

# **CITY OF MANHATTAN BEACH**



**SEPTEMBER 2021**

**DRAFT**

## **2020 URBAN WATER MANAGEMENT PLAN**



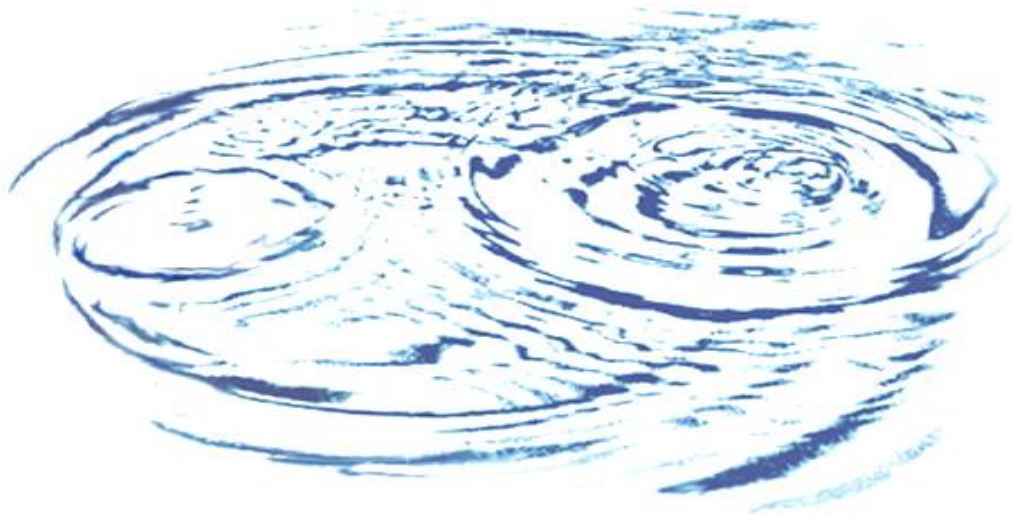
**FINAL DRAFT**



# **City of Manhattan Beach**

## **2020**

# **Urban Water Management Plan**



**SEPTEMBER 2021**



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### LIST OF ACRONYMS

AB	Assembly Bill
AF	Acre-feet
AFY	Acre-feet per year
Annual Assessment	Annual Water Supply and Demand Assessment
AWWA	American Water Works Association
CIMIS	California Irrigation Management Information System
City	City of Manhattan Beach
CWC	California Water Code
CY	Calendar year
DACs	Disadvantaged Communities
Delta	Sacramento-San Joaquin Delta
DOF	Department of Finance
DPW	Department of Public Works
DRA	Drought Risk Assessment
DWR	Department of Water Resources
ECLWRF	Edward C. Little Water Recycling Facility
ERP	Emergency Response Plan
ETo	Evapotranspiration
FEMA	Federal Emergency Management Agency
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
kWh	Kilowatt hours
LACSD	Los Angeles County Sanitation Districts
M&I	Municipal and Industrial
MGD	Million gallons per day
MWD	Metropolitan Water District of Southern California
OWDDF	Ocean Water Desalination Demonstration Facility
Plan	Urban Water Management Plan
RCP	Representative Concentration Pathway
RDM	Robust Decision Making
RRA	Risk and Resilience Assessment
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SGMA	Sustainable Groundwater Management Act
SWRCB	State Water Resources Control Board

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SWRCB-DDW	State Water Resources Control Board - Division of Drinking Water
SWP	State Water Project
TDS	Total Dissolved Solids
ULFT	Ultra Low Flush Toilet
USEPA	U.S. Environmental Protection Agency
UWMP	Urban Water Management Plan
WBMWD	West Basin Municipal Water District
WRCC	Western Regional Climate Center
WRD	Water Replenishment District of Southern California
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<sup>1</sup>) as “a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers.”

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

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

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

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<sup>1</sup> References to CWC Sections in this 2020 UWMP were obtained from <https://leginfo.ca.gov/>





The current requirements for preparing the UWMP are included in California Water Code (CWC) Sections 10608 through 10657. The City'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 the City) with a reliable management action plan for long-term resource planning to ensure adequate water supplies are available to meet existing and future water supply needs. In addition, the 2020 UMWP incorporates water supply reliability determinations resulting from potential prolonged drought, regulatory revisions, and/or changing climatic conditions.

The City'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 of each of these Chapters.



### **LAY DESCRIPTION – CHAPTER 1**

#### **URBAN WATER MANAGEMENT PLAN INTRODUCTION AND OVERVIEW**

Chapter 1 (Urban Water Management Plan Introduction and Overview) of the City's 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. The City is required to prepare an Urban Water Management Plan.
- The City's 2020 Plan was prepared consistent with the recommended organization provided in DWR's Final "Urban Water Management Plan Guidebook 2020", dated March 2021. A description regarding the organization of the 2020 Plan, including a summary of each Chapter, is provided. The City's Water Shortage Contingency Plan (discussed in Chapter 8) is also included in the 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.
- The City's coordination efforts with other planning agencies are discussed, including coordination efforts with West Basin Municipal Water District (WBMWD) and the Southern California Association of Governments
- The City's eligibility to receive grants and loans administered by the State of California and/or DWR, as a result of preparing the 2020 Plan, is discussed.
- Information is provided which demonstrates the City's prior, continued, and projected reduction on imported water supplies obtained (either directly or indirectly) from the Sacramento-San Joaquin Delta (Delta). The City has reduced its reliance on imported water supplies for Calendar Year 2015 and Calendar Year



2020. In addition, the City is projected to continue reducing its reliance on imported water supplies through Fiscal Year 2044-45.

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

### 1.1 RECOMMENDED UWMP ORGANIZATION

The City'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 March 2021. The City'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, the City'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. The City also submitted the UWMP data (standardized tables) electronically through DWR's Online Submittal Tool.

The City'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 the City's governing body. Further discussions regarding these supporting documents are provided within the individual Chapters of the City's 2020 Plan.

### 1.2 UWMPs IN RELATION TO OTHER EFFORTS

The City is a sub-agency of West Basin Municipal Water District, a wholesale water agency. WBMWD prepared a 2020 Plan which is incorporated in the City's 2020 Plan by reference. In addition, the City provided its 2020 Plan to WBMWD 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."*



The City's 2020 UWMP has been prepared 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).*

A discussion which demonstrates the City's measurable reduction in imported water reliance and improvement in regional self-reliance, including calendar year (CY) 2015 and CY 2020, is provided in Appendix B. The City has reduced its reliance on the imported water supplies for CY 2015 and CY 2020. The City is projected to reduce its reliance on the imported water supplies through CY 2045.

### **1.5 TIPS FOR UWMP PREPARERS**

The City's 2020 UWMP (which includes the City's 2020 Water Shortage Contingency Plan (WSCP)) is considered an update to the City's 2015 UWMP. However, the 2020 UWMP and the WSCP are considered stand-alone documents. As discussed in Section 1.1, the City's 2020 UWMP 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 the City's 2020 Plan discusses and provides the following:

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



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

### 2.1 PLAN PREPARATION

As discussed in Section 1.1, the City'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 chooses to participate in a regional or individual planning effort; selection of reporting year-type; and coordination, notification, and outreach."*

Pursuant to CWC requirements, the City'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.*

The City'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.



The City is an “urban water supplier” pursuant to Section 10617 of the CWC and directly serves potable water to more than 3,000 customers and supplies more than 3,000 acre-feet per year (AFY) at retail for municipal purposes. The City’s 2020 Plan is an update to the City’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, the City’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. The City also submitted the UWMP data (from the standardized tables) electronically through DWR’s Online Submittal Tool.

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



## 2.2.2 SUPPLIERS SERVING MULTIPLE SERVICE AREAS / PUBLIC WATER SYSTEMS

The City serves only a single Public Water System. Table 2-1 provides the City's Public Water System name and number.

**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 *
<i>Add additional rows as needed</i>			
1910083	City of Manhattan Beach	13,446	5,107
<b>TOTAL</b>		<b>13,446</b>	<b>5,107</b>
<b>* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</b>			
NOTES: The "Volume of Water Supplied 2020" includes recycled water supplies of 250 AF. Source for "Number of Municipal Connections 2020": <a href="https://sdwis.waterboards.ca.gov/PDWW/">https://sdwis.waterboards.ca.gov/PDWW/</a>			



## 2.3 REGIONAL PLANNING

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

## 2.4 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

As shown in Table 2-2, the City's 2020 Plan is an "Individual UWMP". The City 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). The City 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 <i>if applicable</i> (select from drop down list)
<input checked="" type="checkbox"/>	Individual UWMP	
	<input type="checkbox"/> Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/> Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	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, the City'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.*

The City has developed its 2015 Plan reporting solely on its service area to address all requirements of the California Water Code. The City's 2015 Plan was not developed as a Regional Plan.



## 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 the City's 2020 Plan is reported on a calendar year 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)	
<input type="checkbox"/>	Supplier is a wholesaler
<input checked="" type="checkbox"/>	Supplier is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables are in calendar years
<input type="checkbox"/>	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP * (select from drop down)	
Unit	AF
<b>* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</b>	
NOTES:	



### 2.5.2 REPORTING COMPLETE 2020 DATA

The data provided in the City'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 the City's 2020 Plan is reported in units of 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

The City is a sub-agency of the wholesale water agency WBMWD. As indicated in Table 2-4, the City has provided its 2020 Plan to WBMWD which includes water use projections in five-year increments for normal, single dry, and a five consecutive year drought conditions 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
<i>Add additional rows as needed</i>
West Basin Municipal Water District (WBMWD)
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...*

The City is a retail water supplier that serves customers in the City of Manhattan Beach. The City is required to coordinate the preparation of the Plan with appropriate agencies in the area, including appropriate water suppliers that share a common source. Therefore, the City coordinated the preparation of its 2020 UWMP with the City of El Segundo, California Water Service Company, Water Replenishment District of Southern California, and West Basin Municipal Water District. As discussed in Section 10.2, the City notified this agency, as well as to the cities and county within which the City provides water supplies, at least sixty (60) days prior to the public hearing of the preparation of the 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

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#### CWC 10621.

*(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.*

---

As discussed in Section 10.2, notification was provided to the cities and county within which the City provides water supplies that the City was reviewing and considering amendments (updates) to the previous 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 the City's 2020 Plan discusses and provides the following:

- A description of the City's service area is provided. The City is located on the western edge of Los Angeles County, approximately 22 miles southwest of downtown Los Angeles. The City is bordered by the City of El Segundo to the north, the Cities of Hawthorne and Redondo Beach to the east, and the Cities of Redondo Beach and Hermosa Beach to the south.
- The City's water service area encompasses an area of approximately 3.9 square miles. The location of the City's water service area is provided in Figure 1.
- A description regarding the City's water service area climate is provided. The monthly historical average temperatures (including minimum and maximum), monthly historical average rainfall, and monthly evapotranspiration (ET<sub>o</sub>) in the vicinity of the City's service area is summarized. The sources of the climate information are also discussed.
- The population within the City's water service area is discussed and projected. The sources of the population information are also discussed. The City provides water service to an area with a current population of about 35,031. The City is projected to have a population of 37,528 by CY 2045.
- A discussion of land use information used by the City to develop the 2020 Plan is provided. The City reviewed the current and projected land uses within its service area. The City also reviewed data provided by the Southern California Association





of Governments, the Department of Finance, and the United States Census Bureau and prepared for counties, cities, and unincorporated areas within Southern California.

### 3.1 GENERAL DESCRIPTION

#### CWC 10631.

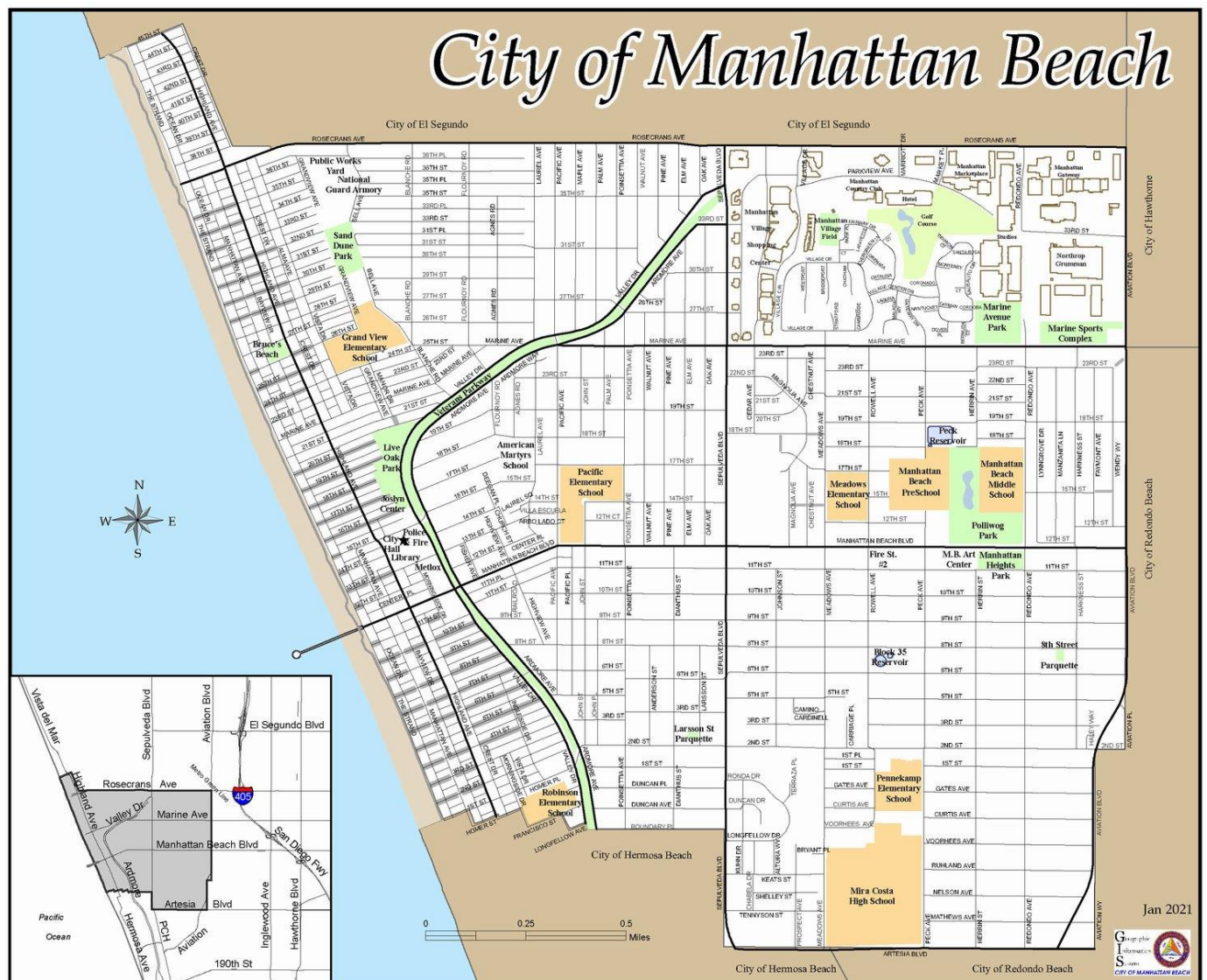
*(a) Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service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

Included in a land grant from Mexico, the Rancho Sausal Redondo consisted of approximately 22,500 acres, including the present site of the City of Manhattan Beach. Major development began in 1888 when the railroad was constructed between Redondo Beach Wharf and Downtown Los Angeles. By the early 1900's, the northern portion of the site was called Shore Acres and was owned by George Peck. The southern portion was owned by John Merrill who named it after his old home Manhattan in New York City. Ultimately, the fate of the City's name was left to a coin flip, in which "Manhattan" won.

The City is located on the western edge of Los Angeles County, approximately 22 miles southwest of downtown Los Angeles. The City is bordered by the City of El Segundo to the north, the Cities of Hawthorne and Redondo Beach to the east, and the Cities of Redondo Beach and Hermosa Beach to the south. Currently the City is comprised of approximately 3.9 square miles of primarily residential land use. Commercial land uses



are located along Highland Avenue, Manhattan Beach Boulevard, Sepulveda Boulevard, and in Manhattan Village, which is located southeast of Rosecrans Avenue and Sepulveda Boulevard. Industrial land uses primarily consist of the Northrop Grumman and Raleigh Studios, which are located northwest of Aviation Boulevard and Marine Avenue. A City location map is provided below.



Source: City of Manhattan Beach website



### 3.2 SERVICE AREA BOUNDARY MAPS

As discussed in Section 3.1, the City's service area covers approximately 3.9 square miles encompassing the majority of the City of Manhattan Beach. A service area boundary map is provided on Figure 1. The City's water service area boundary relative to the City of Manhattan Beach's municipal boundary is also provided in Figure 2.

The City's service area map was submitted online through DWR's Population Tool in a "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 ETo in the vicinity of the City's service area is summarized in the tabulation below. Historical climate information was obtained from the Western Regional Climate Center (WRCC), Los Angeles County Department of Public Works (DPW), and from DWR's California Irrigation Management Information System (CIMIS).

**Service Area Climate Information**

<b>Month</b>	<b>Average Temperature (F)</b>	<b>Average Minimum Temperature (F)</b>	<b>Average Maximum Temperature (F)</b>	<b>Average Total Precipitation (Inches)</b>	<b>ETo (Inches)</b>
<b>January</b>	55.3	44.3	65.9	3.0	2.33
<b>February</b>	56.2	45.8	66.5	3.2	2.52
<b>March</b>	57.5	47.4	67.4	2.0	3.7
<b>April</b>	59.9	49.9	69.6	0.8	4.7
<b>May</b>	62.7	53.5	71.6	0.2	5.14
<b>June</b>	65.4	56.7	73.8	0.1	5.24
<b>July</b>	69.0	60.2	77.6	0.0	5.62
<b>August</b>	69.8	61.1	78.6	0.1	5.57
<b>September</b>	68.9	59.5	78.0	0.2	4.31
<b>October</b>	65.6	55.4	75.4	0.4	3.4
<b>November</b>	60.3	48.9	71.5	1.3	2.48
<b>December</b>	56.0	45.0	66.9	2.2	2.15
<b>Annual</b>	62.3	52.3	71.9	13.6	47.16

**Source:**

Historical average monthly precipitation and temperature information was obtained from the Western Regional Climate Center (<http://www.wrcc.dri.edu/>) and is based on data collected from Station 048973 (Torrance AP, California) from 1932 through 2015. Historical monthly average ETo information was obtained from the California Irrigation Management Information Systems (<http://www.cimis.water.ca.gov>) and is based on data collected from Station 99 (Santa Monica).

The historical average rainfall in the vicinity of the City's service area is 13.6 inches. The City's service area has a dry climate and summers can reach average maximum daily temperatures in the high 70s. Although changes in climatic conditions may have an impact (as discussed in Section 4.5), the projected water supply demands will be based on average year, single dry year and a five consecutive year drought, based on historical



data and projected demands. Precipitation within the vicinity of the City's service area is discussed further in Section 7.2.

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

### 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.*

The City provides water service to an area with a current population of 35,031. Table 3-1 presents the current and projected population of the area encompassed by the City's service area from CY 2020 to CY 2045. The City is projected to have a population of 37,528 by CY 2045.

The City initially reviewed the available historical populations within its service area for population growth trends. The City determined historical U.S. Census populations within its service area using DWR's Population Tool (<https://wuedata.water.ca.gov/>). The City'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 the City'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 the City's service area boundary, to estimate the population served by the City in the years 1990, 2000, and 2010. The calculated CY 2020 population (discussed in Section 5.4) was used to determine compliance with the City's SB X7-7 water use target for 2020 (discussed in Section 5.5).

Projected populations in the City's service area based on growth rate projections obtained from data provided by the Southern California Association of Governments (SCAG) were reviewed. 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. Projected populations from the City's 2021 Water Master Plan (which is currently being prepared by the City) were also reviewed. The City's population projections from the City's 2021 Water Master Plan incorporate SCAG data as well as population growth resulting from proposed developments within the City's service area (including the Sunrise Senior Living development project). The City is projected to have a population of 37,528 by CY 2045.

**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)
	35,031	35,537	36,051	36,572	37,100	37,528
NOTES: The DWR Population Tool was used to estimate the 2020 population (See Section 5.4.1). Growth rates derived from the City's Water Master Plan were applied to the 2020 population and projected through 2045 (See Section 3.4.1).						





### 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 the City's water management planning. However, increased population will have an impact on water demand.

## 3.5 LAND USES WITHIN SERVICE AREA

The City 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. The existing land uses within the City's service area include single family and multi-family residential, commercial, industrial, and landscape. The projected land uses within the City's service area are expected to remain similar to the existing land uses. In addition, although mostly built-out, the projected population within the City's service area is anticipated to increase (as discussed in Section 3.4). A discussion of the existing and projected water uses for the individual water use sectors within the City's service area, which includes the different land uses, is provided in Section 4.2. As discussed in Section 2.6, the City coordinated the preparation of the 2020 Plan with the City of El Segundo, California Water Service Company, Water Replenishment District of Southern California, and West Basin Municipal Water District.

As discussed in Section 3.4, the City 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. 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 the City's 2020 Plan discusses and provides the following:

- The City provides water service to individual “water use sectors”. These water use sectors include single family and multi-family residential, commercial, industrial, and landscape. Individual descriptions for these water use sectors are provided in Section 4.2.1.
- The City's total water demands (including potable and recycled water) over the past 10 years have ranged from 4,878 AFY to 5,924 AFY, with an average of 5,308 AFY. The City currently measures its water use through meter data and billing records.
- The City conducts an annual water loss audit to identify distribution system water losses. Water losses can result from pipeline leaks and inaccurate metering due to faulty meters. Water loss estimates are incorporated into the City's projected water demands.
- The City's current and projected water demands are provided in five-year increments over the next 25 years are provided (through CY 2045) as shown on Table 4-3.
- The City'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 the City's total projected water demands
- The City's sources of water supply and how those sources may be impacted by climate change are discussed. The proactive actions the City and other local/regional water managers may take to address the potential climate change impacts on water supplies are also discussed.
- The City 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 the City's service area, including both non-potable and potable water. Recycled water (non-potable) uses are addressed in Section 6.5; however, a summary is provided in Table 4-3. Furthermore, Chapter 4 addresses the City'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.*

The City'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. The City'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 the City.

The City provides water service to individual “water use sectors” as identified by the California Water Code. The water use sectors supplied by the City are discussed in Section 4.2.1. The water use for each of these sectors during 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 <sup>1</sup> Water - Actual			
Use Type	2020 Actual		
<b>Drop down list</b> 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 <sup>2</sup>
Add additional rows as needed			
Single Family		Drinking Water	3,202
Multi-Family		Drinking Water	350
Commercial	Includes institutional use	Drinking Water	617
Industrial		Drinking Water	241
Landscape		Drinking Water	202
Losses		Drinking Water	244
<b>TOTAL</b>			<b>4,856</b>
<sup>1</sup> Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.			
<sup>2</sup> 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 <sup>1</sup> Water - Projected						
Use Type	Additional Description (as needed)	Projected Water Use <sup>2</sup> <i>Report To the Extent that Records are Available</i>				
<u>Drop down list</u> 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		3,443	3,494	3,544	3,595	3,637
Multi-Family		373	378	384	389	394
Commercial		658	667	677	686	694
Industrial		257	261	264	268	271
Landscape		215	218	222	225	227
Losses		229	232	235	239	242
TOTAL		5,175	5,250	5,326	5,402	5,465
<sup>1</sup> Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. 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 <i>From Tables 4-1R and 4-2 R</i>	4,856	5,175	5,250	5,326	5,402	5,465
Recycled Water Demand <sup>1</sup> <i>From Table 6-4</i>	250	275	275	275	275	275
Optional Deduction of Recycled Water Put Into Long-Term Storage <sup>2</sup>						
<b>TOTAL WATER USE</b>	5,106	5,450	5,525	5,601	5,677	5,740
<sup>1</sup> Recycled water demand fields will be blank until Table 6-4 is complete <sup>2</sup> Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier <i>may</i> 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, the City's service area includes the following water use sectors listed in the California Water Code:

- Single-family residential  
(A single-family dwelling unit is a lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling. 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.) The City included institutional uses under commercial uses.

- 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**

The City'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 the City uses to meet its water demands. Section 6.1 provides a tabulation of the City's historical annual water demands for each water supply source. Over the past ten years, the City's total water demands (including potable and recycled water) have ranged from 4,887 AFY to 5,896 AFY, with an average of 5,312 AFY. In addition, the City recently experienced a five consecutive year drought within its service area from CY 2011- 2015. The City reviewed its historical water demands to determine the projected water demands and water supply reliability (discussed in Chapter 7). The City is able to provide sufficient water supplies to meet the projected water demands of its customers, including during a five consecutive year drought period.

#### **4.2.4 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.*

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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. The City has completed the annual water loss audit process through October 1, 2020, as required by the California Water Code (i.e. the City has completed annual water loss audits representing fiscal year 2016-17 through fiscal year 2019-20). The City’s water loss audits were prepared and validated pursuant to DWR requirements. The annual water loss audit reports submitted by retail water agencies in California, including the City (provided in Appendix E), are available on DWR’s website ([https://wuedata.water.ca.gov/awwa\\_plans](https://wuedata.water.ca.gov/awwa_plans)).

The City’s annual water loss audits identify real water losses (e.g. leaks and main failures) and apparent water losses (e.g. customer meter inaccuracies, systematic data handling



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

**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 <sup>1,2</sup>
01/2016	208
01/2017	193
01/2018	142
01/2019	156
01/2020	245
<sup>1</sup> Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. <sup>2</sup> 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 CY 2017 through CY 2019 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 fiscal year basis, half of the water loss during each fiscal year was applied to the water losses for the corresponding calendar year (to estimate the water losses for the entire calendar year), pursuant to direction from DWR staff. The "Volume of Water Loss" quantities for CY 2016 and CY 2020 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 the City) 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. The City will continue to develop its water loss standard and urban water use objective pursuant to SWRCB requirements.

### **4.2.5 CURRENT WATER USE**

The City currently measures its water use through meter data and billing records. The water use for the City’s individual water use sectors during 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. The City’s total water uses during CY 2020 have been reviewed for compliance with the SB X7-7 water use target for 2020 adopted in the City’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 the City is not required by DWR to use the tool. Section 6.1 provides a tabulation of the City’s historical annual water uses for each water supply source. During the past 10 years, the City experienced a five consecutive year drought within its service area from CY 2011 to CY 2015. Historical records indicate the City’s annual water demands had been greater prior to CY 2011. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. In addition, the City has been able to provide water service to meet maximum



day water demands for these years, including during the summer months. A further discussion regarding the reliability of the City's water supply sources is provided in Chapter 7.

### 4.2.6 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.*



The City's projected water demands are provided in five-year increments over the next 25 years (through CY 2045) in Table 4-3. The City's projected water demands and water supplies during a normal year, a single dry year, and a five consecutive year drought are provided in Chapter 7. The projected water demands for each of the City's water use sectors are provided in Table 4-2.

The City'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 the City. 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 the City's water supplies from WBMWD, a wholesaler, are discussed in Section 6.2. As discussed in Section 2.6, the City has coordinated its water demand projections with WBMWD for each water use sector.

The City'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. The City's Municipal Code 7.44 "Water Conservation", which was created through Ordinance No. 15-0008, which was adopted in July 2015 (discussed in Section 9.2.1), includes methods for current and ongoing reduction in water use and water waste. Prior to adoption of Ordinance No. 15-0008, the City's water use rate ranged from approximately 175 gallons per capita day to 187 gallons per capita day (from 1995 through 2004). As identified in Section 5.5, the City's actual water use rate during CY 2020 was 124 gallons per capita per day which is a decrease of up to 63 gallons per capita per day from the recent historical water use and includes passive savings. The City's projected water demands, incorporate water use targets less than its established SB X7-7 water use target for 2020 and incorporate ongoing water passive savings and reduced water use. As indicated in Table 4-5, estimated future water savings have been considered as part of the City's water use projections.



Table 4-5 Inclusion in Water Use Projections

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
<b>Are Future Water Savings Included in Projections?</b> (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i>	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
<b>Are Lower Income Residential Demands Included In Projections?</b> <i>Drop down list (y/n)</i>	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.*

The City's projected water demands are provided in five-year increments over the next 25 years (and through CY 2045) in Table 4-3. The City'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.





The City's "Drought Risk Assessment" (DRA) for the next five years (from CY 2020 through CY 2025) is discussed in Section 7.3. The DRA includes the City'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 the City'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 the City's Water Shortage Contingency Plan (provided in Chapter 8). In addition to historical drought hydrology, the City 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

The City's current and projected water demands, including the water demands for each of the City'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 the City is not required by DWR to use the tool. The City has provided sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. The City has also been able to provide water service to meet maximum day water demands for these years, including during the summer months. A further discussion regarding the reliability of the City's water supply sources is provided in Chapter 7.





### 4.3.2 DWR 2020 UWMP SUBMITTAL TABLES

The City's current water demands for each of the water use sectors during CY 2020 are provided in Table 4-1. The City's projected water demands for each of the water use sectors, in five-year increments over the next 25 years (and through CY 2020), are provided in Table 4-2. The City's total projected water demands, including potable and recycled water, in five-year increments over the next 25 years (and through CY 2020), are summarized in Table 4-3. The City'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. The City'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.*

The City'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. For the purpose of this evaluation, the entire Los Angeles County was used for the "area median income". The total number of lower



income households within the City's service area was estimated based on billing records provided by the City, a review of the City of Manhattan Beach's General Plan, a review of median household income range statistics provided by the US Census Bureau (<https://data.census.gov/cedsci/>), and a review of GIS maps of Disadvantaged Communities<sup>2</sup> (DACs), including block groups, tracts, and places, provided by DWR. The estimated number of lower income households located within the City's service area is 17 percent of the total number of households. As indicated in Table 4-2, the total projected residential water demands within the City in 2045 is estimated at about 4,031 AFY. Based on a 17 percent use factor of total residential water demands, the projected water demand for lower income households will be about 690 AFY by the CY 2045. The projected water demands for lower income households were included in the City'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.*

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<sup>2</sup> 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<sup>3</sup>”. A change in the climate which produces a greater amount of precipitation (i.e. more runoff and/or snowpack) and lower temperatures is generally a benefit to water supplies. However, drought conditions which may result in decreased precipitation, decreased runoff, and increased temperature may adversely affect an urban water supplier’s ability to meet demands by potentially impacting supplies. Consequently, the focus of impacts of climate change is on these adverse consequences.

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

### Imported Water Supplies

The City receives treated imported water as discussed in Section 6.2.1 and relies on the Water Replenishment District of Southern California (WRD) to manage groundwater supplies of the West Coast Basin (also referred to as West Basin). Consequently, the City

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<sup>3</sup> [www.merriam-webster.com](http://www.merriam-webster.com)



directly and/or indirectly relies on the Metropolitan Water District of Southern California (MWD) 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 UWMP) of the reliability of its water supplies and the impacts of climate change and is incorporated by reference in this Plan. Furthermore, the City is a sub-agency of the West Basin Municipal Water District which has also provided a discussion of climate change considerations and that discussion is included by reference. The following is a brief summary of MWD's efforts:

### Resource Planning

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

### Knowledge Sharing and Research Support

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

### Implementation of Programs and Policies



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

### Groundwater Supplies – West Basin

The City relies on groundwater produced from the West Basin as noted in Section 6.2.2 of this UWMP. As previously noted, the West 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 West Basin is actively managed by the Water Replenishment District of Southern California which serves as the West Basin Watermaster and those management activities are described in detail in Section 6.2.2.

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

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



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

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

The climate tools available on the Cal-Adapt website were used to simulate projected annual precipitation and annual average maximum temperature in the West Basin. An electronic boundary of the West 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 West Basin is projected to be 13.7 inches over the next 25 years (through 2045), compared to historical average of 12.6 inches (from 1950 through 2019). In addition, the average maximum temperature is projected to be 74.8 degrees Fahrenheit compared to a historical average of 72.3 degrees Fahrenheit. Although there may be more precipitation in the future, it may be more likely to fall as rainfall compared to snowfall. The simulations do not denote the duration or intensity of storms contributing to the annual precipitation. Notwithstanding, the San Gabriel River watershed includes a complex and interconnected series of dams, reservoirs and replenishment basins to capture stormwater runoff. In an average to below average year of precipitation, over 95 percent of the precipitation in the watershed is retained within the watershed and is not lost to the ocean. Consequently, most if not all precipitation (whether it is rain or snowfall) likely will be captured for use 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, WRD has taken (and may reinstate as needed) the following proactive actions to anticipate and circumvent the potential impacts of climate change. These actions will enable the City to use rely on the West Coast Basin as a reliable source of supply.

### Recycled Water Groundwater Replenishment

The Water Replenishment District of Southern California has declared its support for a new recycled water supply project for West Basin replenishment. When completed, the project would reduce overall imported replenishment water requirements.

### Water Storage Programs

The West Coast 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 West Coast 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 West Coast 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 the City'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 the City, to develop a "2020 Water Use Target" to assist the State of California to achieve the 20 percent reduction. The 2020 Water Use Target represents the amount of water each person should use per day (i.e. gallons per capita per day or GPCD) by the year 2020.
- The City previously determined its 2020 Water Use Target during the preparation of its 2015 Plan by completing standardized tables (or the SB X7-7 Verification Form) to demonstrate compliance with the Water Conservation Act of 2009. The City's SB X7-7 Verification Form has not been modified and is included as part of this 2020 Plan as Appendix G. The City's 2020 Water Use Target is 144 GPCD.
- The City's 2020 Plan incorporates the 2020 Water Use Target and determines compliance based on actual water use.
- The population within the City's service area during CY 2020 is estimated at 35,031. The City'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 the City's service area.

- The City's "gross water" use represents the total volume of water entering its distribution system from its water supply sources. The City's gross water use excludes recycled water deliveries or water conveyed to another supplier. The City was also eligible to deduct process water from its gross water. The City's annual gross water during CY 2020 was 4,856 AF.
- The City's per-capita water use is based on the gross water use divided by the population. The City's per-capita water use during CY 2020 was 124 GPCD. The City's confirmed 2020 Water Use Target is 144 GPCD. The City's per-capita water use during Fiscal Year 2019-20 meets the 2020 Water Use Target.
- The City 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.*

The City 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

The City previously calculated its "Baseline" water periods and a "2020 Water Use Target" in its 2015 Plan. There were two different Baseline periods identified (consisting of 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 the City and information regarding the starting year, ending year, and average water use rate during this period is provided in Table 5-1. The City determined its 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 the City 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.

The City's calculated 2020 Water Use Target was compared with 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 the City'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)**

The City's service area has not changed (i.e. expansion or contraction) since the 2015 Plan was prepared. The City's 2020 Plan incorporates the Baseline water uses and 2020 Water Use Target calculated in the 2015 Plan. The City previously prepared standardized tables (SB X7-7 Verification Form) to demonstrate compliance with the Water Conservation Act of 2009 in its 2015 Plan. The City'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

The City's compliance with its 2020 Water Use Target is summarized in the following sections. The City 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 <i>Retail Supplier or Regional Alliance Only</i>				
Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1995	2004	180	144
5 Year	2003	2007	173	
<i>*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)</i>				
NOTES:				



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

Submittal Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form <i>Retail Supplier or Regional Alliance Only</i>				
2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* (Adjusted if applicable)		
124	0	124	144	Y
<i>*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)</i>				
NOTES:				

#### 5.2.4 REGIONAL UWMP/REGIONAL ALLIANCE

As discussed in Section 2.4, the City's 2020 Plan was not developed as part of a Regional Alliance. Information from the City'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, the City calculated the Baseline water uses and 2020 Water Use Target in its 2015 Plan. The City's service area has not changed (i.e. expansion or contraction) since the 2015 Plan was prepared. The City's 2020 Plan incorporates the Baseline water uses and 2020 Water Use Target calculated in the 2015 Plan. The City's SB X7-7 Verification Form is included in Appendix G.

As discussed in Section 5.2.1, the City prepared standardized tables (SB X7-7 Verification Form) to demonstrate compliance with the Water Conservation Act of 2009. The City'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. The City'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 the City 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 the City 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.

The City'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. The City's confirmed 2020 Water Use Target is 144 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 the City'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 the City's water service during CY 2020. Because U.S.



Census 2020 population data was not available during the preparation of the 2020 Plan, the City reviewed the methodologies recommended by DWR to estimate the CY 2020 population. The population methodology used by the City in the 2020 Plan is provided below.

The City initially reviewed the available historical population within its service area for population growth trends. The City determined historical U.S. Census population within its service area using DWR's Population Tool (<https://wuedata.water.ca.gov/>). The City'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 the City'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 the City's service area boundary, to estimate the population served by the City in the years 1990, 2000, and 2010.

DWR's Population Tool was also used to estimate the 2020 population within the City's service area. The total number of service connections within the City'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 the City's service area for CY 2020 to be 35,031. The CY 2020 population is consistent with the historical population growth trends. The City'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. The City's annual gross water use amounts are based on the total amount of water entering the City's distribution system from its water supply sources (including groundwater production wells and purchased imported water connections). The annual gross water use by the City during CY 2020 was 4,856 AF.

The annual gross water use amounts within the City 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.





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

Industrial process water is not subtracted from the City's gross water use provided in SB X7-7 Verification Form, Table 4. The City 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 5.4.2, the annual gross water use by the City during CY 2020 was 4,856 AF. As discussed in Section 5.4.1, the estimated population within the City's service area for CY 2020 is 35,031. As a result, the City's per-capita water use during CY 2020 was 124 GPCD. The City's confirmed 2020 Water Use Target is 144 GPCD. The City's per-capita water use during CY 2020 meets the 2020 Water Use Target and is in compliance. The City 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.*

The City 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

The City'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 the City to recalculate the Baseline water uses and 2020 Water Use Target.



### 5.5.3 IF SUPPLIER DOES NOT MEET 2020 TARGET

The City'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, the City's 2020 Plan was not developed as part of a Regional Alliance. Information from the City'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 the City's 2020 Plan discusses and provides the following:

- The City's water supply sources include groundwater produced from the West Coast Basin and treated imported surface water purchased from MWD through WBMWD, and recycled water supplies from WBMWD.
- A tabulation of the City's historical water supplies is provided in Section 6.1.
- A discussion regarding the City's imported water supplies from WBMWD is provided. Information regarding imported water connections, capacities, reliability, and historical production is provided.
- A discussion regarding the City's groundwater supplies from the West Coast Basin is provided. Information regarding basin location, adjudication, management, water levels, water quality, water rights, and historical production is provided.
- A discussion regarding the City's recycled water supplies is provided. The City's recycled water supplies are produced by WBMWD. The City uses recycled water for irrigation of greenbelt areas, landscape, medians, parks, schools, and a golf course.
- The City's proposed future projects to maximum its water supply resources are discussed.
- The City's "energy intensity" is discussed and represents the quantity of energy consumed, measured in kilowatt hours, divided by the volume of water, measured



in acre-feet over a one-year period. The total energy intensity associated with the City's water management processes was estimated during CY 2020.

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

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

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

### 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).*

The City's water supply sources include treated groundwater through the West Coast Basin, treated imported water purchased from MWD through WBMWD, and recycled water supplies from WBMWD. The City's main source of water supply is purchased imported water from MWD through WBMWD. A tabulation of the City's historical water supplies is provided below.



City of Manhattan Beach					
Calendar Year	System Water Supply Sources (AF)				Total
	Potable Water			Recycled Water	
	West Coast Basin Groundwater	West Basin MWD Imported Water	Subtotal		
2011	2,460	3,093	5,553	274	5,827
2012	2,215	3,401	5,616	308	5,924
2013	1,675	3,754	5,429	268	5,697
2014	1,970	3,353	5,323	326	5,649
2015	1,811	2,805	4,616	262	4,878
2016	262	4,383	4,645	291	4,936
2017	496	4,261	4,757	259	5,016
2018	228	4,619	4,847	245	5,092
2019	172	4,521	4,693	259	4,952
2020	79	4,778	4,857	250	5,107

Source: Data provided by the City

### **6.1.1 SPECIFIC ANALYSIS APPLICABLE TO ALL WATER SUPPLY SOURCES**

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

- The City's existing and planned sources of water supply are identified;
- Each source of supply is quantified in five-year increments through 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.

The City historically has relied on groundwater supplies from the West Coast Basin, treated imported water purchased from MWD through WBMWD, and recycled water supplies from WBMWD. The following descriptions summarize the City's sources of supply (detailed descriptions are provided in Section 6.2).

### Existing and Planned Sources of Supply

#### Purchased Treated Imported Water

The City has historically purchased treated imported water from the WBMWD, as described in Section 6.2.1. The City maintains a connection with WBMWD, designated WB-04, to receive treated imported water. The capacity of this connection is 15 cubic feet per second. 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

The City has historically pumped groundwater from the West Coast 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

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

### Storm Water

The City has historically produced groundwater from the West Coast Basin. Management and use of the stormwater runoff by WRD is crucial to groundwater management. However, the City currently does not have its own program to beneficially use stormwater runoff as a direct source of supply.

### Wastewater and Recycled Water

The City has historically purchased recycled water supplies from WBMWD 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 the City'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 the City 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. However, DWR has deemed the tool as optional and the City is not required by DWR to use the tool. Section 6.1 provides a tabulation of the City’s historical annual water uses for each water supply source. During the past 10 years, the City experienced a five consecutive year drought within its service area from CY 2011 to CY 2015. In addition, historical records indicate the City’s annual water demands typically have been even greater prior to CY 2011. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. In addition, the City has been able to provide water service to meet maximum day water demands for these years, including during the summer months. A further discussion regarding the reliability of the City’s water supply sources is provided in Chapter 7.

## **6.2 NARRATIVE SECTIONS FOR SUPPLIER’S UWMP WATER SUPPLY ANALYSIS CHARACTERIZATION**

### **6.2.1 PURCHASED OR IMPORTED WATER**

#### **TREATED IMPORTED WATER**

As a wholesale agency, MWD distributes imported water to 26 member agencies throughout Southern California. WBMWD is one of the member agencies served by MWD. WBMWD distributes water to its retail agencies, including the City of Manhattan Beach. The City purchases imported water from WBMWD through its WB-04 connection which has a capacity of 15 cubic feet per second. The City’s purchases of water from WBMWD over the past five years have been tabulated in Section 6.1 and have ranged



from 4,261 AFY to 4,778 AFY, with an average with an average of 4,512 AFY. The City's projected water purchases from WBMWD, over the next 25 years in five-year increments, is provided in Table 6-9.

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

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

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

In general, the WSAP process calculates total historical member agency demand. That historical demand is then compared to member agency projected local supply for a



specific Allocation year. The balance required from MWD, less an Allocation reduction factor, is the member agency's "Water Supply Allocation" of imported water from MWD. When a member agency reduces its local demand through conservation or other means, the Allocation of imported water will increase. Depending on MWD's available supply, MWD can establish a specific WSAP shortage level. The shortage level causes a regional reduction and calculates an allocation for each of its member agency. Additional information about MWD's WSAP is provided in MWD's Regional 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.

In response to the continued drought conditions, MWD's Board of Directors declared a Water Supply Alert in August 2021, calling for consumers and businesses to voluntarily reduce their water use and help preserve the region's storage reserves. This declaration comes a day after the United States Bureau of Reclamation declared a first-ever shortage on the Colorado River. A Water Supply Alert is the third of four escalating conditions in



MWD's framework indicating the urgency of Southern California's need to save water. The action calls for water agencies to reduce their water demand through public awareness campaigns and by adopting local measures including increased outdoor water use efficiency, prohibiting home car washing or filling of ornamental water features, and requiring that restaurants only serve water upon request. MWD's declaration seeks to avoid the need for more severe actions, including moving to the fourth and final stage in MWD's framework (i.e. WSAP). In addition, while shortages in the Colorado River can potentially impact water supplies, MWD owns priority rights to the Colorado River and water supply will not be impacted in the immediate future. MWD has indicated that its supplies from the Colorado river will not be impacted in 2022 and may be impacted in 2023 and more likely in 2024, if the drought continues<sup>4</sup>, which could potentially trigger the WSAP through which MWD would implement higher rates for increased use among its member agencies.

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<sup>4</sup> <https://www.latimes.com/california/story/2021-08-17/amid-worsening-drought-mwd-declares-water-supply-alert>



## 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.*

## WEST COAST BASIN

### **West Coast Basin – Sustainable Groundwater Management Act**

The West Coast Basin, or West Basin, is a subbasin of the Coastal Plain of Los Angeles County Groundwater Basin pursuant to DWR Bulletin 118, Basin Number 4-11.03. Pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA), the West



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 West Basin Watermaster (which is the Water Replenishment District of Southern California) submits its Annual Report to DWR.

### **West Coast Basin – Adjudication**

During the 1930s and 1940s declining groundwater levels permitted sea water to intrude into the West Basin. A complaint was filed in 1945 with the Superior Court by the California Water Service Company, City of Torrance, and the Palos Verdes Water Company on behalf of themselves and others against 151 defendants, as a result of declining water levels. The suit was filed to quiet title to the groundwater rights of each pumper and to reduce groundwater extractions from the Basin so that the supply would not be further depleted or degraded. The long period of time anticipated before final adjudication prompted certain parties to execute an Interim Agreement to reduce extractions and preserve all rights of the parties during litigation. The Court was asked to make that agreement an ex parte order and to appoint a Watermaster. In February 1955, the Court appointed DWR, as Watermaster.

The West Basin Water Association was created in 1946. The West Basin Water Association sponsored a committee of legal advisors, representing the major groundwater producers, in order to hasten the completion of litigation. Parties representing over 80 percent of the total water rights signed the Stipulation for Judgment. The Judgment, defining the decreed rights of the parties, was approved by the Court on August 18, 1961, after 16 years of litigation. The Court then terminated Watermaster service under the Interim Agreement and reappointed the DWR as Watermaster pursuant to the Judgment.



A second West Basin water right suit, entitled “Judgment No. 668965, Dominguez Water Corporation, et al., vs. American Plant Growers, Incorporated, et al.” filed on October 31, 1956, with the Superior Court, Los Angeles County, was initiated to obtain Court jurisdiction over producers who had been missed in the earlier action and those who began pumping after the filing of the original action. Judge George Francis, who presided over the original West Basin suit, also presided over the second suit, and approved and signed the Judgment on March 24, 1966. The West Coast Basin Judgment was recently amended in September 2014.

Adjudication of the West Coast Basin limited the allowable annual extraction of groundwater in order to prevent seawater intrusion and unhealthy groundwater levels. The West Coast Basin Judgment capped annual production at 64,468.25 AFY. According to WRD’s “2021 Engineering and Survey Report<sup>5</sup>”, the Judgment currently allows annual carryover of unused water rights of up to 20 percent. The Judgment also allows up to an additional 10,000 acre-feet of emergency pumping over a four (4) month period in the West Coast Basin under specified conditions. The City has an adjudicated right of 1,130.20 from the West Coast Basin.

The West Coast Basin Judgment contains provisions for the Parties to obtain additional pumping rights exceeding their entitled extractions. There is a voluntary Exchange Pool in which recipients of Exchange Pool water may pump the amounts released to them in addition to their adjudicated right. The amounts that parties may release are limited by the Judgment. Adjudicated rights may also be transferred through a lease or sale agreement.

In September 2014, the Court approved amendments to the West Coast Basin Judgment, which can be found in Appendix I. The amendment replaced the Department of Water Resources with a new Watermaster, which consists of the “Administrative Body,” the

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<sup>5</sup> <https://www.wrd.org/report/engineering-survey-and-report>





“Water Rights Panel” and the “Storage Panel,” each with different functions. The Court appointed WRD to be the Administrative Body to administer the Watermaster accounting and reporting. The Water Rights Panel, which enforces issues related to pumping rights within the adjudication, is made up of five water rights holders who are selected through election and at least one member who is a non-water rights holder possessing at least one percent of the Adjudicated Rights in the Basin. The Storage Panel, which comprises the Water Rights Panel and WRD, approves certain groundwater storage efforts.

The Amended Judgment states, “There exists within the Basin Available Dewatered Space which has not been optimally utilized for Basin management and storage of native water and Developed Water... It is essential that use of the Available Dewatered Space be undertaken for the greatest public benefit pursuant to uniform, certain and transparent regulation that encourages the conservation of water and reliability of the water supply, avoids Material Physical Harm, and promotes the reasonable and beneficial use of water.” The Available Dewatered Space is apportioned to 49,100 acre-feet for Basin Operating Reserve and 70,900 acre-feet for Adjudicated Storage Capacity. WRD may use the Basin Operating Reserve to manage available sources of water and fulfill its replenishment functions. The Adjudicated Storage Capacity is further allocated to the following:

- Individual Storage Allocation: 25,800 acre-feet for Parties with an Adjudicated Right a first priority right to use an amount of that space equal to approximately 40 percent of their respective Adjudicated Right.
- Community Storage Pool: 35,500 acre-feet for all Parties to the Amended Judgment with Adjudicated Rights on a shared or community basis.
- Regional Storage Allocation: 9,600 acre-feet is designated for “Regional Storage Projects.”

Under the amended Judgment, during shortage of imported water supply to the West Coast Basin, WRD may “determine to subsequently replenish the Basin for any water produced in excess of a Party’s Adjudicated rights...” A copy of the West Coast Basin



Judgment, Amended September 2014, which details of the Available Dewatered Space and procedures, is provided in Appendix I.

### **West Coast Basin – Description**

The West Coast Basin underlies approximately 160 square miles of the southwestern portion of the Los Angeles Coastal Plain. The location of the West Coast Basin is provided in Figure 3. The West Coast Basin is bounded by the Ballona Escarpment to the north, the Newport-Inglewood Uplift to the east, the Santa Monica Bay to the west, and San Pedro Bay and the Palos Verdes Hills to the south. The major source of natural recharge to the West Basin is subsurface flow from the Central Basin.

The major aquifers identified in West Coast Basin include the following: a) the Semiperched, Bellflower, Gaspar, and Gardena aquifers of the Holocene Alluvium Formation; b) the Gage aquifer of the Pleistocene Lakewood Formation; and c) the Lynwood, Silverado, and unnamed aquifers of the Lower Pleistocene San Pedro Formation. General regional groundwater flow is southward and westward from the Central Coastal Plain toward the ocean. According to WRD's "2019-20 Regional Groundwater Monitoring Report<sup>6</sup>", groundwater levels in the West Coast Basin, including the Silverado aquifer, have generally increased over the past 20 years, with groundwater levels remaining relatively constant over the past 5 years. Hydrographs of West Coast Basin wells are provided in Appendix J.

The City extracts water from the Silverado aquifer of the West Coast Basin. According to DWR's Bulletin 118, (See Appendix K) the Silverado aquifer is the most productive aquifer in the West Coast Basin and yields 80 to 90 percent of the West Coast Basin's groundwater. The storage capacity of the Silverado aquifer is estimated at approximately 6,500,000 acre-feet.

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<sup>6</sup> <https://www.wrd.org/reports/regional-groundwater-monitoring-report>



According to DWR's Bulletin 118, natural replenishment of the West Coast Basin's groundwater supply is largely limited to underflow from the Central Basin through and over the Newport-Inglewood fault zone. Water spread (a process in which water is directed into the ground, by spreading on the surface, to replenish a groundwater basin) in the Central Basin percolates into aquifers and a portion crosses the Newport-Inglewood fault to supplement the groundwater supply in the West Coast Basin. Injection wells in the West Coast Basin Barrier create a north-south trending mound of fresh water from Los Angeles International Airport to the Palos Verdes Hills. Injection wells also form a protective mound at the Dominguez Gap Barrier. These two injection projects consist of series of wells injecting fresh and recycled water into the groundwater to recharge the basin and reduce seawater intrusion. In addition, minor replenishment to the West Coast Basin occurs from infiltration of surface inflow from both the Los Angeles and San Gabriel Rivers into the uppermost aquifers and from return irrigation water from fields and lawns, industrial waters, and other applied surface waters.

### **West Basin - Historical and Projected Basin Production**

The City produces groundwater from the West Basin from two wells (Well 11A and Well 15). The City's current adjudicated right in the West Basin is 1,130.20 AFY. The City's production over the past five years has been tabulated in Section 6.1. Over the past five years, the City has produced 79 AFY to 496 AFY, with an average of 247 AFY from the West Basin. As discussed in Section 6.2.8, the City is currently installing a treatment facility to remove manganese contamination which has impacted production from Wells 11A and 15 and has also required the City to increase purchases of imported water in recent years. The proposed project is estimated to be completed in late 2022. The City's projected production from the West 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						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
<input type="checkbox"/>	All or part of the groundwater described below is desalinated.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Add additional rows as needed						
Alluvial Basin	West Coast Basin	262	496	228	172	79
<b>TOTAL</b>		262	496	228	172	79
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES:						

### 6.2.3 SURFACE WATER

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

### 6.2.4 STORMWATER

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



## 6.2.5 WASTEWATER AND RECYCLED WATER

### CWC 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.*

Discussion of wastewater collection, treatment, and recycled water use is included in this chapter. Municipal recycled water is municipal wastewater that has been treated from a municipal wastewater facility to a specified quality to enable it to be used again for a beneficial purpose. Municipal wastewater must meet two requirements; it must be reused



beneficially pursuant to Title 22 of the California Code of Regulations and it must be reused in accordance with a Regional Water Quality Control Board permit. Title 22 of the California Code of Regulations defines beneficial reuse of recycled water as “the use of recycled water that has been transported from the point of treatment or production to the point of use without an intervening discharge to water of the State.”

As a member of WBMWD, the City purchases recycled water for use within its service area. The City has been an active participant in the use of recycled water since it became available from WBMWD in 1995 and continues to explore future uses of recycled water within its service area.

### 6.2.5.1 RECYCLED WATER COORDINATION

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#### 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...*

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The City has supplied recycled water to customers for non-potable irrigation uses since 1995. The City purchase recycled water supply produced by WBMWD. The City has coordinated the preparation of its 2020 Plan with WBMWD. The City will continue to coordinate with WBMWD and take advantage of opportunities to expand recycled water facilities throughout its borders to allow for optimization of recycled water use within the City.



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## 6.2.5.2 WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL

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### 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.*

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According to the City's "2010 Wastewater Master Plan", the City's existing wastewater collection system consists of approximately 81.6 miles of pipe and 2,086 manholes and cleanouts. The system also includes eight pump stations and 5,114 feet of associated forcemains. The City's wastewater system is primarily constructed of vitrified clay pipe with sizes ranging from 6-inches to 21-inches in diameter. Approximately 78 percent of the pipes are 8-inches in diameter. The majority of the City's wastewater system was constructed between 1920 and 1960.

The City's local sewers tie into one of the Los Angeles County Sanitation District (LACSD) regional trunk sewers crossing through the City. Wastewater is then transported to LACSD's Joint Water Pollution Control Plant (JWPCP) in the City of Carson for treatment. The JWPCP is located in the southwest corner of City of Carson just east of I-110 freeway. The City is a part of LACSD's South Bay Cities District.

There are two primary LACSD trunk sewers within the City. The first trunk runs northwest to southeast and parallels The Strand along the beachfront. The second trunk runs west to east and is located in 26th Place, Bell Avenue, 25th Street and Marine Avenue. Pacific Avenue Pump Station, Palm Avenue Pump Station, Poinsettia Avenue Pump Station, Meadows Avenue Pump Station and Voorhees Avenue Pump Station are tributary to this trunk sewer.



Wastewater generated by the City is collected and treated by LACSD's JWPCP. The water reclamation plant is not located within the City's service area. LACSD estimates approximately 60 gallons of wastewater is generated per person per day within LACSD's service area. Based on the City's 2020 population of 35,031 within its service area, the estimated volume of residential wastewater generated and collected in 2020 is approximately 2.1 million gallons (or 2,350 AF), as shown in Table 6-2.

LACSD's JWPCP, which began operation in 1928, currently has a treatment capacity of about 300 million gallons per day (MGD). The treatment level is 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. All water discharged to the ocean is monitored to ensure compliance with applicable local, state, and federal standards for discharge water.





Table 6-2 Wastewater Collected Within Area in 2020

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
<input type="checkbox"/>	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system <i>(optional)</i>					
	Percentage of 2020 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	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? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
City of Manhattan Beach	Estimated	2,350	LA County Sanitation Districts	Joint Water Pollution Control Plant	No	No
Total Wastewater Collected from Service Area in 2020:		2,350				
* 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											
<input checked="" type="checkbox"/> 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) <sup>2</sup>	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area? <i>Drop down list</i>	Treatment Level <i>Drop down list</i>	2020 volumes <sup>1</sup>				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
<b>Total</b>							0	0	0	0	0

<sup>1</sup> Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

<sup>2</sup> 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:

### 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.*

WBMWD's source of recycled water supply is treated wastewater effluent from the City of Los Angeles's Hyperion Wastewater Treatment Plant (Hyperion), located adjacent to WBMWD's service area. The City of Los Angeles has operated Hyperion since 1894. Hyperion has been upgraded over the years to full secondary treatment. Hyperion's full treatment capacity is 450 to 850 MGD and secondary treatment capacity is 450 MGD.

According to WBMWD's "Capital Implementation Master Plan for Recycled Water Systems", June 2009, secondary effluent from Hyperion is pumped from WBMWD's



Hyperion Secondary Effluent Pump Station to WBMWD's main treatment facility, the Edward C. Little Water Recycling Facility (ECLWRF), located in El Segundo. Recycled water produced from ECLWRF is conveyed through approximately 100 miles of distribution pipelines ranging in diameter from 4 to 60 inches.

The City has purchased recycled water produced from WBMWD's ECLWRF since 1995. A summary listing of the City's recycled water users is provided in Appendix L.

#### 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.*

Recycled water is currently being used for irrigation of greenbelt areas, landscape, medians, parks, schools, and a golf course. Over the past 5 years, the City has purchased an average of approximately 261 acre-feet per year of recycled water from WBMWD. A summary of the current and projected recycle water use within the City is provided in Table 6-4. Table 6-5 provides the City's projected recycled water use for 2020 in its 2015 Plan. The City will continue to coordinate with WBMWD and take advantage of opportunities to expand recycled water facilities throughout its borders to allow for optimization of recycled water use within the City.



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										
<input type="checkbox"/>	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:		West Basin Municipal Water District								
Supplemental Water Added in 2020 (volume) <i>Include units</i>		0								
Source of 2020 Supplemental Water		N/A								
Beneficial Use Type <i>Insert additional rows if needed.</i>	Potential Beneficial Uses of Recycled Water (Describe)	Amount of <b>Potential</b> Uses of Recycled Water (Quantity) <i>Include volume units<sup>1</sup></i>	General Description of 2020 Uses	Level of Treatment <i>Drop down list</i>	2020 <sup>1</sup>	2025 <sup>1</sup>	2030 <sup>1</sup>	2035 <sup>1</sup>	2040 <sup>1</sup>	2045 <sup>1</sup> (opt)
Agricultural irrigation										
Landscape irrigation (exc golf courses)		204		Tertiary	186	204	204	204	204	204
Golf course irrigation		71		Tertiary	64	71	71	71	71	71
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)										
				<b>Total:</b>	250	275	275	275	275	275
2020 Internal Reuse										
<sup>1</sup> <b>Units of measure (AF, CCF, MG)</b> 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		
<input type="checkbox"/>	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 <sup>1</sup>	2020 Actual Use <sup>1</sup>
<i>Insert additional rows as needed.</i>		
Agricultural irrigation		
Landscape irrigation (exc golf courses)	227	186
Golf course irrigation	78	64
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)		
<b>Total</b>	<b>305</b>	<b>250</b>
<sup>1</sup> Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.		
NOTE:		



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### 6.2.5.5 ACTIONS TO ENCOURAGE AND OPTIMIZE FUTURE RECYCLED WATER USE

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#### 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.*

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Although the City's recycled water system is nearly optimized and is unlikely to expand substantially, as indicated in Table 6-6, the City will continue to coordinate with WBMWD and take advantage of opportunities to expand recycled water facilities throughout its borders to allow for optimization of recycled water use within the City.

The City has recognized the use of recycled water as a means by which to reduce the City's reliability on imported water sources. To help promote the use of recycled water, the City buys recycled water from WBMWD and sells it to customers within the City at approximately 80 percent of the potable water rate.

WBMWD generates interest in recycled water by contacting potential customers and cities with sites that are located near an existing main pipeline, have a high water use potential in which a line can be constructed, are mandated to use recycled water, and/ or express interest. For commercial and industrial customers, WBMWD emphasizes the benefit of recycled water as a tool for profitability for businesses that goes beyond the benefits of water conservation. WBMWD markets recycled water as a resource that is: less expensive than potable water; more reliable than imported water in a drought; and



consistent with statewide goals for water supply and ecosystem improvement on both the State Water Project and Colorado River systems.

In addition to WBMWD wholesaling recycled water at a rate lower than potable water, other financial incentives are used to encourage recycled water use. Some potential recycled water customers do not have the financial capability to pay for the onsite plumbing retrofits necessary to accept recycled water. Therefore, WBMWD advances funds for retrofit expenses, which can later be reimbursed through the water bills.

WBMWD and the City pursue different sources of funding to help subsidize new recycled water distribution facilities by submitting applications for grant funds when available. Use of such funds, when approved, help increase the economic feasibility of constructing distribution system improvements necessary to reach new customers.

**Table 6-6 Methods to Expand Future Recycled Water Use**

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input type="checkbox"/>	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 6.2.5.5	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			
Provide Recycled Water Incentives	Provides financial incentives to encourage recycled water use	On-going	25
Total			25
<i>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>			
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.*

In a regional effort to reduce the need for imported surface water supplies, WBMWD has been researching the feasibility of an ocean water desalination program to produce drinking water supply. From 2002 to 2009, West Basin operated the Desalination Pilot Project, which incorporated microfiltration as a pretreatment to reverse osmosis for ocean-water desalination. The water produced at the pilot project consisted of approximately 350 parts per million (ppm) of Total Dissolved Solids (TDS) meeting current State and Federal drinking water standards set by the SWRCB-DDW and the United States Environmental Protection Agency. The research and testing conducted at the Desalination Pilot Project was used to design the Ocean Water Desalination Demonstration Facility (OWDDF). The OWDDF was completed in 2010 and operated continuously through June 2014 to evaluate the feasibility of permitting a full-scale desalination plant. WBMWD's proposed Ocean Water Desalination Project would produce between 20 to 60 MGD of drinking water from the ocean. The proposed Project site is located within the El Segundo Generating Station in the City of El Segundo, California. The proposed Project would include a screened intake system to deliver ocean water, reverse osmosis membrane technology, a brine discharge diffuser system to return concentrated seawater back to the ocean, and a drinking water delivery system. Potable water produced from a full-scale desalination plant can potentially be supplied to local and regional agencies. WBMWD initiated an Environmental Impact Report process in 2016. The EIR process allows regional and local agencies to comment on the full-scale facility. The Final EIR was released on October 23, 2019. WBMWD Board of Directors' adopted resolutions in November 2019 to certify the EIR and approve the Project subject to conditions.





## 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."*

The City does not have any current or planned water exchanges.

#### 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."*

Pursuant to the West Coast Basin Judgment (discussed in Section 6.2), parties to the Judgments are allowed to assign, transfer, license, or lease their water rights. The Judgment also allows for the transfer of stored water between parties. The City is able to utilize the transfer opportunities available for West Coast Basin water when necessary.



### 6.2.7.3 EMERGENCY INTERTIES

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.

The City maintains emergency interties (or interconnections) with adjacent water agencies. Two of the interconnections (City of El Segundo and California Water Service Co.) are equipped with two-way valves, which have the ability of providing water both to and from the City. An additional interconnection (City of El Segundo) has the ability to provide water to the City. The total capacity to the City from these two emergency interconnections is approximately 23 cubic feet per second.

### 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.*

The City obtains water from groundwater, imported water supplies, and recycled water. These water supply sources will allow the City to provide sufficient water service currently,



and in the future. The City's proposed future water supply projects are summarized below and include the following:

Redrill and Equip Well 15 – As part of the City's 2020-2024 Capital Improvement Plan, the City will re-drill and equip Well 15 to increase the existing production capacity. The proposed new design capacity will be 2,200 gallons per minute (gpm). The project cost is estimated to be \$650,000.

Eight-million Gallon Drinking Water Reservoir - The proposed new concrete reservoir will replace the existing Peck reservoir built in 1957 and increase capacity by 500,000 gallons to store drinking water supplies and serve the City in firefighting and during emergencies. The proposed project will also include the installation of a treatment facility (green sand) to remove manganese contamination from Wells 11A and 15. The City in recent years has had to increase purchases of imported water due to manganese contamination. The proposed project is estimated to be completed in late 2022.

**Table 6-7 Expected Future Water Supply Projects or Programs**

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	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.					
<input checked="" type="checkbox"/>	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 <i>Drop Down List</i>	Expected Increase in Water Supply to Supplier* <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Supplier Name</i>				
<i>Add additional rows as needed</i>						
Redrill & Equip Well 15	No		Redrill Well 15 to increase capacity	2024	All Year Types	2,200 gpm
Peck Reservoir and Treatment Facility	No		Install replacement reservoir and manganese treatment facility	2022	All Year Types	
<b>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</b>						
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, the City's water supply sources consist of treated imported water purchased from WBMWD (see Section 6.2.1), groundwater from the West Coast Basin (see Section 6.2.1), and recycled water (see Section 6.2.5). The actual quantities of the water supply sources available to the City during CY 2020 are summarized in Table 6-8. The reliable quantities of projected water supply sources available to the City 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 the City'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 the City will initially use groundwater from the West Coast Basin. At the same time the City will continue to use recycled water for non-potable demands. The City will also use treated imported water.

### 6.2.9.2 QUANTIFICATION OF SUPPLIES

The actual quantities of the water supply sources available to the City during CY 2020 are summarized in Table 6-8. The reliable quantities of projected water supply sources available to the City 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.



The City'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. The City's projected quantities of recycled water supplies to meet non-potable demands are based on historical long-term averages. The City's projected quantities of groundwater supplies from the West Coast Basin and treated imported water are based on meeting the remainder of the City's total water demands. Consequently, it is anticipated the City will have sufficient water supplies available to meet projected demands

**Table 6-8 Water Supplies – Actual**

Submittal Table 6-8 Retail: Water Supplies — Actual				
Water 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)	West Coast Basin	79	Drinking Water	
Purchased or Imported Water	West Basin Municipal Water District	4,778	Drinking Water	
Recycled Water		250	Recycled Water	
Total		5,107		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	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
<div>Drop down list</div> <div>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</div>		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)	West Coast Basin	1,000		1,100		1,100		1,100		1,100	
Purchased or Imported Water	West Basin Municipal Water District	4,175		4,150		4,226		4,302		4,365	
Recycled Water		275		275		275		275		275	
Total		5,450	0	5,525	0	5,601	0	5,677	0	5,740	0
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.											
NOTES											

## 6.2.10 SPECIAL CONDITIONS

The City 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 the City's various sources of supply.

### 6.2.10.2 REGULATORY CONDITIONS AND PROJECT DEVELOPMENT

The City has considered the implications of changing regulatory conditions and project development on the availability of planned water supplies. Section 1.4 provides a discussion the reduced reliance on imported water supplies.



### 6.2.10.3 OTHER LOCALLY APPLICABLE CRITERIA

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

## 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. However, DWR has deemed the tool as optional and the City is not required by DWR to use the tool. Section 6.1 provides a tabulation of the City’s historical annual water uses for each water supply source. During the past 10 years, the City experienced a five consecutive year drought within its service area from CY 2011 to CY 2015. In addition, historical records indicate the City’s annual water demands typically have been even greater prior to CY 2011. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. In addition, the City has been able to provide water service to meet maximum day water demands for these years, including during the summer months. A further discussion regarding the reliability of the City’s water supply sources is provided in Chapter 7.

## 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 the City’s water system is provided below. The energy intensity information is based on readily obtainable energy and water use data for the following water management processes: 1) extraction or diversion of water supplies; 2) placement into storage; 3) conveyance to distribution; 4) treatment; and 5) water system distribution.

The City has tabulated its energy intensity using readily obtainable energy consumption data obtained from monthly electricity bills from Southern California Edison (SCE) for the whole water system and the corresponding water use data obtained from available water meter readings. The City has reported the energy intensity associated with the water management processes which occur within its operational control. Because the City does not track individual energy usage for each water management process identified above, the City has estimated the energy intensity using the a “total utility approach” (i.e. sum of all water management processes). The total energy consumed was approximately 1,885 kWh during CY 2020. Although the total energy consumption reported includes electricity usage for general administration (e.g. at the City’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 4,857 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 the City's water management processes is estimated at less than 1 kWh/AF. The energy intensity data and calculations based on the "total utility approach" are provided in Table O-1B below.

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



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

**Urban Water Supplier:**

City of Manhattan Beach

**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			
<input type="checkbox"/> 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)		4,857	0	4857
Energy Consumed (kWh)		1885	0	1885
Energy Intensity (kWh/volume)		0.4	0.0	0.4

**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 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 the City's 2020 Plan discusses and provides the following:

- CY 2020 represents an “average” or “normal” water year for the City in which the total amount of rainfall was similar to the historical average rainfall.
- A “single dry” year for the City was represented in CY 2017, in which the total amount of rainfall was below the historical average rainfall.
- A “five consecutive year drought” period for the City is represented from 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.
- The City'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.
- The City's current and projected water supplies available during single dry years in five-year increments over the next 25 years are provided (through CY 2045) as shown on Table 7-3.
- The City's current and projected water supplies available during each year of a five consecutive year drought in five-year increments over the next 25 years are provided (through CY 2045) as shown on Table 7-4.
- The reliability of the City's water supply sources, including a review of water supply constraints, is provided. A single dry year or a five consecutive year drought period



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

- A Drought Risk Assessment (or DRA) is provided which includes an assessment of the City's water supply reliability over a five consecutive year drought period. The City's DRA assumes a five consecutive year drought from CY 2020 through CY 2025 and includes a review of water supplies, water uses, and water supply reliability for each water supply source during this period. The City's water system has experienced a prior five consecutive year drought with no limitation to its collective water supplies. However, the cost of those water supplies may have increased based on the mix of water supplies which are used. Consequently, the City has the ability to enact varying water shortage levels (see Chapter 8) to help educate its customers and provide an economic incentive for the retail customers to reduce their water consumption.

### 7.1 INTRODUCTION

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



## 7.2 WATER SERVICE RELIABILITY ASSESSMENT

### CWC 10635.

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

Information regarding the reliability of the City's water supplies is based on the historical precipitation data in the West Coast Basin area. Historical annual precipitation in the West Basin area is discussed in Section 3.3 and is based on historical data collected from Station 048973 (Torrance AP, California). 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 the City's service area, thus indicating use of historical data is a reasonable and conservative approach. As indicated in Section 3.3, the historical average rainfall in the vicinity of the City's service area is 13.6 inches. CY 2020 represents an average or normal water year for the City in which the total amount of rainfall was similar to the historical average rainfall. A single dry year for the City was represented in calendar year 2017, in which the total amount of rainfall was below the historical average rainfall. A five consecutive year drought period for the City is represented from 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. Table 7-1 summarizes these "base years" for average, single dry, and five consecutive year drought and provides the total amount of water supplies available to the City during those base years. The following discussion assesses the water service reliability of the City's water supply sources.



### **Water Service Reliability - Imported Water**

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

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

In response to the continued drought conditions, MWD's Board of Directors declared a Water Supply Alert in August 2021, calling for consumers and businesses to voluntarily reduce their water use and help preserve the region's storage reserves. This declaration comes a day after the United States Bureau of Reclamation declared a first-ever shortage on the Colorado River. A Water Supply Alert is the third of four escalating conditions in MWD's framework indicating the urgency of Southern California's need to save water. The action calls for water agencies to reduce their water demand through public





awareness campaigns and by adopting local measures including increased outdoor water use efficiency, prohibiting home car washing or filling of ornamental water features, and requiring that restaurants only serve water upon request. MWD's declaration seeks to avoid the need for more severe actions, including moving to the fourth and final stage in MWD's framework (i.e. WSAP). In addition, while shortages in the Colorado River can potentially impact water supplies, MWD owns priority rights to the Colorado River and water supply will not be impacted in the immediate future. MWD has indicated that its supplies from the Colorado river will not be impacted in 2022 and may be impacted in 2023 and more likely in 2024, if the drought continues, which could potentially trigger the WSAP through which MWD would implement higher rates for increased use among its member agencies.

### **Water Service Reliability - Groundwater**

#### **West Coast Basin**

The West Coast Basin groundwater supplies are managed by WRD, as discussed in Section 6.2.2. During a normal year (CY 2020), the City met about 2 percent of its total demands with supplies from the West Coast Basin. During a single dry year (CY 2017), the City met about 10 percent of its total demands with supplies from the West Coast Basin. During a five consecutive year drought period (CY 2011 to CY 2015), the City met between 31 and 44 percent of its total demands with supplies from the West Coast Basin. As noted in Section 6.2.8, the City is currently installing a treatment facility to remove manganese contamination which has impacted production from Wells 11A and 15 and has also required the City to increase purchases of imported water in recent 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 the City's diverse water supply portfolio, water supplies may be re-apportioned during a five consecutive year drought to meet the City's water demands.

### 7.2.1 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.*

The City's sources of supplies consist of groundwater from the West Coast Basin, treated imported water purchased from MWD through WBMWD, and recycled water supplies from WBMWD, as described in Section 6.2. Although all of these supplies are managed, the following constraints may occur which the City has considered in this reliability analysis.

#### Groundwater

The City produced groundwater from two wells located in the West Coast Basin. As noted in Section 6.2.8, the City is currently installing a treatment facility to remove manganese contamination which has impacted production from Wells 11A and 15 and has also required the City to increase purchases of imported water in recent years.

#### Imported Water



The City receives treated imported water from MWD through WBMWD. 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**

The City's base years for an average year, a single dry year, and a five consecutive year drought are discussed in Section 7.2 and are summarized in Table 7-1. As indicated in Chapter 6, the City's water supplies sources have been sufficient in meeting the City's historical water demands during an average year, a single dry year, and a five consecutive year drought. An average year was based on a historical year during the past 10 years with a total precipitation similar to the historical average precipitation in the vicinity of the City's service area. Because a single dry year or a five consecutive year drought period will not compromise the City's ability to provide a reliable supply of water to its customers, a single dry year in this Plan was selected based one of the driest years during the past 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 the City's service area is 13.6 inches. Calendar year 2020 represents an average or normal water year for the City in which the total amount of rainfall was similar to the historical average rainfall. A single dry year for the City was represented in calendar year 2017, in which the total amount of rainfall was less than the historical average rainfall. A five consecutive year drought period for the City is represented from 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. Table 7-1 summarizes these "base years" for an average year, a single dry year and a five consecutive year drought period and provides the total amount of water supplies available to the City during those base years.



**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	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	% of Average Supply
Average Year	2020	5,107	100%
Single-Dry Year	2017	5,016	98.2%
Consecutive Dry Years 1st Year	2011	5,827	115.0%
Consecutive Dry Years 2nd Year	2012	5,924	111.5%
Consecutive Dry Years 3rd Year	2013	5,697	110.8%
Consecutive Dry Years 4th Year	2014	5,649	95.7%
Consecutive Dry Years 5th Year	2015	4,878	96.4%

*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 ETo in the vicinity of the City's service



area are discussed in Section 3.3 Historical climate information was obtained from the WRCC, DPW, and from DWR's CIMIS.

### 7.2.3 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.*

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

As previously discussed in Section 4.2.6, the City's projected normal year water demands over the next 20 years, in five-year increments, were based on the City's 2020 Water Use Target of 144 GPCD for potable water demands. The ratio of total water supplies (including potable and recycled water supplies) available to the City during a historical average year in CY 2020 (or 5,107 AF) and during a historical single dry year in CY 2017 (or 5,016 AF) was used to estimate the City's projected water demands during single dry years. The ratio of water supplies available to the City during a historical average year in CY 2020 (or 5,107 AF) and a historical a five consecutive year drought period from CY



2011 to CY 2015 (or 5,827 AF, 5,924 AF, 5,697 AF, 5,649 AF, and 4,878 AF, respectively) was used to estimate the City's projected water demands during a five consecutive year drought period. The City's projected dry year water supplies over the next 25 years were based on the minimum supplies needed by the City to meet projected single-dry year demands. Table 7-2, Table 7-3, and Table 7-4 summarize the City's projected water demands and supplies over the next 25 years in five-year increments, including during normal years, single dry years, and a five consecutive year drought periods. These tables indicate the City can meet water demands during normal years, single dry years, and a five consecutive year drought periods over the next 25 years.

### 7.2.3.1 WATER SERVICE RELIABILITY – NORMAL YEAR

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

**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)	5,450	5,525	5,601	5,677	5,740
Demand totals (autofill from Table 4-3)	5,450	5,525	5,601	5,677	5,740
Difference	0	0	0	0	0
NOTES:					



### 7.2.3.2 WATER SERVICE RELIABILITY – SINGLE DRY YEAR

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

**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*	5,353	5,426	5,501	5,576	5,638
Demand totals*	5,353	5,426	5,501	5,576	5,638
Difference	0	0	0	0	0
<i>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>					
NOTES:					

### 7.2.3.3 WATER SERVICE RELIABILITY – FIVE CONSECUTIVE DRY YEARS

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



**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	6,218	6,304	6,390	6,478	6,549
	Demand totals	6,218	6,304	6,390	6,478	6,549
	Difference	0	0	0	0	0
Second year	Supply totals	6,322	6,408	6,496	6,586	6,658
	Demand totals	6,322	6,408	6,496	6,586	6,658
	Difference	0	0	0	0	0
Third year	Supply totals	6,079	6,163	6,248	6,333	6,403
	Demand totals	6,079	6,163	6,248	6,333	6,403
	Difference	0	0	0	0	0
Fourth year	Supply totals	6,028	6,111	6,195	6,280	6,349
	Demand totals	6,028	6,111	6,195	6,280	6,349
	Difference	0	0	0	0	0
Fifth year	Supply totals	5,206	5,277	5,349	5,423	5,482
	Demand totals	5,206	5,277	5,349	5,423	5,482
	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.*

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

The City's sources of supplies consist of groundwater from the West Coast Basin, treated imported water purchased from MWD through WBMWD, and recycled water supplies from WBMWD. The following discussion provides a Drought Risk Assessment which assesses the City's water supply reliability over a five consecutive year drought period. The City's DRA incorporates a five consecutive year drought from calendar year 2021 through calendar year 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 CONDITIONS**



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

- The five consecutive year drought period associated with the 2020 UWMP is based on five consecutive dry years from calendar year 2021 through calendar year 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 calendar year 2011 through calendar year 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 calendar year 2011 through calendar year 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 the City's DRA during for each year of the five consecutive year drought:

- Drought Year 1: The region had experienced an average to above average year of precipitation in the prior year. Water use in the prior year had been below average due to a reduce need for outdoor water use, the groundwater basin had been replenished from above average local stormwater runoff, and imported water supplies were not restricted.



- Drought Year 2: The region experienced a second year of below average precipitation and runoff. Retail customers 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

The City'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 the City's DRA is assumed to be the same as the quantity of water supplies produced by the City (i.e. demands) during the most recent and historical five consecutive year drought which occurred from calendar year 2011 through calendar year 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



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

### Imported Water

The City obtains imported water from the Metropolitan Water District of Southern California through WBMWD. Section 6.2.1 describes the planning conducted by the Metropolitan Water District of Southern California regarding treated imported water supplies available to the City. The reliability of MWD's supplies is also discussed in its 2020 Regional UWMP and is incorporated by reference. The City purchases treated imported water which is delivered directly within its distribution system. The City's purchases of treated, imported water over the past ten years have been tabulated in Section 6.1. In the event of a drought which limits imported water supplies, the City will rely on its groundwater production.

The imported water purchases by the City during the most recent and historical five consecutive year drought period have been tabulated in Section 6.1. Because the City's DRA assumes the most recent and historical five consecutive year drought scenario will be repeated over the next five years, it is assumed the quantity of treated imported water



supplies purchased during the most recent and historical five consecutive year drought scenario will be available. Furthermore, this constitutes the minimum amount of treated imported water which may be available in a future five consecutive year drought absent MWD's programs which it has since implemented.

### Recycled Water

The City has a recycled water distribution system which it has developed over the years to reduced 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

The City's water system has experienced a prior five consecutive year drought with no limitation to its collective water supplies. However, the cost of those water supplies may have increased based on the mix of supplies which are used. Consequently, the City has the ability to enact varying 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 TOTAL WATER SUPPLY AND USE COMPARISON**

Gross water use for the projected five consecutive year drought is shown on Table 7-5. Section 7.3.2 describes the water source reliability for each source of supply the City will



rely on during a five consecutive year drought. The annual quantities are the summed and are also provided on Table 7-5. When necessary, the City can implement various water shortage levels of its Water Shortage Contingency Plan (as discussed in Chapter 8) in order to reduce its water demands. As shown in Table 7-5, assuming no additional water supply benefits will be available from groundwater supplies, the City 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	5,905
Total Supplies	5,827
Surplus/Shortfall w/o WSCP Action	(78)
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	78
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	1%
2022	Total
Total Water Use	6,083
Total Supplies	5,924
Surplus/Shortfall w/o WSCP Action	(159)
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	159
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	3%
2023	Total
Total Water Use	5,926
Total Supplies	5,697
Surplus/Shortfall w/o WSCP Action	(229)
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	229
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	4%
2024	Total
Total Water Use	5,952
Total Supplies	5,649
Surplus/Shortfall w/o WSCP Action	(303)
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	303
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	5%
2025	Total
Total Water Use	5,206
Total Supplies	4,878
Surplus/Shortfall w/o WSCP Action	(328)
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	328
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	6%





### **7.3.4 OPTIONAL PLANNING TOOL WORKBOOK**

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



## **CHAPTER 8**

### **WATER SHORTAGE CONTINGENCY PLAN**

#### **LAY DESCRIPTION – CHAPTER 8**

#### **WATER SHORTAGE CONTINGENCY PLAN**

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

- The City's Water Shortage Contingency Plan is a detailed approach which presents how the City intends to act, or respond, in the case of an actual water shortage contingency.
- Preparation of the City's "Annual Water Supply and Demand Assessment" (or Annual Assessment) is discussed. Commencing July 1, 2022, the City is required to submit the Annual Assessment. The Annual Assessment will include a review of the City's "unconstrained" water demands for the current year and for a potential upcoming single dry year. Unconstrained water demands represent the City's water demands prior to any "response actions" the City may invoke pursuant to the City's Water Shortage Contingency Plan.
- The City will manage water supplies to minimize the adverse impacts of water shortages. The City's plan for water usage during periods of shortage is designed to incorporate six standard water shortage levels corresponding to progressive ranges from up to a 10, 20, 30, 40, and 50 percent shortage, and greater than a 50 percent shortage.
- For each declared water supply shortage level, customers will be required to reduce their consumption by the percentage specified in the corresponding water supply shortage level.



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



for the City to adopt and amend its Water Shortage Contingency Plan are presented.

The following Water Shortage Contingency Plan includes references to Chapters and Sections from the City of Manhattan Beach's 2020 Urban Water Management Plan:

### 8.1 WATER SUPPLY RELIABILITY ANALYSIS

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#### [CWC 10632.](#)

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

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The City's sources of supply were discussed in Section 6.2 of the 2020 UWMP and consist of groundwater from the West Coast Basin, treated imported water purchased from MWD through WBMWD, and recycled water supplies. The reliability of the various sources of supply are discussed in Chapter 7 of this UWMP. Imported water supplies (treated) may be impacted in the event MWD implements its WSAP due to a water supply shortage.



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

Commencing July 1, 2022, the City is required to submit an "Annual Water Supply and Demand Assessment" (Annual Assessment) in accordance with DWR's guidance and requirements. The Annual Assessment will include a review of the City's unconstrained water demands (i.e. water demands prior to any projected response actions the City may



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

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

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**

The City purchase treated groundwater supplies from the West Coast Basin and imported water supplies from WBMWD as its primary sources of water supply. Consequently, during the third quarter of each fiscal year the City will review its water demands from the initial six months along with the current groundwater basin conditions and local hydrology. This information will be used to help develop the Annual Assessment. A draft of the Annual Assessment will be circulated internally within the City for peer review and comment. Based on comments received, a redraft will be prepared and provided to City managers during the Spring of each year. The draft will subsequently be provided to the General Manager for final review. Subsequently, a final draft of the Annual Assessment will be provided to the City Council for review and included in the agenda as part of a City meeting such that it can be approved and any recommended specific shortage response



actions may be enacted. The final Annual Assessment will be provided to DWR no later than July 1 of each year.

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

### 8.2.2 DATA METHODOLOGIES

The key data inputs and methodologies which will be evaluated by the City 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.*

*(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.*

The City will manage water supplies prudently to minimize the adverse impacts of water shortages. The City's plan for water usage during periods of shortage is designed to incorporate six standard water shortage levels corresponding to progressive ranges from up to 10, 20, 30, 40, and 50 percent shortages and greater than a 50 percent shortage.

The City's Ordinance No. 15-0008 , adopted in 2015, previously established five (5) water shortage levels. A copy of Ordinance No. 15-0008 is provided in Appendix M. In accordance with the California Water Code in which urban water suppliers are required to define six standard water shortage level, the City has developed the crosswalk illustrated below that translated the City'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	Supply Condition/Shortage	2020 Standard Level	Shortage Level
1	5%	1	$\leq$ to 10%
2	10%	2	10 to 20%
3	15%	3	20 to 30%
4	20%	4	30 to 40 %
5	25-50%	5	40 to 50 %
		6	> 50 %

Table 8-1 provides a description of the stages of action which may be triggered by a shortage in one or more of the City'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%	Declaring a Stage 1 Water Shortage demonstrates the need to reduce the City's water demand by a maximum of 10%. In addition to the general prohibitions, the following water use restrictions are to be implemented during a Shortage Level 1: 1.Limit landscape irrigation to two times per week for not more than 15 minutes per watering zone 2.No landscape watering unless a timed sprinkler system is installed or watering is done with a handheld device.
2	Up to 20%	Declaring a Stage 2 Water Shortage demonstrates the need to reduce the City's water demand by a maximum of 20%. In addition to the Water Shortage Level 1 prohibitions, the following water use restrictions are to be implemented during a Shortage Level 2: 1.Washing of vehicles is prohibited, except at commercial car washes or by mobile high pressure/low volume commercial services. 2.Home reverse osmosis treatment units and water softeners shall be disconnected or turned off 3.Watering of nonpublic playing fields with potable water is prohibited 4.Landscape watering with potable water shall be limited to one time per week only by drip irrigation, hand held hoses, or if reclaimed water is utilized
3	Up to 30%	Declaring a Stage 3 Water Shortage demonstrates the need to reduce the City's water demand by a maximum of 30%. In addition to the Water Shortage Level 2 prohibitions, the following water use restrictions are to be implemented during a Shortage Level 3: 1.Filling of residential swimming pools or spas with potable water is prohibited 2.Landscape irrigation with potable water is prohibited, except with a watering can using water captured from indoor use 3.Any additional water conservation measures adopted by the Director of Public Works or his or her designee deemed necessary for the preservation of public health, safety, and welfare.
4	Up to 40%	Declaring a Stage 4 Water Shortage demonstrates the need to reduce the City's water demand by a maximum of 40%. No customer of water shall use water contrary to the provisions in Water Shortage Level 3.
5	Up to 50%	Declaring a Stage 5 Water Shortage demonstrates the need to reduce the City's water demand by a maximum of 50%. No customer of water shall use water contrary to the provisions in Water Shortage Level 3.
6	>50%	Declaring a Stage 6 Water Shortage demonstrates the need to reduce the City's water demand by more than 50%. No customer of water shall use water contrary to the provisions in Water Shortage Level 3.
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.*

### 8.4.1 DEMAND REDUCTION

A full listing of the restrictions/prohibitions associated with each shortage level is provided below. The following water conservation requirements shall apply to all persons within the City of Manhattan Beach:

#### Permanent Water Conservation Measures

##### A. Landscape.

1. Watering Hours. No lawn or landscape area shall be spray irrigated between the hours of 9:00 a.m. and 6:00 p.m. on any day. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.
2. Irrigation Overspray and Runoff. Water shall not spray or flow to any impermeable private or public surface, including but not limited to, walkways, driveways, sidewalks, alleys, streets, or storm drains.



3. Water Drift. No sprinklers, fountains or other water features shall be operated when winds are so high as to create water drift causing runoff or flow to any impermeable private or public surface, including, but not limited to, walkways, driveways, sidewalks, alleys, streets, or storm drains.
4. Over-Irrigation. It is prohibited to water or irrigate lawns, turf or other landscape beyond saturation causing runoff or flow to any impermeable private or public surface, including, but not limited to, walkways, driveways, sidewalks, alleys, streets, or storm drains.
5. Irrigation During/After a Rain Event. It is prohibited to water or irrigate any landscaping within forty-eight (48) hours of a one-tenth of an inch (0.10") or greater rainfall event.

B. Cleaning. No person shall:

1. Use water to wash, clean or clear any sidewalks, streets, walkways, patios, driveways, alleys or parking areas, whether paved or unpaved, with a hose connected to a domestic water source unless through use of a water broom or pressure washer.
2. Wash or clean with water any vehicle, including, but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or unmotorized, except by use of a hand-held bucket or similar container or a hose equipped with a positive action quick release shutoff valve or nozzle. This subsection shall not apply to any commercial car washing facility which utilizes a recycling system to capture or reuse water.

C. Water Features and Water Recreation Facilities. No person shall:

1. Fill any water feature such as a fountain, pond, lake or water display unless the water feature is constructed with a water recirculation system.
2. Fill any water recreation facility such as a hot tub, spa, permanent swimming or wading pool unless the water recreation facility is constructed, installed or equipped with a cover to reduce water loss due to evaporation.

D. Waste, Ponding and Leaks. No person shall:



1. Cause, permit or allow water to leak from any exterior or interior pipe, hose or plumbing fixture of any kind whatsoever.
2. Cause, permit or allow water to flow from any source on private or public property into gutters, streets, alleys or storm drains, except as a result of rainfall or excessive groundwater from a private sump pump or from a nonpotable source of water.
3. Cause, permit or allow water from any source to pond on private or public property, except as a result of rainfall.
4. Cause, permit or allow water to flow from any source on private or public property without beneficial use.

E. Eating and Drinking Establishments.

1. All eating and drinking establishments of any kind whatsoever including, but not limited to, any restaurant, hotel, cafe, cafeteria, bar or club, whether public or private, shall only provide drinking water to any person upon receipt of an express request.
2. All food service businesses shall install water conserving pre-rinse nozzles.

F. Hotels, Motels, Bed and Breakfast.

1. All hotels, motels and bed and breakfast establishments shall provide customers the option of choosing not to have towels laundered daily. Each establishment shall prominently display notice of this option in each bathroom and sleeping room using clear easily understood language.
2. All guest room toilets shall be low flow toilets utilizing the best available technology at the time of installation.

G. Carwashes. All carwash systems shall use water recirculation systems.

H. Commercial Establishments in General.

1. All nonresidential buildings in the City shall maintain:
  - i. Public toilets and urinals with best available technology low flow toilets and urinals.
  - ii. Water efficient dishwashers.



2. Water efficient washing machines shall be installed upon replacement of existing or acquisition of new washing machines in nonresidential buildings.
- I. Hoses. No person shall allow water to flow freely from a hose that is not equipped with a positive action quick release shutoff valve or nozzle.
- J. Landscape Irrigation.
  1. New Construction. Irrigation with potable water outside of newly constructed homes and buildings shall be delivered by drip or microspray irrigation systems for irrigation projects submitted for City review on July 1, 2015 or after;
  2. New Landscape Irrigation. Irrigation with potable water of new landscape, not associated with new construction, shall be delivered by drip or microspray irrigation systems for irrigation projects submitted for City review on July 1, 2015 or after.
- K. Exceptions. The provisions of this section are not applicable to the uses of water that are necessary to protect public health and safety or for essential services, such as police, fire, and other similar emergency services. The provisions of this section also do not apply to non-potable water, such as recycled or reclaimed water.

### Water Shortage Level 1

Upon declaration of a Stage 1 Water Shortage, the following restrictions shall apply to the use of water from the City's water system:

1. No landscape watering with potable water unless a timed sprinkler system is installed or watering is done with a handheld device.
2. Landscape watering with potable water shall be limited to two times per week for not more than 15 minutes per watering zone from:
  - a. 6:00 p.m. on Wednesday and 9:00 a.m. the following Thursday; and
  - b. 6:00 p.m. on Saturday and 9:00 a.m. the following Sunday.



3. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

### Water Shortage Level 2

Upon declaration of a Stage 2 Water Shortage, the following restrictions shall apply to the use of water from the City's water system:

1. Washing of vehicles is prohibited, except at commercial car washes or by mobile high pressure/low volume commercial services.
2. Home reverse osmosis treatment units and water softeners shall be disconnected or turned off.
3. Watering of nonpublic playing fields with potable water is prohibited.
4. Landscape watering with potable water shall be limited to one time per week only by drip irrigation, hand held hoses, or if reclaimed water is utilized as permitted by law as follows:
  - a. Even numbered addresses from 6:00 p.m. on Wednesday to 9:00 a.m. the following Thursday, and
  - b. Odd numbered addresses from 6:00 p.m. on Friday to 9:00 a.m. the following Saturday.
5. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

### Water Shortage Level 3

Upon declaration of a Stage 3 Water Shortage, the following restrictions shall apply to the use of water from the City's water system:

1. Washing of vehicles is prohibited, except at commercial car washes or by mobile high pressure/low volume commercial services.





2. Home reverse osmosis treatment units and water softeners shall be disconnected or turned off.
3. Filling of residential swimming pools or spas with potable water is prohibited.
4. Landscape irrigation with potable water is prohibited, except with a watering can using water captured from indoor use.
5. Any additional water conservation measures adopted by the Director of Public Works or his or her designee deemed necessary for the preservation of public health, safety, and welfare.
6. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

### Water Shortage Level 4

Upon declaration of a Stage 4 Water Shortage, the following restrictions shall apply to the use of water from the City's water system:

1. Washing of vehicles is prohibited, except at commercial car washes or by mobile high pressure/low volume commercial services.
2. Home reverse osmosis treatment units and water softeners shall be disconnected or turned off.
3. Filling of residential swimming pools or spas with potable water is prohibited.
4. Landscape irrigation with potable water is prohibited, except with a watering can using water captured from indoor use.
5. Any additional water conservation measures adopted by the Director of Public Works or his or her designee deemed necessary for the preservation of public health, safety, and welfare.
6. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.



### Water Shortage Level 5

Upon declaration of a Stage 5 Water Shortage, the following restrictions shall apply to the use of water from the City's water system:

1. Washing of vehicles is prohibited, except at commercial car washes or by mobile high pressure/low volume commercial services.
2. Home reverse osmosis treatment units and water softeners shall be disconnected or turned off.
3. Filling of residential swimming pools or spas with potable water is prohibited.
4. Landscape irrigation with potable water is prohibited, except with a watering can using water captured from indoor use.
5. Any additional water conservation measures adopted by the Director of Public Works or his or her designee deemed necessary for the preservation of public health, safety, and welfare.
6. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

### Water Shortage Level 6

Upon declaration of a Stage 6 Water Shortage, the following restrictions shall apply to the use of water from the City's water system:

1. Washing of vehicles is prohibited, except at commercial car washes or by mobile high pressure/low volume commercial services.
2. Home reverse osmosis treatment units and water softeners shall be disconnected or turned off.
3. Filling of residential swimming pools or spas with potable water is prohibited.
4. Landscape irrigation with potable water is prohibited, except with a watering can using water captured from indoor use.



5. Any additional water conservation measures adopted by the Director of Public Works or his or her designee deemed necessary for the preservation of public health, safety, and welfare.
6. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

### **8.4.2 SUPPLY AUGMENTATION**

The City 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, the City 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, the City's sources of water supply include groundwater produced from the West Coast Basin, imported surface water purchased from MWD through WBMWD, and recycled water supplies provided by LACSD. As noted in Section 8.2, beginning July 1, 2022, the City 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. If the City is currently in, or considers entering into, one of the standard water shortage levels identified in Section 8.3, the City will consider the water supply (augmentation) actions described below.

For each water shortage level discussed in Section 8.3, the City will consider supplementing its existing water supplies through purchase of additional imported water supplies. Due to previous critically dry conditions, MWD developed the "Water Supply Allocation Plan" whereby available supplies are equitably allocated to its member agencies, including WBMWD. 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 (M&I) 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, the City can potentially continue relying on purchased imported water supplies from MWD through WBMWD for adequate supply augmentation in response to each of the standard water shortage levels identified in Section 8.3.



**Table 8-2 Demand Reduction Actions**

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only</i> <i>Drop Down List</i>
Add additional rows as needed				
At All Times	Landscape - Limit landscape irrigation to specific times			Yes
At All Times	Landscape - Restrict or prohibit runoff from landscape irrigation			Yes
At All Times	Other - Require automatic shut of hoses			Yes
At All Times	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water			Yes
At All Times	Other - Prohibit use of potable water for washing hard surfaces			Yes
At All Times	Water Features - Restrict water use for decorative water features, such as fountains			Yes
At All Times	Pools - Allow filling of swimming pools only when an appropriate cover is in place.			Yes
At All Times	CII - Restaurants may only serve water upon request			Yes
At All Times	CII - Commercial kitchens required to use pre-rinse spray valves			Yes
At All Times	CII - Lodging establishment must offer opt out of linen service			Yes
At All Times	Other - Require automatic shut of hoses			Yes
At All Times	Landscape - Other landscape restriction or prohibition			Yes
1	Landscape - Limit landscape irrigation to specific times	Collective reduction from all Shortage Level 1 actions is up to 313 AF	Landscape irrigation shall be limited to two times per week for no more than 15 minutes per watering zone	Yes
1	Landscape - Limit landscape irrigation to specific days	Collective reduction from all Shortage Level 1 actions is up to 313 AF		Yes
2	Other	Collective reduction from all Shortage Level 2 actions is up to 627 AF	All actiond under Shortage Level 1	Yes
2	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Collective reduction from all Shortage Level 2 actions is up to 627 AF		Yes
2	Other	Collective reduction from all Shortage Level 2 actions is up to 627 AF	Home reverse osmosis treatment units and water softeners shall be disconnected or turned off	Yes
2	Landscape - Prohibit certain types of landscape irrigation	Collective reduction from all Shortage Level 2 actions is up to 627 AF		Yes
2	Landscape - Limit landscape irrigation to specific days	Collective reduction from all Shortage Level 2 actions is up to 627 AF	Limited to only drip irrigation , hand hekd hoses, or reclaimed water	Yes
3	Other	Collective reduction from all Shortage Level 3 actions is up to 940 AF	All actions under Shortage Level 2	Yes
3	Other water feature or swimming pool restriction	Collective reduction from all Shortage Level 3 actions is up to 940 AF		Yes
3	Landscape - Prohibit all landscape irrigation	Collective reduction from all Shortage Level 3 actions is up to 940 AF	Except with a watering can using water captured from indoor use	Yes



4	Other	Collective reduction from all Shortage Level 4 actions is up to 1,254 AF	All actions under Shortage Level 3	Yes
5	Other	Collective reduction from all Shortage Level 5 actions is up to 1,567 AF	All actions under Shortage Level 4	Yes
6	Other	Collective reduction from all Shortage Level 6 actions is greater than 1,567 AF	All actions under Shortage Level 5	Yes
NOTES:				

**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 <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>			
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: The City will consider increased production from the West Coast Basin using existing facilities to address increased demands. As noted on Table 8-2, the City 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, the City will manage its water supply resources to provide sufficient water supplies capable of meeting the demands of its customers. Section 8.4.1 describes the City's standard water shortage levels and associated demand reduction measures. Section 8.4.2 describes the City's water supply sources and water supply augmentation actions available. The supply augmentation actions and demand reduction measures, when implemented, may potentially result in short-term operational changes which are necessary to allow the City to utilize all available water supply sources in response to water shortage situations.



As noted in Section 8.2, beginning July 1, 2022, the City 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 the City in determining any potential operational changes. In addition, the City's standard water shortage levels and the associated demand reduction measures, in conjunction with the City's existing Demand Management Measures (discussed in Chapter 9), will be essential to the City in reducing water demands during any water shortage period. The operational changes the City will consider in addressing non-catastrophic water shortages on a short-term basis include the following:

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

### **8.4.4 ADDITIONAL MANDATORY RESTRICTIONS**

The mandatory restrictions which are implemented by the City to reduce customer demands are discussed in Section 8.4.1. There are no additional mandatory restrictions planned at this time.

### **8.4.5 EMERGENCY RESPONSE PLAN**

Catastrophic water shortages are incorporated in the City's standard water shortage levels (identified in Section 8.3) and the associated demand reduction measures (described in Section 8.4.1). In addition to the water supply augmentation actions



(Section 8.4.2) and potential operational changes (Section 8.4.3) which the City may consider in order to continue providing sufficient water supplies, the City will review and implement any necessary steps included in its “Emergency Response Plan”.

As part of the “America’s Water Infrastructure Act of 2018”, community water systems serving a population greater than 3,300 people, including the City, 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 the United States Environment Protection Agency (USEPA), from March 31, 2020 and December 30, 2021, confirming the current RRA and ERP have been reviewed and updated.

The City’s RRA, prepared in June 2021, evaluates the vulnerabilities, threats, and consequences from potential hazards to the City’s water system. The City 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.

The City’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 the City's water facility assets. The cost-effectiveness of implementing potential countermeasures to reduce risks was also reviewed.

The City's ERP, which is currently being prepared and will be completed in 2021, will provide the management, procedures, and designated actions the City and its employees will implement during emergency situations (including catastrophic water shortages) resulting from natural disasters, system failures and other unforeseen circumstances. The City's ERP (which is incorporated by reference) will provide 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 will also incorporate the results of City'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

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



#### 8.4.6 SEISMIC RISK ASSESSMENT AND MITIGATION PLAN

##### CWC 10632.5.

*(a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.*

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

*(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.*

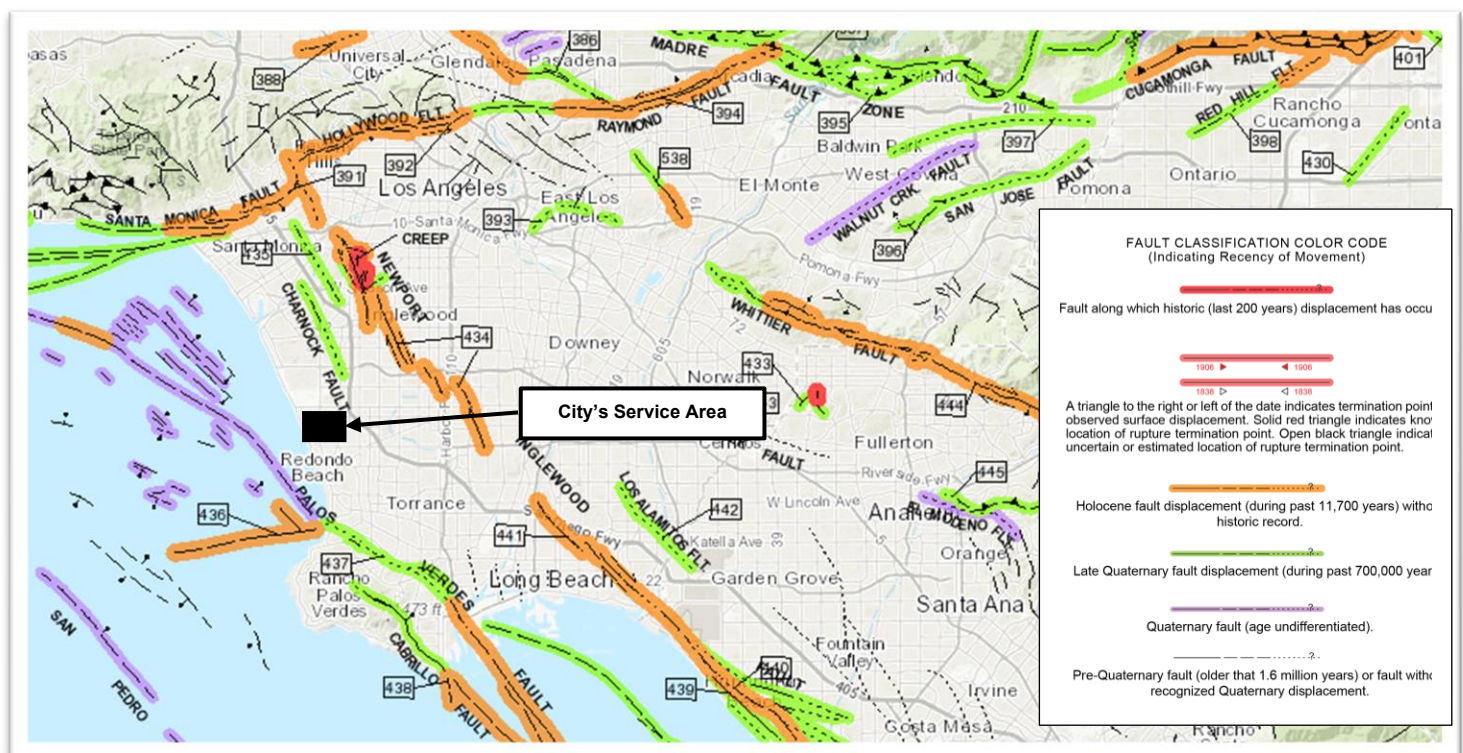
The City prepared a “Local Hazards Mitigation Plan” which was approved by the Federal Emergency Management Agency (FEMA) in 2017. The Hazard Mitigation Plan identifies effective ways to assess the significant natural hazards (including earthquakes) that may affect the City and its residents. The Hazard Mitigation Plan provides resources, information, and strategies to reduce the City’s vulnerability to these hazards, while providing guidance for the coordination of mitigation activities throughout the City. The Hazard Mitigation Plan includes mitigation projects necessary to reduce seismic risk to the City’s water distribution system facilities (including its distribution system pipelines, groundwater wells, booster pumps, and storage reservoirs) and potential disruptions in providing water service. The City’s Hazard Mitigation Plan is provided in Appendix N.

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 O.



The California Geological Survey has published the locations of numerous faults which have been mapped in the Southern California region. Although the San Andreas fault is the most recognized and is capable of producing an earthquake with a magnitude greater than 8 on the Richter scale, some of the lesser-known faults have the potential to cause significant damage. The locations of these earthquake faults in the vicinity of the City's water service area are provided in the figure below. The faults that are located in close proximity to and could potentially cause significant shaking in the City's water service area include the San Andreas fault, the Charnock fault, the Newport-Inglewood fault, the Palos Verdes fault, and the Santa Monica Fault.

### Location of Earthquake Faults



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

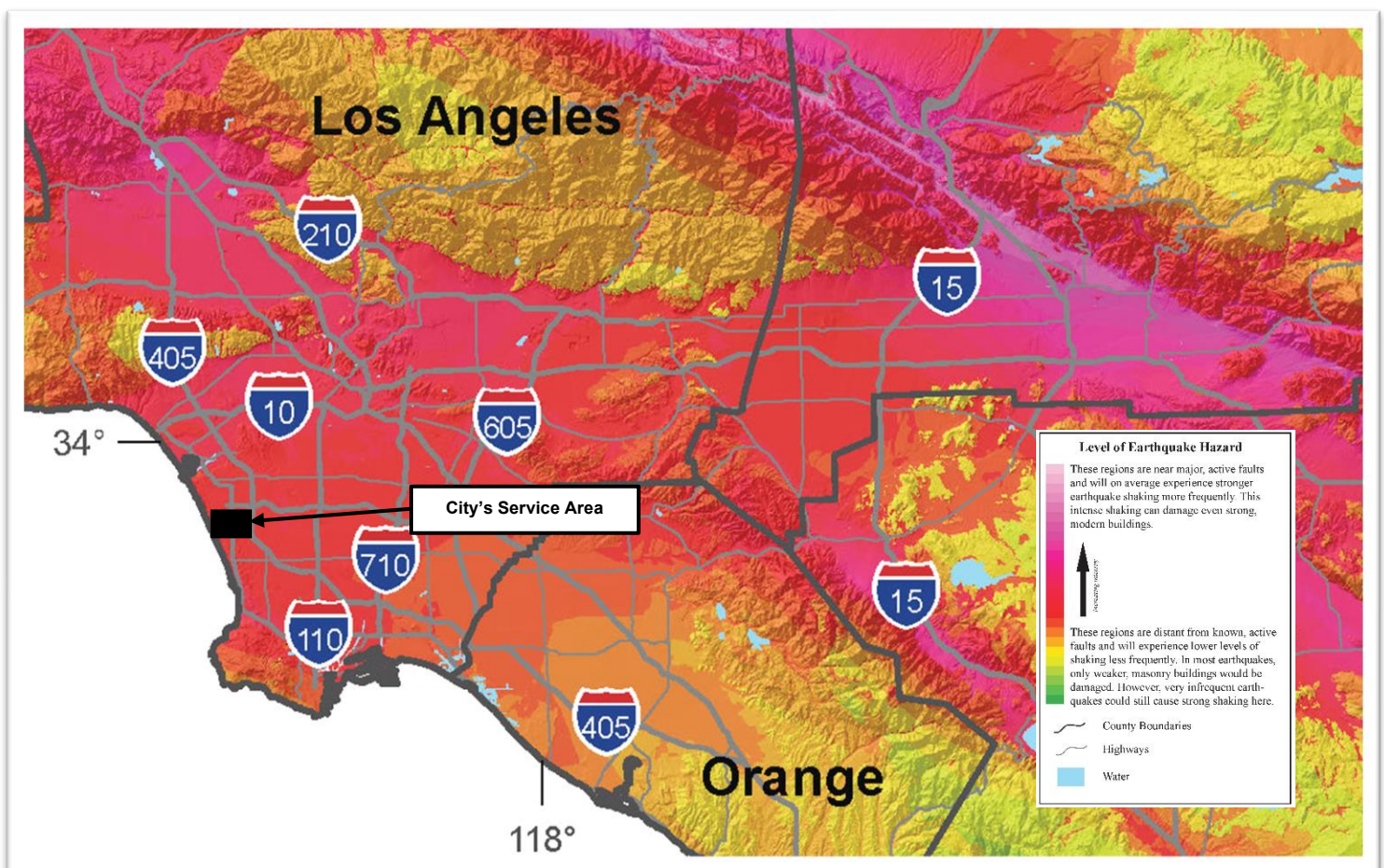
The following figure provides the relative intensity of ground shaking in the vicinity of the City's service area from anticipated future earthquakes. The locations of relatively long-period (1.0 second) earthquake shaking, including the City's service area, are provided.





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, the City is currently preparing an Emergency Response Plan which will provide the management, procedures, and designated actions the City and its employees will implement during emergency situations resulting from natural disasters, including during earthquakes, to ensure that customers receive a reliable and adequate supply of potable water. The City's ERP is 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 the City's historical ability to meet its customer's water demands in response to a water supply shortage. In addition, the City imposes water consumption regulations and restrictions, and supports local agencies in efforts to enforce regulations and prohibitions on water use. The effectiveness of each of the City's shortage response actions, in order to reduce any potential gaps between supply and demand, has been quantified in the expected demand reduction provided in Table 8-2 and Table 8-3.

Section 6.1 provides a tabulation of the City's historical annual water demands for each water supply source. During the past 10 years, the City experienced a five consecutive year drought within its service area from CY 2011 to CY 2015. Throughout this extended dry year period, the City's annual water production ranged from 4,878 AF to 5,924 AF, with an average of approximately 5,595 AF. In addition, historical records indicate the City previously produced a maximum of up to 5,924 AF during CY 2012. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. In addition, the City has been able to provide water service to meet maximum day water demands for these years, including during the summer months.

The City's water demands during the most recent five years (from CY 2016 to CY 2020) averaged approximately 5,021 AFY. Due to conservation efforts and demand management measures (discussed in Chapter 9), the City's recent water demands have been significantly less than its historical water demands, including during long-term droughts. The City's projected water demands (during normal, single dry, and multiple dry years) are provided in Section 7.2.3 and are anticipated to incorporate similar reductions in water use rates as a result of the shortage response actions, ongoing



conservation efforts, and demand management measures. Because the City's projected water demands are less than its historical water demands, it is anticipated the City will be able to continue providing sufficient water supplies to its customers to meet projected water demands, including during long-term droughts. In addition, as discussed in Section 8.4.2, based on historical and on-going management practices, the City will be able to continue relying on its water supply source from West Coast Basin for adequate supply augmentation in response to each of the standard water shortage levels identified in Section 8.3.

Based on the City's ability in meeting water demands during past water supply shortages, adopted water shortage levels, adjusted operating safe yields, and long-term droughts, it is anticipated that the City will be able to continue providing sufficient water supplies to its customers during any of its standard water shortage levels. Although adequate supplies are anticipated, the cost of those water supplies may become incrementally more expensive. The City will enact varying levels of its water shortage contingency plan to encourage retail customers to reduce water consumption and at the same time reduce the need to use the more expensive water supplies. Notwithstanding, the effectiveness of each of the City's shortage response actions, in order to reduce any potential gaps between supply and demand, has been quantified in the expected demand reduction provided in Table 8-2 and Table 8-3. The effectiveness of the City's shortage response actions is based on the City's water demands prior to 2015 (unconstrained demands). The City reduced its water demands in 2015 in response to the Governor's April 1, 2015 Executive Order B-29-15 which mandated statewide reduction in water use of 25 percent. The City's actual water demand reduction during this period was used to estimate the extent of water use reductions for the City's Water Shortage Levels. The City's Water Shortage Levels 1, 2, 3, 4, 5, and 6 are expected to reduce water demands by up to 10%, 20%, 30%, 40%, 50%, and greater than 50%, respectively.



## 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.*

Pursuant to CWC 10632.1, The City's Annual Assessment will be submitted to DWR by July 1 of each year or within 14 days of receiving its final allocation, whichever is later. The Annual Assessment will provide information on the City's anticipated shortage, triggered response actions, compliance and enforcement actions, and communication actions, as discussed in Section 8.2. The City may use the Annual Assessment as a method of declaring the appropriate water shortage level.

The City will evaluate the projected supply and demand for water by its customers and shall recommend to the City Council the extent of the conservation required by its customers. The City Council will discuss the appropriate phase of water conservation to be implemented, modified, or rescinded. The City Council may impose a water shortage level after a public hearing, notice of which shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City will publish information regarding the adoption of any declaring a water shortage level in a daily newspaper of general circulation. The information provided will include the declared shortage level, response action associated with each shortage level, and any other relevant information relating to the resolution.



## 8.6 COMPLIANCE AND ENFORCEMENT

### CWC 10632.

*(a)(6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.*

The City prosecutor, any peace officer or City code enforcement officer shall have the authority to enforce the provisions of this chapter. If any customer should fail to comply with the rules and regulations, the City shall advise the customer of such failure by written notice. A failure to remedy or abate such noncompliance within seven days after notification shall constitute an infraction and may, at the City's discretion, be punishable by a fine of not more than \$100.00 for a first violation, a fine of not more than \$200.00 for a second violation of the same provision of this chapter within one year, or a fine of not more than \$500.00 for each additional violation of the same provision of this chapter within one year.

Any offense that would otherwise constitute an infraction shall be deemed a misdemeanor if a defendant has been convicted of two or more prior violations of this Chapter within the 12-month period immediately preceding the commission of the offense. Each day that a violation occurs shall constitute a separate offense. Punishment under this chapter shall not preclude punishment pursuant to any provision of state law pertaining to water conservation or any other remedies, penalties or procedures provided by law.





## 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.*

In the event that the demand of water consumers cannot be satisfied without depleting a substantial amount of water supply needed for human consumption, sanitation, and fire protection, the City shall declare a water shortage emergency. The City shall coordinate with any city or county within its service area for possible declaration of a local emergency including the City of El Segundo and the Los Angeles County.

In 2015, the City Council previously adopted Ordinance No.15-008, amending Chapter 7.44 of the Manhattan Beach Municipal Code regarding Water Conservation (Appendix M).



## 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.*

The City maintains financial operating reserves, which may be used for water system expenditures to make up for unanticipated shortfalls in water revenue as the result of reduced water sales.

The City's existing rate structure allows the City to collect a Rate Stabilization Reserve that would buffer revenue shortfalls to avoid having to immediately raise rates as conservation takes hold.

## 8.9 MONITORING AND REPORTING

### CWC 10632.

*(a)(9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.*

The City takes several steps to monitor water consumption during various stages of water supply shortage. The reduction monitoring procedure is described below.



### 1. Water Supply Report

Potable water production figures are recorded daily. Totals are reported monthly to the City's Water Distribution Supervisor are incorporated into a Water Supply Report. This report is then forwarded to the WBMWD and the WRD. With this data it is possible to develop trends for monthly water production and use.

### 2. Water Usage Records

The City maintains water use records on each individual customer account. Exceptionally high usage is identified at the time the meter is read. These accounts are investigated for potential water loss or abuse. Additionally, water use graphical trends are recorded on a customer's water bill, comparing water use for the current billing cycle to the same billing cycle of the previous year.

### 3. Monthly Water Production Report

During all stages of a water shortage, daily production figures are reported to and monitored by the City's Water Distribution Supervisor. The Water Distribution Supervisor compares the monthly production to the target monthly production to verify that the reduction goal is being met.

## 8.10 WSCP REFINEMENT PROCEDURES

### [CWC 10632.](#)

*(a)(10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.*

The City's Water Shortage Contingency Plan has been prepared as an adaptive management plan. As discussed in Section 8.9, the City will monitor and report on the implementation of the Water Shortage Contingency Plan. The City will review the implementation results for any current or potential shortage gaps between water supplies



and demands. The City will evaluate the need for revising the Water Shortage Contingency Plan in order to resolve any shortage gaps, as necessary. The City will consider the following potential revisions in the event of a potential shortage gap:

- Implementation of additional public outreach, education, and communication programs (in addition to the programs discussed in Chapter 9).
- Implementation of more stringent water use restrictions under the standard water shortage levels (discussed in Section 8.4.1)
- Implementation of stricter enforcement actions and penalties (discussed in Section 8.6)
- Improvements to the water supply augmentation responses (discussed in Section 8.4.2), as well as any associated operational changes (discussed in Section 8.4.3) which may be required
- Incorporation of additional actions recommended by City staff or other interested parties

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

This Water Shortage Contingency Plan is adopted as part of the City's 2020 Urban Water Management Plan adoption process discussed in Section 10.3. It is anticipated the City will review, revise, and adopt an updated Water Shortage Contingency Plan as part of preparing its 2025 Urban Water Management Plan as necessary. However, the City will continue to review the monitoring and reporting data, and if needed, update the Water Shortage Contingency Plan more frequently. Any updates to the City's Water Shortage Contingency Plan will include a public hearing and adoption process by the City Council (see Section 8.12).



### 8.11 SPECIAL WATER FEATURE DISTINCTION

#### CWC 10632.

*(b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.*

The City's Water Shortage Contingency Plan defines "decorative water features" as water features which are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, but excluding pools and spas. In general, there are additional health and safety considerations in the water supplied to pools and spas compared to decorative water features. As a result, the City's Water Shortage Contingency Plan has reviewed the response actions, enforcement actions, and monitoring and reporting programs separately for decorative water features and for pools and spas, as applicable. Under the City's Municipal Code 7.44.020, no person shall fill any water feature unless the water feature is constructed with a water recirculation system or fill any water recreation facility.

### 8.12 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

#### CWC 10632.

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

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



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

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

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

Additional information regarding the adoption, submittal, and availability of the City's Water Shortage Contingency Plan (and 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 the City's 2020 Plan discusses and provides the following:

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



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

## 9.1 DEMAND MANAGEMENT MEASURES FOR 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.*

The City 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

The City adopted a revised Water Conservation Ordinance (See Appendix M) which is actively enforced during drought situations and specifies water conservation requirements. Enforcement includes patrolling to educate customers and if necessary, issuing warnings and citations for violations. All citations and violations are reported annually. However, records from the previous drought situation are not currently available. It has been observed that during the implementation of this program, the City has seen a reduction in the number of violations.



### 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.*

The City has meters in place for all of its customers, including separate meters for single-family residential, commercial, large landscape, and institutional/governmental customer sectors. The City's water bill provides each customer with summaries of their water use, comparing current water use with water use of the same period of the previous year. The City requires irrigation meters for all large landscape customers. The City has also installed separate meters on all recycled water services. The City will continue to install and read meters on all new services, along with continuing to conduct its meter calibration and replacement program.

The City will continue to install upgrades to fully automate its water meter reading and data management system. The system will track real-time, 24/7 city wide water use that can be viewed on-line by City monitors and water use customers to determine water use consumption patterns. The system is programmed to observe extraordinary water use that deviates from historical average water use. If extraordinary water usage is identified, the City staff and water user are notified by email. Extraordinary usage has been proven to be related to improperly programmed irrigation system timers, or a leak in the water user's plumbing.



### **9.2.3 CONSERVATION PRICING**

The City has a fixed bimonthly service charge that is calculated by meter size, with usage being billed separately for all customer sectors. On January 1, 2010, the City incorporated a tiered rate structure for water usage to encourage water conservation. Based on the rate structure, the cost for Tier 3 purchases will be more than double the cost for Tier 1 purchases for meters sizes less than or equal to 1-inch.

### **9.2.4 PUBLIC EDUCATION AND OUTREACH**

The City promotes water conservation and resource efficiency in conjunction with WBMWD. The City distributes public information through bill inserts, brochures, and many special events every year. Water bills show usage for the last billing period compared to the same period the previous year. The City established a website which includes information on water conservation, recycling, and other resource issues.

In addition, as a member of WBMWD, the customers of the City can also receive public information about water conservation through WBMWD's various public information programs. WBMWD uses many strategies to help promote its programs to the public. It coordinates with local and regional agencies to promote water conservation messaging as well as developing its own public information programs.

The City, in conjunction with WBMWD and the school district, work to promote water conservation and resource efficiency at school facilities and to educate students about these issues. WBMWD provides educational materials for several grade levels; including State and County water system maps, posters, workbooks, interactive computer software, and videos. WBMWD also offer a wide variety of educational programs including the following:



- Water Recycling Facility Field Trips - Students will virtually visit the Edward C. Little Water Recycling Facility in El Segundo and the Roundhouse Aquarium in Manhattan Beach where they learn about the water cycle, West Basin's state-of-the-art water recycling process and water conservation efforts that protect local marine animals.
- Water Industry Careers and Guest Panel - This new and exciting program is designed to encourage students in 6th grade through community college to explore career options in the water industry.
- Water is Life Student Art Contest – West Basin's "Water is Life" student art contest helps foster awareness of water conservation.
- Solar Cup Boat Building Competition – An innovative seven-month water education and environmentally sustainable technology program where high school students build and race solar boats.
- Teach and Test Program - The program allows high school students to volunteer to monitor water quality in the Santa Monica Bay by collecting and processing water samples.
- A Drop in the Bucket Program – Virtual education program exploring Southern California's water resources.

### **9.2.5 PROGRAMS TO ASSESS AND MANAGE DISTRIBUTION SYSTEM REAL LOSS**

Regular maintenance of a distribution system is an essential part of a properly operated water distribution system. The City conduct leak surveys when excessive leakage is suspected. Comparison of pumping and purchase records, and customer meter readings and other uses such as system flushing can indicate if excessive leakage is occurring in the system.



Main line water leaks are quickly detected by an observed drop in water pressure monitored by a computerized Supervisory Control and Data Acquisition (SCADA) system. The SCADA system can alert water personnel about an area that is losing normal system water pressure typically caused by a leak or ruptured pipe. These types of leaks are repaired immediately.

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

### **9.2.6 WATER CONSERVATION PROGRAM COORDINATION AND STAFFING SUPPORT**

The City's water conservation coordinator is primarily performed by the Water Distribution Supervisor working in conjunction with WBMWD and the School District. The City stresses water conservation via distribution of conservation handouts at City Hall and information booths at various community fairs. The Water Distribution Supervisor job description includes the performance of the duties associated with the Water Conservation Coordinator position; therefore, the expenditures for this program are included in the position salary. In addition as a member of WBMWD, the City can utilize WBMWD's water conservation coordinator, who is employed by WBMWD to promote water conservation issues and programs within WBMWD's service area including the City.

### **9.2.7 OTHER DEMAND MANAGEMENT MEASURES**

The City initiated a Community Mulch Program to provide residents with a sustainable method of maintaining their landscapes. Mulch is an essential component of a water-wise, sustainable garden and assist in retaining water on-site.



In conjunction with WBMWD, the City participates in the distribution of showerheads, aerators, and toilet tank leak detection tablets. These conservation kits are distributed at the Hometown Fair, Earth Day events, and Water Awareness Month, as well as at City Hall upon request or establishment of new account. At these events, the City also emphasizes water use surveys and Ultra Low Flush Toilet (ULFT) replacement programs. The kits are also available to City customers at WBMWD sponsored festivals and events. These distributions are not recorded, and therefore, not quantifiable. However, these events continue to provide the consumer with access to information regarding available residential plumbing retrofits, as well as a variety of other water conservation materials.

In conjunction with WBMWD, the City also offers rebates for residential and commercial water conservation products. WBMWD offers property owners various rebates for water efficient purchases. Clothes washers, toilets, turf removal, and weather-based irrigation controllers are a few of the rebates being offered through the SoCal Water\$mart Program. WBMWD offers a free residential home water survey and irrigation devices to develop a water-efficient landscape that conserves water and reduces water run-off. WBMWD also offer an additional dollar to MWD's rebate for a total rebate of \$3 or more per square foot of grass removed from residential and commercial landscapes.

The City is committed to continually working with WBMWD in this conservation effort. As advances in technology create new conservation devices that are more efficient than today's products, the City and WBMWD plan on incorporating them into this program.

### 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.*

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

As discussed in Section 9.2.1, the City adopted a revised Water Conservation Ordinance which is actively enforced during drought situations and specifies water conservation requirements.

As discussed in Section 9.2.2, the City has meters in place for all of its customers, including separate meters for single-family residential, commercial, large landscape, and institutional/governmental customer sectors during the past five years. Furthermore, if there was new development within the City, each facility was individually metered. Service charges for the City are based on the customers' connection size.

As discussed in Section 9.2.3, the City has a tiered rate structure for water usage to encourage water conservation.

As discussed in Section 9.2.4, the City in coordination with MWD and WBMWD, offer a variety of water conservation public information programs available to the public. WBMWD provides educational materials for several grade levels; including State and County water system maps, posters, workbooks, interactive computer software, and videos.



As discussed in Section 9.2.5, the City conduct leak surveys when excessive leakage is suspected. Comparison of pumping and purchase records, and customer meter readings and other uses such as system flushing can indicate if excessive leakage is occurring in the system.

As described in Section 9.2.6, the City's water conservation coordinator is primarily performed by the Water Distribution Supervisor working in conjunction with WBMWD and the School District.

As described in Section 9.2.7, the City participates in MWD's regional rebate program, which is available to the City's residential and commercial customers. There are rebates available for indoor plumbing including high efficiency clothes washers and toilets. Rebates are also available for outdoor plumbing include those for weather-based irrigation controllers, rotating sprinkler nozzles, and replacement of irrigated lawn with drought tolerant plants or other approved landscape options. The City's commercial customers are offered plumbing, landscaping, HVAC, and medical and dental equipment rebates.

### **9.3.2 IMPLEMENTATION TO ACHIEVE WATER USE TARGETS**

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#### **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.*

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The Demand Management Measures implemented by the City are discussed in Section 9.2. Descriptions regarding the nature and extent of these Demand Management Measures implemented by the City over the past five years are discussed in Section 9.3.





The City will continue to implement these Demand Management Measures and other water conservation programs and work collaboratively with West Basin Municipal Water District to provide water conservation programs for its residents.

As discussed in Section 5.5, the City's per-capita water use during CY 2020 was 124 GPCD. The City's confirmed 2020 Water Use Target is 144 GPCD. The City's per-capita water use during CY 2020 meets the 2020 Water Use Target and is in compliance. The City 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 the City in meeting water use targets and objectives.

### **9.4 WATER USE OBJECTIVES (FUTURE REQUIREMENTS)**

The City is currently working with DWR to develop Water Use Objectives pursuant to AB 1668 and SB 606. Beginning in 2024, water agencies, including the City, 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. The City 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 the City's 2020 Plan discusses and provides the following:

- The steps the City has performed to adopt and submit its 2020 Plan are detailed
- The steps the City has performed to adopt and submit its Water Shortage Contingency Plan are detailed
- The City coordinated the preparation of its 2020 Plan with the Cities of Manhattan Beach and El Segundo, the County of Los Angeles, California Water Service Company, Water Replenishment District of Southern California and West Basin Municipal Water District. The City 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.
- The City provided a notice of the public hearing to the same agencies regarding the time, date, and place of the public hearing.
- The City published a newspaper notification of the public hearing, once a week for two successive weeks
- The City conducted a public hearing to discuss and adopt the City's 2020 Plan and City's Water Shortage Contingency Plan.
- Within 30 days of adoption, the City submitted the 2020 Plan and Water Shortage Contingency Plan to the California Department of Water Resources.



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

### 10.1 INCLUSION OF ALL 2020 DATA

The data provided in the City's 2020 Plan and the Water Shortage Contingency Plan is provided on a calendar year basis (as discussed in Section 2.5).

### 10.2 NOTICE OF PUBLIC HEARING

The City's public hearing notification process for its 2020 Plan and the 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.*

### CWC 10642.

*...The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area...*

### 10.2.1.1 60 DAY NOTIFICATION

As discussed in Section 2.6.2., the City coordinated the preparation of the 2020 Plan with the Cities of Manhattan Beach and El Segundo, the County of Los Angeles, California Water Service Company, Water Replenishment District of Southern California and West Basin Municipal Water District. The City notified this agency, as well as the cities and county within which the City provides water supplies, at least sixty (60) days prior to the public hearing of the preparation of the 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

The City provided a notice of the public hearing to the Cities of Manhattan Beach and El Segundo, the County of Los Angeles, California Water Service Company, Water Replenishment District of Southern California and West Basin Municipal Water District. The notice includes the time and place of the public hearing. To ensure that the Plan and the Water Shortage Contingency Plan were available for review, the City placed a copy



of the draft 2020 Plan and the draft Water Shortage Contingency Plan at the City Clerk's Office located at City Hall and 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 the City.

**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
<i>Add additional rows as needed</i>		
Manhattan Beach	Yes	Yes
El Segundo	Yes	Yes
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
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.*

The City encouraged the active involvement of the population within its service area prior to and during the preparation of the Plan. Pursuant to Section 6066 of the Government Code, the City published a notice of public hearing in the newspaper during the weeks of October 18, 2021 and October 25, 2021. A notice of public hearing was also provided to the City Clerk's office and was posted throughout the City of Manhattan Beach and on the City'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, the City placed a copy at the City Clerk's Office located at City Hall and 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.*

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### **10.3.1 PUBLIC HEARING**

Prior to adopting the draft 2020 Plan and the draft Water Shortage Contingency Plan, the City held a public hearing on November 2, 2021 which included input from the community regarding the City's draft 2020 Plan and the draft Water Shortage Contingency Plan. As part of the public hearing, the City adopted a method to determine of its water use targets through selection of Target Method 1 (see Section 5.2.1 and Appendix G). In addition, the City 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.*

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Following the public hearing, the City 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.

*(e) 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.*

The City'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**

Within 30 days of adoption of the 2020 Plan by the City Council, the City 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 the City to assist DWR with its determination that the City's 2020 Plan has addressed the requirements of the California Water Code. The City has completed the DWR checklist by indicating where the required CWC elements can be found within the City's 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, the City submitted all data tables associated with the 2020 Plan through DWR's "Water Use Efficiency Data Portal" website.

#### 10.4.3 SUBMITTING A UWMP, INCLUDING WSCP, TO THE CALIFORNIA STATE LIBRARY

Within 30 days of adoption of the 2020 Plan by the City Council, 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 the City'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 the City Council, a copy of the 2020 Plan was submitted to the County of Los Angeles Registrar / Records office and the City Clerk's Office. A copy of the letter to the County of Los Angeles will be maintained in the City's file.

## 10.5 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, the City made the 2020 Plan (including the Water Shortage Contingency Plan) available at the City Clerk's Office located at City Hall during normal business hours and on the City's website.



## 10.6 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.*

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

## 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.*

The City's amendment process for its 2020 Plan is discussed below.

### 10.7.1 AMENDING A UWMP

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



### 10.7.2 AMENDING A WATER SHORTAGE CONTINGENCY PLAN

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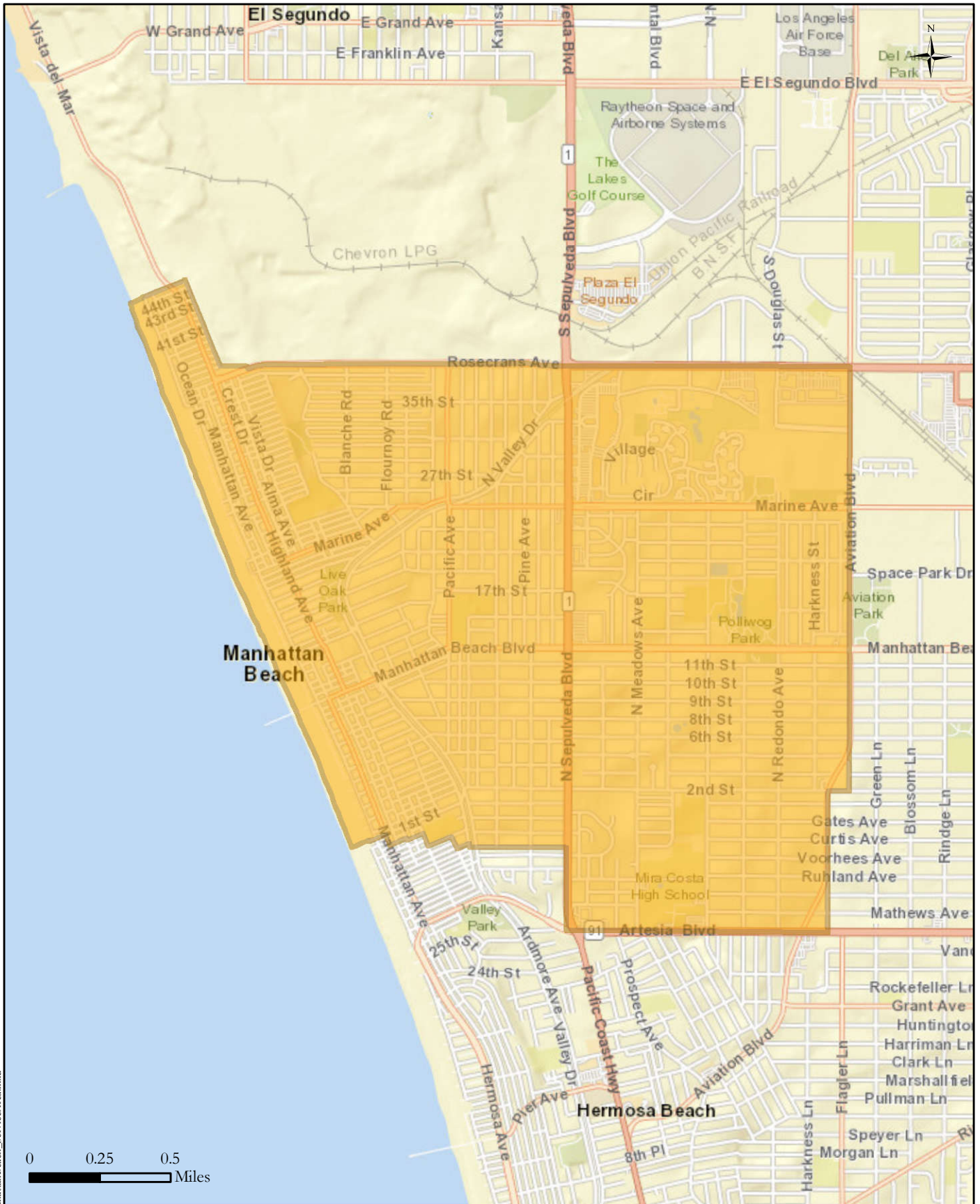
#### CWC 10644.

*(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.*

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

FIGURE 1



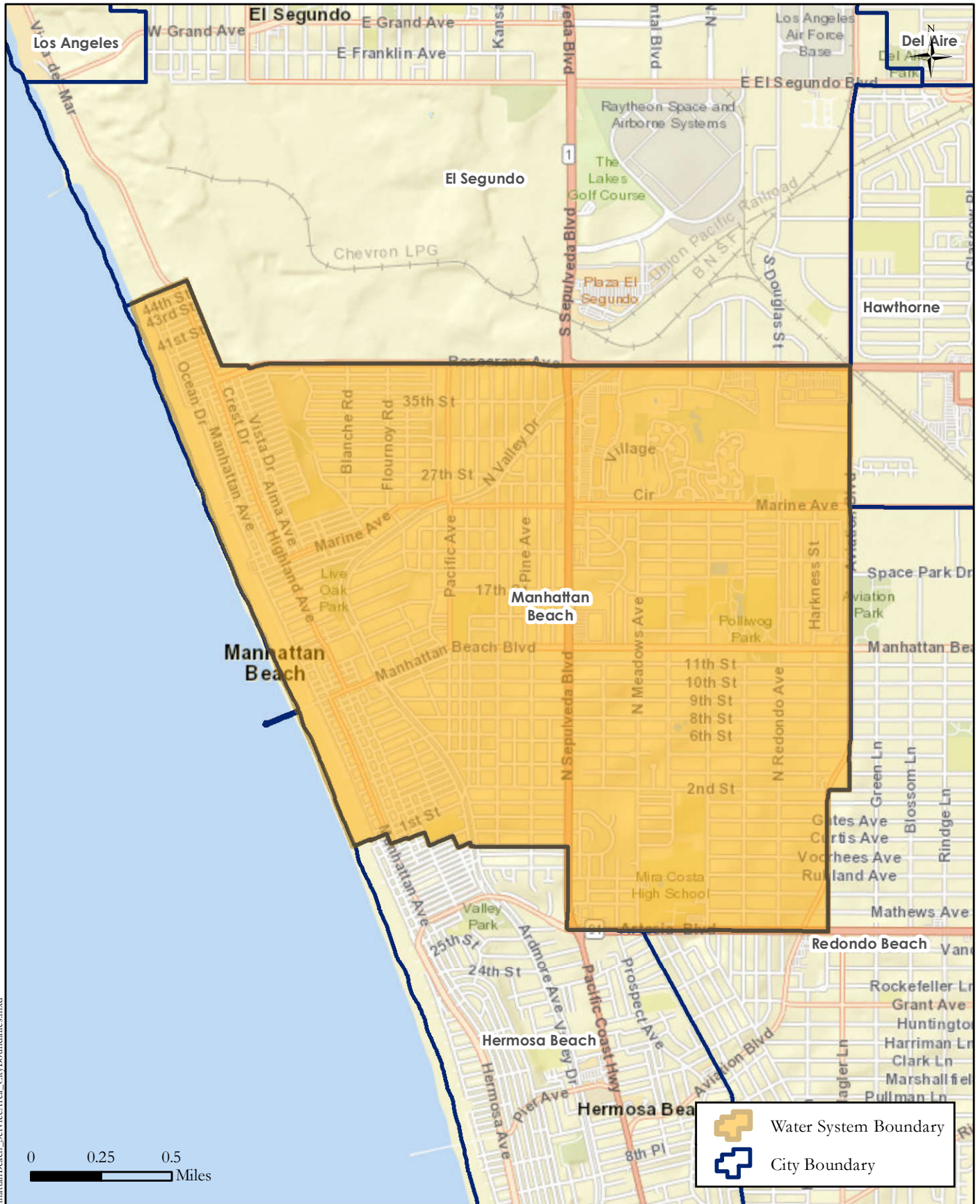
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## CITY OF MANHATTAN BEACH WATER SERVICE AREA



FIGURE 2



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# CITY OF MANHATTAN BEACH WATER SERVICE AREA AND CITY BOUNDARIES

FIGURE 3

