minimum supplies needed by San Gabriel to meet projected single-dry year demands. Table 7-2, Table 7-3, and Table 7-4 summarize San Gabriel 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 San Gabriel can meet water demands during normal years, single dry years, and a five consecutive year drought periods over the next 25 years.

7.2.3.1 WATER SERVICE RELIABILITY – NORMAL YEAR

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

Table 7-2 Normal Year Supply and Demand Comparison

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	36,935	37,421	37,911	38,304	38,700
Demand totals *(autofill from Table 4-3)*	36,935	37,421	37,911	38,304	38,700
Difference	0	0	0	0	0
NOTES:					

7.2.3.2 WATER SERVICE RELIABILITY – SINGLE DRY YEAR

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

Table 7-3 Single Dry Year Supply and Demand Comparison

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	35,578	36,046	36,518	36,897	37,278
Demand totals*	35,578	36,046	36,518	36,897	37,278
Difference	0	0	0	0	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*					
NOTES:					

7.2.3.3 WATER SERVICE RELIABILITY – FIVE CONSECUTIVE DRY YEARS

Table 7-4 summarizes San Gabriel'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 San Gabriel can meet water demands during five consecutive year drought periods over the next 25 years.

Table 7-4 Multiple Dry Years Supply and Demand Comparison

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	40,222	40,751	41,285	41,713	42,144
	Demand totals	40,222	40,751	41,285	41,713	42,144
	Difference	0	0	0	0	0
Second year	Supply totals	41,385	41,930	42,479	42,919	43,363
	Demand totals	41,385	41,930	42,479	42,919	43,363
	Difference	0	0	0	0	0
Third year	Supply totals	46,289	46,899	47,513	48,005	48,501
	Demand totals	46,289	46,899	47,513	48,005	48,501
	Difference	0	0	0	0	0
Fourth year	Supply totals	45,157	45,751	46,350	46,831	47,315
	Demand totals	45,157	45,751	46,350	46,831	47,315
	Difference	0	0	0	0	0
Fifth year	Supply totals	36,072	36,547	37,025	37,409	37,796
	Demand totals	36,072	36,547	37,025	37,409	37,796
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

7.2.4 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, San Gabriel 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 San Gabriel 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 6.5) 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.

Central Basin

As noted in Section 6.2.2, the Central Basin is managed by WRD. During the period of management under the Judgment, significant drought events have occurred. In each drought cycle the Central Basin has been managed to maintain water levels. Therefore, based on historical and on-going management practices, San Gabriel will be able to rely on the Central 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 Central Basin, as well as information on basin management. Chapter 6 also demonstrates the management structure of the Central Basin provides a reliable source of groundwater supply for San Gabriel during a normal year, a single-dry year and a five consecutive year drought. Historical data indicates the Central 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 6.5) and the planned use of treated recycled water for groundwater replenishment in the Central Basin to reduce the need to import water from other regions. Therefore, the groundwater supplies in the Central Basin are deemed reliable.

7.3 DROUGHT RISK ASSESSMENT

CWC 10635.

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

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.

(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

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

San Gabriel's sources of supplies consist of groundwater from the Main Basin (which is managed by the Main Basin Watermaster) and Central Basin (which is managed by WRD), treated import water purchased through Central District and managed by the Metropolitan Water District of Southern California, and recycled water. The following discussion provides a Drought Risk Assessment (DRA) which assesses San Gabriel's water supply reliability over a five consecutive year drought period. San Gabriel's DRA incorporates a five consecutive year drought from CY 2021 through CY 2025 and includes a review of water supplies, water uses, and water supply reliability.

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

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

- The five consecutive year drought period associated with the 2020 UWMP is based on five consecutive dry years from CY 2021 through CY 2025
- 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 CY 2011 and CY 2015 (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 CY 2020 (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 CY 2011 and CY 2015).
- 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 hypothetical methodologies were considered during the preparation of San Gabriel'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 increase 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 increase 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

San Gabriel's DRA incorporates a five consecutive year drought based on five consecutive dry years commencing in CY 2021. The quantity of water supplies available for each year during this five consecutive year drought period included in San Gabriel's DRA is assumed to be the same as the quantity of water supplies produced by San Gabriel (i.e. demands) during the most recent and historical five consecutive year drought which occurred from CY 2011 through CY 2015. 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

San Gabriel 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 Main Basin 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 Upper District 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 will be delivered to the Main Basin, only that it ultimately be delivered. In addition, San Gabriel has established an untreated imported water (cyclic) storage account in the Main Basin which San Gabriel may draw upon to offset its potential future production in excess of its water rights. In doing so, San Gabriel 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, San Gabriel was able to increase its production of its groundwater supplies from an adjudicated and managed groundwater basin. San Gabriel 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), San Gabriel does not anticipate a water supply shortage from the Main Basin.

Groundwater – Central Basin

San Gabriel receives water supplies from the Central Basin which is actively managed by WRD, as described in Section 6.2.2. The Central Basin is adjudicated; however, San Gabriel's water rights in Central Basin are fixed each year. Consequently, San Gabriel cannot produce in excess of its own water rights or rights it may have leased from others. San Gabriel also has access to water supplies from the Main Basin and treated imported water. In addition, San Gabriel has stored water in the Central Basin which it may produce in future years. The quantity of groundwater used (and reliably available) during the most recent and historical five consecutive year drought period has been tabulated in Section 6.1. San Gabriel manages its water supply portfolio to optimize the water supplies available each year and to avoid a water supply shortage. San Gabriel 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), San Gabriel does not anticipate a water supply shortage.

Imported Water

San Gabriel may obtain imported water from MWD through Central District. Section 6.2.1 describes the planning conducted by MWD regarding treated imported water supplies available to San Gabriel. The reliability of MWD's supplies is also discussed in its 2020 Regional UWMP and is incorporated by reference. San Gabriel purchases treated imported water which is delivered directly within its distribution system. San Gabriel's purchases of treated, imported water over the past ten years have been tabulated in Section 6.1. In the event of a drought which limits imported water supplies, San Gabriel 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 San Gabriel during the most recent and historical five consecutive year drought period have been tabulated in Section 6.1. Because San Gabriel'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.

Recycled Water

San Gabriel has a recycled water distribution system which it has developed over the years to reduce demands on its potable water supplies as described in Section 6.2.5. The availability of recycled water supplies is not adversely impacted by drought conditions and are locally available.

The quantity of recycled water used during the most recent and historical five consecutive year drought period have been tabulated in Section 6.1. The quantity of recycled water available during each year of the most recent and historical five consecutive year drought is expected to be available during a future five consecutive year drought.

Summary

San Gabriel's water system has previously 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, San Gabriel 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.

7.3.3 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 San Gabriel will rely on during a five consecutive year drought. The annual quantities are the summed and are also provided on Table 7-5. The most important aspect of San Gabriel's water supplies is the groundwater which can be produced from a managed groundwater basin without restriction on the amount San Gabriel is allowed to produce. However, for the purposes of San Gabriel's DRA, as a worst-case scenario, San Gabriel has considered no water supply augmentation (as indicated in Table 7-5) from its groundwater supplies. When necessary, San Gabriel 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 San Gabriel shown in Table 7-5 are based on the quantity of supplies produced by San Gabriel (i.e. demands) during the most recent historical five consecutive year drought period (from CY 2011 through CY 2015). As shown in Table 7-5, assuming no additional water supply benefits will be available from groundwater supplies, San Gabriel will implement various stages of its Water Shortage Contingency Plan to balance water demands with available supplies during years 1, 2, 3, 4, and 5 of the projected five consecutive year drought.

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

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)	
2021	**Total**
Total Water Use	37,344
Total Supplies	36,625
Surplus/Shortfall w/o WSCP Action	(719)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	719
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	2%
2022	**Total**
Total Water Use	39,164
Total Supplies	37,684
Surplus/Shortfall w/o WSCP Action	(1,480)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	1,480
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	4%
2023	**Total**
Total Water Use	44,634
Total Supplies	42,150
Surplus/Shortfall w/o WSCP Action	(2,484)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	2,484
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	6%
2024	**Total**
Total Water Use	44,349
Total Supplies	41,118
Surplus/Shortfall w/o WSCP Action	(3,231)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	3,231
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	7%
2025	**Total**
Total Water Use	36,072
Total Supplies	32,846
Surplus/Shortfall w/o WSCP Action	(3,226)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	3,226
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	9%

7.3.4 OPTIONAL PLANNING TOOL WORKBOOK

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

CHAPTER 8

WATER SHORTAGE CONTINGENCY PLAN

LAY DESCRIPTION – CHAPTER 8

WATER SHORTAGE CONTINGENCY PLAN

Chapter 8 (Water Shortage Contingency Plan) of San Gabriel's 2020 Plan discusses and provides the following:

- San Gabriel's Water Shortage Contingency Plan is a detailed approach which presents how San Gabriel intends to act, or respond, in the case of an actual water shortage contingency.
- Preparation of San Gabriel's "Annual Water Supply and Demand Assessment" (or Annual Assessment) is discussed. Commencing July 1, 2022, San Gabriel is required to submit the Annual Assessment. The Annual Assessment will include a review of San Gabriel's "unconstrained" water demands for the current year and for a potential upcoming single dry year. Unconstrained water demands represent San Gabriel's water demands prior to any "response actions" San Gabriel may invoke pursuant to San Gabriel's Water Shortage Contingency Plan.
- San Gabriel will manage water supplies to minimize the adverse impacts of water shortages. San Gabriel'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, San Gabriel 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 San Gabriel 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.
- San Gabriel's Emergency Response Plan is summarized. The Emergency Response Plan provides the management, procedures, and designated actions San Gabriel 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 San Gabriel's seismic risk assessment and mitigation plan is discussed. The locations of earthquake faults in the vicinity of San Gabriel's water service area are provided.
- The effectiveness of the shortage response actions for each of San Gabriel's standard water shortage levels is presented. San Gabriel 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 San Gabriel when it declares any water shortage level are presented.
- The compliance and enforcement procedures associated with San Gabriel's standard water shortage levels are presented.
- The legal authorities associated with San Gabriel's standard water shortage levels are presented.
- The financial consequences associated with San Gabriel's standard water shortage levels are presented.

- San Gabriel 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 San Gabriel 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 San Gabriel Valley Water Company's 2020 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.

San Gabriel's sources of supply were discussed in Section 6.2 of the 2020 UWMP and consist of groundwater from Main Basin and Central Basin, treated imported water from Central District, and recycled water. Both Main Basin and Central Basin are adjudicated, and groundwater supplies are managed. The reliability of the various sources of supply are discussed in Chapter 7 of the 2020 UWMP. Based on the adjudication provisions in the Main Basin, San Gabriel is able to produce groundwater, provided an applicable assessment is paid to the Main Basin Watermaster to purchase untreated imported water for groundwater replenishment. Based on adjudication provision in the Central Basin, San Gabriel is only able to produce a fixed amount of groundwater from the Central Basin. Imported water supplies (both treated and untreated) may be impacted in the event MWD implements its WSAP due to a water supply shortage. Finally, recycled water is locally generated and generally is not impacted by drought conditions.

8.2 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

CWC 10632.

(a)(2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.

(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

(iii) Existing infrastructure capabilities and plausible constraints.

(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.

(v) A description and quantification of each source of water supply.

CWC 10632.1.

An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before June 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by June 1 of each year, whichever is later.

Commencing July 1, 2022, San Gabriel 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 San Gabriel's unconstrained water demands (i.e. water demands prior to any projected response

actions San Gabriel may trigger under this Water Shortage Contingency Plan) for the current year and the upcoming (potential single dry) year. San Gabriel will also include information regarding anticipated shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with San Gabriel's Water Shortage Contingency Plan.

For each Annual Assessment, San Gabriel's 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.

The components of Annual Assessment consist of the following:

- A written decision-making process
- Key data inputs and assessment methodology

8.2.1 DECISION MAKING PROCESS

San Gabriel 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 San Gabriel 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 San Gabriel for peer review and comment. Based on comments received, a redraft will be prepared and provided to San Gabriel managers during the Spring of each year. The draft will subsequently be provided to upper management for final review. Subsequently, a final draft of the Annual Assessment will be provided to San Gabriel's Board of Directors for review and included in the agenda as part of a Board 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 San Gabriel 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 San Gabriel.

8.2.2 DATA AND METHODOLOGIES

The key data inputs and methodologies which will be evaluated by San Gabriel during the preparation of the preliminary 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 9.2.1).

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 4.2.4) 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 6.2.8), will be considered.

6) Other Factors: Additional local considerations, if any, which can affect the availability of water supplies will be described.

8.3 SIX STANDARD WATER SHORTAGE LEVELS

CWC 10632.

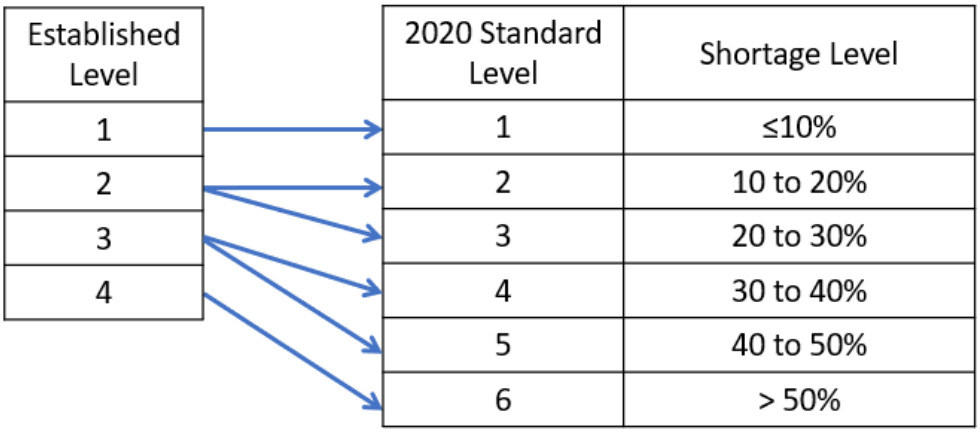
(a)(3)(A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions 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.

San Gabriel will manage water supplies prudently to minimize the adverse impacts of water shortages. San Gabriel'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. The required percentage reduction for each customer will be based on water usage during the same billing period in the last CY during which there were no declared water shortages.

CPUC's Rule 14.1 ("Water Shortage Contingency Plan"), adopted on June 1, 2015, previously established four water shortage levels. A copy of Rule 14.1 is provided in Appendix M. In accordance with the CWC in which urban water suppliers are required to define six standard water shortage levels, San Gabriel has developed the crosswalk illustrated below that translates San Gabriel's previously established shortage levels to the mandated standard shortage levels.

Corresponding Relationships Between Supplier's 2015 Shortage Levels and the 2020 WSCP Mandated Shortage Levels



Established Level	2020 Standard Level	Shortage Level
1	1	≤10%
2	2	10 to 20%
3	3	20 to 30%
4	4	30 to 40%
	5	40 to 50%
	6	> 50%

Table 8-1 provides a description of the six water shortage levels, which may be triggered by a shortage in one or more of San Gabriel's water supply sources, depending on the severity of the shortage and its anticipated duration.

Table 8-1 Water Shortage Contingency Planning Levels

Submittal Table 8-1 Water Shortage Contingency Plan Levels		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions** (*Narrative description*)
1	Up to 10%	Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to three (3) days per week. No watering during and for 48 hours after measureable precipitation. Commercial businesses, including restaurants and other food service providers, can only serve drinking water to customers on request.
2	Up to 20%	In addition to Shortage Level 1, the watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to the following two (2) days per week unless the local governmental agency (i.e., city or county) designates different days.4. No irrigation with potable water of outside newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission.
3	Up to 30%	In addition to Shortage Level 2; Additional restrictions may be implemented as determined by San Gabriel, after notice to customers.
4	Up to 40%	in addition to Shortage Level 3, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to one day. All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty-four (24) hours of notification by the utility unless other arrangements are made with the utility.
5	Up to 50%	In addition to Shortage Level 4; Additional restrictions may be implemented as determined by San Gabriel, after notice to customers.
6	>50%	In additon to Shortage Level 5, watering or irrigating lawns, landscape, or other vegetated areas with potable water is prohibited.
NOTES:		

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.

Shortage response actions are dependent on the severity of a declared shortage level. Response actions implement varying improvements and regulations of system infrastructure and operations, water supply augmentation, demand reduction initiatives and other water use functions to conserve water supplies.

San Gabriel is an investor-owned urban water supplier and is subject to CPUC approval to establish and activate necessary shortage response actions and corresponding water shortage levels pursuant to CPUC Rule 14.1 (“Water Shortage Contingency Plan”). San Gabriel may express a need for customers to practice voluntary or mandatory conservation measures. If San Gabriel finds it necessary, San Gabriel may request to activate a water shortage level which would implement fines and surcharges in addition to mandatory conservation measures after establishing a CPUC Schedule 14.1 (“Staged Water Shortage Surcharges and Penalties”).

8.4.1 DEMAND REDUCTION

San Gabriel 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 San Gabriel'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 encourage customers with high gallon per capita usage to achieve proportionally greater reduction than those with low usage. Violations of these demand reduction actions may be considered waste and an unreasonable use of water. Table 8-2 describes each demand reduction action and its effect on reducing the shortage gap.

The following demand reduction actions may be activated under voluntary or mandatory conservation measures and are applicable and in effect at all times during any activated water shortage level:

1. Obligation to Fix Leaks, Breaks or Malfunctions: Use of water through any broken or defective plumbing fixture, sprinkler, watering or irrigation system on the customer's premises must cease when the utility has notified the customer in writing to repair the broken or defective plumbing fixture, sprinkler, watering or irrigation system, and the customer has failed to make such repairs within five (5) days after receipt of such notice.
2. Restrictions on washing vehicles: The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it is prohibited. Use of water for washing commercial aircraft, cars, buses, boats, trailers or other commercial vehicles at any time is prohibited, except at commercial or fleet vehicle or boat washing facilities operated at a fixed location where equipment using water is properly maintained to avoid wasteful use.

3. Operation of commercial car washes that do not recycle the potable water used as required by the California Water Code Sections 10950-10953.
4. No Excessive Water Flow or run-off: Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures is prohibited.
5. The use of potable water in a fountain or other decorative water device that does not have a fully automatic recirculation system, or the filling or topping off of decorative lakes or ponds, except where the water is part of a recirculating system or where the fountains, lakes, or ponds utilize recycled water.
6. Other Restrictions on use of potable water as prescribed from time to time by CPUC or authorized government agency.

Water Shortage Level 1

1. Watering days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to three (3) days per week. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a handheld bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system. Outdoor irrigation is restricted to the following three days per week unless the local governmental agency (i.e., city or county) designates different days:
    a. Street addresses ending in 0, 2, 4, 6, or 8: Monday, Wednesday, Friday
    b. All other street addresses: Tuesday, Thursday, Saturday
2. Watering hours: Except as provided in D.3 below, watering or irrigating of lawn, landscape, or other vegetated areas with potable water is prohibited between the hours of 9:00 a.m. and 5:00 p.m. on any day, except by use of a handheld bucket

or similar container, a handheld hose equipped with a positive self-dosing water shut-off nozzle or device or for the express purpose of adjusting or repairing an irrigation system.

3. Watering duration: Watering or irrigating of any lawn, landscape, or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than ten (10) minutes of watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation equipment when no emitter produces more than two (2) gallons of water per hour and weather-based controllers or stream rotor sprinklers that meet a 70% efficiency standard.
4. Notwithstanding the foregoing restrictions, when a city, county, or other local government agency adopts restrictions on the days or the hours of the day that customers may irrigate which are different than those adopted by the utility, the utility may instead choose to enforce the city's, county's, or local government agency's restriction in place of its own restrictions.
5. No watering during and for 48 hours after measurable precipitation. Watering or irrigating of any lawn, landscape, or other vegetated area with potable water during and for 48 hours following measurable precipitation is prohibited.
6. No water fountains and decorative water features without recirculating water system: Operating a water fountain or other decorative feature that does not use re-circulated water is prohibited.
7. Commercial businesses, including restaurants and other food service providers, can only serve drinking water to customers on request.
8. Hotel and motel operators must provide guests with the option of choosing not to have towels and linens laundered daily. Information about this option must be prominently displayed.
9. Unmetered fire hydrant water cannot be used by individuals for any reason other than fire suppression or utility system maintenance purposes.

10. Use of potable water for dust control or earth compaction, in the utility's sole judgement, cannot be unreasonable or excessive.
11. Other wasteful practices identified from time to time by the CPUC, utility, or authorized government agency.

Water Shortage Level 2

In addition to the non-essential or unauthorized uses of water identified in Stage 1, the following water use restriction requirements apply during Stage 2 of the WSCP, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency:

1. Watering days: The watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to the following two (2) days per week unless the local governmental agency (i.e., city or county) designates different days:
    a. Street addresses ending in 0, 2, 4, 6, or 8: Monday and Thursday
    b. All other street addresses: Tuesday and Friday
2. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of notification from utility.
3. No irrigation with potable water of ornamental turf on public medians.
4. No irrigation with potable water of outside newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission.
5. Rates: The utility shall implement a Commission-approved Schedule No. 14.1-Staged Water Shortage Surcharges and Penalties Tariff.

Water Shortage Level 3

In addition to the non-essential or unauthorized uses of water identified in Stage 1 and 2, the following water use restriction requirements apply during Stage 3 of the WSCP, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency:

1. Watering days: The watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to the following two (2) days per week unless the local governmental agency (i.e., city or county) designates different days:
    a. Street addresses ending in 0, 2, 4, 6, or 8: Monday and Thursday
    b. All other street addresses: Tuesday and Friday
2. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of notification from utility.
3. No irrigation with potable water of ornamental turf on public medians.
4. No irrigation with potable water of outside newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission.
5. Rates: The utility shall implement a Commission-approved Schedule No. 14.1-Staged Water Shortage Surcharges and Penalties Tariff.

Water Shortage Level 4

In addition to the non-essential or unauthorized uses of water identified in Stage 1, 2, and 3, the following water use restriction requirements apply during Stage 4 of the WSCP, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency:

1. Watering days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to one day. Maintenance of vegetation, including trees and shrubs, watered by use of a hand-held bucket or similar container, hand-held hose equipped with a positive self-closing water shut-off nozzle or device are permitted.
    a. Street addresses ending in 0, 2, 4, 6, or 8: Wednesday
    b. All other street addresses: Thursday
    c. The watering day restriction does not apply to the following categories of use, unless the utility has determined that recycled water is available and may be applied to the following uses:
        i. Maintenance of existing landscape necessary for fire protection;
        ii. Maintenance of existing landscape for soil erosion control; and
        iii. Maintenance of plant materials identified by applicable government authority to be rare or essential to the well-being of protected species;
        iv. Stage 4 does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour.
2. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty-four (24) hours of notification by the utility unless other arrangements are made with the utility.
3. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided

that such aquatic life are of significant value and have been actively managed within the water feature prior to declaration of a water supply shortage stage under this Rule.

4. Customers shall not use potable water for dust control purposes except by prior approval.
5. Rates: The utility shall implement a Commission-approved Schedule No. 14.1-Staged Water Shortage Surcharges and Penalties Tariff.

Water Shortage Level 5

In addition to the non-essential or unauthorized uses of water identified in Stage 1, 2, 3, and 4, the following water use restriction requirements apply during Stage 5 of the WSCP, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency:

1. Watering days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to one day. Maintenance of vegetation, including trees and shrubs, watered by use of a hand-held bucket or similar container, hand-held hose equipped with a positive self-closing water shut-off nozzle or device are permitted.
    a. Street addresses ending in 0, 2, 4, 6, or 8: Wednesday
    b. All other street addresses: Thursday
    c. The watering day restriction does not apply to the following categories of use, unless the utility has determined that recycled water is available and may be applied to the following uses:
        i. Maintenance of existing landscape necessary for fire protection;
        ii. Maintenance of existing landscape for soil erosion control; and
        iii. Maintenance of plant materials identified by applicable government authority to be rare or essential to the well-being of protected species;

iv. Stage 5 does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour.

2. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty-four (24) hours of notification by the utility unless other arrangements are made with the utility.
3. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such aquatic life are of significant value and have been actively managed within the water feature prior to declaration of a water supply shortage stage under this Rule.
4. Customers shall not use potable water for dust control purposes except by prior approval.
5. Rates: The utility shall implement a Commission-approved Schedule No. 14.1-Staged Water Shortage Surcharges and Penalties Tariff.

Water Shortage Level 6

In addition to the non-essential or unauthorized uses of water identified in Stage 1, 2, 3, 4, and 5, the following water use restriction requirements apply during Stage 6 of the WSCP, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency:

1. No Watering or Irrigating: Watering or irrigating lawns, landscape, or other vegetated areas with potable water is prohibited. This restriction does not apply to the following categories of use, unless the utility has determined that recycled water is available and is applied to the use:
    a. Maintenance of vegetation, including trees and shrubs, that are watered using a handheld bucket or similar container, hand-held hose equipped with a positive self-closing water shut-off nozzle or device.

b. Maintenance of existing landscape necessary for fire protection.
c. Maintenance of existing landscape for soil erosion control.
d. Maintenance of plant materials identified by applicable government authority to be rare or essential to the well-being of protected species.
e. Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, and school grounds, provided that such irrigation does not exceed one day per week.
f. Actively irrigated environmental mitigation projects required by applicable governmental authority.

2. Obligation to Fix Leaks, Breaks, or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired immediately upon notification from the utility unless other arrangements are made with the utility.
3. No new potable water service: Upon declaration of a Stage 6 WSCP, no new potable water service will be provided, no new temporary meters will be provided, and no statements of immediate ability to serve or provide potable water service (such as will-serve letters, certificates, or letters of availability) will be issued, except under the following circumstances:
    a. The project is necessary to protect public health, safety, and welfare; or
    b. The applicant provides to the satisfaction of the utility substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provisions of a new water meter(s).
4. Rates: The utility shall implement a Commission-approved Schedule No. 14.1-Staged Water Shortage Surcharges and Penalties Tariff.

Table 8-2 Demand Reduction Actions

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only*** *Drop Down List*
Add additional rows as needed				
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Collective reduction from all Shortage Level 1 actions is up to 3,261 AF		Yes
1	Landscape - Limit landscape irrigation to specific times	Collective reduction from all Shortage Level 1 actions is up to 3,261 AF		Yes
1	Landscape - Limit landscape irrigation to specific days	Collective reduction from all Shortage Level 1 actions is up to 3,261 AF		Yes
1	CII - Restaurants may only serve water upon request	Collective reduction from all Shortage Level 1 actions is up to 3,261 AF		Yes
1	CII - Lodging establishment must offer opt out of linen service	Collective reduction from all Shortage Level 1 actions is up to 3,261 AF		Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Collective reduction from all Shortage Level 1 actions is up to 3,261 AF		Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Collective reduction from all Shortage Level 1 actions is up to 3,261 AF		Yes
1	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Collective reduction from all Shortage Level 1 actions is up to 3,261 AF		Yes
2	Other	Collective reduction from all Shortage Level 2 actions is up to 6,522 AF	Includes all Stage 1 Actions	Yes
2	Landscape - Prohibit certain types of landscape irrigation	Collective reduction from all Shortage Level 2 actions is up to 6,522 AF		Yes
3	Other	Collective reduction from all Shortage Level 3 actions is up to 9,783 AF	Includes all Stage 2 Actions	Yes
4	Other	Collective reduction from all Shortage Level 4 actions is up to 13,044 AF	Includes all Stage 3 Actions	Yes
4	Other water feature or swimming pool restriction	Collective reduction from all Shortage Level 4 actions is up to 13,044 AF	Prohibit filling or refilling ornamental lakes or ponds	Yes
4	Other - Prohibit use of potable water for construction and dust control	Collective reduction from all Shortage Level 4 actions is up to 13,044 AF		Yes
5	Other	Collective reduction from all Shortage Level 5 actions is up to 16,305 AF	Includes all Stage 4 Actions	Yes
6	Other	Collective reduction from all Shortage Level 6 actions is greater than 16,305 AF	Includes all Stage 5 Actions	Yes
6	Landscape - Prohibit all landscape irrigation	Collective reduction from all Shortage Level 6 actions is greater than 16,305 AF		Yes
NOTES:				

8.4.2 SUPPLY AUGMENTATION

San Gabriel does not plan to add a new source of water supply to address customer demands, but instead will consider increased supplies from existing sources. Table 8-3 reflects this approach and does not identify any new supplies. Instead, San Gabriel will focus on demand reduction measures in the event existing sources of supply are not sufficient to meet customer demands. As discussed in Chapter 6, San Gabriel's sources of water supply include groundwater produced from the Main Basin and Central Basin, imported water purchased from MWD through Central District, and recycled water. As noted in Section 8.2, beginning July 1, 2022, San Gabriel will 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. In the event San Gabriel is currently in, or considers entering into, one of the standard water shortage levels identified in Section 8.3, San Gabriel will consider the water supply augmentation actions described below.

For each water shortage level discussed in Section 8.3, San Gabriel will consider increased production of groundwater supplies, to the extent possible. Due to previous critically dry conditions, MWD developed the "Water Supply Allocation Plan" whereby available imported supplies are equitably allocated to its member agencies, including Central District. 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 2020 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. Pursuant to MWD's "Emergency Storage Objective", updated in 2019, approximately 750,000 AF of total stored water is emergency storage reserved by MWD for use in the event of supply interruptions. Based on MWD's historical and on-going water supply and storage programs and management practices, San Gabriel will use up to the treated imported water supply made available from MWD through Central District for adequate supply augmentation in response to each of the standard water shortage levels identified in Section 8.3. Water demands will be addressed through increased use of local groundwater supplies and implementation of demand reduction measures through various stages of action.

San Gabriel will consider augmenting 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 San Gabriel, 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 District. 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, San Gabriel 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.

Table 8-3 Supply Augmentation and Other Actions

Submittal Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
1	Transfers	Not applicable (see Notes)	
2	Transfers	Not applicable (see Notes)	
3	Transfers	Not applicable (see Notes)	
4	Transfers	Not applicable (see Notes)	
5	Transfers	Not applicable (see Notes)	
6	Transfers	Not applicable (see Notes)	
NOTES: San Gabriel will consider increased production from the Main Basin using existing facilities to address increased demands. As noted on Table 8-2, San Gabriel plans to implement demand reduction measures in the event water supplies from existing sources are not sufficient to meet anticipated demands.			

8.4.3 OPERATIONAL CHANGES

During a water supply shortage situation, San Gabriel will manage its water supply resources to provide sufficient water supplies capable of meeting the demands of its customers. Section 8.4.1 describes San Gabriel's water supply sources and water supply augmentation actions available. Section 8.4.2 describes San Gabriel'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 San Gabriel to utilize all available water supply sources in response to water shortage situations.

As noted in Section 8.2, beginning July 1, 2022, San Gabriel will 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 San Gabriel in determining any potential operational changes. In addition, San Gabriel's standard water shortage levels and the associated demand reduction measures, in conjunction with San Gabriel's existing Demand Management Measures (discussed in Chapter 9), will be essential to San Gabriel in reducing water demands during any water shortage period. The operational changes San Gabriel 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 San Gabriel 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 San Gabriel'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 San Gabriel may consider in order to continue providing sufficient water supplies, San Gabriel will review and implement any necessary steps included in its "Emergency Response Plan".

As part of the "America's Water Infrastructure Act of 2018", community water systems serving a population greater than 3,300 people, including San Gabriel, are required to review and update their "Risk and Resilience Assessment" (RRA) and the associated "Emergency Response Plan" (ERP) every five (5) years. However, due to security concerns regarding the submitting of these reports, water systems are required to submit certifications to USEPA, from March 31, 2020 and December 30, 2021, confirming the current RRA and ERP have been reviewed and updated.

San Gabriel's RRA, prepared in 2020, evaluates the vulnerabilities, threats, and consequences from potential hazards to San Gabriel's water system. San Gabriel prepared its RRA (which is incorporated by reference) by evaluating the following items:

- Natural hazards and malevolent acts (i.e., all hazards);
- Resilience of water facility infrastructure (including pipes, physical barriers, water sources and collection, treatment, storage and distribution facilities, and electronic, computer and other automated systems);
- Monitoring practices;
- Financial systems (e.g., billing systems);
- Chemical storage and handling; and
- Operation and maintenance.

San Gabriel's RRA evaluated a series of potential malevolent acts, natural hazards, and other threats in order to estimate the potential "monetized risks" (i.e. associated economic consequences to both the water system and surrounding region, and the likelihood of

occurrence) associated with San Gabriel's water facility assets. The cost-effectiveness of implementing potential countermeasures to reduce risks was also reviewed.

San Gabriel's ERP, prepared in 2021, provides the management, procedures, and designated actions San Gabriel's and its employees will implement during emergency situations (including catastrophic water shortages) resulting from natural disasters, system failures and other unforeseen circumstances. San Gabriel'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 results of San Gabriel's RRA and includes 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

San Gabriel 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. San Gabriel 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.

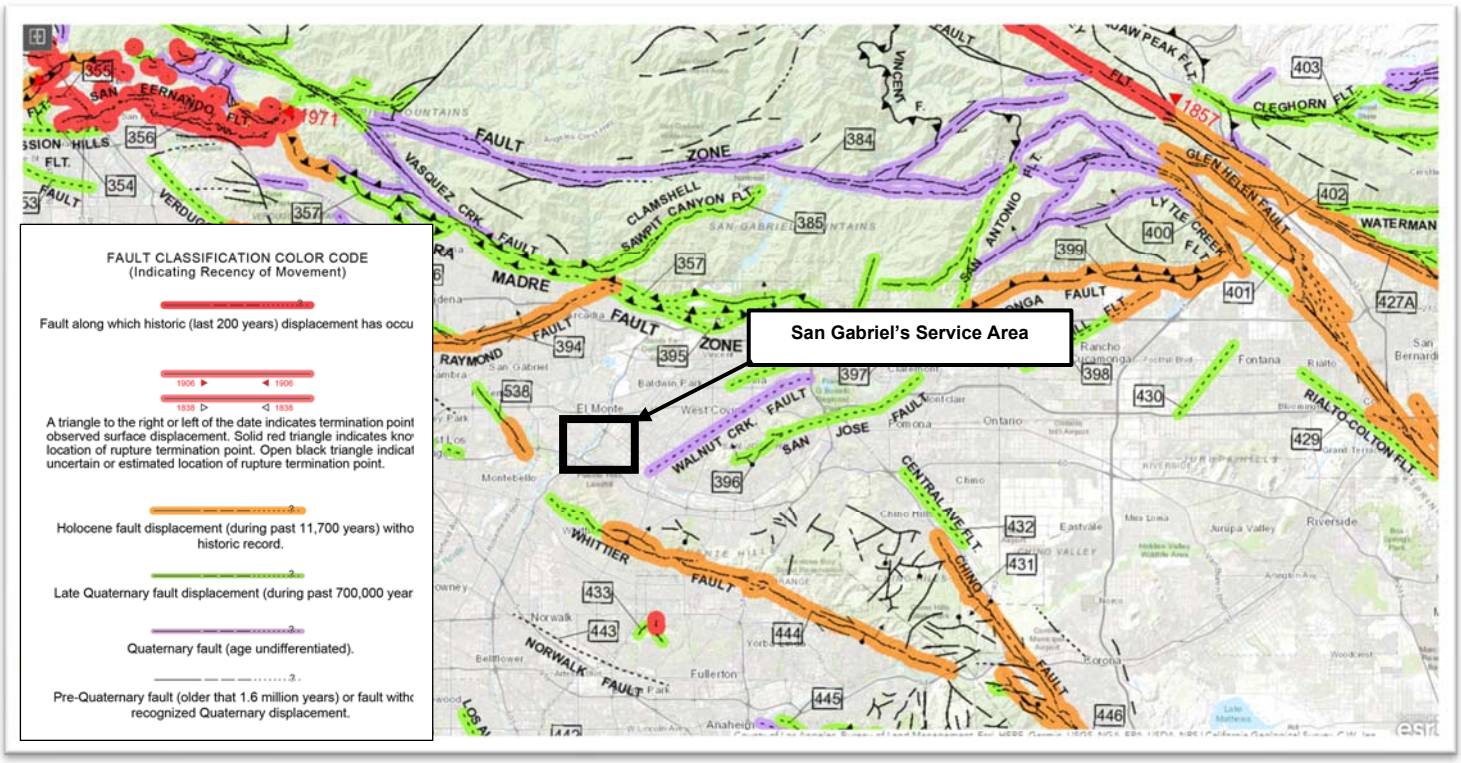
(b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.

(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 County of Los Angeles prepared a "All-Hazards Mitigation Plan" in 2019 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 N.

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 San Gabriel'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 San Gabriel's water service area include the San Andreas fault, the Walnut Creek fault, the Whittier fault, the San Jose fault, the Raymond fault, the Sierra Madre fault, and the East Montebello fault.

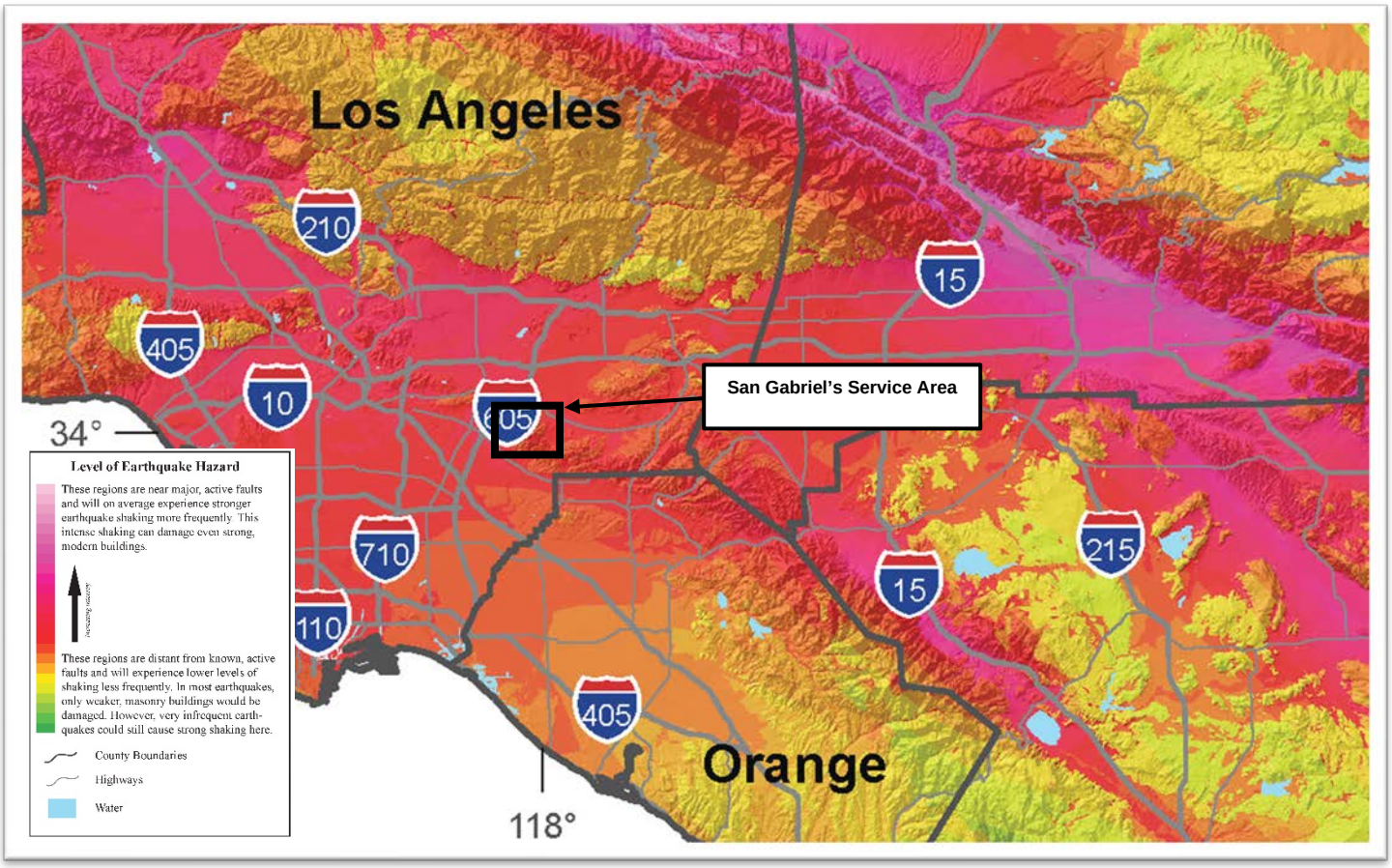
Location of Earthquake Faults



Source: https://maps.conservation.ca.gov/cgs/fam/App/

The following figure provides the relative intensity of ground shaking in the vicinity of San Gabriel's service area from anticipated future earthquakes. The locations of relatively long-period (1.0 second) earthquake shaking, including San Gabriel's service area, are provided. Long-period shaking affects tall, relatively flexible buildings, but also correlates with earthquake damage. The shaking potential is calculated based on the level of ground motion that has a 2 percent chance of being exceeded in 50 years (or the level of ground-shaking with an approximate 2,500-year average repeat time). As discussed in Section 8.4.5, San Gabriel has prepared an Emergency Response Plan which provides the management, procedures, and designated actions San Gabriel 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. San Gabriel's ERP is incorporated by reference.

Earthquake Shaking Potential



Source: "Earthquake Shaking Potential for California", 2016, California Geological Survey and United States Geological Survey

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 San Gabriel's historical ability to meet its customer's water demands in response to a water supply shortage. In addition, San Gabriel 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 San Gabriel'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 San Gabriel's historical annual water demands for each water supply source. During the past 10 years, San Gabriel experienced a five-year consecutive drought within its service area from CY 2011 to CY 2015. Throughout this extended dry year period, San Gabriel's annual water production ranged from 32,846 AF to 42,150 AF, with an average of approximately 38,084 AF. In addition, historical records indicate San Gabriel previously produced a maximum of up to 42,150 AF during CY 2013. San Gabriel 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, San Gabriel has been able to provide water service to meet maximum day water demands for these years, including during the summer months.

San Gabriel's water demands during the most recent five years (from CY 2015 to CY 2020) averaged approximately 33,190 AFY. Due to conservation efforts and demand management measures (discussed in Chapter 9), San Gabriel's recent water demands have been significantly less than its historical water demands, including during long-term droughts. San Gabriel'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 San Gabriel's projected water demands are less than its historical water demands, it is anticipated San Gabriel 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, San Gabriel will be able to continue relying on its water supply sources from the Main Basin and Central Basin for adequate supply augmentation in response to each of the standard water shortage levels identified in Section 8.3.

Based on San Gabriel's demonstrated ability to meet water demands during past water supply shortages, the adopted water shortage levels, the adjusted operating safe yields, and water supplies during long-term droughts, it is anticipated that San Gabriel will be

able to provide sufficient water supplies to its customers during each of its standard water shortage levels. Although adequate supplies are anticipated, the cost of those water supplies may become incrementally more expensive. San Gabriel will enact varying stages of its WSCP 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 San Gabriel's shortage response actions, in order to reduce any potential gaps between supply and demand, has been quantified in the expected demand reduction section provided in Table 8-2 and Table 8-3. The effectiveness of San Gabriel's shortage response actions is based on San Gabriel's water demands prior to 2015 (unconstrained demands). San Gabriel 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. San Gabriel's actual water demand reduction during this period was used to estimate the extent of water use reductions for San Gabriel's Water Shortage Stages. San Gabriel'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.

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.

Commencing July 1, 2022, San Gabriel is required to submit an Annual Assessment in accordance with DWR's guidance and requirements. The Annual Assessment will include a review of San Gabriel's unconstrained water demands (i.e., water demands prior to any projected response actions San Gabriel may trigger under this WSCP) for the current year and the upcoming (potential single dry) year. San Gabriel will also include information regarding anticipated shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with San Gabriel's WSCP. See Section 8.2 for further discussion the Annual Assessment.

San Gabriel may elect to activate voluntary conservation pursuant to CPUC's Rule 14.1 by notifying the Director of the CPUC's Division of Water and Audits (DWA). San Gabriel will notify customers through a notice on its website, a bill insert, or direct mailing.

San Gabriel may elect to establish mandatory conservation measures and standard water shortage levels by requesting the addition of a Schedule 14.1 tariff, through a Tier 2 advice letter to CPUC. Upon approval of establishing Schedule 14.1, San Gabriel may then request activation of a water shortage level via a Tier 2 advice letter to CPUC, if necessary. San Gabriel also may request a loss revenue memorandum account at this time.

The Tier 2 advice letter to establish Schedule 14.1 includes but is not limited to:

- Applicability,
- Territory applicable to,
- A detailed description of each water shortage level,
- A detailed description of the trigger that activates each water shortage level,
- A detailed description of each water use restriction for each water shortage level,
- Water use violation levels, written warning levels, associated fines, if applicable, and exception procedures.

- Conditions for installation of a flow restrictor,
- Charges for removal of flow restrictors, and
- Special conditions.

The Tier 2 advice letter requesting activation of the established Schedule 14.1 shall include but not be limited to justification for activating a particular water shortage level and the period during which the water shortage level will be in effect. San Gabriel must consult DWA staff prior to filing the advice letter in order to determine details of the public meeting. San Gabriel shall then notify the customer of each Tier 2 advice letter filed with CPUC and details of the associated CPUC public hearing by bill inserts or direct mailing.

Upon approval, San Gabriel shall notify its customers of the activation of a water shortage level by means of a notice on its website, bill inserts, or direct mailing. Notification shall take place prior to imposing any fines associated with the activated water shortage level. If activation of a water shortage level by Schedule 14.1 would occur one year or more since the public hearing associated with establishing Schedule 14.1, then San Gabriel shall conduct a public hearing prior to activation of the water shortage level. San Gabriel shall provide its customers with updates in at least every other bill regarding its water supply status and the results of the customers' conservation efforts.

Under unique circumstances where a specific requirement of this WSCP would result in undue hardship to a customer that is disproportionate to the impacts on other customers, then the customer may apply for an exemption or appeal by completing an Appeals form available online at San Gabriel's website or one of San Gabriel's commercial offices. San Gabriel shall respond to each request in writing.

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.

Any violation of this WSCP is considered a waste and an unreasonable use of water. In the event a customer is observed to be using water for any nonessential or unauthorized use as defined by this WSCP, San Gabriel may charge a water use violation fine in accordance with Schedule 14.1.

San Gabriel may, after one written warning, install a flow restricting device on the service line of any customer observed by San Gabriel personnel to be using water in violation of the WSCP. The restricting device may be removed only by San Gabriel staff, after a seven-day period has elapsed, and upon payment of the appropriate removal charge as set forth in Schedule No. 14.1.

After removal of the restricting device, if any nonessential or unauthorized use of water continues, San Gabriel may install another flow restricting device without written notice. This device shall remain in place until water supply conditions warrant its removal and until the appropriate charge for removal has been paid to San Gabriel.

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.

(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.

San Gabriel is an investor-owned urban water supplier and is subject to CPUC approval to establish and/or activate necessary shortage response actions and corresponding water shortage levels, pursuant to CPUC Rule 14.1. San Gabriel is then responsible for implementing and enforcing the water shortage response actions. San Gabriel may update current water shortage condition response measures based on CPUC approvals and direction, state policy directives, emergency conditions, or to improve customer response.

San Gabriel may declare a water shortage emergency and implement any shortage response action deemed necessary, upon CPUC approval. Upon declaration of a water shortage emergency, San Gabriel shall coordinate with the County and local cities within its service area for the possible proclamation of a local emergency.

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.

Potential revenue reductions and expense increases associated with activated shortage response actions are regulated and tracked by CPUC memorandum accounts.

San Gabriel anticipates potential impacts in revenue associated with rates and surcharges. If San Gabriel establishes a CPUC-approved surcharge to customers to recover revenue, San Gabriel anticipates that the increase in rates may result in a decline of water usage. Also, the quantity tariff rate may cause a decline in water sales and further reduction in revenue.

San Gabriel anticipates potential impacts in expenditures associated with operations. An increase in staff cost may be triggered by salaries and benefits for new hires required to administer and implement the WSCP. Necessary alternative sources of water supply may also increase operations and maintenance costs. Additionally, a new water supply may increase cost of supply and treatment.

Money collected through water use violation fines shall not be accounted for as income but rather booked to a memorandum account to offset authorized expenses incurred or recovery of lost revenue.

All expenses incurred to establish and/or activate Schedule 14.1 that have not been considered in a General Rate Case or other proceedings, shall be recoverable by San Gabriel, as approved by the CPUC. San Gabriel shall recover expenses in a separate memorandum account for disposition as directed from time to time by the CPUC.

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.

Customer compliance of the provisions adopted by declaration of a WSCP are monitored and reported through water loss audits performed by San Gabriel. Staff prepares annual Distribution System Water Audits to monitor water losses. Staff reviews the audits to track real and apparent losses. Losses are monitored by comparing water production to sales. San Gabriel regularly monitors its system and repairs leaks in a timely manner. This includes regular checks on valves and meters, and pipeline maintenance. If leaks are encountered or suspected during routine inspection of the system, further evaluation is conducted. If leaks are found, they are repaired.

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.

San Gabriel's WSCP has been prepared as an adaptive management plan. As discussed in Section 8.9, San Gabriel will monitor and report on the implementation of the WSCP. San Gabriel will review the implementation results for any current or potential shortage gaps between water supplies and demands. San Gabriel will evaluate the need for revising the WSCP in order to resolve any shortage gaps, as necessary. San Gabriel 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 8.4.2)
- 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 San Gabriel staff or other interested parties

San Gabriel 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 WSCP is adopted as part of San Gabriel's 2020 Urban Water Management Plan adoption process discussed in Section 10.3. It is anticipated San Gabriel will review, revise, and adopt an updated WSCP as part of preparing its 2025 Urban Water Management Plan as necessary. However, San Gabriel will continue to review the monitoring and reporting data, and if needed, update the WSCP more frequently. Any

updates to San Gabriel's WSCP will include a public hearing and adoption process by San Gabriel's Board (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.

San Gabriel's WSCP 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, San Gabriel's WSCP has reviewed the response actions, enforcement actions, and monitoring and reporting programs separately for decorative water features and for pools and spas, as applicable.

8.12 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

CWC 10632.

(c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.

San Gabriel's WSCP is adopted as part of San Gabriel's 2020 Urban Water Management Plan adoption process discussed in Chapter 10. The process for adopting San Gabriel's Water Shortage Contingency Plan includes the following:

- San Gabriel will conduct a public hearing and make the WSCP available for public inspection.
- San Gabriel will provide notification of the time and place of the public hearing to any city or county in which water is provided.
- San Gabriel will publish notice of public hearing in a newspaper once a week, for two successive weeks (with at least five days between publication dates).
- San Gabriel's Board will adopt the 2020 Urban Water Management Plan and the WSCP.
- As part of submitting the 2020 Urban Water Management Plan to DWR, San Gabriel will also submit the WSCP (electronically through DWR's online submittal tool) within 30 days of adoption and by July 1, 2021. San Gabriel will submit a copy of the WSCP to the California State Library and to any city or county in which water is provided within 30 days of adoption. In addition, San Gabriel will make the WSCP available for public review within 30 days of adoption.

If there are any subsequent amendments required, the process for adopting an amended WSCP includes the following:

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

Additional information regarding the adoption, submittal, and availability of San Gabriel's WSCP (and 2020 Urban Water Management Plan) is provided in Chapter 10.

CHAPTER 9

DEMAND MANAGEMENT MEASURES

LAY DESCRIPTION – CHAPTER 9

DEMAND MANAGEMENT MEASURES

Chapter 9 (Demand Management Measures) of San Gabriel's 2020 Plan discusses and provides the following:

- San Gabriel has implemented "Demand Management Measures" (DMMs) to reduce its water demands and achieve its water use targets (discussed in Chapter 5)
- San Gabriel's Demand Management Measures include adoption of an ordinance to prevent water waste.
- San Gabriel'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.
- San Gabriel's Demand Management Measures include conservation pricing. San Gabriel's current water rate structure is tiered to promote water conservation by customers.
- San Gabriel's Demand Management Measures include public education and outreach programs regarding water conservation.
- San Gabriel'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 San Gabriel has implemented over the past five (5) years is provided. San Gabriel met the 2020 Water Use Target (discussed in Chapter 5) through the implementation of these Demand Management Measures.

9.1 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:

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

(ii) Metering.

(iv) Public education and outreach.
(vi) Water conservation program coordination and staffing support.

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

(2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

San Gabriel is not a wholesale agency and is not required by DWR to complete Section 9.1.

9.2 EXISTING 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.

9.2.1 WATER WASTE PREVENTION ORDINANCES

San Gabriel is governed by the laws and rulings of the CPUC. CPUC-approved rules including Rule 14.1 ("Water Conservation and Rationing Plan"), Schedule 14.1 ("Staged Mandatory Conservation and Rationing"), and Rule No. 20 ("Water Conservation"), which prohibit water waste. In compliance with the CPUC's request, San Gabriel adopted Rule No. 14.1 "Water Shortage Contingency Plan" (see Appendix M). Although San Gabriel does not have the legal authority to enact an "Ordinance" as does a municipality, if water supplies warrant the need to implement mandatory water conservation, Rule 14.1 would suffice (San Gabriel would be able to encourage its customers to conserve by enforcing

the rules listed therein). In addition, San Gabriel will continue to support local legislation and regulations that prohibit water waste such as those implemented by Upper District and Central District.

CPUC's Rule 14.1, when in effect, sets forth procedures to implement the following water conservation restrictions:

- Use of potable water for more than minimal landscaping.
- Use through a broken or defective water meter.
- Use of potable water which results in flooding or runoff in gutters or streets.
- Use of potable water for washing private cars or commercial aircrafts, cars, buses, boats, or trailers, except at a fixed location where water is properly maintained to avoid wasteful use.
- Use of potable water for washing buildings, structures, driveways, street cleaning, or other hard-surfaced areas.
- Use of potable water to irrigate turf, lawns, gardens, or ornamental landscaping.
- Use of potable water for construction purposes.
- Use of potable water for filling or refilling of swimming pools.

CPUC's Schedule 14.1, when activated, imposes mandatory conservation restrictions above and/or declares a level of water shortage which adopts customer surcharges and reductions in water use (as discussed in Section 8.4).

CPUC's Rule No. 20 discourages wasteful use of water and promotes the use of water saving devices. The stated purpose of the rule is to "ensure that water resources available to the utility are put to a reasonable beneficial use and that the benefits of the utility's water supply and service extend to the largest number of persons."

Upper District passed Resolution 6-90-266 in 1990 to reduce water demands within Upper District's service area. In addition, on October 21, 2014, Upper District's Board passed, approved, and adopted Resolution No. 10-14-543 to declare a water emergency in concurrence with Governor Brown's declared state of an emergency due to the current severe drought. The resolution, in part, resolved that Upper District would adopt water conservation actions as mandated by the SWRCB and work with local water retailers to help them implement water conservation actions.

Central District created a Water Use Efficiency Ordinance Task Force, comprised of members from surrounding cities and retail agencies, to reach out to San Gabriel's cities and unincorporated communities. In addition, each water retailer was provided with a Water-Use Efficiency Ordinance Tool Kit, compliments of Central District.

9.2.2 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.

San Gabriel meters all customer connections, including separate metering for single-family residential, commercial, industrial, large landscape and institutional/governmental facilities. Furthermore, if there is new development within San Gabriel's service area, each facility is individually metered. Service charges for San Gabriel are based on the

customers' connection size. Further information regarding San Gabriel's service fees and conservation pricing is provided in Section 9.2.3.

9.2.3 CONSERVATION PRICING

San Gabriel is a public utility water company regulated by the CPUC. In the event a water shortage is declared, San Gabriel would request CPUC authorization to implement its Water Shortage Contingency Plan as set forth in CPUC Rule No. 14.1. In addition, San Gabriel would request CPUC authorization to implement its Stage Water Shortage Surcharges and Penalties, as set forth in Schedule 14.1, which includes surcharges and penalties to encourage water conservation. Under Schedule 14.1; during a declared DWR Stage 2 and 3 Water Shortage, the surcharge on residential customers is set at 100 percent of the highest tier Quantity Rate and is applicable to all usage greater than 20 hundred cubic feet (ccf) per month. During a declared DWR Stage 4 and 5 Water Shortage, the surcharge on residential customers is set at 200 percent of the highest tier Quantity Rate and is applicable to all usage greater than 20 ccf per month. During a declared DWR Stage 6 Water Shortage, the surcharge on residential customers is set at 300 percent of the highest tier Quantity Rate and is applicable to all usage greater than 20 ccf per month. The water rates have been developed to fund the cost of water and are related to the overall cost of water service. A water rate sheet showing current rates is provided in Appendix O.

9.2.4 PUBLIC EDUCATION AND OUTREACH

San Gabriel promotes water conservation through numerous local public events by providing water conservation materials and information to the general public. During these events San Gabriel distributes conservation materials such as sponges, pens, pencils, erasers, rulers, recycle bags, hose nozzles, conservation kits, and brochures for adults and children. These conservation materials and devices are distributed to customers to educate and encourage the efficient use of water.

San Gabriel representatives are available to speak to local schools, civic organizations, and groups of concerned citizens wanting information on topics of water conservation and water quality. Water conservation and water quality literature, videotapes on wiser water use and water savings tips, posters, and displays are utilized in various presentations. San Gabriel also promotes water conservation paid advertising, and residential customer bill inserts.

San Gabriel's customers receive educational tools regarding water conservation through Upper District's school educational programs. Upper District 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 District.

Upper District directly offers school education programs to raise awareness of water issues. Upper District 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 District's school educational programs:

1. "Water is Life" Art Contest
2. Solar Cup Competition
3. Water Educational Posters
4. Water Resource Library

Central District public information efforts consist of a variety of programs and practices that are used to educate the public about water conservation. Conservation literature is provided to the public at various one-day programs and at community events. Central District provides the community with a Speakers Bureau to promote conservation. Additionally, Central District provides education through the "Shut Your Tap!" outreach campaign which includes information on Central District's website and various publication materials.

In 2013, MWD created the Bewaterwise.com website to assist in educating the public, focusing on the drought, and providing information on rebate and incentive programs. The rebate and incentive programs are summarized in Section 9.2.7. San Gabriel's customers may participate in educational school programs through MWD, which has extensive educational programs that includes schools within San Gabriel's service area. MWD's educational programs meet state education framework requirements. A list of MWD's school education programs and water conservation savings is included in MWD's 2020 Plan, which is incorporated by reference.

9.2.5 PROGRAMS TO ASSESS AND MANAGE DISTRIBUTION SYSTEM REAL LOSS

San Gabriel implements a system water audit, leak detection and repair program within its service area. San Gabriel's water system is completely metered, and San Gabriel staff routinely conducts water audits, leak detection through both a visual and a systematic leak detection program utilizing acoustic monitoring equipment, and repair on its distribution system. San Gabriel conducts monitoring, and repair of system leaks as an integral part of maintenance activities. San Gabriel receives reports of leaks in its distribution system from customers, field crews, and other agencies. Upon receipt of such a report, San Gabriel's Central Control Operator generates a work order and dispatches a field crew to investigate and make repairs. San Gabriel promptly repairs distribution mains, services and other appurtenances.

San Gabriel offers free residential water surveys to residential customers to aid in reducing water use. The San Gabriel water survey consists of identification of potential leaks, recommendation of water conserving devices, assessment of irrigation efficiency, and determination of landscape watering schedule. Also, San Gabriel conducts residential audits to high water use customers.

Upper District and Central District are member agencies of MWD which conduct various system audits and leak detection program for its entire system. Additional information regarding system water audits, leak detection, repair, and water conservation savings can be found in MWD's 2020 Plan, which is incorporated by reference.

9.2.6 WATER CONSERVATION PROGRAM COORDINATION AND STAFFING SUPPORT

San Gabriel employs a conservation coordinator and a conservation specialist to promote water conservation and work with customers within San Gabriel's service area on improving water conservation efforts. San Gabriel's Water Conservation Coordinator and Water Conservation Specialist will coordinate and oversee surveys to customers to identify potential leaks, recommend water conserving devices, assess irrigation efficiency, and determine proper landscape watering schedule. San Gabriel's Water Conservation Coordinator and Water Conservation Specialist also conduct audits to high water use customers.

The Water Conservation Coordinator employed by Upper District 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 management practices and advises the Upper District Board Members and its sub-agencies, including San Gabriel, on water conservation matters. More information about Upper District's conservation coordinator can be found in its 2020 Plan, which is incorporated by reference.

9.2.7 OTHER DEMAND MANAGEMENT MEASURES

Residential Water Audits

San Gabriel conducts water survey programs for residential customers to assist customers looking for help to reduce indoor and outdoor water use. San Gabriel sends survey request forms to customers through bill inserts. San Gabriel also schedules appointments for surveys with customers by phone. San Gabriel's water survey is designed to identify potential leaks, recommend water conserving devices, assess irrigation efficiency, and determine proper landscape watering schedule to San Gabriel's customers. San Gabriel also offers to conduct residential survey in response to high water use inquiries.

Upper District encourages its sub-agencies, including San Gabriel, to implement water survey programs. Upper District supports its sub-agencies' efforts by offering workshops to train staff on how to conduct residential water surveys.

Residential Plumbing Retrofit

San Gabriel implements a residential plumbing retrofit program through its basic water conservation kit to San Gabriel's customers. The water conservation kit consists of a 1.5 gpm massage showerhead, a 1.5 gpm flow dual spray kitchen aerator, and a 1 gpm aerator. San Gabriel offers water conservation kits for free after San Gabriel has verified customers' water bills during conservation events or after a residential audit has been conducted at the customers' home. In addition, as a sub-agency of Central District, San Gabriel's customers may participate in Central District's residential rebate programs which include weather-based irrigation controllers, high-efficiency toilets, rain barrels, and rotating nozzles for pop-up spray heads. Additional information about Central District's residential plumbing retrofit is included in Central District's 2020 Plan, which is incorporated by reference.

Large Landscape Conservation Programs and Incentives

San Gabriel implements a Large Landscape audit program to commercial and industrial institutional (CII) customers with landscapes of one acre or larger. The Large Landscape audit program provides San Gabriel's CII customers with system reviews and identifies necessary irrigation system repairs. San Gabriel's CII customers under the Large Landscape audit program can track repairs through follow-up reviews and surveys. San Gabriel can provide incentives such as rebates and facilitating the installation of wireless irrigation management systems to assist large landscape customers with monitoring water usage and reducing their irrigation demands.

San Gabriel, in conjunction with the Upper District and MWD, participated in a turf removal program, which provided residential and commercial customers with financial incentives to replace turf lawns with California Friendly® landscapes. The program was launched in January 2014 and closed in November 2015.

Central District's large landscape conservation program includes:

- A District-wide large landscape managed Irrigation program incorporating maintenance, monitoring and tracking of individual property water savings
- A city partnership program to install Smart Irrigation Controllers in parks and street medians
- A Commercial Landscape research grant to Improve water use efficiency at schools, parks and open public spaces

High-Efficiency Washing Machine Rebate Program

Upper District and Central District, in partnership with MWD, implement region-wide rebate programs through MWD's SoCal Water$mart, which includes a residential high-efficiency clothes washer rebate program. Residential dwellings that are located within Upper District's and Central District's service area can install a high-efficiency washing machine in place of standard-efficiency for a rebate. The program began in FY 2002-03.

MWD states that this program saves about 10,000 gallons per year per washer over a conventional top loading washer. Additional information on the high-efficiency washing machine rebate program can be found in Upper District's 2020 Plan and Central District's 2020 Plan, incorporated by reference.

9.3 REPORTING IMPLEMENTATION

9.3.1 IMPLEMENTATION OVER THE PAST FIVE YEARS

CWC 10631.

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

(1) (A) …a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

San Gabriel is committed to implementing water conservation programs and works collaboratively with Upper District and Central District to provide water conservation programs for its residents. As a sub-agency of Upper District and Central District, San Gabriel's residents have the benefit of participating in Upper District and Central District's conservation efforts. The highlights of DMM implementation over the past five years are described below.

As discussed in Section 9.2.1, in compliance with the CPUC's request, San Gabriel adopted Rule No. 14.1 "Water Shortage Contingency Plan" (see Appendix M). Although San Gabriel does not have the legal authority to enact an "Ordinance" as does a municipality, if water supplies warrant the need to implement mandatory water conservation, Rule No. 14.1 would be implemented (San Gabriel would be able to encourage its customers to conserve by enforcing the rules listed therein). In addition,

San Gabriel will continue to support local legislation and regulations that prohibit water waste.

As discussed in Section 9.2.2, San Gabriel metered all customer connections, including separate metering for single-family residential, commercial, industrial, large landscape and institutional/governmental facilities during the past five years. Furthermore, if there was new development within San Gabriel, each facility was individually metered. Service charges for San Gabriel are based on the customers' connection size.

As discussed in Section 9.2.3, San Gabriel is a public utility water company regulated by the CPUC. In the event a water shortage is declared, San Gabriel would request CPUC authorization to implement its Water Shortage Contingency Plan as set forth in CPUC Rule No. 14.1. In addition, San Gabriel would request CPUC authorization to implement its Stage Water Shortage Surcharges and Penalties, as set forth in Schedule 14.1, which includes surcharges and penalties to encourage water conservation. Under Schedule 14.1; during a declared DWR Stage 2 and 3 Water Shortage, the surcharge on residential customers is set at 100 percent of the highest tier Quantity Rate and is applicable to all usage greater than 20 ccf per month. During a declared DWR Stage 4 and 5 Water Shortage, the surcharge on residential customers is set at 200 percent of the highest tier Quantity Rate and is applicable to all usage greater than 20 ccf per month. During a declared DWR Stage 6 Water Shortage, the surcharge on residential customers is set at 300 percent of the highest tier Quantity Rate and is applicable to all usage greater than 20 ccf per month. The water rates have been developed to fund the cost of water and are related to the overall cost of water service.

As discussed in Section 9.2.4, from 2016 through 2020, San Gabriel promoted water conservation through numerous local public events which provided water conservation materials and information to the general public. During these events, San Gabriel distributed conservation materials such as sponges, pens, pencils, erasers, rulers, recycle bags, hose nozzles, conservation kits, and brochures for adults and children.

These conservation materials and devices were distributed to customers to educate and encourage the efficient use of water.

San Gabriel's customers also received educational tools regarding water conservation through Upper District's school educational programs. Upper District partnered 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 District.

Upper District directly offered school education programs in an effort to raise awareness of water issues. Upper District 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 District's school educational programs:

- "Water is Life" Art Contest
- Solar Cup Competition
- Water Educational Posters
- Water Resource Library

Central District public information efforts consisted of a variety of programs and practices that are used to educate the public about water conservation. Conservation literature was provided to the public at various one-day programs and at community events. Central District also provided the community with a Speakers Bureau to promote conservation. Additionally, Central District provided education through the "Shut Your Tap!" outreach campaign which included information on Central District's website and various publication materials.

In 2013, MWD created the Bewaterwise.com website to assist in educating the public, focusing on the drought, and providing information on rebate and incentive programs. The

rebate and incentive programs are summarized in Section 9.2.7. A list of MWD's school education programs and water conservation savings is included in MWD's draft 2020 Plan, which is incorporated by reference.

As discussed in Section 9.2.5, San Gabriel implemented a system water audit, leak detection, and repair program within its service area from 2016 through 2020. San Gabriel's water system is completely metered, and San Gabriel Staff conducted regular water audits, leak detection through a visual and a systemic leak detection program utilizing acoustic monitoring equipment, and repair on its distribution system. San Gabriel promptly repaired distribution mains, services, and other appurtenances.

San Gabriel also offered free residential water surveys to residential customers to provide aid in reducing water use. Also, San Gabriel conducted residential audits for high water use customers.

Upper District and Central District are sub-agencies of MWD which also conduct various system audits and leak detection program for its entire system. Additional information regarding system water audits, leak detection, repair, and water conservation savings can be found in MWD's draft 2020 Plan, which is incorporated by reference.

As described in Section 9.2.6, San Gabriel employed a Water Conservation Coordinator and a Water Conservation Specialist to oversee all water conservation activities from 2016 through 2020. The Water Conservation Coordinator and the Water Conservation Specialist are responsible for all matters pertaining to San Gabriel's water conservation program including implementation of DMMs. San Gabriel plans to continue to provide water conservation program coordination and staffing support.

Other DMMs employed by San Gabriel are discussed in Section 9.2.7. Highlights of other DMM implementation over the past five years are described below.

- Residential Water Audits – San Gabriel conducted water survey programs for residential customers to assist customers looking for help to reduce indoor and outdoor water use.
- Residential Plumbing Retrofit – San Gabriel implemented a residential plumbing retrofit program through its basic water conservation kit to San Gabriel's customers. In addition, San Gabriel's customers may participate in Central District's residential rebate programs which include weather-based irrigation controllers, high-efficiency toilets, rain barrels, and rotating nozzles for pop-up spray heads. Through these rebate programs, San Gabriel provided its customers with the following: 732 rain barrels at a cost of approximately $87,800; 1,088 high-efficiency toilets at a cost of approximately $424,500; 26,646 sprinkler nozzles at a cost of approximately $740,100; and 618 weather-based irrigation controllers.
- Large Landscape Conservation Programs and Incentives – San Gabriel implemented a Large Landscape audit program to CII customers with landscapes of one acre or larger. The Large Landscape audit program provided San Gabriel's CII customers with system reviews and identifies necessary irrigation system repairs. San Gabriel can provide incentives such as rebates and facilitating the installation of wireless irrigation management systems to assist large landscape customers with monitoring water usage and reducing their irrigation demands.
- High-Efficiency Washing Machine Rebate Program - Upper District and Central District, in partnership with MWD, implemented region-wide rebate programs through MWD's SoCal Water$mart, which includes a residential high-efficiency clothes washer rebate program. Through these rebate programs, San Gabriel provided its customers with 465 high-efficiency clothes washers at a cost of approximately $75,500.

9.3.2 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.

The Demand Management Measures implemented by San Gabriel are discussed in Section 9.2. Descriptions regarding the nature and extent of these Demand Management Measures implemented by San Gabriel over the past five years are discussed in Section 9.3. San Gabriel will continue to implement these Demand Management Measures and other water conservation programs and work collaboratively with both, Upper District and Central District, to provide water conservation programs for its residents.

As discussed in Section 5.5, San Gabriel's per-capita water use during CY 2020 was 112 GPCD. San Gabriel's confirmed 2020 Water Use Target is 142 GPCD. San Gabriel's per-capita water use during CY 2020 meets the 2020 Water Use Target and is in compliance. San Gabriel met the 2020 Water Use Target through the implementation of the Demand Management Measures discussed in Section 9.2. Continued implementation of these Demand Management Measures will assist San Gabriel in meeting water use targets and objectives.

9.4 WATER USE OBJECTIVES (FUTURE REQUIREMENTS)

San Gabriel is currently working with DWR to develop Water Use Objectives pursuant to AB 1668 and SB 606. Beginning in 2024, water agencies, including San Gabriel, are required to begin reporting compliance of their Water Use Objectives consisting of indoor residential water use, outdoor residential water use, commercial, industrial and institutional, irrigation with dedicated meters, water loss, and other unique local uses. San Gabriel plans to meet its Water Use Objectives through continued implementation of the Demand Management Measures discussed in 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 San Gabriel's 2020 Plan discusses and provides the following:

- The steps San Gabriel has performed to adopt and submit its 2020 Plan are detailed.
- The steps San Gabriel has performed to adopt and submit its Water Shortage Contingency Plan are detailed.
- San Gabriel coordinated the preparation of the 2020 Plan with the Amarillo Mutual Water Company, Central District, Del Rio Mutual Water Company, Hemlock Mutual Water Company, La Puente Valley County Water District, Upper District, and Valley County Water District. San Gabriel notified these agencies at least sixty (60) days prior to the public hearing of the preparation of the 2020 Plan and invited these agencies to participate in the development of the 2020 Plan.
- San Gabriel provided a notice of the public hearing to the same agencies regarding the time, date, and place of the public hearing.
- San Gabriel published a newspaper notification of the public hearing, once a week for two successive weeks
- San Gabriel conducted a public hearing to discuss and adopt San Gabriel's 2020 Plan and San Gabriel's Water Shortage Contingency Plan.
- Within 30 days of adoption, San Gabriel submitted the 2020 Plan and Water Shortage Contingency Plan to the California Department of Water Resources.

- Within 30 days of adoption, San Gabriel submitted all data tables associated with the 2020 Plan to the California Department of Water Resources.
- Within 30 days of adoption, San Gabriel submitted a copy of the 2020 Plan to the State of California Library.
- Within 30 days of adoption, San Gabriel submitted a copy of the 2020 Plan (and Water Shortage Contingency Plan) to the County of Los Angeles Registrar-Recorder/ Clerk's office and San Gabriel's main office.
- Within 30 days after submittal of the 2020 Plan to the California Department of Water Resources, San Gabriel made the 2020 Plan (including the Water Shortage Contingency Plan) available at San Gabriel's main office and on San Gabriel's website.
- The steps San Gabriel will perform to amend the 2020 Plan and/or the Water Shortage Contingency Plan, if necessary, are provided.

10.1 INCLUSION OF ALL 2020 DATA

The data provided in San Gabriel's 2020 Plan and the Water Shortage Contingency Plan is provided on a CY basis through December 31, 2020 (as discussed in Section 2.5).

10.2 NOTICE OF PUBLIC HEARING

San Gabriel's public hearing notification process for its 2020 Plan and Water Shortage Contingency Plan is discussed below.

10.2.1 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. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

CWC 10642.

(b) …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… A privately owned water supplier shall provide an equivalent notice within its service area….

10.2.1.1 60 DAY NOTIFICATION

As discussed in Section 2.6.2., San Gabriel coordinated the preparation of the 2020 Plan with the Amarillo Mutual Water Company, Central District, Del Rio Mutual Water Company, Hemlock Mutual Water Company, La Puente Valley County Water District, Upper District, and Valley County Water District. San Gabriel notified these agencies, as well as the cities and county within which San Gabriel provides water supplies, at least sixty (60) days prior to the public hearing of the preparation of the 2020 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.

10.2.1.2 NOTICE OF PUBLIC HEARING

San Gabriel provided a notice of the public hearing to Amarillo Mutual Water Company, Central District, Del Rio Mutual Water Company, Hemlock Mutual Water Company, La Puente Valley County Water District, Upper District, and Valley County Water District, as well as the cities and county within which San Gabriel provides water supplies. The notice includes the time and place of the public hearing. To ensure that the draft 2020 Plan and

the draft Water Shortage Contingency Plan were available for review, and pursuant to COVID-19 regulations, San Gabriel made a copy available for review on its website. Copies of the notice of the public hearing are provided in Appendix D.

10.2.1.3 SUBMITTAL TABLES

Table 10-1 summarizes the agencies which were provided notifications by San Gabriel.

Table 10-1 Notification to Cities and Counties

Submittal Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Arcadia	Yes	Yes
Baldwin Park	Yes	Yes
El Monte	Yes	Yes
City of Industry	Yes	Yes
Irwindale	Yes	Yes
La Puente	Yes	Yes
Montebello	Yes	Yes
Monterey Park	Yes	Yes
Pico Rivera	Yes	Yes
Rosemead	Yes	Yes
San Gabriel	Yes	Yes
Santa Fe Springs	Yes	Yes
South El Monte	Yes	Yes
West Covina	Yes	Yes
Whittier	Yes	Yes
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Los Angeles County	Yes	Yes
NOTES:		

10.2.2 NOTICE TO THE PUBLIC

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.

San Gabriel 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, San Gabriel published a notice of public hearing in the newspaper during the weeks of June 14, 2021 and June 21, 2021. A notice of public hearing was also provided to each of San Gabriel's office locations and was posted throughout San Gabriel's service area and on San Gabriel's website. A copy of the published notice is provided in Appendix D. To ensure the draft 2020 Plan and the draft Water Shortage Contingency Plan were available for review, and pursuant to COVID-19 regulations, San Gabriel made a copy available for review on its website.

10.3 PUBLIC HEARING AND ADOPTION

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.

CWC 10608.26.

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

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

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

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

10.3.1 PUBLIC HEARING

Prior to adopting the draft 2020 Plan and the draft Water Shortage Contingency Plan, San Gabriel held a public hearing on June 29, 2021 which included input from the community regarding San Gabriel's draft 2020 Plan and the draft Water Shortage Contingency Plan. As part of the public hearing, San Gabriel adopted a method to determine its water use targets through selection of Target Method 3 (see Section 5.2.1 and Appendix G). In addition, San Gabriel considered the economic impacts of meeting these water use targets; including measures described in Section 8.8.

10.3.2 ADOPTION

CWC 10642.

… 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.

Following the public hearing, San Gabriel adopted both the draft 2020 Plan and the draft Water Shortage Contingency Plan (included in Chapter 8). A copy of the resolution adopting the 2020 Plan and the Water Shortage Contingency Plan is provided in Appendix P.

10.4 PLAN SUBMITTAL

CWC 10621.

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

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.

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.

San Gabriel's submittal process for its 2020 Plan and the Water Shortage Contingency Plan is discussed below.

10.4.1 SUBMITTING A UWMP AND WATER SHORTAGE CONTINGENCY PLAN TO DWR

San Gabriel's governing board adopted the 2020 Plan on July 1, 2021 and within 30 days of adoption, San Gabriel submitted the adopted 2020 Plan (including the Water Shortage Contingency Plan) to DWR. The 2020 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 San Gabriel to assist DWR with its determination that San Gabriel's 2020 Plan has addressed the requirements of the California Water Code. San Gabriel has completed the DWR checklist by indicating where the required CWC elements can be found within San Gabriel's 2020 Plan (See Appendix C).

10.4.2 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 2020 Plan, San Gabriel submitted all data tables associated with the 2020 Plan through DWR's "Water Use Efficiency Data Portal" website.

10.4.3 SUBMITTING A UWMP TO THE CALIFORNIA STATE LIBRARY

Within 30 days of adoption of the 2020 Plan by San Gabriel's governing board, a copy (CD or hardcopy) of the 2020 Plan was submitted to the State of California Library. A copy of the letter to the State Library will be maintained in San Gabriel's file. The 2020 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 2020 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

10.4.4 SUBMITTING A UWMP TO CITIES AND COUNTIES

Within 30 days of adoption of the 2020 Plan (including the Water Shortage Contingency Plan) by San Gabriel's governing board, a copy of the 2020 Plan was submitted to the County of Los Angeles Registrar / Recorders office and each of San Gabriel's office locations. A copy of the letter to the County of Los Angeles will be maintained in San Gabriel's file.

10.5 PUBLIC AVAILABILITY

CWC 10645.

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

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

Within 30 days after submittal of the 2020 Plan to DWR, San Gabriel made the 2020 Plan (including the Water Shortage Contingency Plan) available on San Gabriel's website.

10.6 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.

San Gabriel will submit the 2020 Plan (and Water Shortage Contingency Plan) to the California Public Utilities Commission as part of its general rate case filings.

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

San Gabriel's amendment process for its 2020 Plan is discussed below.

10.7.1 AMENDING A UWMP

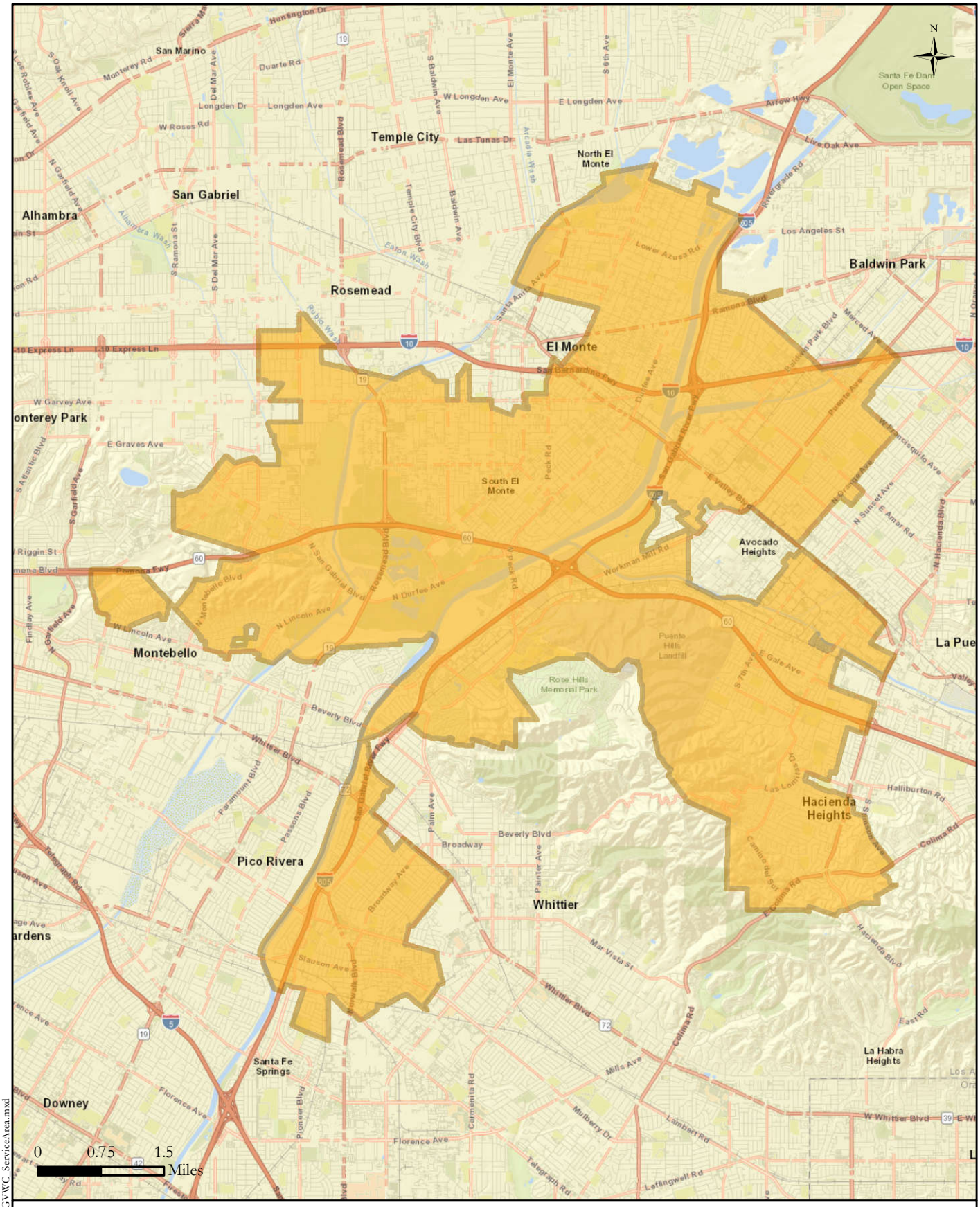
If San Gabriel amends the adopted 2020 Plan, the amended Plan will undergo adoption by San Gabriel's governing board. Within 30 days of adoption, the amended Plan will then be submitted to DWR, the State of California Library, the County of Los Angeles Registrar / Recorders office, and each of San Gabriel's office locations.

10.7.2 AMENDING A WATER SHORTAGE CONTINGENCY PLAN

CWC 10644.

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

If San Gabriel amends the adopted 2020 Plan (including the Water Shortage Contingency Plan), the amended Plan (and Water Shortage Contingency Plan) will undergo adoption by San Gabriel's governing board. Within 30 days of adoption, the amended Plan (and the Water Shortage Contingency Plan) will then be submitted to DWR, the State of California Library, the County of Los Angeles Registrar / Recorders office, and each of San Gabriel's office locations.



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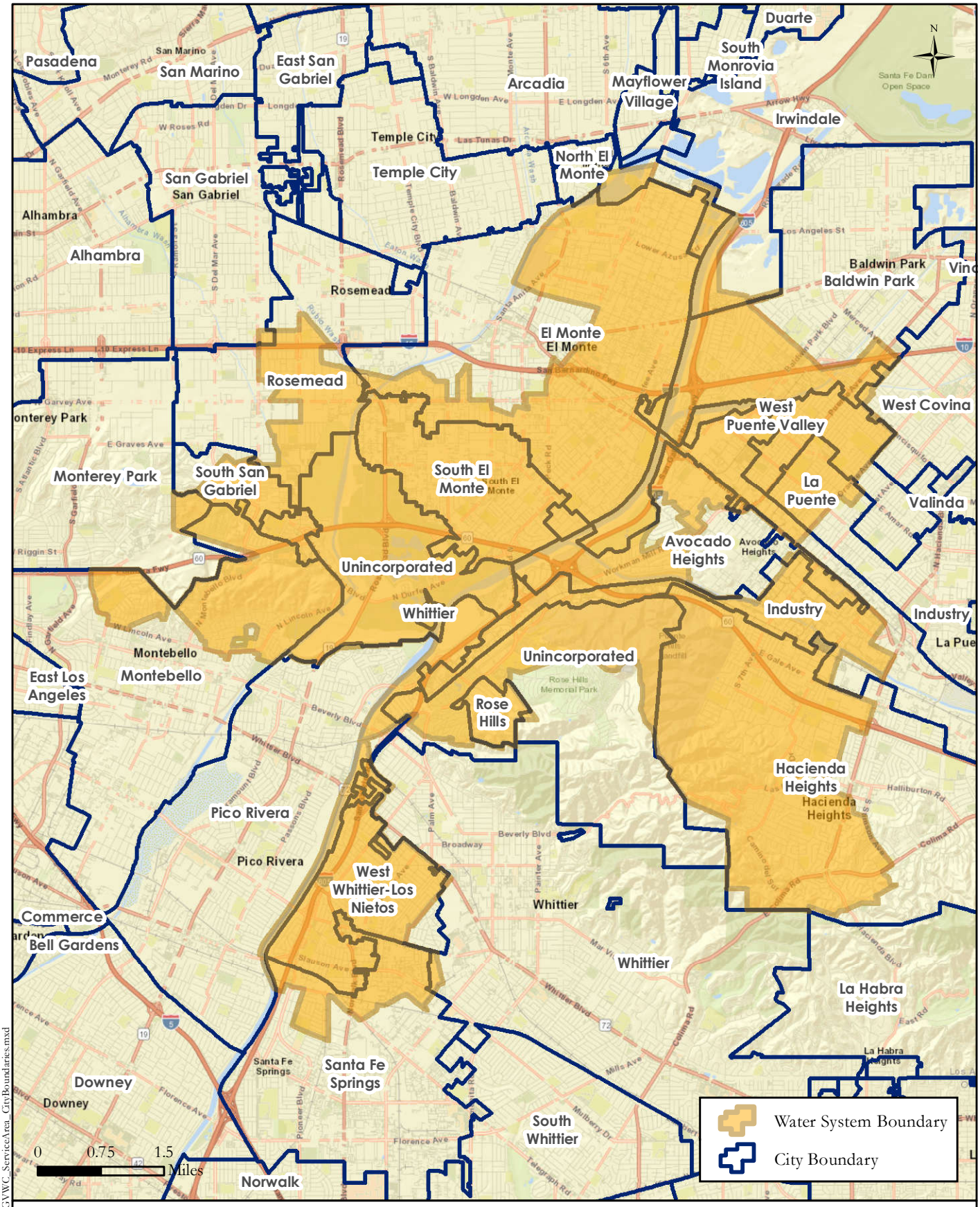
STETSON
ENGINEERS INC.

SAN GABRIEL VALLEY WATER COMPANY
WATER SERVICE AREA



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STETSON ENGINEERS INC.

SAN GABRIEL VALLEY WATER COMPANY
WATER SERVICE AREA
AND CITY BOUNDARIES

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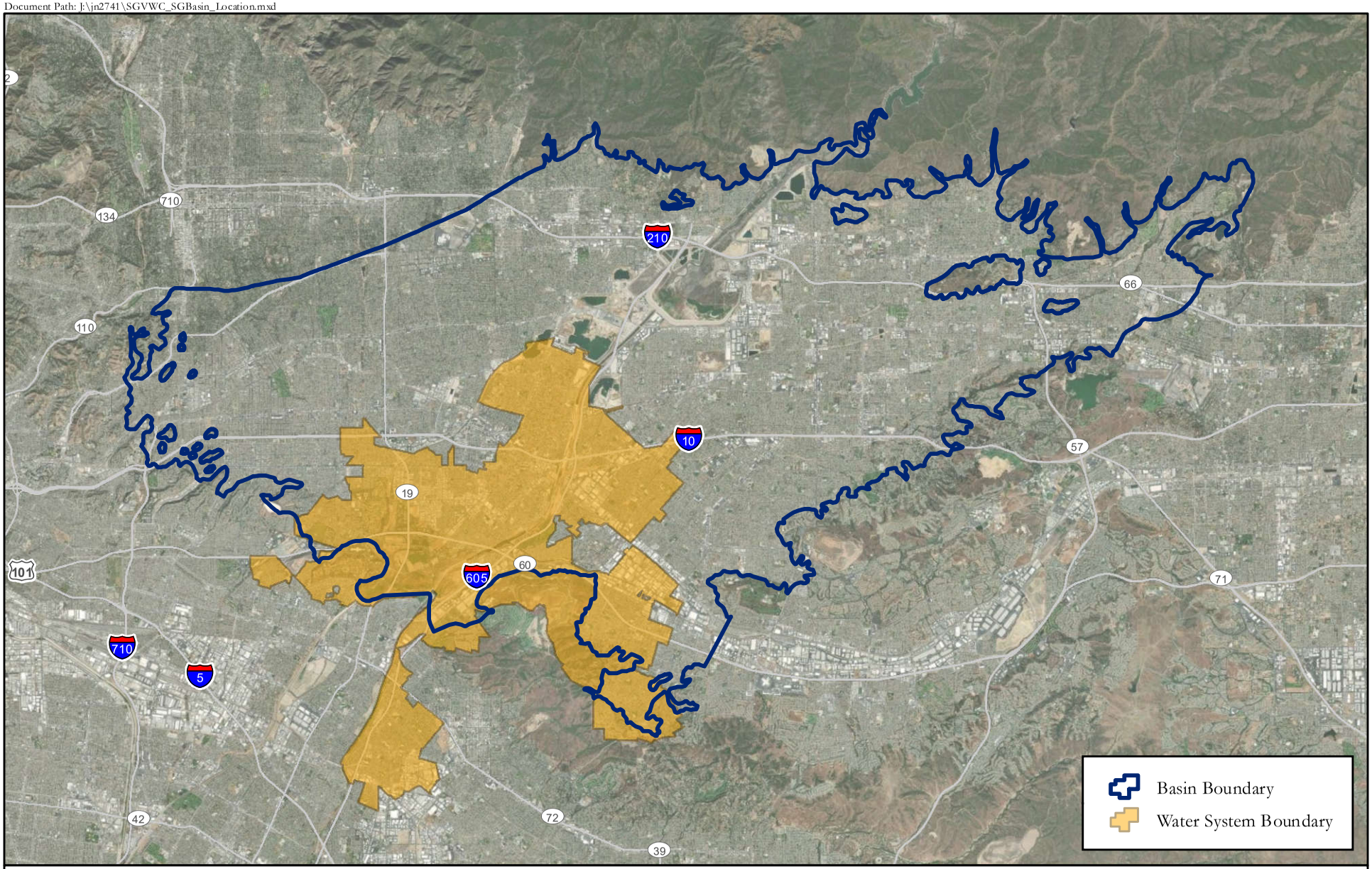

STETSON ENGINEERS INC.

SAN GABRIEL VALLEY WATER COMPANY
MAIN SAN GABRIEL BASIN LOCATION

0 1.5 3 Miles

N

FIGURE 3

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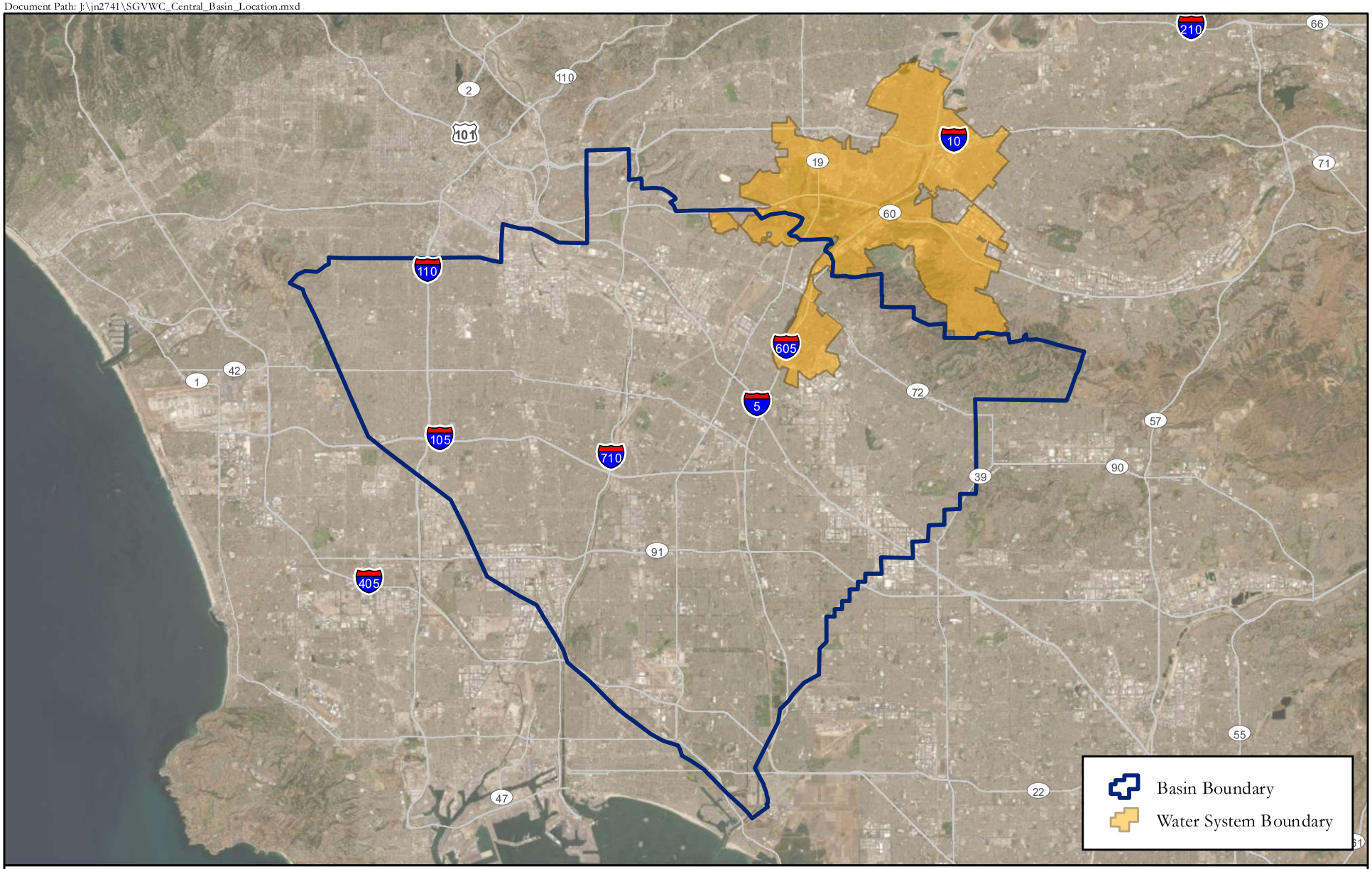

STETSON ENGINEERS INC.

SAN GABRIEL VALLEY WATER COMPANY
CENTRAL BASIN LOCATION

FIGURE 4