2025

URBAN WATER MANAGEMENT PLAN

AND

WATER SHORTAGE CONTINGENCY PLAN

MONTEBELLO LAND AND WATER COMPANY

Montebello Land and Water Company

Established 1900



JUNE 2026 FINAL

STETSON ENGINEERS INC.

Northern California • Southern California • Arizona • Oregon

Montebello Land and Water Company

2025
Urban Water Management Plan

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LIST OF ACRONYMS

AB	Assembly Bill
AF	Acre-feet
AFY	Acre-feet per year
AWWA	American Water Works Association
CBMWD	Central Basin Municipal Water District
CIMIS	California Irrigation Management Information System
Company	Montebello Land and Water Company
CWC	California Water Code
DACs	Disadvantaged Communities
DOF	Department of Finance
DPW	Department of Public Works
DRA	Drought Risk Assessment
DWR	Department of Water Resources
ERP	Emergency Response Plan
ETo	Evapotranspiration
FY	Fiscal Year
GCMs	General Circulation Models
GIS	Geographical Information Systems
GPCD	Gallons per capita per day
gpm	Gallons per minute
GSP	Groundwater Sustainability Plan
GWMA	Gateway Water Management Authority
LACSD	Los Angeles County Sanitation Districts
LBWRP	Long Beach Water Reclamation Plant
LCWRP	Los Coyotes Water Reclamation Plant
LVL	Leo J. Vander Lans Advanced Water Treatment Facility
M&I	Municipal and Industrial
MCL	Maximum Contaminant Level
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MWD	Metropolitan Water District of Southern California
PCE	Perchloroethylene
PFAS	Per- and Poly-Fluoroalkyl Substances
Plan	Urban Water Management Plan
RCP	Representative Concentration Pathway
RRA	Risk and Resilience Assessment
SB	Senate Bill
SCAG	Southern California Association of Governments
SGMA	Sustainable Groundwater Management Act
SWRCB	State Water Resources Control Board
SWRCB-DDW	State Water Resources Control Board – Division of Drinking Water

SWP	State Water Project
TCE	trichloroethylene
TDS	Total Dissolved Solids
USEPA	U.S. Environmental Protection Agency
UWMP	Urban Water Management Plan
VOCs	Volatile Organic Compounds
WIN	Water Independence Now
WRCC	Western Regional Climate Center
WRD	Water Replenishment District of Southern California
WSAP	Water Supply Allocation Plan
WSRA	Water Supply Reliability Assessment
WSCP	Water Shortage Contingency Plan
WSRA	Water Supply Reliability Assessment
WUCA	Water Utility Climate Alliance
WUE	Water Use Efficiency

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CHAPTER 1

URBAN WATER MANAGEMENT PLAN INTRODUCTION AND OVERVIEW

LAY DESCRIPTION - INTRODUCTION

An urban water supplier is defined (pursuant to Section 10617 of the California Water Code[1]) as "*a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers.*"

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

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

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

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

The Company's 2025 Plan consists of the following Chapters:

Chapter 1	Urban Water Management Plan Introduction and Overview
Chapter 2	Plan Preparation
Chapter 3	Service Area Description
Chapter 4	Water Use Characterization
Chapter 5	SB X7-7 Baselines, 2020 Targets, and 2025 Reporting
Chapter 6	Normal-Year Water Supply Characterization
Chapter 7	Water Service Reliability and Drought Risk Assessment
Chapter 8	Water Shortage Contingency Plan
Chapter 9	Demand Management Measures
Chapter 10	Plan Adoption, Submittal, and Implementation

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

LAY DESCRIPTION – CHAPTER 1

URBAN WATER MANAGEMENT PLAN INTRODUCTION AND OVERVIEW

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

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

indirectly) from the Sacramento-San Joaquin Delta (Delta). The Company has reduced its reliance on imported water supplies for Fiscal Year 2014-15, Fiscal Year 2019-2020, and Fiscal Year 2024-25. In addition, the Company is projected to continue reducing its reliance on imported water supplies through Fiscal Year 2049-50.

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

1.1 UPDATED GUIDANCE FOR 2025 URBAN WATER MANAGEMENT PLAN

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

- There have been minor changes to the Water Code since the 2020 Plans were submitted; primarily, several definitions have been added (none of these change the requirements for 2025 Plans).
- DWR and the State Water Resources Control Board are using the same criteria to determine when a water supplier with multiple Public Water Systems is considered an Urban Water Supplier subject to UWMP requirements.
- DWR has updated its submittal tables to reflect the current reporting year, improve accuracy of reporting, and more clearly identify information required by Water Code and optional information.
- There has been no change to the Water Code regarding water loss standard reporting since the 2020 Plans were submitted. However, water suppliers can

report progress toward compliance with their 2028 Water Loss Standard in the 2025 Plans (see Table 4-6).

- The State Water Resources Control Board has adopted regulations for the use of direct potable reuse (DPR) since the 2020 Plan reporting. To allow for reporting of DPR, minor changes have been made to the supply and demand tables in the 2025 Plans.
- While projections for lower-income housing were required in the 2020 Plans, additional guidance has been provided for optional reporting of the method used to project water use for lower-income housing.
- In previous years, the guidance for reporting water placed into storage did not differentiate between long-term storage (i.e., water placed into storage one year but extracted in a future year) and short-term storage (i.e., water that is placed into storage and extracted the same year). When a water supplier reports water placed into storage and then reports it was retrieved in the same year (short-term storage) it can cause a double counting error. Additional guidance has been provided recommending that water suppliers do not report water into and out of short-term storage.

1.2 SUBMITTAL TABLES

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

1.2.1 OPTIONAL PLANNING TOOL

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.

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 Company is not required by DWR to use the tool.

1.3 RECOMMENDED UWMP ORGANIZATION

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

Chapter 1	Urban Water Management Plan Introduction and Overview
Chapter 2	Plan Preparation
Chapter 3	Service Area Description
Chapter 4	Water Use Characterization
Chapter 5	SB X7-7 Baselines, 2020 Targets, and 2025 Reporting
Chapter 6	Normal-Year Water Supply Characterization
Chapter 7	Water Service Reliability and Drought Risk Assessment
Chapter 8	Water Shortage Contingency Plan
Chapter 9	Demand Management Measures
Chapter 10	Plan Adoption, Submittal, and Implementation

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

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

1.4 UWMPS IN RELATION TO OTHER EFFORTS

As discussed in Section 2.4, the Company notified the City of Montebello and the County of Los Angeles that the 2025 UWMP was being prepared. In addition, the Company provided its 2025 Plan to the City of Montebello and the County of Los Angeles which includes water use projections in five-year increments for a normal year, a single dry year, and a five consecutive year drought over the next 25 years.

1.4.1 SPECIFIC CONSIDERATIONS

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

Pursuant to DWR, an urban water supplier that anticipates participating in or receiving water from a proposed project (or "covered action") such as a multi-year water transfer,

conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta) should provide information in their Plans for use in demonstrating consistency with Delta Plan Policy WR P1, "*Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance"*. In addition, pursuant to California Code of Regulations, Title 23, § 5003:

> *(c)(1) Water suppliers that have done all of the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:*
>
> > *(A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;*
> >
> > *(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and*
> >
> > *(C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).*

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

1.4.1.2 PERMITTING FOR OCEAN DESALINATION PROJECTS

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

1.5 DEPARTMENT OF WATER RESOURCES' REVIEW PROCESS

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

1.6 UWMPS AND GRANT OR LOAN ELIGIBILITY

CWC 10608.56.

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

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included

in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

CWC 10656.

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

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

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

Pursuant to DWR's Final 2025 UWMP Guidebook:

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

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

1.7 TIPS FOR UWMP PREPARERS

The Company's 2025 Plan (which includes the Company's 2025 Water Shortage Contingency Plan (WSCP)) is considered an update to the Company's 2020 UWMP. However, the 2025 Plan and the WSCP are considered stand-alone documents. As discussed in Section 1.3, the Company's 2025 Plan was prepared consistent with the recommended organization provided in DWR's Final 2025 UWMP Guidebook. The Company's 2025 Plan was also prepared based on the tips provided in DWR's Final 2025 UWMP Guidebook including the use of information from previous Plans and following the required Plan notification and adoption process.

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

CHAPTER 2

URBAN WATER MANAGEMENT PLAN PREPARATION

LAY DESCRIPTION – CHAPTER 2

PLAN PREPARATION

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

- The basis for preparing an Urban Water Management Plan is provided. The Company is required to prepare the 2025 Plan because it is an "urban water supplier" (the Company 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 Company is a "Public Water System" and is regulated by the State Water Resources Control Board - Division of Drinking Water. The Company's Public Water System number is provided in Table 2-1.
- The Company's Plan has been prepared as an "individual" plan rather than a "regional" plan in an effort to provide information specific to the Company to best inform its employees, management and customers.
- Information presented in the Company's 2025 Plan is provided on "fiscal year" basis which is from July 1 through June 30 of the following year.
- Water quantities presented in the Company's 2025 Plan are provided on an "acre-foot" basis.
- The Company's coordination and outreach efforts with wholesale water agencies, other retail water agencies, and the community are described. The Company coordinated the preparation of its 2025 Plan with the City of Montebello and the County of Los Angeles.

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

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

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

2.1 BASIS FOR PREPARING A PLAN

CWC 10617.

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

CWC 10618.12.

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

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

CWC 10620.

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

CWC 10621.

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

The Company's 2025 Plan was prepared in accordance with the UWMP Act which was established in 1983. The UWMP Act requires every "urban water supplier" to prepare and adopt a Plan, to periodically review its Plan at least once every five years and make any amendments or changes which are indicated by the review. An "Urban Water Supplier" is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet (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 2025 Plans be submitted by July 1, 2026.

The Company 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 Company's 2025 Plan is an update to the Company's 2020 Plan.

2.1.1 SUPPLIERS WITH BOTH WHOLESALE AND RETAIL SALES

The Company is a retail water supplier (and not a wholesale water supplier). The Company's 2025 Plan was prepared based on the CWC requirements pertaining to retail water suppliers. The Company relies on water supplies from wholesale water suppliers which are discussed in Section 2.4.1.

2.1.2 PUBLIC WATER SYSTEMS

California Health and Safety Code 116275.

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

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

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

REGIONAL PLANNING

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

2.2 INDIVIDUAL OR REGIONAL PLANS

As shown in Table 2-2, the Company's 2025 Plan is an "Individual UWMP". The Company has developed its 2025 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 Company notified and coordinated with appropriate regional agencies and constituents (See Section 2.4).

2.2.1 REGIONAL REPORTING

CWC 10620.

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

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

2.3 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE

CWC 10608.20.

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

2.3.1 FISCAL OR CALENDAR YEAR

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

2.3.2 UNITS OF MEASURE

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

2.4 COORDINATION AND OUTREACH

CWC 10631.

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

2.4.1 WHOLESALE AND RETAIL COORDINATION

The Company does not rely on a wholesale agency for a source of water. As discussed in Section 6.2, the Company's only source of potable water is groundwater produced from the Central Basin. The Company is a retail water supplier which serves customers in the City of Montebello.

2.4.2 COORDINATION WITH OTHER AGENCIES AND THE COMMUNITY

CWC 10620.

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

CWC 10642.

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan…

The Company is a retail water supplier that serves customers in the City of Montebello. The Company 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 Company coordinated the preparation of its 2025 UWMP with the City of Montebello. As discussed in Section 10.2, the Company notified the City of Montebello and the County of Los Angeles at least sixty (60) days prior to the public hearing of the preparation of the 2025 Plan and invited them to participate in the development of the 2025 Plan. A copy of the notification letters sent to these agencies is provided in Appendix D.

2.4.3 NOTICE TO CITIES AND COUNTIES

CWC 10621.

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

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

2.5 SUBMITTAL TABLES

2.5.1 SUBMITTAL TABLE 2-1: PWSs

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

Table 2-1 Public Water Systems

Submittal Table 2-1 Retail: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (AF)
Add additional rows as needed			
CA1910091	Montebello Land and Water Co.	3,948	2,942
	Total	3,948	2,942
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES:			

2.5.2 SUBMITTAL TABLE 2-2: PLAN TYPE IDENTIFICATION

Table 2-2 Plan Identification Type

Submittal Table 2-2: Plan Identification		
Select One	**Type of Plan**	**Name of Regional Alliance or RUWMP** (Drop Down List)
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	
NOTES:		

2.5.3 SUBMITTAL TABLE 2-3: SUPPLIER INFORMATION

Table 2-3 Supplier Information

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

2.5.4 SUBMITTAL TABLE 2-4: WATER SUPPLIER INFORMATION EXCHANGE

Table 2-4 Water Supplier Information Exchange

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

CHAPTER 3

SERVICE AREA DESCRIPTION

LAY DESCRIPTION – CHAPTER 3

SERVICE AREA DESCRIPTION

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

- A description of the Company's service area is provided. The Company's water service area is approximately 22 percent of the land within the City of Montebello's municipal boundaries. The location of the Company's water service area is provided in Figure 1.
- The Company is bordered to the north by the Cities of Monterey Park and South San Gabriel and the County of Los Angeles, to the southeast by the City of Pico Rivera, and to the southwest by East Los Angeles and the City of Commerce. The Company service area is approximately 22 percent of the land within the City of Montebello.
- A description regarding the Company's water service area climate is provided. The monthly historical average temperatures (including minimum and maximum), monthly historical average rainfall, and monthly evapotranspiration (ETo) in the vicinity of the Company's service area is summarized. The sources of the climate information are also discussed.
- The population within the Company's water service area is discussed and projected. The sources of the population information are also discussed. The Company provides water service to an area with a current population of about 25,752. The Company is projected to have a population of 26,396 by FY 2049-2050.

- A discussion of land use information used by the Company to develop the 2025 Plan is provided. The Company reviewed the current and projected land uses within its service area. The Company also reviewed data provided by the Southern California Association of Governments, the Department of Finance, and the United States Census Bureau and prepared for counties, cities, and unincorporated areas within Southern California.

3.1 GENERAL DESCRIPTION

CWC 10631.

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

The Company's potable water system was originally developed by William Mulholland and incorporated on February 10, 1900. The Company was originally organized for the purpose of supplying the Montebello Tract of 1,250 acres with water. Around the turn of the century and through the 1920s, the area was famed for its production of flowers, vegetables, berries, and fruits. The discovery of oil by Standard Oil Company in 1917 brought about a revolutionary change to the Company. The area soon became a major contributor to oil production in California. Today, the oil production is gone and the oil wells have been replaced with urban development.

The Company is currently governed by a five member Board of Directors who are elected by the stock holders. Each Director serves a one-year term and then is up for re-election by the stock holders. Each consumer of water who is an owner of property within the service territory of the Company is required to own at least a fractional share of the Company stock, or to be a lessee of such an owner, except City, State, and Federal Government, and other Public agencies. All proceeds are used to obtain water and maintain the Company's water system infrastructure for the benefit of all shareholders. The entire system of the Company is under the supervision of the General Manager, subject to the policies of the Board of Directors. The Board of Directors guides the mission and policy of the Company.

The Company's potable water service area is located in the central portion of the City of Montebello, within the County of Los Angeles, as shown on Figures 1 and 2. The City of Montebello covers approximately 8.4 square miles of the southwestern area of the San Gabriel Valley, approximately 8 miles east of downtown Los Angeles. The Company is bordered to the north by the Cities of Monterey Park and South San Gabriel and the County of Los Angeles, to the southeast by the City of Pico Rivera, and to the southwest by East Los Angeles and the City of Commerce. The Company service area is approximately 22 percent of the land within the City of Montebello.

The Company currently derives its potable water supply from seven (7) groundwater wells that produce water from the Central Basin. The total capacity of the Company's wells is approximately 10,500 gallons per minute (GPM). A discussion of the Company's sources of water supply is provided in Chapter 6.

3.2 SERVICE AREA BOUNDARY MAPS

As discussed in Section 3.1, the Company's service area covers approximately 8.4 square miles encompassing a portion of the City of Montbello. A service area boundary

map is provided on Figure 1. The Company's water service area boundary relative to the City of Montebello's municipal boundary is also provided in Figure 2.

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

3.3 SERVICE AREA CLIMATE

CWC 10631.

(a) Describe the service area of the supplier, including … "climate…"

CWC 10630.

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

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

Service Area Climate Information

Month	Average Temperature (F)	Average Min. Temperature (F)	Average Max. Temperature (F)	Average Total Precipitation (Inches)	ETo (Inches)
January	58.6	47.8	39.4	4.0	2.07
February	60.2	48.8	71.1	3.6	2.50
March	61.6	50.4	72.9	2.8	3.87
April	65.5	53.3	77.6	0.8	4.60
May	68.3	57.3	79.4	0.2	5.08
June	72.5	60.9	83.7	0.1	5.50
July	76.5	64.2	88.5	0.0	6.08
August	77.2	65.1	89.7	0.0	5.98
September	75.6	63.6	87.9	0.3	4.72
October	70.6	58.5	82.6	0.3	3.40
November	63.4	51.5	75.4	1.3	2.32
December	59.0	47.4	70.8	1.9	1.77
Annual	67.0	55.3	79.1	16.1	47.84

Source:

Historical average monthly precipitation information was obtained from the Western Regional Climate Center (http://www.wrcc.dri.edu/) and is based on data collected from Station 045790 (Montebello, California) from 1979 through 2011. Historical monthly average ETo information was obtained from the California Irrigation Management Information Systems (http://wwwcimis.water.ca.gov) and is based on the weighted average of data collected from Station 174 (Long Beach) and Station 159 Monrovia.

The historical average rainfall in the vicinity of the Company's service area is 16.1 inches. The Company's service area has a dry climate and summers can reach average maximum daily temperatures in the high 80s. Although changes in climatic conditions may have an impact (as discussed in Section 4.5), the projected water supply demands will be based on average year, single dry year and a five consecutive year drought, based on historical data and projected demands. Precipitation within the vicinity of the Company's service area is discussed further in Section 7.2.

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

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

3.4.1 SERVICE AREA POPULATION

CWC 10631.

(a) Describe the service area of the supplier, including current and projected population… The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

The Company provides water service to an area with a current population of 25,752. Table 3-1 presents the current and projected population of the area encompassed by the Company's service area from FY 2024-25 to FY 2049-50. The Company is projected to have a population of 26,396 by FY 2049-50.

A GIS analysis using census tracts was performed to estimate the current population (FY 2024-25) within the Company's service area. The Company's service area is comprised of individual census tracts which represent smaller statistical areas for which population data is available. The smaller census tracts were combined to more accurately represent the total area within the Company's service area. Current census tract information was obtained in a GIS format from the advanced demographics dataset developed by Esri which includes source material supplied by the U.S. Census Bureau and the U.S. Census Bureau's American Community Survey. The Company's service area boundary in a GIS format was overlayed on the census tract GIS layer. Each census tract located

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

The Company's service area population was also reviewed and confirmed based on the total number of dwelling units, mobile home park spaces, and individual business, commercial, and institutional units multiplied by a population per unit factor provided by SWRCB.

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

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

addition of apartment units and accessory dwelling units (ADUs) as the means of affordable housing.

Pursuant to the California State Housing Law, every jurisdiction (including the City of Montebello) is required to plan for its RHNA allocation in the Housing Element of its General Plan. RHNA is a representation of future housing needs for all income levels in a jurisdiction. SCAG's "*6th Cycle Final RHNA Allocation*" was adopted March 2021 (and modified in July 2021) and covers the planning period from October 2021 through October 2029. The total RHNA allocation of housing within the City of Montebello through 2029 is 5,186 units (including 1,314 "very-low" income units, 707 "low" income units, 777 "moderate" income units, and 2.388 "above moderate" income units). The City of Montebello must identify adequate sites and establish policies and programs that will accommodate the estimated growth, however the City of Montebello is not obligated to produce, construct, or develop these allocated units.

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

3.5 LAND USES WITHIN SERVICE AREA

CWC 10631.

(a) ...The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities…

The Company reviewed the current and projected land uses within its service area during the preparation of this 2025 Plan. Information regarding current and projected land uses is included in the City of Montebello's 2040 General Plan, prepared in 2024. The existing land uses within the Company's service area include residential (single-family), commercial, and open space. The projected land uses within the Company's service area are expected to remain similar to the existing land uses. In addition, although mostly built-out, the projected population within the Company'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 Company's service area, which includes the different land uses, is provided in Section 4.2. As discussed in Section 2.4, the Company coordinated the preparation of the 2025 Plan with the City of Montebello and the County of Los Angeles.

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

3.6 SUBMITTAL TABLES

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

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

Table 3-1 Population – Current and Projected

Submittal Table 3-1 Retail: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	25,752	25,885	26,018	26,143	26,269	26,396
NOTES:						

CHAPTER 4

WATER USE CHARACTERIZATION

LAY DESCRIPTION – CHAPTER 4

WATER USE CHARACTERIZATION

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

- The Company provides water service to individual "water use sectors". These water use sectors include single-family residential, commercial, and industrial. Individual descriptions for these water use sectors are provided in Section 4.2.1.
- The Company's total water demands (including potable and recycled water) over the past 15 years have ranged from 2,828 AFY to 3,525 AFY, with an average of 3,075 AFY. The Company currently measures its water use through meter data and billing records.
- The Company 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 Company's projected water demands.
- The Company's current and projected water demands are provided in five-year increments over the next 25 years are provided (through Fiscal Year 2049-50) as shown on Table 4-3.
- The Company's water demand projections incorporate passive savings from water savings which are the result of implementation of codes, water conservation standards, and/or ordinances.

- The projected water demands for lower income households are identified and are included in the Company's total projected water demands
- The Company's sources of water supply and how those sources may be impacted by climate change are discussed. The proactive actions the Company and other local/regional water managers may take to address the potential climate change impacts on water supplies are also discussed.

4.1 NON-POTABLE VERSUS POTABLE WATER USE

The Water Code requires a description and quantification of water uses within the Company's service area, including both non-potable and potable water. Recycled water (non-potable) uses are addressed in Section 6.2.5; however, a summary is provided in Table 4-1 and Table 4-2. Furthermore, Chapter 4 addresses the Company's potable water demands.

4.2 PAST, CURRENT, AND PROJECTED WATER USE BY SECTOR

CWC 10635.

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

CWC 10631.

(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a),

identifying the uses among water use sectors, including, but not necessarily limited to, all of the following…

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

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

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

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

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

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

4.2.1 WATER-USE SECTORS LISTED IN WATER CODE

CWC 10631.

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

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

As shown in Table 4-1, the Company'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)

- 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.)

- Institutional (and governmental)
  (Institutional users are defined as water users dedicated to public service. Institutional users include, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.)

- Landscape
  (Landscape connections supply water solely for landscape irrigation. Landscape users may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation. Landscape water demands are included in retail demands.)

- Distribution system losses
  (Distribution system losses represent the potable water losses from the pressurized water distribution system and water storage facilities, up to the point of delivery to the customers. Additional information is discussed in Section 4.3)

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

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

4.2.3 PAST WATER USE

Chapter 6 provides a discussion of the sources of water supply the Company uses to meet its water demands. Section 6.1 provides a tabulation of the Company's historical annual water demands for each water supply source. Over the past 15 years, the Company's total water demands (including potable and recycled water) have ranged from 2,828 AFY to 3,525 AFY, with an average of 3,075 AFY. In addition, the Company recently experienced a five consecutive year drought within its service area from FY 2011-12 to FY 2015-16. The Company reviewed its historical water demands to determine the projected water demands and water supply reliability (discussed in Chapter 7). The Company is able to provide sufficient water supplies to meet the projected water demands of its customers, including during a five consecutive year drought period.

4.2.4 CURRENT WATER USE

CWC 10631.

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

The Company currently measures its water use through meter data and billing records. The water use for the Company's individual water use sectors during FY 2024-25 are

provided in Table 4-1. Recycled water uses are addressed separately in Section 6.5; however, a summary of projected recycled water uses is provided in Table 4-2.

DWR has created an optional "Planning Tool Worksheet" for water suppliers to review and assess monthly water use trends. DWR has deemed the tool as optional and the Company is not required by DWR to use the tool. Section 6.1 provides a tabulation of the Company's historical annual water uses for each water supply source. During the past 15 years, the Company experienced a five consecutive year drought within its service area from FY 2011-12 to FY 2015-16. Historical records indicate the Company's annual water demands had been greater prior to FY 2011-12. The Company 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 Company 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 Company's water supply sources is provided in Chapter 7.

4.2.5 PROJECTED WATER USE

4.2.5.1 GENERAL GUIDANCE ON PROJECTIONS

CWC 10631.

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

CWC 10633.

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

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

CWC 10635.

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

CWC 10631.

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

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

4.2.5.2 WATER-USE PROJECTIONS BY SECTOR

CWC 10631.

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

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

4.2.5.3 STANDARDS, CODES, ORDINANCES, AND PLANS

CWC 10631.

(d)(4)(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(d)(4)(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

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

The Company's projected water demands are provided in five-year increments over the next 25 years (through FY 2049-50) in Table 4-2. The Company'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 Company's water use sectors are provided in Table 4-2. As discussed in the following Section, the Company's water demand projections incorporate "passive savings" which are the result of implementation of codes, standards, and/or ordinances.

4.2.5.4 RETAIL ONLY

The Company's total water demands were projected based on a review of the "2020 Water Use Target" pursuant to SB X7-7 calculations (discussed in Section 5.2), current water use factors based on recent water demands, Urban Water Use Objective standards (discussed in Section 5.2.6), and the total population projections based on land use trends within the Company (discussed in Section 3.4). The projected water demands for the water use sectors were based on the percentage breakdown of water demands from each individual water use sector in FY 2024-25 (the percentages were then applied to the projected total water demands). As discussed in Section 2.4, the Company coordinated water demand projections with the City of Montebello and the County of Los Angeles for each water use sector.

The Company's water demand projections incorporate water savings from "passive savings" which are the result of implementation of codes, standards, and/or ordinances. The Company'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. Prior to passive savings, the Company's water use rate ranged from approximately 121 gallons per capita day to 149 gallons per capita day (from FY 1996-97 through FY 2006-07). As identified in Section 5.2.2, the Company's actual water use rate during FY 2019-20 was 103.9 gallons per

capita per day which is a decrease of up to 45 gallons per capita per day from the recent historical water use and includes passive savings. The Company'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 Company's water use projections.

4.2.5.5 LOWER-INCOME HOUSEHOLDS

CWC 10631.1.

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

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

California Health and Safety Code 50079.5.

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

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

records provided by the Company, a review of the City of Montebello's 2040 General Plan, a review of median household income range statistics provided by the US Census Bureau (https://data.census.gov/cedsci/), and a review of GIS maps of Disadvantaged Communities[2] (DACs), including block groups, tracts, and places, provided by DWR. The estimated number of lower income households located within the Company's service area is 44.6 percent of the total number of households. As indicated in Table 4-2, the total projected residential (single family and multi-family) water demands within the Company in FY 2049-2050 is estimated at about 1,724 AFY. Based on a 44.6 percent use factor of total residential water demands, the projected water demand for lower income households will be about 769 AFY by FY 2049-2050. The projected water demands for lower income households were included in the Company's total projected water demands, as indicated in Table 4-3.

4.2.5.6 CLIMATE CHANGE CONSIDERATIONS

CWC 10630.

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

CWC 10635.

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

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

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

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

Section 6.2 of this Plan describes the Company'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 Company's water supply sources. Chapter 8 provides a detailed discussion of the Company'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 Company's sources of supply, how those sources may be impacted by climate change, and the proactive actions the Company and other local/regional water managers may take to address the potential climate change impacts on water supplies.

Imported Water Supplies

The Company 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 Central Basin. Consequently, the Company directly and/or indirectly relies on the Metropolitan Water District of Southern California for those imported water supplies. MWD has prepared a Regional 2025 Urban Water Management Plan which includes a discussion (Section 2.6 in MWD's 2025 UWMP) of the reliability of

[3] www.merriam-webster.com

its water supplies and the impacts of climate change and is incorporated by reference in this Plan. 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 – Central Basin

The Company relies on groundwater produced from the Central Basin as noted in Section 6.2.2 of this UWMP. The Central Basin has been identified by DWR as a very low-priority groundwater basin partially due to the fact it is adjudicated. In that regard, the Central Basin is actively managed by the Water Replenishment District of Southern California which serves as the Central Basin Watermaster and those management activities are described in detail in Section 6.2.2.

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

To address the uncertainty in future greenhouse gas emissions, Cal-Adapt has developed a Representative Concentration Pathway 4.5 (RCP 4.5) scenario and a Representative Concentration Pathway 8.5 (RCP 8.5) scenario. RCP 4.5 represents a scenario in which greenhouse gas emissions peak around 2040, then decline and stabilize. RCP 8.5 represents a scenario in which emissions continue to strongly rise through 2050 and plateau around 2100. RCP 4.5 is a "medium" emissions scenario that models a future in which there is an effort made by societies to reduce greenhouse gas emissions, whereas RCP 8.5 is a "business-as-usual" scenario. For the Company'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 Company's climate change analysis, the average condition GCM (CanESM2) was selected.

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

Based on the data generated by the Cal-Adapt simulations (see Appendix E), the average annual rainfall in the Central Basin is projected to be 16.5 inches through 2099, compared to historical average of 15.1 inches (from 1961 through 1990). In addition, the average maximum temperature is projected to be 80.3 degrees Fahrenheit compared to a historical average of 74.7 degrees Fahrenheit. Although there may be more precipitation in the future, it may be more likely to fall as rainfall compared to snowfall. The simulations do not denote the duration or intensity of storms contributing to the annual precipitation. Notwithstanding, the San Gabriel River watershed includes a complex and interconnected series of dams, reservoirs and replenishment basins to capture stormwater runoff. In an average to below average year of precipitation, over 95 percent of the precipitation in the watershed is retained within the watershed and is not lost to the ocean. Consequently, most if not all precipitation (whether it is rain or snowfall) likely will be captured for use in the Central Basin area and not adversely impacted by a potentially higher average annual temperature.

Recognizing these potential impacts to local hydrology resulting from climate change and the resultant impacts to the groundwater supplies, 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 Company to rely on the Central Basin as a reliable source of supply.

Recycled Water Groundwater Replenishment

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

Water Storage Programs

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

4.3 DISTRIBUTION SYSTEM WATER LOSS

CWC 10631.

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

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

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

4.3.1 PREVIOUS FIVE YEARS DISTRIBUTION SYSTEM LOSSES

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

The California Water Code Section 10608.34 requires “On or before 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 Company has completed the annual water loss audit process through January 1, 2026, as required by the California Water Code. As shown in Table 4-5, the Company has completed water loss audits for the past five years representing FY 2020-21 through FY 2024-25. The Company’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 Company, are available on DWR's WUEdata website (https://wuedata.water.ca.gov/awwa_plans).

The Company'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 Company's distribution system water losses are based on the sum of the real and apparent water losses. Over the past five years, the Company's average distribution system water losses represent approximately 8.9 percent of its total water demands. This average water loss factor was incorporated into the Company's total potable water demand projections (Tables 4-2 and 4-3).

4.3.2 PROGRESS TOWARD MEETING THE WATER LOSS PERFORMANCE STANDARD

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

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

- Retail suppliers may have met their Real Water Loss Performance Standard if their 2025 or 2026 annual water loss audits (currently not available) show actual real water loss at or below the standard (California Code of Regulations Section 981[b]).
- Retail suppliers may still meet the Real Water Loss Performance Standard if, by January 1, 2028, their 2027 annual water loss audit shows actual real water loss at or below the standard (California Code of Regulations Section 981[a] and [b]).
- Apparent Water Loss Performance Standards are evaluated at the time compliance with the Real Water Loss Performance Standard is assessed (California Code of Regulations Section 981[d]).

The Company's 2025 water loss audit is due by January 1, 2027 and was not available during the preparation, completion, and submittal of the Company's 2025 Plan. However, Table 4-6 presents the Company's Real and Apparent Water Loss Performance Standard, as well as the real and apparent water losses included in the Company's most recent 2024 water loss audit.

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

4.4 SUBMITTAL TABLES

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

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

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

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual Water Code Section 10631(d)(1)			
Use Type	Additional Description (as needed)	2025 Actual Water Use	
Drop down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool		**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
Single Family		Potable	698
Multi-Family		Potable	985
Commercial		Potable	390
Industrial		Potable	472
Institutional/Governmental		Potable	117
Landscape	Recycled Water	Non-Potable	21
Distribution System Water Loss		Potable	259
		Subtotal Potable	2921
		Subtotal Non-Potable	21
		Total	2,942
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES:			

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

Table 4-2 Total Uses of Potable and Non-Potable Water - Projected

Submittal Table 4-2 Retail: Total Uses for Potable, and Non-Potable Water — Projected Water Code Section 10631(d)(1)							
Use Type	Additional Description (as needed)	**Projected Water Use** (Report To the Extent that Records are Available)					
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		**Potable or Non-Potable** (OPTIONAL) Drop down list	**2030 (AF)**	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 opt (AF)**
Add additional rows as needed.							
Single Family		Potable	701	705	708	712	715
Multi-Family		Potable	990	995	999	1,005	1,009
Commercial		Potable	392	394	396	398	400
Industrial		Potable	475	477	479	482	484
Institutional/Governmental		Potable	118	118	119	119	120
Landscape	Recycled Water	Non-Potable	25	25	25	25	25
Distribution System Water Loss		Potable	260	262	263	264	266
		Subtotal Potable	2,936	2,951	2,964	2,980	2,994
		Subtotal Non-Potable	25	25	25	25	25
		Total	2,961	2,976	2,989	3,005	3,019
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.							
NOTES:							

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

Table 4-3 Inclusion in Water-Use Projections

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

4.4.4 OPTIONAL TABLE 4-4: PASSIVE WATER SAVINGS PROJECTION

DWR has deemed Table 4-4 to be optional.

Table 4-4 Passive Water Savings Projections

4.4.5 TABLE 4-5: WATER LOSS AUDIT REPORTING

Table 4-5 Water Loss Audit Reporting

Submittal Table 4-5 Retail: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)		
Public Water System ID # Reported in Table 2-1 R	Reporting Period	Submitted to DWR Water Loss Audit Program (yes/no)
Report submittal status for all five years for each Public Water System as available. Add rows as needed		
CA1910091	**2020**	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES:		

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

Table 4-6 Progress Toward 2028 Water Loss Standard

Submittal Table 4-6 Retail: Progress Towards 2028 Water Loss Standard
Water Code Section 10631(d)(3)(C)

Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System? (y/n) If no, Supplier will not complete this row.	Real Water Loss					Apparent Water Loss				
		State Water Board Standard		Most Recent AWWA Water Loss Audit			State Water Board Standard		Most Recent AWWA Water Loss Audit		
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss Drop down list	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (AF)	Real Water Loss Per Unit per Day	2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (AF)	Apparent Water Loss Per Unit per Day
Add additional rows as needed.											
CA1910091	Yes	16.5	Gallons per Service Connection per Day (GPSCD)	4027	126.426	28.0	31.2	Gallons per Service Connection per Day (GPSCD)	4027	186.18	41.3
								Gallons per Service Connection per Day (GPSCD)			
								Gallons per Service Connection per Day (GPSCD)			

Water Board's Calculated Water Loss Standards

DWR NOTES: Units of measure (AF, CCF, MG) for Water Loss **MUST** remain consistent with units reported in Submittal Table 2-3. The units reported in Submittal Table 2-3 are used in this table's calculations.

NOTES:

CHAPTER 5

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

LAY DESCRIPTION – CHAPTER 5

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

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

- The Water Conservation Act of 2009 (or SB X7-7) required the State of California achieve a 20 percent reduction in urban water use by the year 2020.
- SB X7-7 required urban water suppliers, including the Company, 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 Company 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 Company's 2020 Water Use Target was 119.5 GPCD.
- The Company's per-capita water use during Fiscal Year 2019-20 was 103.9 GPCD. The Company's confirmed 2020 Water Use Target was 119.5 GPCD. The Company's per-capita water use during Fiscal Year 2019-20 met the 2020 Water Use Target.

5.1 REPORTING REQUIREMENTS FOR WHOLESALE SUPPLIERS

CWC 10608.12.

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

CWC 10608.36.

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

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

5.2 REPORTING REQUIREMENTS FOR RETAIL SUPPLIERS

CWC 10608.40.

Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631.

CWC 10608.12.

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

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

water suppliers, including the Company, 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 Company 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 Company's SB X7-7 Verification Form was also included in its 2020 Plan. The Company's 2020 Water Use Target was 119.5 GPCD.

5.2.1 SUPPLIER WAS NOT AN URBAN RETAIL WATER SUPPLIER

Section 5.2.1 is not applicable to the Company.

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

5.2.2 SUPPLIER MET 2020 TARGET IN 2020

The Company previously calculated its "2020 Water Use Target" in its 2015 Plan pursuant to the methodology provided by DWR. The Company's 2020 Water Use Target was confirmed to be 119.5 GPCD. As discussed in the Company's 2020 Plan, the Company's per-capita water use during FY 2019-20 was 103.9 GPCD. As shown in Table 5-1, the Company's per-capita water use during FY 2019-20 met the 2020 Water Use Target.

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

Section 5.2.3 is not applicable to the Company.

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

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

Section 5.2.4 is not applicable to the Company.

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

5.2.5 FUNDING ELIGIBILITY

CWC 10608.56.

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

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

- Water Code Section 10608.56(c) states that a water supplier shall be eligible for a water loan or grant if it "has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per-capita reductions."
- Water Code Section 10608.56(e) states that a water supplier can also be eligible for a water loan or grant if it "has submitted to the department for approval

documentation demonstrating that its entire service area qualifies as a disadvantaged community."

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

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

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

The Urban Water Use Objective is the sum of standard-based water use budgets for efficient residential indoor use, residential outdoor use, CII landscapes with dedicated irrigation meters (DIMs), and real water losses. Each budget is the product of the applicable standard and the water supplier's unique characteristics (e.g., population). Water suppliers will be assessed for compliance with their overall objective, not each standards-based budget.

The residential indoor water use standard is based on 55 GPCD (until December 31, 2024), 47 GPCD (from January 1, 2025 to January 1, 2030), and 42 GPCD (beginning January 1, 2030). The residential outdoor water standard is based on a landscape efficiency factor (representing plant factors and irrigation efficiency) of 0.80 (until June 30, 2035), 0.63 (from July 1, 2035 to June 30, 2040), and 0.55 (beginning July 1, 2040). The standard for commercial, industrial, and institutional (CII) landscapes is based on a landscape efficiency factor of 0.80 (until June 30, 2035), 0.63 (from July 1, 2035 to June

30, 2040), and 0.45 (beginning July 1, 2040). Urban retail water suppliers are also required to comply with real water loss standards by January 1, 2028.

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

5.3 SUBMITTAL TABLES

Table 5-1 SB X7-7 2020 Target Progress

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress Water Code Section 10608.40						
☐	Check the box if the Supplier was not an Urban Water Supplier during or before the 2020 UWMP reporting cycle. Proceed to the next table.					
Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	Only for suppliers that did not meet the Target in 2020 See DWR NOTES below.	
					Actual 2025 GPCD (From SB X7-7 Compliance Form)	Did Supplier meet the 2020 Target in 2025?
No	Individual Target	120	104	Yes		NA
DWR NOTES: **Suppliers calculating a 2025 GPCD** will need to complete and submit SB X 7-7 Compliance Tables to verify the use of SB X7-7 Methodologies. **Suppliers that were part of a merger or consolidation since 2020** see Chapter 5 and Appendix P for guidance.						
NOTES:						

CHAPTER 6

NORMAL-YEAR WATER SUPPLY CHARACTERIZATION

LAY DESCRIPTION – CHAPTER 6

WATER SUPPLY CHARACTERIZATION

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

- The Company's water supply sources include groundwater produced from the Central Basin and recycled water supplies from CBMWD.
- A tabulation of the Company's historical water supplies is provided in Section 6.1.
- A discussion regarding the Company's groundwater supplies from the Central Basin is provided. Information regarding basin location, adjudication, management, water levels, water quality, water rights, and historical production is provided.
- A discussion regarding the Company's recycled water supplies is provided. The Company's recycled water supplies are produced by CBMWD. The Company uses recycled water for landscape irrigation.
- The Company's proposed future projects to maximize its water supply resources are discussed.
- The Company'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 Company's water management processes was estimated during FY 2024-25.

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

- Management of water supply sources;
- Current provisions of a basin adjudication or Groundwater Sustainability Plan (GSP), as applicable, pertaining to management of groundwater supplies;
- Measures the Company 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 Company's water supply sources will account for the anticipated availability during a normal year, a single dry year, a five consecutive year drought, along with projections through FY 2049-50.

6.1 WATER SUPPLY ANALYSIS OVERVIEW

CWC 10631.

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

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

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

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

CWC 10631.

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

The Company's water supply sources include groundwater produced from the Central Basin and recycled water supplies from CBMWD. A tabulation of the Company's historical water supplies is provided below.

Fiscal Year	System Water Supply Sources (AF)		Total
	Potable Water	Recycled Water	
	Central Basin		
2010-11	3,301	-	3,301
2011-12	3,370	-	3,370
2012-13	3,468	-	3,468
2013-14	3,525	-	3,525
2014-15	3,137	-	3,137
2015-16	2,919	-	2,919
2016-17	2,957	-	2,957
2017-18	3,061	-	3,061
2018-19	2,969	15	2,984
2019-20	2,857	17	2,873
2020-21	2,868	25	2,892
2021-22	2,984	25	3,009
2022-23	2,806	22	2,828
2023-24	2,838	19	2,858
2024-25	2,921	21	2,942

Source: Data provided by the Company

6.1.1 SPECIFIC ANALYSIS APPLICABLE TO ALL WATER SUPPLY SOURCES

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

- The Company's existing and planned sources of water supply are identified;
- Each source of supply is quantified in five-year increments through FY 2049-50;
- The anticipated supply availability under normal, single dry, and five consecutive dry years, and any other water year conditions included in the Drought Risk Assessment (see Chapter 7) are described;
- The management of each water supply in correlation with other identified supplies is described.
- Information pertinent to the reliability analysis, including climate change effects, is considered.

The Company has historically relied on groundwater produced from the Central Basin, and recycled water supplies from CBMWD. The following descriptions summarize the Company's sources of supply (detailed descriptions are provided in Section 6.2).

Existing and Planned Sources of Supply

Purchased Treated Imported Water

The Company does not purchase treated, imported water supplies to meet its water demands.

Purchased Groundwater

The Company has historically pumped groundwater from the Central Basin. 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 purchased groundwater supplies for FY 2024-25. In addition, Table 6-9 summarizes the projected water supply, in five-year increments, through FY 2049-50 under varying water supply conditions.

Surface Water

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

Storm Water

The Company has historically produced groundwater from the Central Basin. Management and use of the stormwater runoff from the groundwater basin watershed is crucial to groundwater management. However, the Company currently does not have its own program to beneficially use stormwater runoff as a direct source of supply.

Wastewater and Recycled Water

The Company has historically purchased recycled water supplies from the Sanitation Districts of Los Angeles County through CBMWD 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 FY 2024-25. In addition, Table 6-9 summarizes the projected recycled water supply, in five-year increments, through FY 2049-50 under varying water supply conditions.

6.1.2 SPECIAL CONDITIONS

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

6.1.2.1 CLIMATE CHANGE EFFECTS

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

6.1.2.2 REGULATORY CONDITIONS AND PROJECT DEVELOPMENT

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

6.1.2.3 OTHER LOCALLY APPLICABLE CRITERIA

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

6.1.2.1 WHOLESALE AND RETAIL SUPPLIERS COORDINATION

The Company does not rely on wholesale water supplies. However, as discussed in Section 2.4, the Company coordinated the preparation of the 2025 Plan with the City of Montebello and the County of Los Angeles.

6.2 WATER SUPPLY CHARACTERIZATION

6.2.1 PURCHASED OR IMPORTED WATER

The Company does not use imported water supplies to meet its water demands. The Company relies entirely on groundwater as its sole source of potable water supply. The Company does not currently have plans to construct a connection to receive imported water from CBMWD's system.

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.

CENTRAL BASIN

Central Basin - Sustainable Groundwater Management Act

The Central Basin is a subbasin of the Coastal Plain of Los Angeles Groundwater Basin pursuant to DWR Bulletin 118, Basin Number 4-11.04. Pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA), the Central Basin was named as an adjudicated groundwater basin and is exempt from the requirements of developing a Groundwater Sustainability Plan and subsequently was designated a very-low-priority basin in DWR's 2019 SGMA Basin Prioritization report. In compliance with SGMA, the Central Basin Watermaster (which is the Water Replenishment District of Southern California) submits its Annual Report to DWR.

Central Basin - Adjudication

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

Subsequently, a stipulated judgment was drafted. Approval was received by public utility water companies and other producers representing well over 200,000 AF, or 75 percent, of the total rights within Central Basin. This was a prerequisite to filing the stipulated

judgment with the Court. On May 17, 1965, the case went to trial before Judge Edmund M. Moor. Following testimony on engineering, geology, hydrology, and safe yield of Central Basin and arguments on water right entitlement, the case was continued to August 25, 1965. Shortly thereafter, Judge Moor appointed DWR as Watermaster. The final Judgment was signed on October 11, 1965 and became effective on October 1, 1966.[4]

The Judgment was amended on March 21, 1980, to provide for a transition in the administrative year from a water year (October 1 to September 30) to a fiscal year (July 1 to June 30). Under the Judgment, this transition in turn contained a "short" administrative year of nine months (from October 1, 1980 to June 30, 1981). The administrative year starting July 1, 1981 was on a fiscal year basis.

The Judgment was again amended on July 19, 1985, modifying the annual budget ($20 minimum assessment) and exchange pool provisions. The second amended Judgment of May 6, 1991 modified the carryover and overproduction provisions (to 20 percent of allowed pumping allocation or 20 AF, whichever is greater, from 10 percent of allowed pumping allocation or 10 AF), and defined drought carryover, and provided for exemptions for extractors of contaminated groundwater.

In December 2013, the Central Basin Judgment was amended ("Third Amended" Central Basin Judgment) to confirm the retirement of DWR as the Watermaster of Central Basin. The Judgment established three separate bodies to assist the Court in the administration and enforcement of the provisions and stipulations of the Judgment. The first body is the Administrative Body, which administers Watermaster accounting and financial reporting activities. The Water Replenishment District of Southern California was appointed by the Court for this role. The second body is the Water Rights Panel, which enforces issues

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

related to groundwater production rights as defined by the Judgment. The Water Rights panel comprises of seven elected water rights holders within the Central Basin. The third administrative body is the Storage Panel, which reviews and approves groundwater storage efforts. The Storage Panel is comprised of the Water Rights Panel and the WRD Board of Directors. A copy of the Central Basin Judgment is provided in Appendix F.

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

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

set aside for storage. The purpose of the storage program creates an added reliability in water supply from the Central Basin.

Central Basin - Description

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

Central Basin covers approximately 270 square miles and is bounded on the north by the Hollywood Basin and the Elysian, Repetto, Merced, and Puente Hills, to the east by the Los Angeles County/Orange County line, and to the south and west by the NIU. The location of the Central Basin is provided in Figure 3. DWR divided the Central Basin into four sections: the Los Angeles Forebay, the Montebello Forebay, the Whittier Area, and the Pressure Area. Pursuant to DWR Bulletin 118 (for Basin Number 4-11.04), the total storage capacity of the Central Basin is estimated at approximately 13,800,000 AF.

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

Gabriel River, proceeds southwesterly across the Montebello Forebay Area and joins the Los Angeles River midway across the Basin. The San Gabriel River also enters Central Basin through the Whittier Narrows, crosses the Montebello Forebay, and runs south to the Pacific Ocean near Long Beach at the Orange County line.

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

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

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

Formation; and d) the Sunnyside Aquifer of the Lower Pleistocene Lower San Pedro Formation.

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

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

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

As previously discussed, DWR divided the Central Basin into four sections: the Los Angeles Forebay, the Montebello Forebay, the Whittier Area, and the Pressure Area. Below is a discussion of groundwater level changes, pursuant to WRD's 2026 Engineering Survey and Report.

- In the Los Angeles Forebay, the water level high was observed in 1938 with an elevation of approximately 70 feet above mean sea level (msl) and by 1962, the water levels had fallen by 180 feet to an elevation of 109 feet below msl due to over pumping and lack of recharge. Water levels have improved since then due to pumping rights adjudication and managed aquifer recharge. In 2023, the groundwater levels were at an elevation of 12.65 feet below msl.

- In the Montebello Forebay, the water level high was observed in 1942 with an elevation of approximately 137.8 feet above mean sea level (msl) and by 1958, the water levels had fallen by 117 feet to an elevation of 20.9 feet above msl due to over pumping and lack of recharge. Water levels have improved since then due to pumping rights adjudication and managed aquifer recharge. In 2025, the groundwater levels were at an elevation between 69.25 and 116.72 feet above msl.

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

recharge. In 2025, the groundwater levels were at elevations between 42.86 and 71.33 feet below msl.

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

Central Basin - Historical and Projected Basin Production

The Company currently produces groundwater from seven wells in the Central Basin. The total capacity of the Company's groundwater wells is approximately 10,500 GPM. The Company's current Allowed Pumping Allocation in the Central Basin is 1,901.15 AFY. As discussed in Section 6.2.7, the Company leases Central Basin water rights on an annual basis to allow for additional production above its Allowed Pumping Allocation. The Company's production over the past five years has been tabulated in Section 6.1. Over the past five years, the Company has produced 2,806 AFY to 2,984 AFY, with an average of 2,884 AFY from the Central Basin. The Company's projected production from the Central Basin, over the next 25 years in five-year increments, is provided in Table 6-9.

6.2.3 SURFACE WATER

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

6.2.4 STORMWATER

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

6.2.5 WASTEWATER AND RECYCLED WATER

CWC 10633R.

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

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

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

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

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

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

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

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

Discussion of wastewater collection, treatment, and recycled water use is included in this chapter. Municipal recycled water is municipal wastewater that has been treated 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."

Recycled water is currently used within the Company's service area for landscape irrigation at three (3) City of Montebello parks.

6.2.5.1 RECYCLED WATER COORDINATION

CWC 10633.

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

The Company purchases recycled water supplies from CBMWD, which provides recycled water produced from Los Angeles County Sanitation Districts' (LACSD) Los Coyotes Water Reclamation Plant (LCWRP) in Cerritos and San Jose Creek Water Reclamation Plant (SJCWRP) in Whittier. CBMWD has developed a recycled water program within its service area to provide direct delivery of recycled water to serve non-potable demands, thereby offsetting reliance on imported water supplies. The Company has coordinated the preparation of its 2025 Plan with Los Angeles County.

6.2.5.2 WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL

CWC 10633.

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

Wastewater generated in the vicinity of the Company is treated by LACSD. The local sewers tie into LACSD's regional trunk sewers. The regional trunk sewer lines deliver wastewater to one or more water reclamation plants owned by LACSD for treatment. The water reclamation plants are not located within the Company's service area. The water reclamation plants serving the Company include LACSD'S Los Coyotes Water Reclamation Plant (LCWRP) and the A.K. Warren Water Resource Facility (formerly known as the Joint Water Pollution Control Plant). LACSD estimates approximately 69 gallons of wastewater is generated per person per day within LACSD's service area. Based on the Company's 2025 population of approximately 25,752 within its service area, the estimated volume of residential wastewater generated and collected in 2025 is approximately 1,990 AF, as shown in Table 6-2.

LCWRP, which began operation in 1970, has a current design capacity of 37.5 MGD and provides coagulated, filtered and disinfected tertiary effluent. LCWRP plant serves a population of approximately 370,000 people. The method of disposal when treated recycled water is not used (non-recycled) is discharge to the San Gabriel River and eventually flows to the ocean.

The A.K Warren Water Resource Facility, which began operation in 1928 in the City of Carson, currently has a treatment capacity of about 400 MGD. The treatment level is primary and secondary treatment with disinfection. The plant serves a population of approximately 4.8 million people. Solids collected in primary and secondary treatment are

processed in anaerobic digestion tanks where bacteria break down organic material and produce methane gas. Treated wastewater is ultimately disinfected prior to being discharged to the Pacific Ocean. All water discharged to the ocean is monitored to ensure compliance with applicable local, state, and federal standards for discharge water.

6.2.5.3 RECYCLED WATER SYSTEM DESCRIPTION

CWC 10633.

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

The Company does not own or operate any recycled water facilities. Within the Company's service area, CBMWD owns the recycled water system and the Company reads the meters and bills the customers for the recycled water deliveries. The first recycled water service in the Company's service area was connected in 2018. The Company currently has three recycled water connections that serve City parks. Current recycled water demand within the Company's service area is shown on Table 6-4.

6.2.5.4 CURRENT, POTENTIAL, 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.

This section discusses the potential, current, and projected beneficial use of recycled water within the Company. Beneficial use is defined by Title 22 of the California Code of Regulations 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 the waters of the State."

Currently, the Company delivers recycled water provided by and purchased from CBMWD. CBMWD purchases tertiary treated recycled water from LACSD. The Company uses recycled water to augment its groundwater supplies for landscape irrigation within its water service area.

Table 6-4 describes the supply currently being used and the supply available for use in a recycled water project. Table 6-5 compares the projected use for 2025 versus actual use of recycled water in 2025.

6.2.5.5 ACTIONS TO ENCOURAGE AND OPTIMIZE FUTURE RECYCLED WATER USE

CWC 10633.

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

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

Recycled water use within the Company's service area is not expected to increase significantly within the planning horizon. However. the Company works collaboratively with CBMWD to encourage and optimize future recycled water use within its service area. Through CBMWD's marketing efforts, recycled water customers have expanded from traditional irrigation users such as golf courses and parks to unconventional and industrial users. Additionally, the Company provides incentives by setting recycled water rates below potable water rates to encourage recycled water use. CBMWD also advances funds for customer's retrofit expenses and are subsequently reimbursed through monthly payments. Additional details on CBMWD's recycled water program are available in CBMWD's 2025 Plan which is incorporated by reference.

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.

Central Basin

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

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

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

6.2.7.2 TRANSFERS

Pursuant to DWR's 2025 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 Central 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 Company is able to utilize the transfer opportunities available for Central Basin water when necessary.

As discussed in Section 6.2.2, the Company can lease Central Basin water rights on an annual basis to allow for additional production above its Allowed Pumping Allocation. The Company has consistently leased annual water rights from other parties to the Central Basin Judgment, including the City of Montebello, the Puente Basin Water Authority, Suburban Water Systems, and others.

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 Company has emergency interconnections with the following water agencies to receive water:

- California Water Service
- San Gabriel Valley Water Company
- South Montebello Irrigation District
- City of Montebello

6.2.8 SUPPLY FROM STORAGE

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

6.2.9 OTHER

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

6.2.10 FUTURE WATER PROJECTS

CWC 10631.

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

The Company is continuing with the development of a new groundwater well with a potential capacity of 1,600 gpm. The new Well 15 is anticipated to be online by mid-2026. The Company anticipates its existing Well 11A (1,000 gpm capacity) will be put on standby once Well 15 is up and running.

The Company is also constructing a new treatment facility to remove PFAS contamination from its groundwater wells. The treatment facility will treat water from all wells, including the new Well 15.

6.3 ENERGY USE

CWC 10631.2.

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

(1) An estimate of the amount of energy used to extract or divert water supplies.

(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.

(3) An estimate of the amount of energy used to treat water supplies.

(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.

(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.

(6) An estimate of the amount of energy used to place water into or withdraw from storage.

(7) Any other energy-related information the urban water supplier deems appropriate.

"Energy intensity" is defined as the quantity of energy consumed, measured in kilowatt hours (kWh), divided by the volume of water, measured in AF for a water management process over a one-year period. The information used to calculate the estimated energy intensity associated with the Company'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 Company 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 Company has reported the energy intensity associated with the water management processes which occur within its operational

control. Because the Company does not track individual energy usage for each water management process identified above, the Company has estimated the energy intensity using the "total utility approach" (i.e. sum of all water management processes). The total energy consumed was approximately 3,747,472 kWh during FY 2024-25. Although the total energy consumption reported includes electricity usage for general administration (e.g. at the Company'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 2,921 AF during FY 2024-25 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 Company's water management processes is estimated at 3,937 kWh per million gallons. The energy intensity data and calculations based on the "total utility approach" are provided in Table O-1B below.

The Company'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 Company'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 Company's water management processes do not include any substantial "self-generated energy sources" including solar, wind, geothermal, biomass, co-generation, and diesel generator sources.

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

Optional Submittal Table O-1B: Recommended Energy Reporting - SINGLE DELIVERY PRODUCT - TOTAL UTILITY APPROACH				
Water Delivery Product drop down list (If delivering more than one type of product recommend using Table O-1C)	Retail Potable Deliveries	**Only for Water Delivery Products Under the Urban Water Supplier's Operational Control**		
Start Date of Reporting Period	7/1/2024	**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
End Date of Reporting Period	6/30/2025			
Is upstream embedded energy in the values reported?	No			
Units of Measure for Water	AF	**Total Utility** See DWR NOTES	**Hydropower**	**Net Utility**
Volume of Water Entering Process		2,921		2,921
Energy Consumed (kWh)		3,747,472		3,747,472
Energy Intensity (kWh/vol. converted to MG)		3,937	-	3,937

DWR NOTES:

Total Utility: The volume of water entered in the "Total Utility" column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from your volume in this table.

Quantity of Self-Generated Renewable Energy

0 kWh

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

Combination of Estimates and Metered Data

Data Quality Narrative:

The total energy consumed was identified based on Southern California Edison (SCE) billing records. Although the total energy consumed includes electricity usage for general administration (which is not an identified water management process), general administration energy use is considered to be negligible compared to overall water system use and has not been netted out.

Narrative:

The total energy consumption includes energy associated with operating groundwater production wells and booster pumps to deliver water in the distribution system. Energy consumption is associated with operating groundwater water treatment. Energy consumption is also associated with plant lighting and air conditioning, and operating the Supervisory Control and Data Acquisition (SCADA) system and chlorination injection pumps.

NOTES:

6.4 SUBMITTAL TABLES

The applicable standardized Submittal Tables referenced within Chapter 6 are provided below.

6.4.1 TABLE 6-1: GROUNDWATER VOLUME PUMPED

Table 6-1 Groundwater Volume Pumped

Submittal Table 6-1 Retail: Groundwater Volume Pumped **Water Code Section 10631(4) and 10631(4)(c)**							
☐	Check the box if the Supplier does not pump groundwater. Proceed to the next table.						
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)						
Groundwater Type **Drop Down List** May use each category multiple times	Potable or Non-Potable (OPTIONAL) **Drop down list**	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Add additional rows as needed							
Alluvial Basin	Potable	Central Basin	2868	2984	2806	2838	2921
		Total	2,868	2,984	2,806	2,838	2,921
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.							
NOTES							

6.4.2 TABLE 6-2: WASTEWATER COLLECTED WITHIN SERVICE AREA

Table 6-2 Wastewater Collected Within UWMP Service Area

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area Water Code Section 10633(a)				
☐	Check the box if there is no wastewater collection system. Proceed to the next table.			
	Percentage of 2025 service area served by wastewater collection system (OPTIONAL)			
	Percentage of 2025 service area population served by wastewater collection system (OPTIONAL)			
Wastewater Collection			**Recipient of Collected Wastewater**	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? OPTIONAL **Drop Down List**	Volume of Wastewater Collected from UWMP Service Area 2025 (AF)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number **Drop down list**	Is WWTP Located Within UWMP Area? **Drop Down List**
Add additional rows as needed				
LACSD	Estimated	170	Los Coyotes WRP, Place ID 238646	No
LACSD	Estimated	1,820	A.K. Warren Water Resource Facility, Place ID 234156	No
Total Wastewater Received from UWMP Service Area in 2025:		1,990		
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Additional Guidance**: See Appendix M, Section M.21 for detailed guidance on this table.				
NOTES:				

6.4.3 TABLE 6-3: WASTEWATER TREATMENT AND OUTCOMES WITHIN UWMP SERVICE AREA

Table 6-3 Wastewater Treatment and Outcome within Service Area

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area Water Code Section 10633(b)														
☑	Check the box if no wastewater is treated or disposed of within the UWMP service area. Proceed to the next table.													
Wastewater Treatment Plant Name and Place ID Number **Drop down list**	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (OPTIONAL) **Drop down list**	2025 Volume of Wastewater Received from UWMP Service Area (As Reported in Submittal Table 6-2 R) (AF)	Total 2025 Volume of Water Treated (AF)	2025 Outcomes of Treated Wastewater										
				Water Recycled Within UWMP Service Area (enter data as applicable)		**Water Recycled Outside of UWMP Service Area** (enter data as applicable)		**Effluent Discharge that is not a Permitted Recycled Water Use** (enter data as applicable)		**Required Discharge for Instream Flow** (enter data as applicable)		**Delivered to Another Entity for Additional Treatment** (enter data as applicable)		
				Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Name of other entity
Add additional rows as needed														
Total		0	-		0		0		0		0		0	
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **IPR:** Indirect Potable Reuse would have the treatment level of its end use requirement in the Level of Treatment drop-down. **Additional Guidance:** See Appendix M, Section M.21 for detailed guidance on this table.														
NOTES:														

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

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

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area **Water Code Section 10633 (c),(d),(e)**										
☐	Check box if recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.									
Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL) :										
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :										
Volume of Supplemental Water Added in 2025 (OPTIONAL) :										
Source of 2025 Supplemental Water (OPTIONAL) :										
Use Type **Drop down list**	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	**Potential Recycled Water Use**	
									Volume	Narrative page number (OPTIONAL)
Add additional rows as needed										
Landscape irrigation (exc golf courses)	Non-Potable	City park irrigation	21	25	25	25	25	25		
Subtotal Potable			0	0	0	0	0	0	0	
Subtotal Non-Potable			21	25	25	25	25	25	0	
Total			21	25	25	25	25	25	0	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Additional Guidance:** See Appendix M, Section M.21 for detailed guidance on this table. **Potential recycled water use:** a description of the feasibility of these uses must be included in the narrative. **Multiple Producers:** If you have multiple recycled water producers, submit a separate table for each.										
NOTES:										

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

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

Submittal Table 6-5 Retail: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual Water Code Section 10633(e)		
☐	Check the box if recycled water was not used in 2025 nor previously projected for use in 2020. Proceed to the next table.	
Use Type Drop Down list	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Add additional rows as needed		
Landscape irrigation (exc golf courses)	29	21
Total	29	21

DWR NOTES:

Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3

Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

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

Table 6-6 Methods to Encourage Future Recycled Water Use

Submittal Table 6-6 Retail: Methods to Encourage Future Recycled Water Use Water Code Section 10633(f)			
☐	Check the box if the Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.2.5	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Add additional rows as needed			
Conversion	Median irrigation	Future	4
		Total (AF)	4
		Unit Conversion to AF	4
DWR NOTES: **Units of measure** (AF, CCF, MG) MUST remain consistent with units reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **The unit conversion to Acre Feet** addresses the Water Code's requirement that this value be provided in acre-feet.			
NOTES:			

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

Table 6-7 Expected Future Water Supply Projects or Programs

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs **Water Code Section 10631(f)**							
☐	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Proceed to the next table.						
☑	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.						
Section 6.2.10	Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Planned Implementation Year	Planned for Use in Year Type **Drop Down List**	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Add additional rows as needed							
Contruct New Well 15	No		Central Basin	Potable	2026	All Year Types	2,600 AFY
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3.							
NOTES:							

6.4.8 TABLE 6-8: WATER SUPPLIES—ACTUAL

As discussed in Section 6.2, the Company's water supply sources consist of groundwater produced from the Central Basin (see Section 6.2.2) and recycled water (see Section 6.2.5). The actual quantities of the water supply sources available to the Company during FY 2024-25 are summarized in Table 6-8. The reliable quantities of projected water supply sources available to the Company in five-year increments through FY 2049-50 during normal or average years are summarized in Table 6-9. The reliability of these sources of supply are addressed in Section 7.2.3, including during normal years, single dry years, and five consecutive year droughts.

The Company's projected reliable water supplies from FY 2024-25 through FY 2049-50 in five-year increments is based on historical practices, water supply availability, and the cost of water. It is anticipated the Company will produce groundwater from the Central Basin up to its APA. The Company will lease water rights to produce groundwater above its APA. At the same time the Company will continue to use recycled water for non-potable demands.

The Company's projected quantities of recycled water supplies to meet non-potable demands are based on historical long-term averages. The Company's projected quantities of groundwater supplies from Central Basin are based on historical long-term averages and available supplies during previous dry year conditions. The Company's projected quantities of recycled water supplies to meet non-potable demands are based on historical long-term averages. Consequently, it is anticipated the Company will have sufficient water supplies available to meet projected demands.

Table 6-8 Water Supplies - Actual

Submittal Table 6-8 Retail: Water Supplies — Actual **Water Code Section 10631(b)**				
Water Supply		**2025**		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed				
Groundwater (not desalinated)	Central Basin	Potable	2,921	
Recycled Water		Non-Potable	21	
		Subtotal Potable	2,921	0
		Subtotal Non-Potable	21	0
		Total	2,942	0
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Total Entitlement:** e.g. Water Right, Groundwater Allocation, Contracted Amount.				
NOTES:				

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

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

6.4.10 TABLE 6-9: WATER SUPPLIES—PROJECTED

Table 6-9 Water Supplies – Projected

Submittal Table 6-9 Retail: Water Supplies — Projected Water Code Section 10631 (b)												
Water Supply			Projected Water Supply (Report to the Extent Practicable)									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop Down list	2030		2035		2040		2045		2050 (opt)	
			Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed												
Groundwater (not desalinated)	Central Basin	Potable	2,936		2,951		2,964		2,980		2,994	
Recycled Water		Non-Potable	25		25		25		25		25	
Subtotal Potable			2,936	0	2,951	0	2,964	0	2,980	0	2,994	0
Subtotal Non-Potable			25	0	25	0	25	0	25	0	25	0
Total			2,961	0	2,976	0	2,989	0	3,005	0	3,019	0
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. **Total Entitlement:** e.g. Water Right, Groundwater Allocation, Contracted Amount.												
NOTES:												

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 Company's 2025 Plan discusses and provides the following:

- FY 2016-17 represents an "average" or "normal" water year for the Company in which the total amount of rainfall was similar to the historical average rainfall.
- A "single dry" year for the Company was represented in FY 2017-18, in which the total amount of rainfall was below the historical average rainfall.
- A "five consecutive year drought" period for the Company is represented from FY 2011-12 to FY 2015-16, where the total amount of rainfall during each of these years was less than the historical average rainfall.
- The Company's current and projected water supplies available during normal years in five-year increments over the next 25 years are provided (through Fiscal Year 2049-50) as shown on Table 7-2.
- The Company's current and projected water supplies available during single dry years in five-year increments over the next 25 years are provided (through Fiscal Year 2049-50) as shown on Table 7-3.
- The Company's current and projected water supplies available during each year of a five consecutive year drought in five-year increments over the next 25 years are provided (through Fiscal Year 2049-50) as shown on Table 7-4.
- The reliability of the Company'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 Company'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 Company's water supply reliability over a five consecutive year drought period. The Company's Drought Risk Assessment assumes a five consecutive year drought from FY 2025-26 through FY 2029-30 and includes a review of water supplies, water uses, and water supply reliability for each water supply source during this period. The Company'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 Company 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.

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

7.1 CONSTRAINTS ON WATER SOURCES CONSIDERATIONS

CWC 10631.

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

Water Code Section 10634

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

Water Code Section 10635

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

Water Code Section 10635

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

7.1.1 SERVICE RELIABILITY - CONSTRAINTS ON WATER SOURCES

The Company's sources of supplies consist of groundwater from the Central Basin and recycled water supplies from CBMWD, as described in Section 6.2. Although all of these supplies are managed, the following constraints may occur which the Company has considered in this reliability analysis.

Central Basin

The Company produces groundwater from the Central Basin. The groundwater has been impacted by contamination, including by PFAS. However, the Company is currently constructing a treatment facility to remove PFAS contamination from its wells. The Company's groundwater supplies are considered reliable both from a water quality and quantity standpoint.

7.2 WATER SERIVCE 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 Company's water supplies is based on the historical precipitation data in the Central Basin area. Historical annual precipitation in the Central Basin area is discussed in Section 3.3 and is based on historical data collected from Station 045790 (Montebello, California). Furthermore, Section 4.2.5.6 of this Plan notes that potential future climate change impacts may result in an increase in the average annual precipitation within the Company'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 Company's service area is 16.1 inches. FY 2016-17 represents an average or normal water year for the Company in which the

total amount of rainfall was similar to the historical average rainfall. A single dry year for the Company was represented in FY 2017-18, in which the total amount of rainfall was below the historical average rainfall. A five consecutive year drought period for the Company is represented from FY 2011-12 to FY 2015-16, where the total amount of rainfall during each of these years was less than the historical average rainfall. Table 7-1 summarizes these "base years" for average, single dry, and five consecutive year drought and provides the total amount of water supplies available to the Company during those base years. The following discussion assesses the water service reliability of the Company's water supply sources.

Water Service Reliability - Groundwater

Central Basin Groundwater Production

The Central Basin groundwater supplies are managed by the Central Basin Watermaster (WRD), as discussed in Section 6.2.2. During a normal year (FY 2016-17), single dry year (FY 2017-18), and five consecutive year drought period (FY 2011-12 to FY 2015-16), the Company met all of its potable demands from the Central Basin.

Water Service Reliability Summary

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

7.2.1 WSRA YEAR-TYPE CHARACTERIZATION

7.2.1.1 TYPES OF YEARS

The Company'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 Company's water supplies sources have been sufficient in meeting the Company's historical water demands during an average year, a single dry year, and a five consecutive year drought. An average year was based on a historical year during the past 15 years with a total precipitation similar to the historical average precipitation in the vicinity of the Company's service area. Because a single dry year or a five consecutive year drought period will not compromise the Company's ability to provide a reliable supply of water to its customers, a single dry year in this Plan was selected based on of the driest years during the past 15 years. The five consecutive year drought period was based on a period of five consecutive dry years during the past 15 years.

As indicated in Section 3.3, the historical average rainfall in the vicinity of the Company's service area is 16.1 inches. FY 2016-17 represents an average or normal water year for the Company in which the total amount of rainfall was similar to the historical average rainfall. A single dry year for the Company was represented in FY 2017-18, in which the total amount of rainfall was less than the historical average rainfall. A five consecutive year drought period for the Company is represented from FY 2011-12 to FY 2015-16, where the total amount of rainfall during each of these years was less than the historical average rainfall. Table 7-1 summarizes these "base years" for an average year, a single dry year and a five consecutive year drought period and provides the total amount of water supplies available to the Company during those base years.

7.2.1.2 SOURCES FOR WATER DATA

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

7.2.2 WSRA SUPPLY AND DEMAND COMPARISON

CWC 10635.

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

The Company primarily obtains its water supplies from groundwater produced from the Central Basin. As discussed in Section 7.3 and shown in Table 7-2, Table 7-3, and Table 7-4, the Company'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 Company's ability to provide a reliable supply of water to its customers.

The Company's projected normal year water demands over the next 25 years are discussed in Section 4.2.6. The ratio of total water supplies (including potable and recycled water supplies) available to the Company during a historical average year in FY 2016-17 (or 2,957 AF) and during a historical single dry year in FY 17-18 (or 3,061 AF) was used to estimate the Company's projected water demands during single dry years.

The ratio of water supplies available to the Company during a historical average year in FY 2016-17 (or 2,957 AF) and a historical a five consecutive year drought period from FY 2011-12 to FY 2015-16 (or 3,370 AF, 3,468 AF, 3,525 AF, 3,137 AF, and 2,919 AF, respectively) was used to estimate the Company's projected water demands during a five consecutive year drought period. The Company's projected dry year water supplies over the next 25 years were based on the minimum supplies needed by the Company to meet projected single-dry year demands. Table 7-2, Table 7-3, and Table 7-4 summarize the Company'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 Company can meet water demands during normal years, single dry years, and a five consecutive year drought periods over the next 25 years.

7.2.2.1 NORMAL YEAR

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

7.2.2.2 SINGLE DRY YEAR

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

7.2.2.3 FIVE CONSECUTIVE DRY YEARS

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

7.2.3 WSRA DESCRIPTION OF MANAGEMENT TOOLS AND OPTIONS

CWC 10620.

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

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

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

7.3 DROUGHT RISK ASSESSMENT

CWC 10612.

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

CWC 10635.

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

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

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

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

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

The Company's sources of supplies consist of groundwater produced from the Central Basin and recycled water supplies from CBMWD. The following discussion provides a Drought Risk Assessment (DRA) which assesses the Company's water supply reliability over a five consecutive year drought period. The Company's DRA incorporates a five consecutive year drought from FY 2025-26 through FY 2029-30 and includes a review of water supplies, water uses, and water supply reliability.

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

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

- The five consecutive year drought period associated with the 2025 Plan is based on five consecutive dry years from FY 2025-26 through FY 2029-30
- The projected water supplies available during each year of this five consecutive year drought are assumed to be identical to the water supplies produced during each year between FY 2011-12 and FY 2015-16 (which represents the most recent and historical five consecutive year drought).
- The projected demands during this five consecutive year drought are based on water demands from FY 2016-17 (a normal year) which were adjusted based on projected population over the next five years along with the ratio of the normal year demands to actual demands over each year of the most recent and historical five consecutive year drought period (from FY 2011-12 through FY 2015-16).
- The projected demands were compared to the projected supplies to identify potential water supply deficits which may require implementation of the Water Shortage Contingency Plan (discussed further in Chapter 8).

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

Groundwater

The Company produces groundwater supplies from the Central Basin which is actively managed by the Central Basin Watermaster, as described in Section 6.2.2. The Central Basin is adjudicated; however, the water rights are fixed each year. Consequently, a Central Basin producer cannot produce in excess of its own water rights or rights it may have leased from others. The Company also has access to water supplies from recycled water. The quantity of groundwater used (and reliably available) during the most recent and historical five consecutive year drought period have been tabulated in Section 6.1. The Company manages its water supply portfolio to optimize the water supplies available each year and to avoid a water supply shortage. The Company 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 Company does not anticipate a water supply shortage.

Recycled Water

The Company provides recycled water to reduce demands on its potable water supplies as described in Section 6.2.5. The availability of recycled water supplies is not adversely impacted by drought conditions and are locally available.

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

Summary

The Company'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 Company has the ability to enact varying Demand Management Measures (see Chapter 9) to help educate its customers and provide an economic incentive for the retail customers to reduce their water consumption.

7.3.3 DRA TOTAL WATER SUPPLY AND USE COMPARISON

Gross water use for the projected five consecutive year drought is shown on Table 7-5. Section 7.3.2 describes the water source reliability for each source of supply the Company will rely on during a five consecutive year drought. The annual quantities are summed and are also provided on Table 7-5. When necessary, the Company 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 Company can implement various stages of its Water Shortage Contingency Plan to balance water demands with available supplies during each year of the projected five consecutive year drought.

OPTIONAL PLANNING TOOL WORKBOOK

DWR has deemed the "Planning Tool Worksheet" as optional and the Company is not required by DWR to use the tool. The Company has provided sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. The Company has also been able to provide water service to meet maximum day water demands for these years, including during the summer months. The Company obtains all of its potable water supplies from a managed groundwater basin which is not

subject to seasonal fluctuation. Consequently, an evaluation regarding water supplies on a monthly basis was not considered.

7.4 SUBMITTAL TABLES

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

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

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

Optional Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	**Base Year** If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	**Available Supplies if Year Type Repeats**	
		☐ Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]	
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	**% of Average Supply**
Average Year	2017	2957	100%
Single-Dry Year	2018	3061	103.5%
Consecutive Dry Years 1st Year	2012	3370	114.0%
Consecutive Dry Years 2nd Year	2013	3468	117.3%
Consecutive Dry Years 3rd Year	2014	3525	119.2%
Consecutive Dry Years 4th Year	2015	3137	106.1%
Consecutive Dry Years 5th Year	2016	2919	98.7%

DWR NOTES: Supplier may use multiple versions of Submittal Table 7-1 R if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Submittal Table 7-1 R, in the "Note" section of each submittal table, state that multiple versions of Submittal Table 7-1 R are being used and identify the particular water source that is being reported in each submittal table. **Units of measure (AF, CCF, MG**) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the units of measure reported in Submittal Table 2-3.

NOTES:

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

Table 7-2 Normal-Year Supply and Use Comparison

Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 R)	2,961	2,976	2,989	3,005	3,019
Use totals (autofill from Submittal Table 4-2 R)	2,961	2,976	2,989	3,005	3,019
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

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

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

Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	3,065	3,081	3,094	3,111	3,125
Use totals	3,065	3,081	3,094	3,111	3,125
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES					

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

Table 7-4 Multiple Dry Years Supply and Use Comparison

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison Water Code Section 10635(a)						
		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	3,375	3,392	3,407	3,425	3,441
	Use totals	3,375	3,392	3,407	3,425	3,441
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	3,473	3,491	3,506	3,525	3,541
	Use totals	3,473	3,491	3,506	3,525	3,541
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	3,530	3,548	3,564	3,583	3,599
	Use totals	3,530	3,548	3,564	3,583	3,599
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	3,142	3,158	3,171	3,188	3,203
	Use totals	3,142	3,158	3,171	3,188	3,203
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	2,923	2,938	2,951	2,967	2,981
	Use totals	2,923	2,938	2,951	2,967	2,981
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.						
NOTES:						

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

Table 7-5 Five-Year Drought Risk Assessment

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
2026	**Total**
Total Water Use (AF)	3,358
Total Supplies (AF)	3,370
Surplus/Shortfall w/o WSCP Action	12
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2027	**Total**
Total Water Use (AF)	3,460
Total Supplies (AF)	3,468
Surplus/Shortfall w/o WSCP Action	8
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	3,521
Total Supplies (AF)	3,525
Surplus/Shortfall w/o WSCP Action	4
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	3,138
Total Supplies (AF)	3,137
Surplus/Shortfall w/o WSCP Action	(1)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	1
Revised Surplus/(shortfall)	0
2030	**Total**
Total Water Use (AF)	2,923
Total Supplies (AF)	2,919
Surplus/Shortfall w/o WSCP Action	(4)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	4
Revised Surplus/(shortfall)	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

CHAPTER 8

WATER SHORTAGE CONTINGENCY PLAN

LAY DESCRIPTION – CHAPTER 8

WATER SHORTAGE CONTINGENCY PLAN

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

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

- The Company 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 Company to adopt and amend its Water Shortage Contingency Plan are presented.

The following Water Shortage Contingency Plan includes references to Chapters and Sections from Montebello Land and Water Company's 2025 Urban Water Management Plan:

8.1 WATER SUPPLY RELIABILITY ANALYSIS

CWC 10632.

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

CWC 10632.5.

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

The Company's sources of supply were discussed in Section 6.2 of the 2025 Plan and consist of groundwater from the Central Basin and recycled water supplies from CBMWD. The reliability of the various sources of supply are discussed in Chapter 7 of the 2025 Plan. Recycled water is locally generated and is not impacted by drought conditions. A seismic risk assessment and mitigation plan is discussed in Section 8.4.6.

8.2 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

CWC 10632.

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

CWC 10632.

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

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

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

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

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

(iii) Existing infrastructure capabilities and plausible constraints.

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

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

CWC 10632.1.

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

By July 1st of every year, the Company 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 Company's unconstrained water demands (i.e. water demands prior to any projected response actions the Company may trigger under this Water Shortage Contingency Plan) for the current year and the upcoming (potential single dry) year. The Annual Assessment also includes information regarding anticipated shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the Company's Water Shortage Contingency Plan.

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

8.2.1 DECISION-MAKING PROCESS

The Company produces groundwater from the Central Basin as its primary sources of water supply. Consequently, during the third quarter of each fiscal year the Company 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 Company for peer review and comment. Based on comments received, a redraft will be prepared and provided to Company managers during the Spring of each year. The draft will subsequently be provided to the General Manager for final review. If necessary, a final draft of the Annual Assessment will be provided to the company Board for review 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 Company 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 Company.

8.2.2 DATA METHODOLOGIES

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

1) Evaluation Criteria: The locally applicable evaluation criteria used to prepare the Annual Assessment will be identified. The evaluation criteria will include, but is not limited to, an analysis of current local hydrology (including rainfall and groundwater levels), current water demands, a review of water system improvement plans which may impact infrastructure availability, and water quality regulations which may impact groundwater availability.

2) Water Supply: A description of each available water supply source will be provided. The descriptions will include a quantification of each available water supply source and will be based on review of current production capacities, historical production, Urban Water Management Plans, and prior water supply studies (including Water Supply Assessments and/or Master Plans).

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

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

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

8.3 SIX STANDARD WATER SHORTAGE LEVELS

CWC 10632.

(a)(3)(A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(a)(3)(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

The Company will manage water supplies prudently to minimize the adverse impacts of water shortages. The Company'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 Company previously established four (4) water shortage levels. In accordance with the California Water Code in which urban water suppliers are required to define six standard water shortage level, the Company has developed the crosswalk illustrated below (also included in the Company's 2020 Plan) that translated the Company's previously established shortage levels to the mandated standard shortage levels. Table 8-1 also provides a cross-reference between the Company's previously established shortage levels and the mandated standard shortage levels.

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

Current WSCP Stage	Supply Condition / Shortage		2025 UWMP Stage	Shortage Level
Permanent	Normal	→	1	Up to 10%
Level 1	Moderate Condition	→	2	10-20%
Level 2	Severe Condition	→	3	20-30%
		→	4	30-40%
Level 3	Emergency Condition	→	5	40-50%
		→	6	Greater than 50%

8.4 SHORTAGE RESPONSE ACTIONS

CWC 10632.

(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

(A) Locally appropriate supply augmentation actions.

(B) Locally appropriate demand reduction actions to adequately respond to shortages.

(C) Locally appropriate operational changes.

(D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.

(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

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

8.4.1 SUPPLY AUGMENTATION

The Company 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 8-2 reflects this approach and does not identify any new supplies. Instead, the Company 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 Company's sources of water supply include groundwater produced from the Central Basin and recycled water supplies provided by LACSD through CBMWD. As noted in Section 8.2, the Company is required to annually 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

Company is currently in, or considers entering into, one of the standard water shortage levels identified in Section 8.3, the Company will consider the water supply (augmentation) actions shown in Table 8-2.

8.4.2 DEMAND REDUCTION

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

A full listing of the restrictions/prohibitions associated with each shortage level is provided below.

<u>Water Shortage Level 1 (includes permanent water conservation requirements)</u>

A. Limits on Watering Hours. Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of ten a.m. and one hour before sunset Pacific Standard Time on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system. Lawns or other

irrigated areas shall not be watered more frequently than every other day. Odd-numbered street-addressed properties may water on odd-numbered dates. Even-numbered street-addressed properties may only do so on even-numbered dates. All irrigated areas may be watered on the 29th day of the month of February every fourth year or the 31st day of the month having thirty one days. The provisions of this subsection shall not apply to restrict watering of newly seeded or reseeded lawns once a year, nor to prohibit drip irrigation systems.

B. Limit on Watering Duration. Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two gallons of water per hour or weather based controllers or stream rotor sprinklers that meet a seventy percent efficiency standard.

C. No Excessive Water Flow or Runoff. Watering of irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining property, or non-landscaped areas such as sidewalks, driveways, streets, alleys, gutters or ditches is prohibited.

D. No Washing Down Hard or Paved Surfaces. Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning machine equipped with a positive self-closing water shut-off device, a low-volume, high pressure cleaning machine equipped to recycle any water used, or a low-volume high pressure water

broom. Should the use of water for wash-down have to do with an immediate fire or sanitation hazard, written permission shall have been obtained from the City fire department, health department or building department.

E. Obligation to Fix Leaks, Breaks or Malfunctions. Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water users plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than seven days of receiving notice from the Company, is prohibited.

F. Recirculating Water Required for Water Fountains and Decorative Water Features. Operating a water fountain or other decorative water feature that does not use recirculated water is prohibited.

G. Limits on Washing Vehicles. Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility with an on-site water recycling system.

H. Drinking Water Served Upon Request Only. Eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested by that person or that person's guardian or custodian of care therefor.

I. Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services. Hotels, motels and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily.

Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood English and Spanish languages and any other language commonly used by users of such establishments.

J. No Installation of Single Pass Cooling Systems. Installation of single pass cooling systems is prohibited in buildings requesting new water service.

K. No Installation of Non-recirculating Water Systems in Commercial Car Wash and Laundry Systems. Installation of non-recirculating water systems is prohibited in premises with new commercial conveyor car wash or new commercial laundry system.

L. Restaurants Required to Use Water Conserving Dish Wash Spray Valves. Food preparation establishments, such as restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

M. Commercial Car Wash Systems. All commercial car wash systems must have installed operational recirculating water systems, or must have secured a waiver of this requirement and/or an extension of time for installation from the City.

N. Construction meters used for landscape irrigation shall not be used between ten a.m. and one hour before sunset.

O. Filling or refilling of private swimming pools, spas, ponds and artificial lakes is prohibited between ten a.m. and one hour before sunset. Swimming pools and spas shall be equipped with covers to minimize evaporation and such covers shall be used not less than five days a week unless the facility is in use.

Water Shortage Level 2

In addition to the restrictions identified in Water Supply Shortage Level 1, the following allocations and drought emergency surcharges are in effect during Water Supply Shortage Level 2:

A. Limits on Watering Days. Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to not to exceed three days per week on a schedule established and posted by the Company.
   During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week on a schedule established and posted by the Company.
   This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two gallons of water per hour.
   This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

B. Obligation to Fix Leaks, Breaks or Malfunctions. All leaks, breaks; or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two hours of receipt of written notification by the Company unless other arrangements are made with the Company.
   All leaks, breaks or malfunctions in the water purveyor's water system shall be repaired within seventy-two hours of the water purveyor becoming aware thereof.

Water Shortage Level 3

In addition to the restrictions identified in Water Supply Shortage Level 2, the following allocations and drought emergency surcharges are in effect during Water Supply Shortage Level 3:

A. Watering Days. Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to not to exceed two days per week on a schedule established and posted by the Company. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week on a schedule established and posted by the Company. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purposes of adjusting or repairing an irrigation system.

B. Obligation to Fix Leaks, Breaks or Malfunctions. All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within forty-eight hours of receipt of written notification by the Company unless other arrangements are made with the Company. All leaks, breaks or malfunctions in the water purveyor's water system shall be repaired within forty-eight hours of the water purveyor becoming aware thereof.

C. Limits on Filling Ornamental Lakes or Ponds. Filling or re-filling of ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such aquatic life are of significant value and have been actively managed

within the water feature prior to declaration of a supply shortage level under this Plan.

D. Limits on Washing Vehicles. Using water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not, is prohibited except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a recirculating water system to capture or reuse water.

E. Limits on Filling Residential Swimming Pools and Spas. Re-filling of more than one foot of depth in a pool or spa and initial filling of residential swimming pools or outdoor spas with potable water is prohibited.

Water Shortage Level 4

The following water use restrictions shall be in effect and will be enforced on all customers: The restrictions in Water Shortage Level 4 shall be that same as Water Shortage Level 3, with the exception that no customer shall cause, use or permit the use of water for any purpose in an amount in excess of 60% of said customer's base period allocation.

Water Shortage Level 5

In addition to the restrictions identified in Water Supply Shortage Level 4, the following allocations and drought emergency surcharges are in effect during Water Supply Shortage Level 5:

A. No Watering or Irrigating. Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use, unless the Company has determined that recycled water is available and may be applied to the use.
    1. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self-closing water shut-off nozzle or device
    2. Maintenance of existing landscape necessary for fire protection;
    3. Maintenance of plant materials identified to be rare or essential to the wellbeing of protected species;
    4. Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, and school grounds, provided that such irrigation does not exceed two days per week according to the schedule established in Section 4-3.3(A) and time restrictions in Section 4-3.1(A) and (B);
    5. Actively irrigated environmental mitigation projects.

B. Obligation to Fix Leaks, Breaks or Malfunctions. All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty-four hours of notification by the Company unless other arrangements are made with the Company. The same time restrictions shall apply to water systems of water purveyors.
    1. No New Potable Water Service. Upon declaration of a Level 5 water supply shortage emergency condition by the Company, no new potable water service shall be provided, no new temporary meters or permanent meters are to be provided, and no statements of immediate ability to serve or provide potable water service (such as, will-serve letters, certificates, or letters of availability) are to be issued, except under the following circumstances:
        i. A valid, unexpired building permit has been issued for the project; or

ii. The project is necessary to protect the public health, safety, and welfare; or

iii. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the Company.

This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less.

2. Limits on Building Permits. The Company will request the City to limit or withhold the issuance of building permits which require new or expanded water service, except to protect the public health, safety and welfare, or in cases which meet the City's adopted water conservation offset requirements.

C. Discontinue Service. The Company, in its sole discretion, or pursuant to a Federal, State or local government agency order with jurisdiction over the Company, may discontinue service to a water user who willfully violates provisions of this section.

<u>Water Shortage Level 6</u>

The following water use restrictions shall be in effect and will be enforced on all customers: The restrictions in Water Shortage Level 6 shall be that same as Water Shortage Level 5, with the exception that no customer shall cause, use or permit the use of water for any purpose in an amount more than 50% of said customer's base period allocation.

8.4.3 OPERATIONAL CHANGES

During a water supply shortage situation, the Company will manage its water supply resources to provide sufficient water supplies capable of meeting the demands of its customers. Section 8.4.2 describes the Company's standard water shortage levels and associated demand reduction measures. Section 8.4.1 describes the Company'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 Company to utilize all available water supply sources in response to water shortage situations.

As noted in Section 8.2, the Company is required to annually 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 Company in determining any potential operational changes. In addition, the Company's standard water shortage levels and the associated demand reduction measures, in conjunction with the Company's existing Demand Management Measures (discussed in Chapter 9), will be essential to the Company in reducing water demands during any water shortage period. The operational changes the Company 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 Company to reduce customer demands are discussed in Section 8.4.2. There are no additional mandatory restrictions planned at this time.

8.4.5 EMERGENCY RESPONSE PLAN

Catastrophic water shortages are incorporated in the Company's standard water shortage levels (identified in Section 8.3) and the associated demand reduction measures (described in Section 8.4.2). In addition to the water supply augmentation actions (Section 8.4.1) and potential operational changes (Section 8.4.3) which the Company may consider in order to continue providing sufficient water supplies, the Company 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 Company, 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, 2025 and December 31, 2026, confirming the current RRA and ERP have been reviewed and updated.

The Company's RRA, updated in 2026, evaluates the vulnerabilities, threats, and consequences from potential hazards to the Company's water system. The Company 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 Company'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 Company's water facility assets. The cost-effectiveness of implementing potential countermeasures to reduce risks was also reviewed.

The Company's ERP, updated in 2026, provides the management, procedures, and designated actions the Company and its employees will implement during emergency situations (including catastrophic water shortages) resulting from natural disasters, system failures and other unforeseen circumstances. The Company's ERP (which is incorporated by reference) provides the guidelines for evaluating an emergency situation, procedures for activating an emergency response, and details of the different response phases in order to ensure that customers receive a reliable and adequate supply of potable water. The scope of the ERP includes emergencies which directly affect the water system and the ability to maintain safe operations (such as a chlorine release, and earthquake or a threat of contamination). The ERP also incorporates the results of Company'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 Company 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 Company 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.

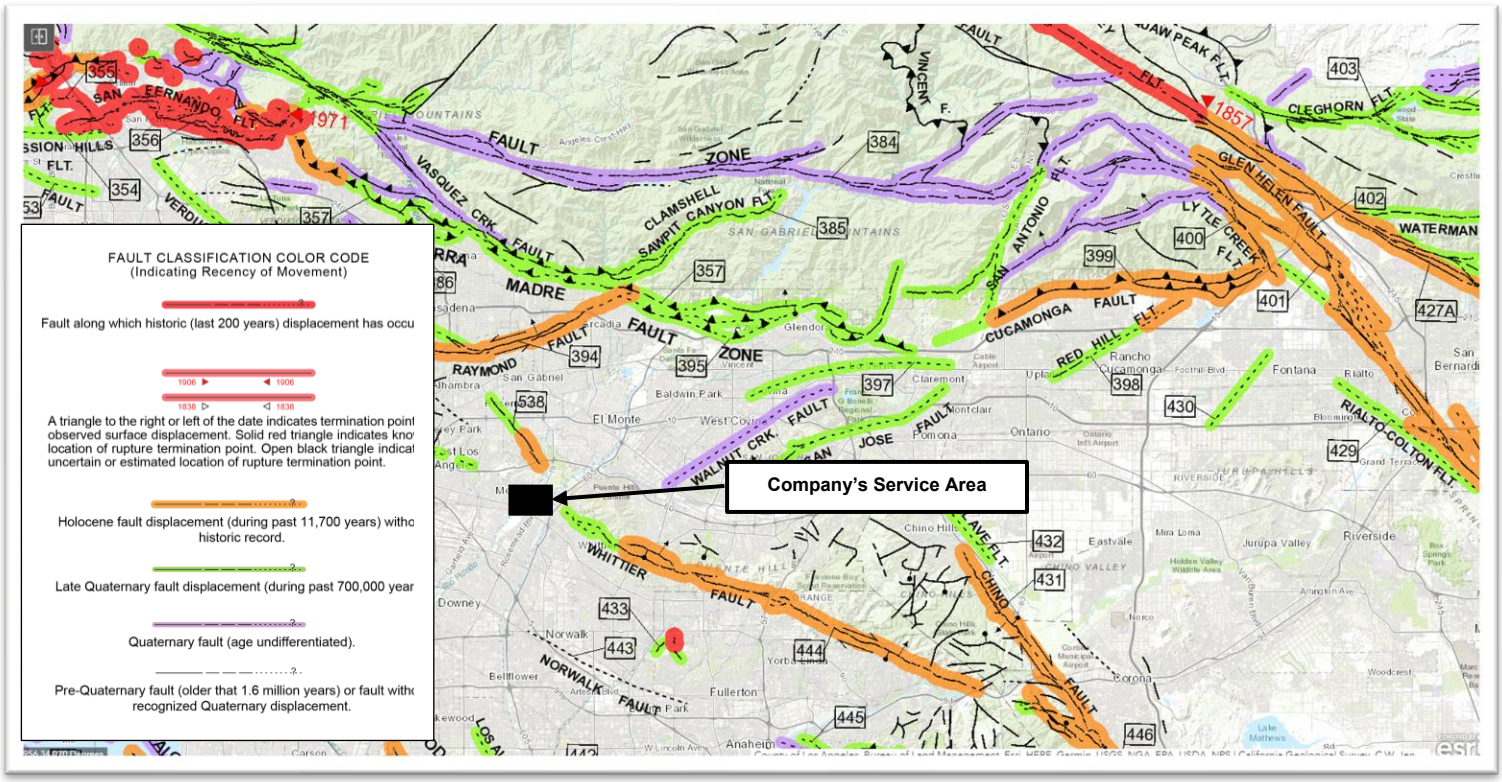
(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or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

The City of Montebello prepared a draft "Local Hazard Mitigation Plan" in 2024 (see Appendix G). The Local Hazard Mitigation Plan identifies effective ways to assess the significant natural hazards (including earthquakes) that may affect the Company and its residents. The Local Hazard Mitigation Plan provides resources, information, and strategies to reduce the Company's vulnerability to these hazards, while providing guidance for the coordination of mitigation activities throughout the City.

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

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 Company’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 Company’s water service area include the San Andreas fault, the Whittier fault, Norwalk fault, and the Newport-Inglewood fault .

Location of Earthquake Faults



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

The California Geological Survey provides earthquake hazard maps[5] based on the Modified Mercalli Intensity (MMI) scale, which measures earthquake shaking intensity and its impacts on people, objects, and buildings. The area within the Company's service area has an MMI of approximately 9.3 calculated based on the level of shaking that has a 2 percent chance of being exceeded in 50 years (or the level of shaking with an approximate 2,500-year average repeat time). An MMI at this intensity (violent shaking) can result in buildings shifted off foundations, cracked, or tilted, the ground cracked, and underground pipes broken. As discussed in Section 8.4.5, the Company has prepared an Emergency Response Plan which provides the management, procedures, and designated actions the Company and its employees will implement during emergency

[5] https://conservation.ca.gov/cgs/sh/earthquake-shaking-potential

situations resulting from natural disasters, including during earthquakes, to ensure that customers receive a reliable and adequate supply of potable water. The Company's ERP is incorporated by reference.

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 Company's historical ability to meet its customer's water demands in response to a water supply shortage. In addition, the Company 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 Company'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 Company's historical annual water demands for each water supply source. During the past 15 years, the Company experienced a five consecutive year drought within its service area from FY 2011-12 to FY 2015-16. Throughout this extended dry year period, the Company's annual water production ranged from 2,919 AF to 3,525 AF, with an average of approximately 3,284 AF. In addition, historical records indicate the Company previously produced a maximum of up to 4,304 AF during FY 1996-97. The Company 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 Company has been able to provide water service to meet maximum day water demands for these years, including during the summer months.

The Company's water demands during the most recent five years (from FY 2019-20 to FY 2024-25) averaged approximately 2,906 AFY. Due to conservation efforts and demand management measures (discussed in Chapter 9), the Company's recent water demands have been less than its historical water demands, including during long-term

droughts. The Company'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 Company's projected water demands are less than or similar to or less than its historical water demands, it is anticipated the Company 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 Company will be able to continue relying on its water supply sources from the Central Basin and CBMWD for adequate supply augmentation in response to each of the standard water shortage levels identified in Section 8.3.

Based on the Company'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 Company 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 Company 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 Company'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 Company's shortage response actions is based on the Company's water demands prior to 2015 (unconstrained demands). The Company 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 Company's actual water demand reduction during this period was used to estimate the extent of water use reductions for the Company's Water Shortage Levels. The Company's Water Shortage

Levels 1, 2, 3, 4, 5, and 6 are expected to reduce water demands by up to 10%, 20%, 30%, 40%, 50%, and greater than 50%, respectively.

Emergency regulations previously adopted by the SWRCB pursuant to Executive Order N-7-22 (issued on March 28, 2022 by California Governor Gavin Newsom) required urban water suppliers to implement Level 2 of their Water Shortage Contingency Plans meant to address up to a 20% shortage of water supplies. The regulations also required urban water suppliers to establish a ban on irrigating non-functional turf at commercial, industrial, and institutional properties (including grass in front of or next to large industrial or commercial buildings). The ban did not include watering turf that is used for recreation or other community purposes, water used at residences or water to maintain trees. Pursuant to Executive Order N-5-23 issued on March 24, 2023 by California Governor Gavin Newsom, the requirement for urban water suppliers to implement Level 2 of their Water Shortage Contingency Plans was removed. As of June 5, 2024, SWRCB statewide water conservation emergency regulations have expired. In October 2023, however, the California State Legislature passed Assembly Bill 1572, which phases in a ban on decorative grass watering in commercial, industrial, and institutional areas permanently beginning January 2027.

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 Company's Annual Assessment will be submitted to DWR by July 1 of each year. The Annual Assessment will provide information on the Company's anticipated shortage, triggered response actions, compliance and enforcement actions, and communication actions, as discussed in Section 8.2. The Company may use the Annual Assessment as a method of declaring the appropriate water shortage level.

Within five days following the declaration of a Water Shortage Level, the Company shall publish a copy of the resolution in a newspaper used for publication of official notices covering its service area, as well as on the Company website.

The Company will also provide notice of the Water Shortage Level in the regular billing statement or by any other mailing to the address to which the Company customarily mails the billing statement for fees or charges for ongoing water service.

Within five days following the declaration of a Water Shortage Level, the Company shall notify the City of Montebello and the County of Los Angeles. The City Manager of the City of Montebello and the Deputy Director of Water Resources at the Los Angeles County Department of Public Works will be contacted by telephone and a follow-up letter.

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.

Penalties for failure to comply with any provisions of the WSCP are as follows:

First Violation

The Company will issue a written warning and deliver a copy of this WSCP to the shareholder of record for the property on which the violation occurred by United States Postal Service first class (USPS) mail.

Second Violation

A second violation within the following twelve calendar months of the first violation will subject the shareholder's account for the property on which the violation occurred to a penalty assessment not to exceed one hundred dollars ($100), which will be subject to collection by the Company as are all other rates, charges and assessments.

Third Violation

A third violation within the following twelve calendar months of the first violation will subject the shareholder's account for the property on which the violation occurred to a penalty assessment not to exceed two hundred fifty dollars ($250), which will be subject to collection by the Company as are all other rates, charges and assessments.

Fourth and Subsequent Violations

A fourth violation in the following twelve calendar months of the first violation will subject the shareholder's account for the property on which the violation occurred to a penalty

assessment not to exceed five hundred dollars ($500), which will be subject to collection by the Company as are all other rates, charges and assessments.

Water Flow Restrictor

In addition to any penalty assessments, the Company may install a water flow restrictor device of approximately one gallon per minute capacity for service pipe up to one and one-half inch size and comparatively sized restrictors for larger services after issuance by the Company of a written notice of intent to install a flow restrictor for a minimum of forty-eight hours.

Discontinuing Service

In addition to any penalty assessments and the installation of a water flow restrictor, the Company may disconnect a shareholder's water service for willful violations of mandatory restriction in this WSCP.

A person or entity that violates this WSCP is responsible for payment of the water purveyor's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the water purveyor's schedule of charges then in effect. The charge for installing and/or removing any flow restricting device must be paid to the water purveyor before the device is removed. Nonpayment will be subject to the same remedies as nonpayment of a regular water bill.

Each day that a violation of this WSCP occurs is a separate offense.

The Company will issue a notice of violation by USPS first class mail or personal delivery at least ten days before taking enforcement action. Such notice must describe the violation and the date by which corrective action must be taken. A shareholder may appeal the notice of violation by filing a written notice of appeal with the Company no later than the close of business on the day before the date scheduled for enforcement action.

Any notice of violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled, and the Company will mail by USPS first class service written notice of the hearing date to the shareholder at least ten days before the date of the hearing.

Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the Company may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violations and the current declared water level condition.

8.7 LEGAL AUTHORITIES

CWC 10632.

(a)(7)(A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.

(B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1. [see below]

(C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

CWC Division 1, Section 350

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

In the event that the demand of water consumers cannot be satisfied without depleting a substantial amount of water supply needed for human consumption, sanitation, and fire

protection, the Company shall declare a water shortage emergency (in accordance with Water Code Chapter 3 commencing with Section 350 of Division 1 regarding water shortage emergencies). The Company shall coordinate with any city or county within its service area for possible declaration of a local emergency, as defined in Section 8588 of the Government Code, including the following:

City of Montebello
Mr. Rene Bobadilla – City Manager
(323) 887-1363
1600 W Beverly Blvd
Montebello, CA 90640

County of Los Angeles
Deputy Director of Water Resources
(626) 458-4012
900 S. Freemont Avenue
Alhambra, CA 91803

The Company's Board of Directors previously adopted a resolution approving the Water Shortage Contingency Plan on August 10, 2021 following the public hearing. The approved Water Shortage Contingency Plan provides a mechanism for the Company to implement a water conservation plan based on the severity of a water supply shortage.

8.8 FINANCIAL CONSEQUENCES OF WSCP

CWC 10632.

(a)(8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:

(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1. [retail urban suppliers only]

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

When shortage response actions are activated, the potential expense increases are as follows:

- Notification costs for newspaper articles, billing fliers, and changes to website.
- Increased staff costs for tracking, reporting, and to patrol and enforce actions.

Historically, the Company has not had a significant enough reduction in revenue due to shortage response actions to prompt mitigation actions. This is not expected to change significantly in the future either since the Company has permanent water conservation requirements in place. If in the future, mitigation actions are needed to address revenue reductions and expense increases associated with activated shortage response actions, the Company's options are as follows:

- Using financial reserves
- Reducing operation and maintenance expenses
- Water rate adjustments
- Triggering drought rate structures or surcharges
- Deferring capital improvement projects

The Company's water rate structure includes three tiers based on the usage per unit. This tiered rate structure effectively promotes water conservation by providing financial incentives to its customers through the Company's rate schedule. The Company water fees and charges inherently discourages excessive water use by using a tiers to charge single family residential and government customers.

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

Well production data is collected and tracked monthly for each individual well owned by the Company. Flow meters are inspected and calibrated every year. Customers are billed bi-monthly and the water sales is therefore tracked on a bi-monthly monthly basis.

Company staff identifies unusual high water use from customers while processing monthly water bills. The current usage is compared to the previous month as well as the same month from the year before. Any unusually high water use is flagged for evaluation. If deemed appropriate, the office staff writes up a work order for the field staff to investigate. If a potential leak is found, the customer is notified. The notification may be in person, by mail, and/or by door hanger. Meters will be tested for accuracy at a customer's request. The cost of the testing is covered by the customer unless the meter is actually found to be inaccurate. In the case of an inaccurate meter, the Company will pay for the cost of the meter to be replaced

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

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

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

8.12 PLAN ADOPTION, SUBMITTAL, AVAILABILITY, AND AMENDMENT PROCEDURES

CWC 10632.

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

The Company's Water Shortage Contingency Plan is adopted as part of the Company's 2025 Urban Water Management Plan adoption process discussed in Chapter 10. The

process for adopting the Company's Water Shortage Contingency Plan includes the following:

- The Company will conduct a public hearing and make the Water Shortage Contingency Plan available for public inspection.
- The Company will provide notification of the time and place of the public hearing to any city or county in which water is provided.
- The Company 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 Company's Board of Director's will adopt the 2025 Urban Water Management Plan and the Water Shortage Contingency Plan
- As part of submitting the 2025 Urban Water Management Plan to DWR, the Company will also submit the Water Shortage Contingency Plan (electronically through DWR's online submittal tool) within 30 days of adoption and by July 1, 2026. The Company 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 Company 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 Company will conduct a public hearing and make the amended Water Shortage Contingency Plan available for public inspection.
- The Company's Board of Directors will adopt the amended Water Shortage Contingency Plan
- The Company 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 Company's Water Shortage Contingency Plan (and 2025 Urban Water Management Plan) is provided in Chapter 10.

8.13 RESOURCES AND REFERENCES

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

8.14 SUBMITTAL TABLES

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

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

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

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)			
☐	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%	1	Up to 20%
2	Up to 20%	1	Up to 20%
3	Up to 30%	2	Up to 40%
4	Up to 40%	2	Up to 40%
5	Up to 50%	3	Up to 50%
6	>50%	3	50% or Greater
NOTES: Standard Shortage Level 1 includes the Company's permanent water conservation requirements.			

8.14.2 TABLE 8-2: SUPPLY AUGMENTATION AND OTHER ACTIONS

Table 8-2 Supply Augmentation and Other Actions

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

8.14.3 TABLE 8-3: DEMAND-REDUCTION ACTIONS

Table 8-3 Demand Reduction Actions

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B),(D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)	Penalty, Charge, or Other Enforcement? For Retail Suppliers Only Drop Down List
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)		
Add additional rows as needed					
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	Landscape - Limit landscape irrigation to specific times	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Prohibited between 10 am and one hour before sunset PST	Yes
1	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Limited to every other day; does not apply to hand-held bucket or positive self-closing water shut-off nozzles	Yes
1	Landscape - Other landscape restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Time limited to 15 min per station unless watering device is continuously attended or is a very low-flow drip system	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Recirculating water is required	Yes
1	Other - Require automatic shut of hoses	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Limits on washing vehicles	Yes
1	CII - Lodging establishment must offer opt out of linen service	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	CII - Other CII restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Installation of single pass cooling system is prohibited for buildings requesting new water service	Yes
1	CII - Other CII restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	No installation of non-recirculating water systems in commercial car wash or laundry systems	Yes
1	CII - Commercial kitchens required to use pre-rinse spray valves	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	CII - Other CII restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	All commercial car wash systems must have installed operational recirculating water systems	Yes
1	Landscape - Other landscape restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Construction meters used for irrigation shal l not be used between 10 am and one hour before sunset.	Yes
1	Other water feature or swimming pool restriction	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Filling or refilling of private swimming pools, spas, ponds, artificial lakes prohibi ted between 10 am and one hour before sunset.	Yes
1	Other water feature or swimming pool restriction	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Pools and spas shall be equipped with covers not less than five days a week unless facility is in use.	Yes
2	Other	Volume	Collective reduction from Shortage Level 1 plus all Shortage Level 2 actions is up to 407 AFY	All actions under Shortage Level 1	Yes
2	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from Shortage Level 1 plus all Shortage Level 2 actions is up to 407 AFY	Limited to three days per week. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week	Yes
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from Shortage Level 1 plus all Shortage Level 2 actions is up to 407 AFY	Must be repaired within 72 hours of receipt of written notification.	Yes
3	Other	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	All actions under Shortage Level 2	Yes
3	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Limited to not to exceed two days per week; from November through March, limited to no more than one day per week; does not apply to hand-held bucket or positive self-closing water shut-off nozzles	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Repairs must be within 48 hours of receipt of written notification	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Filling or refilling of ornamental lakes or ponds is prohibited	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Limited to using hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing shut-off nozzle or device, by pressure/flow volume wash systems, or at a commercial car washing facility that utilizes a recirculatingwater system to capture or reuse water.	Yes
3	Other water feature or swimming pool restriction	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Re-filling of more than one foot of depth in a pool or spa and initial filling is prohibited	Yes
4	Other	Volume	Collective reduction from Shortage Level 3 plus all Shortage Level 4 actions is up to 814 AFY	All actions under Shortage Level 3	Yes
5	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	Watering or irrigating is prohibited	Yes
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	Repairs must be within 24 hours of receipt of written notification	Yes
5	Other	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	No new potable water services allowed	Yes
5	Other	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	Limits on building permits	Yes
5	Other	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	Discontinue service to any water user that violates water level provisions	Yes
6	Other	Volume	Collective reduction from Shortage Level 5 plus all Shortage Level 6 actions is greater than 1,018 AFY.	All actions under Shortage Level 5	Yes
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

CHAPTER 9

DEMAND MANAGEMENT MEASURES

LAY DESCRIPTION – CHAPTER 9

DEMAND MANAGEMENT MEASURES

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

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

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

9.1 DEMAND MANAGEMENT MEASURES FOR RETAIL SUPPLIERS

CWC 10631.

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

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

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

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

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

(vi) Water conservation program coordination and staffing support.

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

9.1.1 IMPLEMENTATION OVER THE PAST FIVE YEARS

The Company is committed to implementing water conservation programs and works collaboratively with CBMWD to provide water conservation programs for its customers. As a sub-agency of CBMWD, the Company's customers have the benefit of participating

in CBMWD's conservation efforts. The highlights of DMM implementation over the past five years are described below.

As discussed in Section 9.1.3.1, the Company is located within the City of Montebello Council and is subject to the City of Montebello's water waste prevention ordinances.

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

As discussed in Section 9.1.3.3, the Company utilizes a water rate structure that provides financial incentives for customers to conserve water. The water usage charge includes three tiers for single family and government customers

As discussed in Section 9.1.3.4, the Company, in coordination with CBMWD, offers a variety of water conservation public information programs available to the public.

As discussed in Section 9.1.3.5, Company staff performs preventive maintenance which includes regular checks on valves and meters, and pipeline maintenance. If leaks are found, they are repaired. The also Company monitors the water system for loss by comparing water production to water sales.

As described in Section 9.1.3.6, the Company has trained its staff in water awareness and to perform water audits at meter locations where abnormal water consumption is noted. Company staff are also available to assist in all aspects of public education, conservation policies, research, and training related to water conservation.

As described in Section 9.1.3.7, the Company participates in MWD's regional rebate program, which is available to the Company'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 Company's commercial customers are offered plumbing, landscaping, HVAC, and medical and dental equipment rebates.

9.1.2 IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

CWC 10631.

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

The Demand Management Measures implemented by the Company are discussed in Section 9.1.3. Descriptions regarding the nature and extent of these Demand Management Measures implemented by the Company over the past five years are discussed in Section 9.1.1. The Company will continue to implement these Demand Management Measures and other water conservation programs and work collaboratively with Central Basin Municipal Water District to provide water conservation programs for its residents.

As indicated in Section 5.2.2, the Company previously met its 2020 Water Use Target as part of the 2020 Plan. The Company met the 2020 Water Use Target through the implementation of the Demand Management Measures discussed in Section 9.1.3.

Continued implementation of these Demand Management Measures will assist the Company in meeting water use targets and objectives.

9.1.3 REQUIRED DEMAND MANAGEMENT MEASURES

9.1.3.1 WATER WASTE PREVENTION ORDINANCES

As a mutual water company, the Company does not have the authority to pass ordinances, however, the Company prohibits water waste within its service area by alternative methods. These methods include adopting resolutions that include prohibitions on water waste and implementing the WSCP.

Because the Company's service area is entirely within the City of Montebello, the City of Montebello's water waste prevention ordinances apply to the Company and its customers. Pursuant to Chapter 8.29.060 (and Ordinance No. 2333) of the City of Montebello's Municipal Code, the following permanent water conservation requirements are in effect at all times:

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A. Limits on Watering Hours. Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of ten a.m. and one hour before sunset Pacific Standard Time on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system. Lawns or other irrigated areas shall not be watered more frequently than every other day. Odd-numbered street-addressed properties may water on odd-numbered dates. Even-numbered street-addressed properties may only do so on even-numbered dates. All irrigated areas may be watered on the 29th day of the month of February every fourth year or the 31st day of the month having thirty days. The provisions of this

subsection shall not apply to restrict watering of newly seeded or reseeded lawns once a year, nor to prohibit drip irrigation systems.

B. Limit on Watering Duration. Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two gallons of water per hour or weather based controllers or stream rotor sprinklers that meet a seventy percent efficiency standard.

C. No Excessive Water Flow or Runoff. Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining property, or non-landscaped areas such as sidewalks, driveways, streets, alleys, gutters or ditches is prohibited.

D. No Washing Down Hard or Paved Surfaces. Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom. Should the use of water for wash-down have to do with an immediate fire or sanitation hazard, written permission shall have been obtained from the fire department, the health department or the building department.

E. Obligation to Fix Leaks, Breaks or Malfunctions. Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or

distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than seven days of receiving notice from the city, is prohibited. This section also applies to all water purveyors in the city.

F. Recirculating Water Required for Water Fountains and Decorative Water Features. Operating a water fountain or other decorative water feature that does not use recirculated water is prohibited.

G. Limits on Washing Vehicles. Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility with an on-site water recycling system. Commercial vehicle washing establishments that do not have on-site water recycling for reuse systems shall meet with city staff within two months of the adoption of this chapter to work out a satisfactory schedule for the installation of such a system or the issuance of a waiver under this chapter.

H. Drinking Water Served Upon Request Only. Eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested by that person or that person's guardian or custodian of care therefor.

I. Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services. Hotels, motels and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option

in each bathroom using clear and easily understood English and Spanish languages and any other language commonly used by users of such establishments.

J. No Installation of Single Pass Cooling Systems. Installation of single pass cooling systems is prohibited in buildings requesting new water service.

K. No Installation of Non-recirculating Water Systems in Commercial Car Wash and Laundry Systems. Installation of non-recirculating water systems is prohibited in premises with new commercial conveyor car wash or new commercial laundry systems.

L. Restaurants Required to Use Water Conserving Dish Wash Spray Valves. Food preparation establishments, such as restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

M. Commercial Car Wash Systems. Effective on January 1, 2011, all commercial car wash systems must have installed operational recirculating water systems, or must have secured a waiver of this requirement and/or an extension of time for installation from the city.

N. Construction meters used for landscape irrigation shall not be used between ten a.m. and one hour before sunset.

O. Filling or refilling of private swimming pools, spas, ponds and artificial lakes is prohibited between ten a.m. and one hour before sunset. Swimming pools and spas shall be equipped with covers to minimize evaporation and such covers shall be used not less than five days a week unless the facility is in use.

9.1.3.2 METERING

CWC 526.

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

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

CWC 527.

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

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

The Company is fully metered and requires meters for all new service connections. The Company metered all customer connections, including separate metering for single residential, multi-family residential, commercial, industrial, and institutional/governmental facilities. Sales meters are read on a bimonthly schedule. Section 9.1.3.3 provides greater detail about the Company's fees and conservation pricing.

Production meters are read at least once every week. Sales meter readings alert the Company staff and customers of any abnormal water use. When high consumption occurs, staff promptly notifies the customer by telephone or by leaving a door hanger at the billing address. The customer then coordinates with the Company to determine the cause of the high consumption. Additionally, the customer is advised on water conservation practices and available conservation assistance to avoid future excessive usage.

9.1.3.3 CONSERVATION PRICING

As discussed in Section 8.8, the Company utilizes a water rate structure that provides financial incentives for customers to conserve water. The water rate structure includes a meter charge and a water usage charge. The meter charge is a fixed charge based on the size of the customer's connection. The water usage charge is based on consumption and includes three tiers for single family and government customers. This tiered rate structure effectively promotes water conservation by providing financial incentives to its customers through the Company's rate schedule. The Company's current rate structure showing conservation pricing is provided in Appendix I.

9.1.3.4 PUBLIC EDUCATION AND OUTREACH

The Company includes regional flyers and educational information along with its bills and on the Company website as they become available. Over the years, the Company has conducted water education programs at local elementary and middle schools. The students are taken on a guided tour of the Company's plant and office facilities and given materials that contain information on using water more wisely. In addition, Water Awareness programs and contests are held at local schools through the help of school personnel and teaching staff. Fremont Elementary and Montebello Intermediate School have participated in these programs.

School education programs are also available to the Company's customers through CBMWD, including the following:

- **Water is Life Poster Contest** – A contest designed for students to express the value of water through their artwork.
- **Water Protectors** – A Girl Scout Program to teach girls about water efficiency.

- **Conservation Connection** – A program that provides curriculum for teachers of grades 6-8 to get students actively involved in conserving water and energy at school and at home.
- **Solar Cup** – The nation's largest solar powered boat competition for grades 9-12. Students have an opportunity to develop and increase their leadership and communication skills, as well as gain a better understanding of: stewardship of natural resources, water supply and water quality challenges, renewable energy, and careers within the water industry.

9.1.3.5 PROGRAMS TO ASSESS AND MANAGE DISTRIBUTION SYSTEM REAL LOSS

The Company's estimated water system losses are discussed in Section 4.3. As a part of normal operation and maintenance of the water system, Company staff performs preventive maintenance. This includes regular checks on valves and meters, and pipeline maintenance. If leaks are encountered or suspected during routine inspection of the system, further evaluation is conducted. If leaks are found, they are repaired. The Company monitors the water system for loss by comparing water production to water sales. The Company will continue these programs to assess and manage distribution system real losses.

9.1.3.6 WATER CONSERVATION PROGRAM COORDINATION AND STAFFING SUPPORT

The Company has trained its staff in water awareness and to perform water audits at meter locations where abnormal water consumption is noted through water billing meter reads. Company staff are responsible for the monitoring of conservation measures, as they oversee the metering and billing aspects. In addition, Company staff are available to

assist in all aspects of public education, conservation policies, research, and training related to water conservation.

9.1.3.7 OTHER DEMAND MANAGEMENT MEASURES

Rebate programs are available to the Company's customers through MWD and its member agency, CBMWD. MWD offers rebates to customers within their distribution territory through its "SoCal Water$mart" rebate program. Through MWD's SoCal Water$mart, residential and commercial customers are eligible for rebates to help encourage water efficiency and conservation. The SoCal Water$mart program offers rebates on a wide variety of water-saving technologies 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.

9.2 DEMAND MANAGEMENT MEASURES FOR WHOLESALE SUPPLIERS

CWC 10631.

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

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

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

CHAPTER 10

PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

LAY DESCRIPTION – CHAPTER 10

PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

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

- The steps the Company has performed to adopt and submit its 2025 Plan are detailed
- The steps the Company has performed to adopt and submit its Water Shortage Contingency Plan are detailed
- The Company coordinated the preparation of its 2025 Plan with the City of Montebello and the County of Los Angeles. The Company notified these agencies at least sixty (60) days prior to the public hearing of the preparation of the 2025 Plan and invited these agencies to participate in the development of the 2025 Plan.
- The Company provided a notice of the public hearing to the same agencies regarding the time, date, and place of the public hearing.
- The Company published a newspaper notification of the public hearing, once a week for two successive weeks
- The Company conducted a public hearing to discuss and adopt the Company's 2025 Plan and Company's Water Shortage Contingency Plan.
- Within 30 days of adoption, the Company submitted the 2025 Plan and Water Shortage Contingency Plan to the California Department of Water Resources.
- Within 30 days of adoption, the Company submitted all data tables associated with the 2025 Plan to the California Department of Water Resources.

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

10.1 PLAN COMPLETION TIMELINE

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

10.2 NOTICE OF PLAN PREPARATION

CWC 10621.

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

As discussed in Section 2.4.2, the Company coordinated the preparation of the 2025 Plan with the City of Montebello and the County of Los Angeles. The Company notified these

agencies at least sixty (60) days prior to the public hearing of the preparation of the 2025 Plan and invited them to participate in the development of the Plan. A copy of the notification letters sent to these agencies is provided in Appendix D.

10.3 NOTICE OF PUBLIC HEARING

CWC 10642.

…Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies.

Government Code 6066.

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

The Company provided a notice of the public hearing to the City of Montebello and the County of Los Angeles. The notice includes the time and place of the public hearing. Copies of the notice of the public hearing are provided in Appendix D. Table 10-1 summarizes the agencies which were provided notifications by the Company.

The Company 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 Company published a notice of public hearing in the newspaper during the weeks of May 25, 2026 and June 1, 2026. A notice of public hearing was also posted on the Company's website. A copy of the published notice is provided in Appendix D. To ensure the draft 2025 Plan and the draft Water Shortage Contingency Plan were

available for review, the Company placed a copy at its main office and made a copy available for review on its website.

10.4 PUBLIC HEARING AND ADOPTION

CWC 10642.

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon…. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

Government Code Section 7291

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

Prior to adopting the draft 2025 Plan and the draft Water Shortage Contingency Plan, the Company held a public hearing on June 9, 2026 which included input from the community regarding the Company's draft 2025 Plan and the draft Water Shortage Contingency Plan.

Following the public hearing, the Company's Board of Directors adopted both the draft 2025 Plan and the draft Water Shortage Contingency Plan (included in Chapter 8). A copy of the resolution adopting the 2025 Plan and the Water Shortage Contingency Plan is provided in Appendix J.

10.5 PLAN SUBMITTAL

CWC 10621.

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

CWC 10635.

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

CWC 10644.

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

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

10.5.1 SUBMITTING A UWMP AND WATER SHORTAGE CONTINGENCY PLAN TO DWR

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

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

10.5.2 ELECTRONIC DATA SUBMITTAL

CWC 10644.

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

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

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

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

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

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

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

10.5.4 SUBMITTING A UWMP TO CITIES AND COUNTIES

Within 30 days of adoption of the 2025 Plan (including the Water Shortage Contingency Plan) by the Company's Board of Directors , a copy of the 2025 Plan was submitted to the County of Los Angeles Registrar / Recorders office. A copy of the letter to the County of Los Angeles will be maintained in the Company's file.

10.6 PUBLIC AVAILABILITY

CWC 10645.

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

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

Within 30 days after submittal of the 2025 Plan to DWR, the Company made the 2025 Plan (including the Water Shortage Contingency Plan) available at the Company's main office during normal business hours and on the Company's website.

10.7 NOTIFICATION TO PUBLIC UTILITIES COMMISSION

CWC 10621.

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

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

10.8 PLAN IMPLEMENTATION

CWC 10643.

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

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

10.9 AMENDING AN ADOPTED UWMP OR WATER SHORTAGE CONTINGENCY PLAN

CWC 10621.

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

CWC 10644.

(a)(1) Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

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

10.9.1 AMENDING A UWMP OR WSCP

If the Company amends the adopted 2025 Plan, the Company will conduct a similar notification and public hearing process for the amended 2025 Plan as discussed in Sections 10.2, 10.3, and 10.4. The amended Plan will undergo adoption by the Company's governing board. Within 30 days of adoption, the amended Plan will then be submitted to DWR, the State of California Library, and the County of Los Angeles Registrar / Recorders office.

10.9.2 SUBMITTING REVISED WATER SHORTAGE CONTINGENCY PLAN

CWC 10644.

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

If the Company amends the adopted 2025 Plan (including the Water Shortage Contingency Plan), the amended Plan (and Water Shortage Contingency Plan) will undergo adoption by the Company'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 / Recorders office, and the Company's main office.

10.10 CALIFORNIA DEPARTMENT OF WATER RESOURCES REVIEW OF SUBMITTED PLANS

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

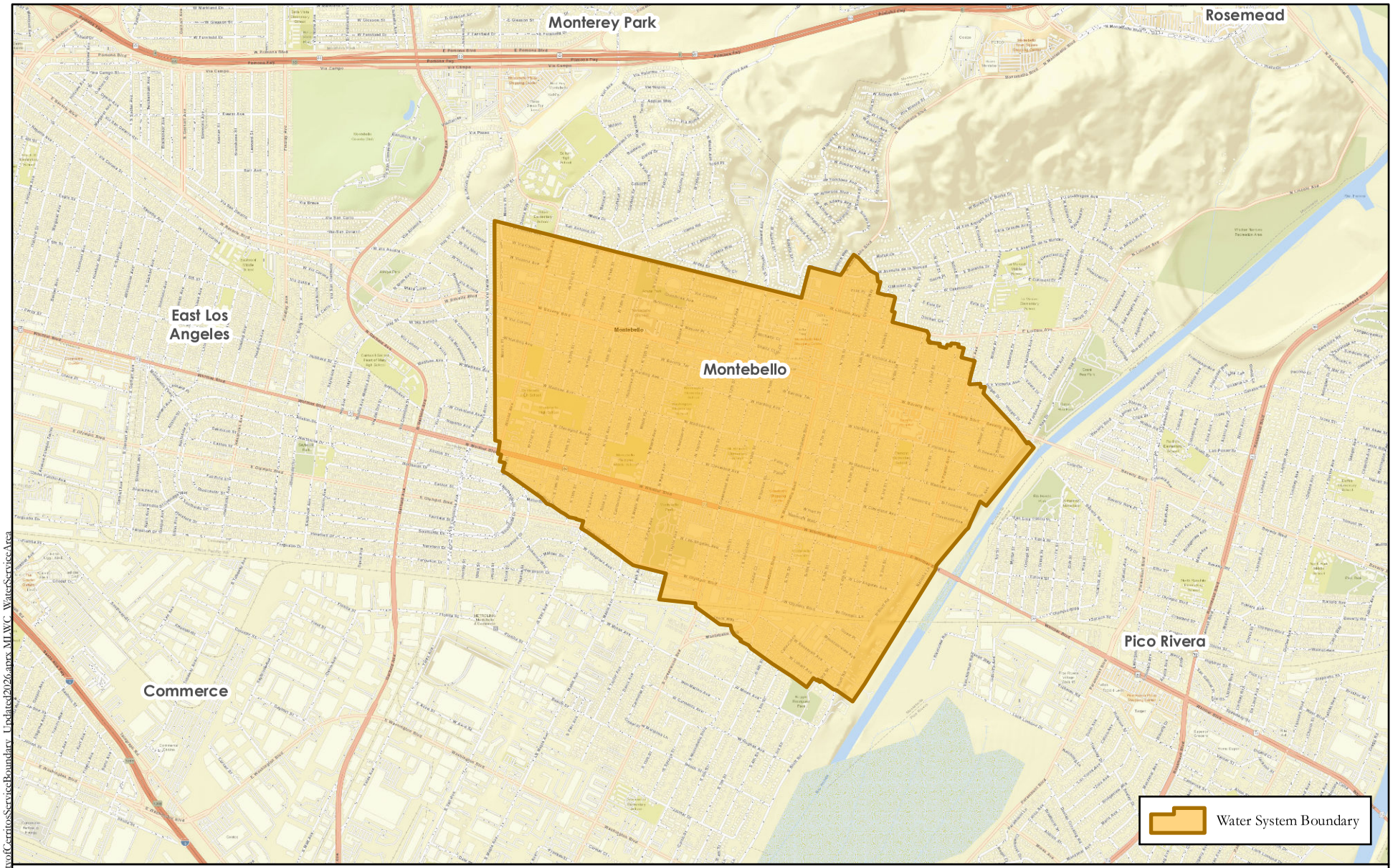
10.11 SUBMITTAL TABLES

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

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

Table 10-1 Notification to Cities and Counties

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



STETSON ENGINEERS INC.

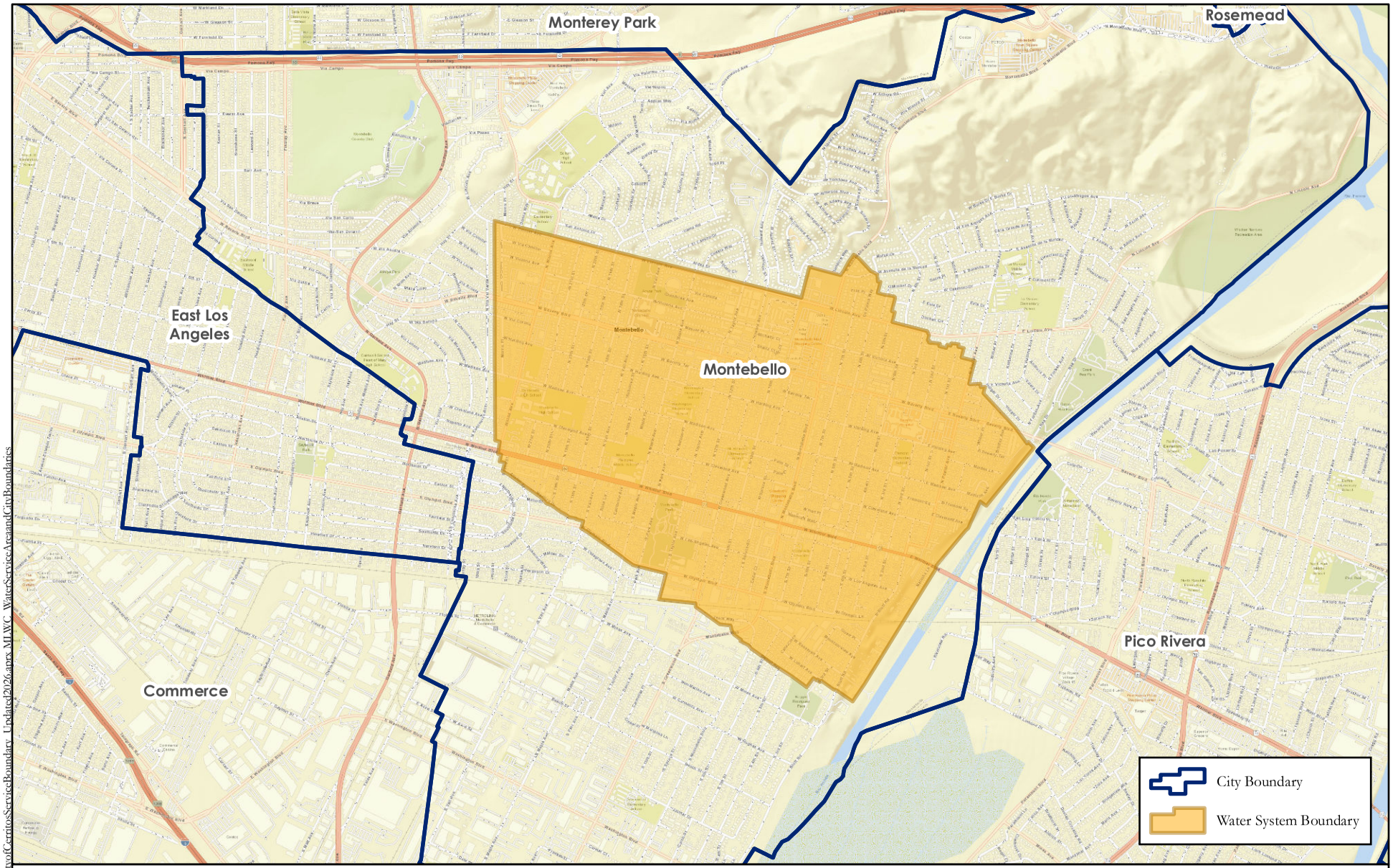
MONTEBELLO LAND AND WATER COMPANY
WATER SERVICE AREA

0 0.15 0.3 Miles

N

FIGURE 1

Document Path: J:\jn2948\City of Cerritos\Service Boundary_Updated2026\apxs MLWC_WaterServiceArea



STETSON ENGINEERS INC.

MONTEBELLO LAND AND WATER COMPANY
WATER SERVICE AREA AND CITY BOUNDARIES

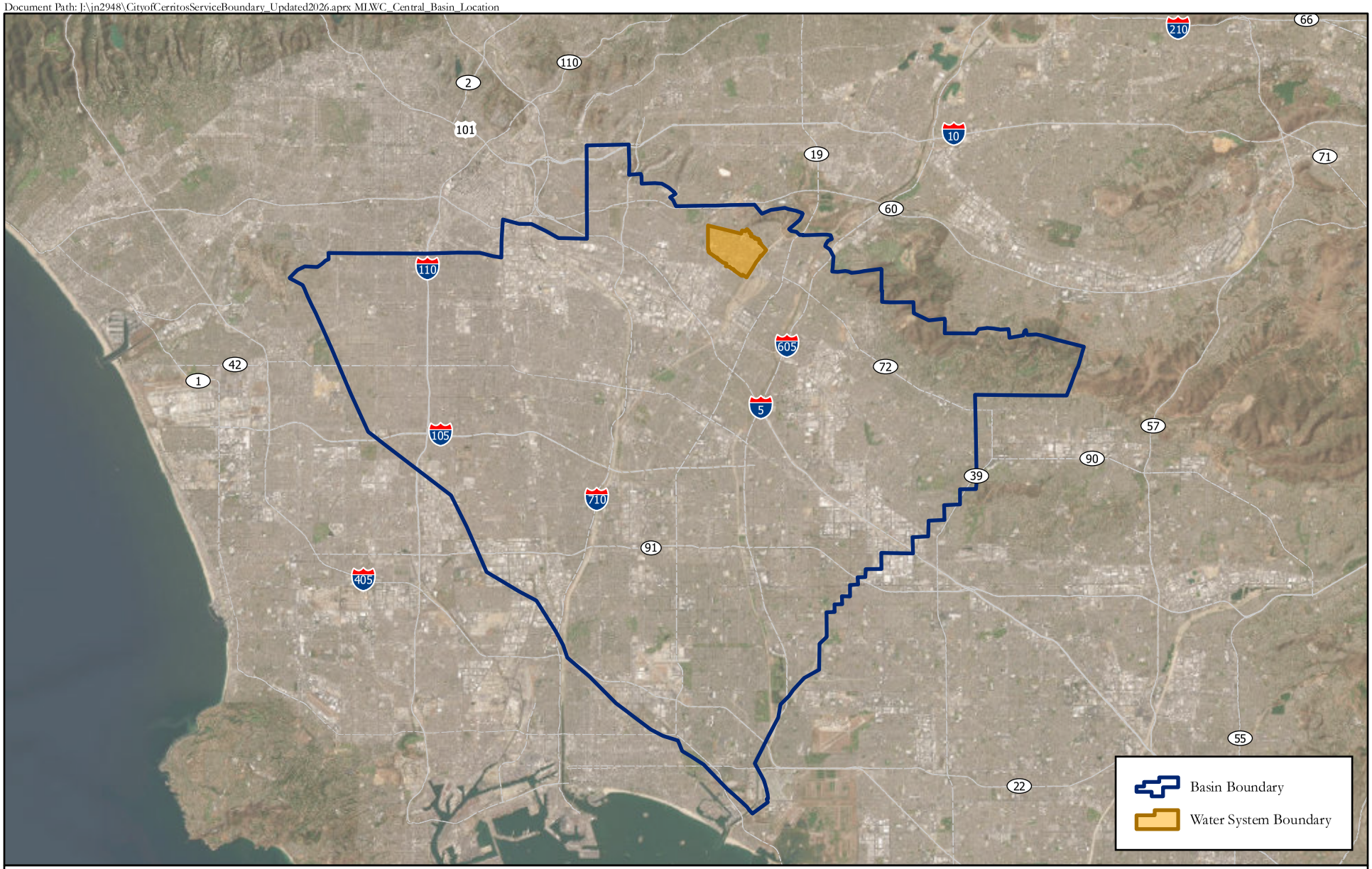
0 0.15 0.3 Miles

N

FIGURE 2

Document Path: J:\in2948\City of Cerritos\Service Boundary_Updated2026\aprx MLWC_WaterServiceAreaandCityBoundaries

Document Path: J:\jn2948\CityofCerritosServiceBoundary_Updated2026.aprx MLWC_Central_Basin_Location



STETSON ENGINEERS INC.

MONTEBELLO LAND AND WATER COMPANY
CENTRAL BASIN LOCATION

0 2 4 Miles

N

FIGURE 3

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX A

DWR STANDARDIZED TABLES

Submittal Table 2-1 Retail: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (AF)
Add additional rows as needed			
CA1910091	Montebello Land and Water Co.	3,948	2,942
	Total	3,948	2,942

DWR NOTES:

Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

NOTES:

Submittal Table 2-2: Plan Identification		
Select One	**Type of Plan**	**Name of Regional Alliance or RUWMP** (Drop Down List)
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	
NOTES:		

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

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

Submittal Table 3-1 Retail: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	25,752	25,885	26,018	26,143	26,269	26,396
NOTES:						

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual
Water Code Section 10631(d)(1)

Use Type	Additional Description (as needed)	2025 Actual Water Use	
Drop down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool		**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
Single Family		Potable	698
Multi-Family		Potable	985
Commercial		Potable	390
Industrial		Potable	472
Institutional/Governmental		Potable	117
Landscape	Recycled Water	Non-Potable	21
Distribution System Water Loss		Potable	259
		Subtotal Potable	2921
		Subtotal Non-Potable	21
		Total	2,942

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

NOTES:

Submittal Table 4-2 Retail: Total Uses for Potable, and Non-Potable Water — Projected
Water Code Section 10631(d)(1)

Use Type	Additional Description (as needed)	Projected Water Use (Report To the Extent that Records are Available)					
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		**Potable or Non-Potable** (OPTIONAL) Drop down list	**2030 (AF)**	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 opt (AF)**
Add additional rows as needed.							
Single Family		Potable	701	705	708	712	715
Multi-Family		Potable	990	995	999	1,005	1,009
Commercial		Potable	392	394	396	398	400
Industrial		Potable	475	477	479	482	484
Institutional/Governmental		Potable	118	118	119	119	120
Landscape	Recycled Water	Non-Potable	25	25	25	25	25
Distribution System Water Loss		Potable	260	262	263	264	266
		Subtotal Potable	2,936	2,951	2,964	2,980	2,994
		Subtotal Non-Potable	25	25	25	25	25
		Total	2,961	2,976	2,989	3,005	3,019

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

NOTES:

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

Submittal Table 4-5 Retail: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)		
Public Water System ID # Reported in Table 2-1 R	Reporting Period	Submitted to DWR Water Loss Audit Program (yes/no)
Report submittal status for all five years for each Public Water System as available. Add rows as needed		
CA1910091	**2020**	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES:		

Submittal Table 4-6 Retail: Progress Towards 2028 Water Loss Standard
Water Code Section 10631(d)(3)(C)

Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System? (y/n) If no, Supplier will not complete this row.	Real Water Loss					Apparent Water Loss				
		State Water Board Standard		Most Recent AWWA Water Loss Audit			State Water Board Standard		Most Recent AWWA Water Loss Audit		
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss Drop down list	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (AF)	Real Water Loss Per Unit per Day	2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (AF)	Apparent Water Loss Per Unit per Day
Add additional rows as needed.											
CA1910091	Yes	16.5	Gallons per Service Connection per Day (GPSCD)	4027	126.426	28.0	31.2	Gallons per Service Connection per Day (GPSCD)	4027	186.18	41.3
								Gallons per Service Connection per Day (GPSCD)			
								Gallons per Service Connection per Day (GPSCD)			

Water Board's Calculated Water Loss Standards

DWR NOTES: Units of measure (AF, CCF, MG) for Water Loss **MUST** remain consistent with units reported in Submittal Table 2-3. The units reported in Submittal Table 2-3 are used in this table's calculations.

NOTES:

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress Water Code Section 10608.40						
☐	Check the box if the Supplier was not an Urban Water Supplier during or before the 2020 UWMP reporting cycle. Proceed to the next table.					
Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	Only for suppliers that did not meet the Target in 2020 See DWR NOTES below. Actual 2025 GPCD (From SB X7-7 Compliance Form)	Did Supplier meet the 2020 Target in 2025?
No	Individual Target	120	104	Yes		NA

DWR NOTES:

Suppliers calculating a 2025 GPCD will need to complete and submit SB X 7-7 Compliance Tables to verify the use of SB X7-7 Methodologies.

Suppliers that were part of a merger or consolidation since 2020 see Chapter 5 and Appendix P for guidance.

NOTES:

Submittal Table 6-1 Retail: Groundwater Volume Pumped
Water Code Section 10631(4) and 10631(4)(c)

☐	Check the box if the Supplier does not pump groundwater. Proceed to the next table.
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)

Groundwater Type **Drop Down List** May use each category multiple times	Potable or Non-Potable (OPTIONAL) **Drop down list**	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Add additional rows as needed							
Alluvial Basin	Potable	Central Basin	2868	2984	2806	2838	2921
		Total	2,868	2,984	2,806	2,838	2,921

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

NOTES

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area
Water Code Section 10633(a)

☐	Check the box if there is no wastewater collection system. Proceed to the next table.
	Percentage of 2025 service area served by wastewater collection system (OPTIONAL)
	Percentage of 2025 service area population served by wastewater collection system (OPTIONAL)

Wastewater Collection			Recipient of Collected Wastewater	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? OPTIONAL **Drop Down List**	Volume of Wastewater Collected from UWMP Service Area 2025 (AF)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number **Drop down list**	Is WWTP Located Within UWMP Area? **Drop Down List**
Add additional rows as needed				
LACSD	Estimated	170	Los Coyotes WRP, Place ID 238646	No
LACSD	Estimated	1,820	A.K. Warren Water Resource Facility, Place ID 234156	No
Total Wastewater Received from UWMP Service Area in 2025:		1,990		

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area
Water Code Section 10633(b)

☑	**Check the box if no wastewater is treated or disposed of within the UWMP service area.** Proceed to the next table.

Wastewater Treatment Plant Name and Place ID Number **Drop down list**	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (OPTIONAL) **Drop down list**	2025 Volume of Wastewater Received from UWMP Service Area (As Reported in Submittal Table 6-2 R) (AF)	Total 2025 Volume of Water Treated (AF)	**2025 Outcomes of Treated Wastewater**										
				Water Recycled Within UWMP Service Area (enter data as applicable)		**Water Recycled Outside of UWMP Service Area** (enter data as applicable)		**Effluent Discharge that is not a Permitted Recycled Water Use** (enter data as applicable)		**Required Discharge for Instream Flow** (enter data as applicable)		**Delivered to Another Entity for Additional Treatment** (enter data as applicable)		
				Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Name of other entity
Add additional rows as needed														
Total		0	-		0		0		0		0		0	

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
IPR: Indirect Potable Reuse would have the treatment level of its end use requirement in the Level of Treatment drop-down.
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area
Water Code Section 10633 (c),(d),(e)

☐	Check box if recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.

Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL) :	
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :	
Volume of Supplemental Water Added in 2025 (OPTIONAL) :	
Source of 2025 Supplemental Water (OPTIONAL) :	

Use Type **Drop down list**	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	**Potential Recycled Water Use**	
									Volume	Narrative page number (OPTIONAL)
Add additional rows as needed										
Landscape irrigation (exc golf courses)	Non-Potable	City park irrigation	21	25	25	25	25	25		
Subtotal Potable			0	0	0	0	0	0	0	
Subtotal Non-Potable			21	25	25	25	25	25	0	
Total			21	25	25	25	25	25	0	0

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.
Potential recycled water use: a description of the feasibility of these uses must be included in the narrative.
Multiple Producers: If you have multiple recycled water producers, submit a separate table for each.

NOTES:

Submittal Table 6-5 Retail: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual
Water Code Section 10633(e)

☐ Check the box if recycled water was not used in 2025 nor previously projected for use in 2020.
Proceed to the next table.

Use Type Drop Down list	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Add additional rows as needed		
Landscape irrigation (exc golf courses)	29	21
Total	29	21

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

Submittal Table 6-6 Retail: Methods to Encourage Future Recycled Water Use
Water Code Section 10633(f)

☐	Check the box if the Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.
Section 6.2.5	Provide page location of narrative in the UWMP

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Add additional rows as needed			
Conversion	Median irrigation	Future	4
		Total (AF)	4
		Unit Conversion to AF	4

DWR NOTES:
Units of measure (AF, CCF, MG) MUST remain consistent with units reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
The unit conversion to Acre Feet addresses the Water Code's requirement that this value be provided in acre-feet.

NOTES:

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs
Water Code Section 10631(f)

☐	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Proceed to the next table.
☑	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
Section 6.2.10	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Planned Implementation Year	Planned for Use in Year Type **Drop Down List**	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Add additional rows as needed							
Contruct New Well 15	No		Central Basin	Potable	2026	All Year Types	2,600 AFY

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

NOTES:

Submittal Table 6-8 Retail: Water Supplies — Actual
Water Code Section 10631(b)

Water Supply		2025		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed				
Groundwater (not desalinated)	Central Basin	Potable	2,921	
Recycled Water		Non-Potable	21	
		Subtotal Potable	2,921	0
		Subtotal Non-Potable	21	0
		Total	2,942	0

DWR NOTES:

Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES:

Submittal Table 6-9 Retail: Water Supplies — Projected
Water Code Section 10631 (b)

Water Supply			Projected Water Supply (Report to the Extent Practicable)									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	**2030**		**2035**		**2040**		**2045**		**2050 (opt)**	
			Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed												
Groundwater (not desalinated)	Central Basin	Potable	2,936		2,951		2,964		2,980		2,994	
Recycled Water		Non-Potable	25		25		25		25		25	
Subtotal Potable			2,936	0	2,951	0	2,964	0	2,980	0	2,994	0
Subtotal Non-Potable			25	0	25	0	25	0	25	0	25	0
Total			2,961	0	2,976	0	2,989	0	3,005	0	3,019	0

DWR NOTES:

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

Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES:

Optional Submittal Table O-1B: Recommended Energy Reporting - SINGLE DELIVERY PRODUCT - TOTAL UTILITY APPROACH

Water Delivery Product drop down list (If delivering more than one type of product recommend using Table O-1C)	Retail Potable Deliveries	**Only for Water Delivery Products Under the Urban Water Supplier's Operational Control**		
Start Date of Reporting Period	7/1/2024	**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
End Date of Reporting Period	6/30/2025			
Is upstream embedded energy in the values reported?	No			
Units of Measure for Water	AF	**Total Utility** See DWR NOTES	**Hydropower**	**Net Utility**
Volume of Water Entering Process		2,921		2,921
Energy Consumed (kWh)		3,747,472		3,747,472
Energy Intensity (kWh/vol. converted to MG)		3,937	-	3,937

DWR NOTES:

Total Utility: The volume of water entered in the "Total Utility" column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from your volume in this table.

Quantity of Self-Generated Renewable Energy

0 kWh

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

Combination of Estimates and Metered Data

Data Quality Narrative:

The total energy consumed was identified based on Southern California Edison (SCE) billing records. Although the total energy consumed includes electricity usage for general administration (which is not an identified water management process), general administration energy use is considered to be negligible compared to overall water system use and has not been netted out.

Narrative:

The total energy consumption includes energy associated with operating groundwater production wells and booster pumps to deliver water in the distribution system. Energy consumption is associated with operating groundwater water treatment. Energy consumption is also associated with plant lighting and air conditioning, and operating the Supervisory Control and Data Acquisition (SCADA) system and chlorination injection pumps.

NOTES:

Optional Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	Available Supplies if Year Type Repeats	
		☐ Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]	
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	**% of Average Supply**
Average Year	2017	2957	100%
Single-Dry Year	2018	3061	103.5%
Consecutive Dry Years 1st Year	2012	3370	114.0%
Consecutive Dry Years 2nd Year	2013	3468	117.3%
Consecutive Dry Years 3rd Year	2014	3525	119.2%
Consecutive Dry Years 4th Year	2015	3137	106.1%
Consecutive Dry Years 5th Year	2016	2919	98.7%

DWR NOTES: Supplier may use multiple versions of Submittal Table 7-1 R if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Submittal Table 7-1 R, in the "Note" section of each submittal table, state that multiple versions of Submittal Table 7-1 R are being used and identify the particular water source that is being reported in each submittal table. **Units of measure (AF, CCF, MG**) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the units of measure reported in Submittal Table 2-3.

NOTES:

Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 R)	2,961	2,976	2,989	3,005	3,019
Use totals (autofill from Submittal Table 4-2 R)	2,961	2,976	2,989	3,005	3,019
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	3,065	3,081	3,094	3,111	3,125
Use totals	3,065	3,081	3,094	3,111	3,125
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES					

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison
Water Code Section 10635(a)

		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	3,375	3,392	3,407	3,425	3,441
	Use totals	3,375	3,392	3,407	3,425	3,441
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	3,473	3,491	3,506	3,525	3,541
	Use totals	3,473	3,491	3,506	3,525	3,541
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	3,530	3,548	3,564	3,583	3,599
	Use totals	3,530	3,548	3,564	3,583	3,599
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	3,142	3,158	3,171	3,188	3,203
	Use totals	3,142	3,158	3,171	3,188	3,203
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	2,923	2,938	2,951	2,967	2,981
	Use totals	2,923	2,938	2,951	2,967	2,981
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

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

NOTES:

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
2026	**Total**
Total Water Use (AF)	3,358
Total Supplies (AF)	3,370
Surplus/Shortfall w/o WSCP Action	12
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2027	**Total**
Total Water Use (AF)	3,460
Total Supplies (AF)	3,468
Surplus/Shortfall w/o WSCP Action	8
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	3,521
Total Supplies (AF)	3,525
Surplus/Shortfall w/o WSCP Action	4
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	3,138
Total Supplies (AF)	3,137
Surplus/Shortfall w/o WSCP Action	(1)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	1
Revised Surplus/(shortfall)	0
2030	**Total**
Total Water Use (AF)	2,923
Total Supplies (AF)	2,919
Surplus/Shortfall w/o WSCP Action	(4)
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	4
Revised Surplus/(shortfall)	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels
Water Code Section 10632(a)(3)(B)

☐	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%	1	Up to 20%
2	Up to 20%	1	Up to 20%
3	Up to 30%	2	Up to 40%
4	Up to 40%	2	Up to 40%
5	Up to 50%	3	Up to 50%
6	>50%	3	50% or Greater

NOTES: Standard Shortage Level 1 includes the Company's permanent water conservation requirements.

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

Submittal Table 8-3 Retail: Demand Reduction Actions
Water Code Section 10632(a)(4)(B),(D), and (E)

Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)	Penalty, Charge, or Other Enforcement? **For Retail Suppliers Only** Drop Down List
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)		
Add additional rows as needed					
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	Landscape - Limit landscape irrigation to specific times	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Prohibited between 10 am and one hour before sunset PST	Yes
1	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Limited to every other day; does not apply to hand-held bucket or positive self-closing water shut-off nozzles	Yes
1	Landscape - Other landscape restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Time limited to 15 min per station unless watering device is continuously attended or is a very low-flow drip system	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Recirculating water is required	Yes
1	Other - Require automatic shut of hoses	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Limits on washing vehicles	Yes
1	CII - Lodging establishment must offer opt out of linen service	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	CII - Other CII restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Installation of single pass cooling system is prohibited for buildings requesting new water service	Yes
1	CII - Other CII restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	No installation of non-recirculating water systems in commercial car wash or laundry systems	Yes
1	CII - Commercial kitchens required to use pre-rinse spray valves	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF		Yes
1	CII - Other CII restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	All commercial car wash systems must have installed operational recirculating water systems	Yes
1	Landscape - Other landscape restriction or prohibition	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Construction meters used for irrigation shal l not be used between 10 am and one hour before sunset.	Yes
1	Other water feature or swimming pool restriction	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Filling or refilling of private swimming pools, spas, ponds, artificial lakes prohibi ted between 10 am and one hour before sunset.	Yes
1	Other water feature or swimming pool restriction	Volume	Collective reduction from all Shortage Level 1 actions is up to 204 AF	Pools and spas shall be equipped with covers not less than five days a week unless facility is in use.	Yes
2	Other	Volume	Collective reduction from Shortage Level 1 plus all Shortage Level 2 actions is up to 407 AFY	All actions under Shortage Level 1	Yes
2	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from Shortage Level 1 plus all Shortage Level 2 actions is up to 407 AFY	Limited to three days per week. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week	Yes
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from Shortage Level 1 plus all Shortage Level 2 actions is up to 407 AFY	Must be repaired within 72 hours of receipt of written notification.	Yes
3	Other	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	All actions under Shortage Level 2	Yes
3	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Limited to not to exceed two days per week; from November through March, limited to no more than one day per week; does not apply to hand-held bucket or positive self-closing water shut-off nozzles	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Repairs must be within 48 hours of receipt of written notification	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Filling or refilling of ornamental lakes or ponds is prohibited	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Limited to using hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing shut-off nozzle or device, by pressure/low volume wash systems, or at a commercial car washing facility that utilizes a recirculatingwater system to capture or reuse water.	Yes
3	Other water feature or swimming pool restriction	Volume	Collective reduction from all Shortage Level 3 actions is up to 611 AF	Re-filling of more than one foot of depth in a pool or spa and initial filling is prohibited	Yes
4	Other	Volume	Collective reduction from Shortage Level 3 plus all Shortage Level 4 actions is up to 814 AFY	All actions under Shortage Level 3	Yes
5	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	Watering or irrigating is prohibited	Yes
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	Repairs must be within 24 hours of receipt of written notification	Yes
5	Other	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	No new potable water services allowed	Yes
5	Other	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	Limits on building permits	Yes
5	Other	Volume	Collective reduction from all Shortage Level 5 actions is up to 1,018 AF	Discontinue service to any water user that violates water level provisions	Yes
6	Other	Volume	Collective reduction from Shortage Level 5 plus all Shortage Level 6 actions is greater than 1,018 AFY	All actions under Shortage Level 5	Yes

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

NOTES:

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

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX B

COMPLETED PLAN CHECKLIST

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	1	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and overview	n/a	Chapter 1 Lay Description
x	x	1	Chapter 1	10630.5	Each plan shall include a simple description of the Supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a Supplier may also choose to include a simple description at the beginning of each chapter.	Plan preparation	n/a	Beginning of each Chapter
x	x	2.1	Section 2.1	10620(b)	Every person that becomes a Supplier shall adopt UWMP within one year after it has become a Supplier.	Plan preparation	n/a	Section 2.1
x	n/a	2.5	Section 2.5	10644	Supplier shall report the Public Water Systems number, volume of delivered water, and number of connections that are included in this UWMP.	Plan preparation	2-1	Sections 2.1 and 2.5
x	x	2.5	Section 2.5	10644	Supplier shall report if this UWMP is an individual UWMP and whether the Supplier belongs to a regional UWMP or regional alliance.	Plan preparation	2-2	Sections 2.2 and 2.5
x	x	2.5	Section 2.5	10644	Supplier shall report whether the data is in fiscal or calendar years and the units of measure used for reporting water volumes.	Plan preparation	2-3	Sections 2.3 and 2.5
x	x	2.4	Section 2.4	10642	Provide supporting documentation that the Supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan preparation	n/a	Section 2.4
x	x	2.4	Section 2.4.2	10620(d)(3)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other Suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan preparation	n/a	Section 2.4.2
x	n/a	2.4	Section 2.4.1	10631(h)	Retail Suppliers will include documentation that they have provided their Wholesale Supplier(s)—if any—with water use projections from that source.	Plan preparation	2-4 R	Sections 2.4.1 and 2.5
n/a	x	2.4	Section 2.4.1	10631(h)	Wholesale Suppliers will provide their Suppliers with identification and quantification of the existing and planned sources of water available from the Wholesale Supplier to the Supplier during various water year types.	Plan preparation	2-4 W	n/a
x	x	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	Section 3.1 and 3.2
x	x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	Section 3.3
x	x	3.4	Section 3.4.1	10631(a)	Provide the current and projected service area populations for 2030, 2035, 2040, 2045 and optionally 2050.	System description	3-1	Sections 3.4 and 3.6
x	x	3.4	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the Supplier's water management planning.	System description	n/a	Section 3.4.2
x	x	3.5	Section 3.5	10631(a)	Describe the land uses within the service area… include the current and projected land uses within the existing or anticipated service area affecting the Supplier's water management planning. Describe the land uses within the service area.	System description and baselines	n/a	Section 3.5
x	Optional	4.2	Sections 4.2.3 and 4.2.4	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System water use	4-1 and 4-2	Sections 4.2 and 4.4
x	Optional	4.3	Section 4.3.1	10631(d)(3)(A)	Report the distribution system water loss for each of the five years preceding the plan update.	System water use	4-5	Sections 4.3 and 4.4
x	n/a	4.3	Section 4.3.2	10631(d)(3)(C)	Retail Suppliers shall provide data to show the distribution loss standards were met.	System water use	4-6	Sections 4.3 and 4.4
x	n/a	4.2	Section 4.2.5.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the Supplier.	System water use	4-3	Sections 4.2.5.5 and 4.4
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System water use	4-3	Section 4.2.5.3
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System water use	4-3	Sections 4.2.5.3 and 9.1
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)(ii)	To the extent that a Supplier reports the information described in subparagraph (A), an urban water Supplier shall… 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.	System water use	4-3	Section 4.2.5.3 and 4.2.5.4
x	x	4.2	Section 4.2.5.6	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System water use	n/a	Section 4.2.5.6
n/a	x	5.1	Section 5.1	10608.36	Wholesale Suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their Retail Suppliers achieve targeted water use reductions.	Baselines and targets	n/a	n/a
x	n/a	5.2	Section 5.2	10608.4	Retail Suppliers shall report on their compliance in meeting their water use targets. Reporting requirements will vary depending on whether the Supplier: - Was considered an urban retail water supplier in 2020, - Met its 2020 target in 2020, or - Was part of a merger or consolidation since 2020. Chapter 5 Subsections 5.2.1, 5.2.2, and 5.2.3 address each of these situations.	Baselines and targets	5-1	Sections 5.2 and 5.3
x	x	6.1	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System supplies	n/a	Sections 6.1 and 6.2
x	x	6.1	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.	System supplies	n/a	Sections 6.1, 6.2, 7.1, and 7.2
x	x	6.2	Section 6.2.2	10631(b)(4)(C)	Indicate whether groundwater is an existing or planned source of water available to the Supplier. If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	Water supplies and recycled water	6-1	Sections 6.2.2 and 6.4
x	x	6.2	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the Supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System supplies	n/a	Section 6.2.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	Section 6.2.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the Supplier has the legal right to pump.	System supplies	n/a	Section 6.2.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… (include) information as to whether DWR has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin…	Water supplies and recycled water	n/a	Section 6.2.2

x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… describe efforts by the Supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	Water supplies and recycled water	n/a	Section 6.2.2
x	x	6.2	Section 6.2.2.	10631(b)(4)(C)	If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	System supplies	n/a	Sections 6.2.2 and 6.4
x	x	6.2	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System supplies	6-9	Sections 6.2.2 and 6.4
x	x	6.1	Section 6.1	10631(b)	Identify and quantify the existing and planned sources of water available for 2025, 2030, 2035, 2040, 2045 and optionally 2050.	System supplies	6-8 and 6-9	Section 6.4
x	x	6.2	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System supplies	n/a	Section 6.2.7
x	n/a	6.2	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the Supplier's service area with quantified amount of collection and treatment and the disposal methods.	System supplies (recycled water)	6-2	Sections 6.2.5 and 6.4
x	x	6.2	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System supplies (recycled water)	6-3	Sections 6.2.5 and 6.4
x	x	6.2	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the Supplier's service area.	System supplies (recycled water)	6-4	Sections 6.2.5 and 6.4
x	x	6.2	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System supplies (recycled water)	6-4	Sections 6.2.5 and 6.4
x	x	6.2	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the Supplier's service area at the end of 5, 10, 15, and 20 years, and describe the actual use of recycled water in comparison to uses previously projected.	System supplies (recycled water)	6-4 and 6-5	Sections 6.2.5 and 6.4
x	x	6.2	Section 6.2.5	10633(f)	Describe the actions that may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System supplies (recycled water)	6-6	Sections 6.2.5 and 6.4
x	x	6.2	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the Supplier's service area.	System supplies (recycled water)	n/a	Sections 6.2.5 and 6.4
x	x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	Section 6.2.6
x	x	6.2	Section 6.2.10	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water Supplier to address water supply reliability in average, single-dry, and for a period of drought lasting five consecutive water years.	System supplies	6-7	Sections 6.2.10 and 6.4
x	x	6.3	Section 6.3 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a Supplier can readily obtain.	System suppliers, energy intensity	O-1A, O-1B, O-1C, and O-2	Section 6.3
x		7.1	Section 7.1	10634	Provide information on the quality of existing sources of water available to the Supplier and the manner in which water quality affects water management strategies and supply reliability.	Water supply reliability assessment	n/a	Section 7.1
x	x	7.2	Section 7.2	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the Supplier with the total projected water use over the next 20 years.	Water supply reliability assessment	7-2, 7-3, and 7-4	Sections 7.2
x	x	7.2	Section 7.2.3	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water supply reliability assessment	n/a	Section 7.2.3
x	x	7.3	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water supply reliability assessment	n/a	Section 7.3
x	x	7.3	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive years.	Water supply reliability assessment	n/a	Section 7.3
x	x	7.3	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water supply reliability assessment	n/a	Section 7.3
x	x	7.3	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the Supplier with the total projected water use for the drought period.	Water supply reliability assessment	7-5	Section 7.3
x	x	7.3	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water supply reliability assessment	n/a	Section 7.3
x	x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	Chapter 8
x	x	8	Chapter 8	10632(a)(1)	Provide an analysis of water supply reliability (from Guidebook Chapter 7) in the WSCP.	Water shortage contingency planning	n/a	Chapter 8
x	x	8.2	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the Supplier will use each year to determine its water reliability.	Water shortage contingency planning	n/a	Section 8.2
x	x	8.2	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the Supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water shortage contingency planning	n/a	Section 8.2
x	x	8.3	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10%, 20%, 30%, 40%, 50% shortage, and greater than 50% shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water shortage contingency planning	n/a	Section 8.3
x	x	8.3	Section 8.3	10632(a)(3)(B)	Suppliers with an existing WSCP that uses different water shortage levels must cross reference their categories with the six standard categories.	Water shortage contingency planning	8-1	Sections 8.3 and 8.14
x	x	8.4	Section 8.4	10632(a)(4)(A)	Suppliers with WSCPs that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water shortage contingency planning	8-2	Sections 8.4.1 and 8.14
x	x	8.4	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water shortage contingency planning	8-3	Sections 8.4.2 and 8.14
x	x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	Section 8.4.3
x	x	8.4	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to State-mandated prohibitions are appropriate to local conditions.	Water shortage contingency planning	Table 8-3	Section 8.4.4
x	x	8.4	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water shortage contingency planning	8-2 and 8-3	Sections 8.4.7 and 8.14
x	x	8.4	Section 8.4.6	10632.5	The UWMP shall include a seismic risk assessment and mitigation plan.	Water shortage contingency plan	n/a	Section 8.4.6
x	x	8.5	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water shortage contingency planning	n/a	Section 8.5

x	x	8.5	Section 8.5	10632(a)(5)(B), 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water shortage contingency planning	n/a	Section 8.5
x	n/a	8.6	Section 8.6	10632(a)(6)	Retail Supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water shortage contingency planning	n/a	Section 8.6
x	x	8.7	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the Supplier to enforce shortage response actions.	Water shortage contingency planning	n/a	Section 8.7
x	x	8.7	Section 8.7	10632(a)(7)(B)	Provide a statement that the Supplier will declare a water shortage emergency per Water Code Chapter 3, *Water Shortage Emergencies* .	Water shortage contingency planning	n/a	Section 8.7
x	x	8.7	Section 8.7	10632(a)(7)(C)	Provide a statement that the Supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water shortage contingency planning	n/a	Section 8.7
x	x	8.8	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	Section 8.8
x	x	8.8	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	Section 8.8
x	n/a	8.8	Section 8.8	10632(a)(8)(C)	Retail Suppliers must describe the cost of compliance with Water Code Chapter 3.3, *Excessive Residential Water Use During Drought* .	Water shortage contingency planning	n/a	Section 8.8
x	n/a	8.9	Section 8.9	10632(a)(9)	Retail Suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data are collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water shortage contingency planning	n/a	Section 8.9
x	x	8.10	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the WSCP to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water shortage contingency planning	n/a	Section 8.10
x	n/a	8.11	Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water shortage contingency planning	n/a	Section 8.11
x	x	8.12	Section 8.12	10632(c)	Make available the WSCP to customers and any city or county where it provides water within 30 days after adoption of the plan.	Water shortage contingency planning	n/a	Sections 8.12 and 10.6
x	n/a	9.1	Sections 9.1	10631(e)(1)	Retail Suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand management measures	n/a	Section 9.1.1
n/a	x	9.2	Sections 9.2	10631(e)(2)	Wholesale Suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and Supplier assistance program.	Demand management measures	n/a	n/a
x	n/a	10	Chapter 10	10608.26(a)	Retail Suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan adoption, submittal, and implementation	n/a	Sections 10.3 and 10.4
x	x	10.2	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the Supplier provides water that the Supplier will be reviewing the UWMP and considering amendments or changes to the plan.	Plan adoption, submittal, and implementation	10-1	Section 10.2
x	x	10.4	Section 10.4	10621(f)	Each urban water Supplier shall update and submit its 2025 plan to DWR by July 1, 202 6.	Plan adoption, submittal, and implementation	n/a	Section 10.5
x	x	10.2	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the Supplier made the UWMP and WSCP available for public inspection, published notice of the public hearing, and held a public hearing about the UWMP and WSCP.	Plan adoption, submittal, and implementation	n/a	Sections 10.2, 10.3, and 10.4
x	x	10.2	Section 10.2.2	10642	The Supplier is to provide the time and place of the hearing to any city or county within which the Supplier provides water.	Plan adoption, submittal, and implementation	10-1	Section 10.3
x	x	10.3	Section 10.3.2	10642	Provide supporting documentation that the UWMP and WSCP has been adopted as prepared or modified.	Plan adoption, submittal, and implementation	n/a	Sections 10.4 and 10.9
x	x	10.4	Section 10.4	10644(a)	Provide supporting documentation that the Supplier has submitted their UWMP to the California State Library.	Plan adoption, submittal, and implementation	n/a	Section 10.5.3
x	x	10.4	Section 10.4	10644(a)(1)	Provide supporting documentation that the Supplier has submitted their UWMP to any city or county within which the Supplier provides water no later than 30 days after adoption.	Plan adoption, submittal, and implementation	n/a	Section 10.5.4
x	x	10.4	Sections 10.4.1 and 10.4.2	10644(a)(2)	The UWMP, or amendments to the UWMP, submitted to DWR shall be submitted electronically.	Plan adoption, submittal, and implementation	n/a	Sections 10.5 and 10.9
x	x	10.7	Section 10.7.2	10644(b)	If revised, submit a copy of the WSCP to DWR within 30 days of adoption.	Plan adoption, submittal, and implementation	n/a	Section 10.9
x	x	10.5	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its UWMP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Section 10.6
x	x	10.5	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its WSCP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Section 10.6
x	x	10.6	Section 10.6	10621(c)	If Supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan adoption, submittal, and implementation	n/a	Section 10.7

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX C

DEMONSTRATION OF REDUCED IMPORTED WATER RELIANCE

DEMONSTRATION OF CONSISTENCY WITH THE DELTA PLAN FOR PARTICIPANTS IN COVERED ACTIONS (2015 THROUGH 2050)

MONTEBELLO LAND AND WATER COMPANY (COMPANY)

Introduction

Pursuant to the California Department of Water Resources (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, 2020, and 2025 Urban Water Management Plans (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).*

Reduced Reliance Calculation Tables

Pursuant to DWR guidance, Tables C-1 through C-4 were prepared to show the potential reduction of reliance on imported supply for the Company. The Company has used these tables to demonstrate its reduced regional reliance on imported water supplies, but not specifically Delta Watershed supplies. For each of the tables, a “Baseline year” was selected. Water demands during subsequent years (from 2015 through 2050 in five-year increments) were compared to water demands during the Baseline year. Table C-1 considers the population and service area water demands, and a demand in gallons per capita per day (GPCD) water use rate was calculated for each of the years following the Baseline year. The calculated reduction in GPCD from the Baseline year was then translated to an estimated amount of water saved as a result of water conservation measures. Table C-2 references the estimated amount of water saved from Table C-1 and shows the Company’s water demand without water use efficiency in effect.

A method of showing reduced regional reliance on imported water supplies is to show increased regional self-reliance. Table C-3 lists water supply sources that contribute to regional self-reliance, including water use efficiency (from Table C-1 and C-2) and groundwater recharge activities. Regional self-reliance is expressed both in terms of acre feet (AF) and as a percentage.

The calculation of reduced regional reliance on imported water supplies is shown on Table C-4. Table C-4 also shows the percent change in imported water supplies relative to the Company’s total supply. A negative percent change of imported water supplies indicates the Company’s has reduced regional reliance on imported water supplies.

Since the Baseline year, the Company has decreased its reduced regional reliance on imported water supplies in 2015, 2020, 2025, and anticipates doing so through 2050.

The Company has reduced its reliance on imported water supply in up to three separate categories, as follows:

- The demand in GPCD for the "Baseline year" was compared to the GPCDs in subsequent years (from 2015 through 2050, in five-year increments). The reduced GPCD multiplied by the population in these subsequent years is indicative of the potential reduced regional reliance on imported water supplies and is included in Table C-1.
- The recycled water use from 2015 through 2050, in five-year increments, also demonstrates reduced regional reliance on imported water supplies and included in Table C-1
- To the extent the Water Replenishment District of Southern California (WRD) has, or plans to, use recycled water to replenish the Central Basin, the Company's proportional share (up to the total replenishment water obligation) will be included on Table C-1.

These categories of reduced imported water reliance are discussed below. The sum of the increased regional self-reliance and the sum of the reduced regional reliance imported water demand resulting from these categories is reflected on Table C-3 and Table C-4, respectively, and is reflective of the Company's overall reduced reliance.

Reduced GPCD

Section 6.2.2 of the 2025 UWMP describes the management of the Central Basin. The Company produces groundwater from the Central Basin, which is adjudicated and managed by the WRD. As discussed in Section 6.2.7 of the 2025 UWMP, the Company can lease Central Basin water rights on an annual basis to allow for additional production above its Allowed Pumping Allocation.

Chapter 9 of the 2025 UWMP describes the Demand Management Measures which the Company has implemented to reduce the amount water used by its customers. In addition, Chapter 6 of the 2025 UWMP describes the groundwater basin management measures implemented by WRD. Collectively these actions translate to a reduction in the

GPCD usage rate which is described further in Chapter 5 of the 2025 UWMP. These actions directly impact total water demands, and consequently, the quantity of imported water which may be required. Absent the proactive measures taken by the Company, it is anticipated there may have been a greater demand on imported water.

Pursuant to DWR guidance, reduced reliance on imported water supplies can be demonstrated by first selecting a “Baseline” water demand, represented by total potable water demands during 2010 Table C-1 summarizes the “Baseline” water usage by the Company in 2010 (assuming demand reduction efforts had not been implemented); actual water usage in 2015, 2020, and 2025; and projected water usage through 2050 in five-year increments. Table C-2 demonstrates that, but for the water conservation efforts implemented by the Company, there may have been a greater reliance on untreated imported water supplies during the Baseline year as compared to subsequent years. The reduction is considered the reduced imported water reliance.

The Company’s potable water demand during 2010, along with the corresponding service area population, were used to determine the Baseline GPCD. Subsequently, the actual demands for 2015, 2020, and 2025 were compared to the calculated population to obtain the recent GPCD which includes the water conservations measures which have been implemented (those demand management measures are described in Chapter 9 of the 2025 UWMP). The “Water Supplies Contributing to Regional Self-Reliance" are also provided in Table C-1. The differences between the Baseline GPCD and the 2015, 2020, and 2025 GPCDs are effectively considered a demonstration of the reduced regional reliance on imported water supplies with the understanding that any potential increased demand by the Company resulting from increased population could have been required, absent the Company’s new water supplies which contribute to self-reliance. A similar methodology is used for the projected potable water demands (2025 UWMP Table 4-2) and populations (2025 UWMP Table 3-1).

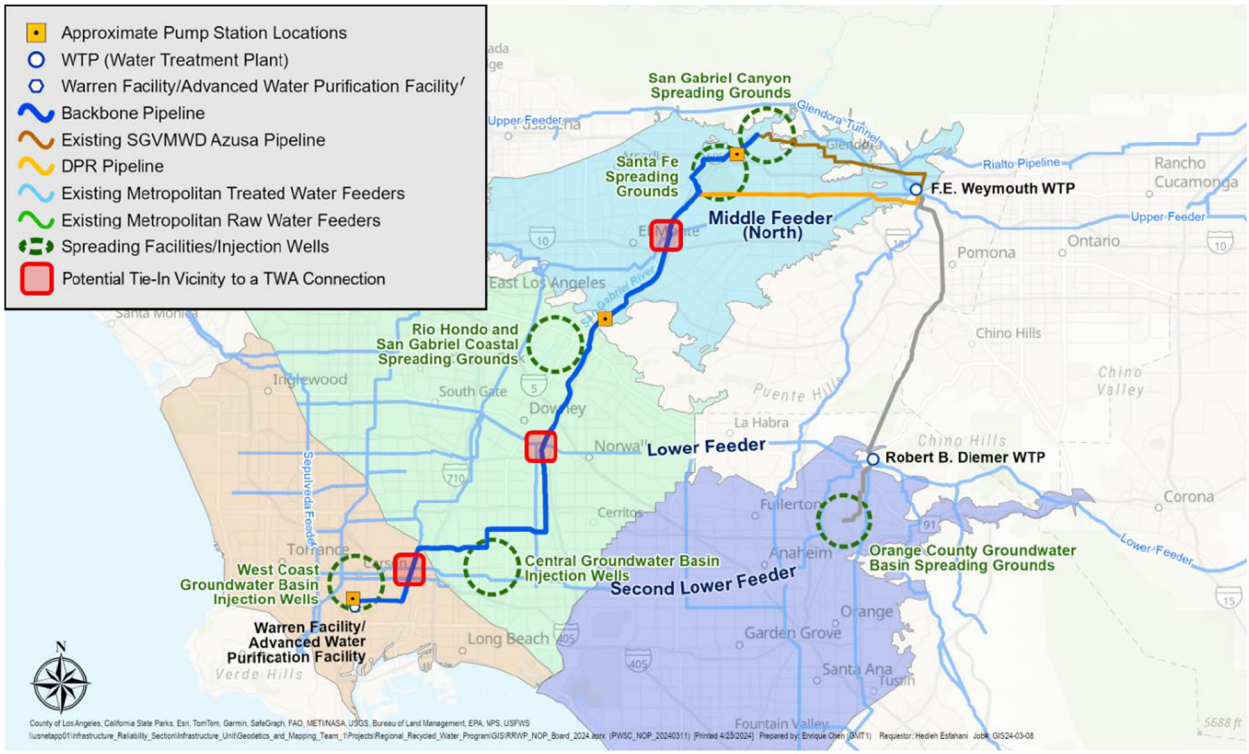
Recycled Water Use

The Company has also constructed infrastructure to deliver recycled water to its customers instead of continuing to use its potable water supplies. The historical recycled water demands for 2015, 2020, and CY 2025, along with the projected recycled water demands (2025 UWMP Table 4-2) are incorporated in Table C-1. These quantities are in addition to the reduced demand resulting from decreased GPCD.

Recycled Water for Groundwater Replenishment

MWD is currently partnering with LACSD to investigate the viability of providing up to 150 million gallons per day (MGD) (approximately 168,000 AFY) of advanced treated wastewater from LACSD's A.K. Warren Water Resource Facility (formerly Joint Water Pollution Control Plant) located in Carson, California (Carson Plant). The "Pure Water Southern California" (Pure Water) project would deliver purified water from the Carson Plant in up to 60 miles of transmission pipelines to groundwater basins within MWD's service area, including the Central, West Coast, Main San Gabriel, and Orange County Basins. The purified water would be used for groundwater recharge, groundwater storage, and industrial facilities. In addition, purified water could potentially be treated further at two of MWD's existing water treatment plants for direct potable reuse. The locations of the proposed pipeline alignments are provided in the figure below.

Regional Recycled Water Program Location



Source: https://www.mwdh2o.com/building-local-supplies/pure-water-southern-california/

MWD began construction of a $17 million small-scale demonstration plant (0.5 MGD) in late 2017 which was completed in October 2019. The results of the demonstration plant will allow MWD and others to determine if expansion to a full-scale plant is beneficial. The full-scale plant would take approximately 11 years to construct once approved (with a cost of over $3 billion).

Pursuant to MWD's "*Regional Recycled Water Program Conceptual Planning Studies Report*", February 2019, the proposed Pure Water project would potentially deliver up to 9 MGD (about 10,000 AFY) of purified water for injection at the Montebello Forebay or for spreading at the Rio Hondo Spreading Grounds in Pico Rivera for Central Basin replenishment purposes. Water produced from the proposed Pure Water project would offset an equal amount of untreated imported water from the State Water Project and/or the Colorado River, which otherwise historically may have been used for groundwater

replenishment (including in the Central Basin). For the Central Basin, MWD has entered into a letter of intent with Central Basin Municipal Water District for up to 69,000 AFY. As noted in Section 6.2.2 of the 2025 UWMP, all producers in Central Basin are levied a "Replenishment Assessment" to replenish Central Basin on each acre-foot of groundwater produced. Therefore, the benefit to each producer in this Plan is based on the proportional share of its anticipated production to the total Central Basin production.

WRD has developed the "Water Independence Now" (WIN) Project, formerly referred to as the Groundwater Reliability Improvement Program (GRIP), which consists of about 10,500 AFY of highly treated recycled water blended with an additional 10,500 AFY of recycled water, for a total of 21,000 AFY. This recycled water is produced from LACSD's San Jose Creek Water Reclamation Plant and is used to replenish the Central Basin. The WIN Project will offset an equal amount of SWP water. As noted in Section 6.2.2 of the 2025 UWMP, all producers in Central Basin are levied a "Replenishment Assessment" to replenish Central Basin on each acre-foot of groundwater produced. Therefore, the benefit to each producer in this Plan is based on the proportional share of its anticipated production to the total Central Basin production. The recharged water hypothetically assigned to the Company is based on the Company's share of the Central Basin's total Allowable Pumping Allocation (217,367 AFY) multiplied by the amount of recycled water replenished and is shown on Table C-3.

The decrease in GPCD, increase in recycled water use, and enhanced groundwater recharge programs compared to the Baseline year has resulted in an overall decrease in reliance on imported water supplies. As shown in Table C-4, the percentage of imported water supplies relative to the Company's total supply has decreased, and is projected to decrease, from the percentage in the Baseline year.

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

Service Area Water Use Efficiency Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	3,301	3,137	2,873	2,942	2,961	2,976	2,989	3,005	3,019
Non-Potable Water Demands	-	-	17	21	25	25	25	25	25
Potable Service Area Demands with Water Use Efficiency Accounted For	3,301	3,137	2,857	2,921	2,936	2,951	2,964	2,980	2,994

Total Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Population	32,219	26,554	27,111	25,752	25,885	26,018	26,143	26,269	26,396

Water Use Efficiency Since Baseline (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Per Capita Water Use (GPCD)	91	105	94	101	101	101	101	101	101
Change in Per Capita Water Use from Baseline (GPCD)		14	3	10	10	10	10	10	10
Estimated Water Use Efficiency Since Baseline		(417)	(79)	(283)	(284)	(285)	(286)	(289)	(290)

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

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	3,301	3,137	2,873	2,942	2,961	2,976	2,989	3,005	3,019
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline		(417)	(79)	(283)	(284)	(285)	(286)	(289)	(290)
Service Area Water Demands without Water Use Efficiency Accounted For	3,301	2,720	2,794	2,659	2,677	2,691	2,703	2,716	2,729

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

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Water Use Efficiency	-	(417)	(79)	(283)	(284)	(285)	(286)	(289)	(290)
Water Recycling	-	-	17	21	25	25	25	25	25
Stormwater Capture and Use									
Advanced Water Technologies (WIN Project)[1]	-	-	-	89	89	89	89	89	89
Advanced Water Technologies (Pure Water - Central Basin)[2]	-	-	-	-	-	87	87	87	87
Conjunctive Use Projects									
Local and Regional Water Supply and Storage Projects									
Other Programs and Projects the Contribute to Regional Self-Reliance									
Water Supplies Contributing to Regional Self-Reliance	-	(417)	(62)	(173)	(170)	(84)	(84)	(87)	(88)

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	3,301	2,720	2,794	2,659	2,677	2,691	2,703	2,716	2,729

Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Water Supplies Contributing to Regional Self-Reliance	-	(417)	(62)	(173)	(170)	(84)	(84)	(87)	(88)
Change in Water Supplies Contributing to Regional Self-Reliance		(417)	(62)	(173)	(170)	(84)	(84)	(87)	(88)

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Percent of Water Supplies Contributing to Regional Self-Reliance	0.0%	-15.3%	-2.2%	-6.5%	-6.3%	-3.1%	-3.1%	-3.2%	-3.2%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		-15.3%	-2.2%	-6.5%	-6.3%	-3.1%	-3.1%	-3.2%	-3.2%

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

Water Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
CVP/SWP Contract Supplies									
Delta/Delta Tributary Diversions									
Transfers and Exchanges									
Other Water Supplies from the Delta Watershed (Untreated)[3]	230	162	-	-	-	-	-	-	-
Other Water Supplies from the Delta Watershed (Treated)	-	-	-	-	-	-	-	-	-
Total Water Supplies from the Delta Watershed	230	162	-	-	-	-	-	-	-

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	3,301	2,720	2,794	2,659	2,677	2,691	2,703	2,716	2,729

Change in Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Water Supplies from the Delta Watershed	230	162	-	-	-	-	-	-	-
Change in Water Supplies from the Delta Watershed		(68)	(230)	(230)	(230)	(230)	(230)	(230)	(230)

Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045	2050 (Optional)
Percent of Water Supplies from the Delta Watershed	7.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in Percent of Water Supplies from the Delta Watershed		-1.0%	-7.0%	-7.0%	-7.0%	-7.0%	-7.0%	-7.0%	-7.0%

[1] As part of the Water Independence Now Project, the Albert Robles Center was completed in 2019 and supplies about 21,000 AFY to Central Basin for replenishment purposes. The projected amount available to the Company is based on the Company's share of the total Allowable Pumping Allocation (0.87463%) and recent historical replenishment.

[2] The Pure Water project is anticipated to result in 10,000 AFY for the Central Basin starting in 2035. The projected amount available to the Company is based on the share of Central Basin's total Allowable Pumping Allocation (0.87463%).

[3] Represents imported water for replenishment purposes by the Water Replenishment District of Southern California in the Central Basin.

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX D

60-DAY NOTIFICATION LETTERS

MONTEBELLO LAND & WATER COMPANY
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1/2/2026

City of Montebello
1600 W Beverly Blvd
Montebello, CA 90640

SUBJECT: 2025 Urban Water Management Plan Update

Dear Interested Parties

The Montebello Land and Water Company is currently in the process of reviewing its Urban Water Management Plan (UWMP) for the upcoming 2025 Update. The Urban Water Management Planning Act requires every urban water supplier, which provides water directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least once every five years. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The Montebello Land and Water Company is currently in the process of preparing the 2025 UWMP Update.

As an urban water supplier, the Montebello Land and Water Company is required pursuant to Section 10620(d)(3) of the California Water Code to coordinate with water management agencies, relevant public agencies, and other water suppliers regarding the preparation of the UWMP. Pursuant to Section 10621(b) of the California Water Code, the Montebello Land and Water Company will be reviewing the

UWMP and will make amendments or changes, as appropriate. The Montebello Land and Water Company invites you to submit comments in anticipation of the development of our 2025 UWMP Update. Please provide written comments within the next 30 days to the Montebello Land and Water Company.

Sincerely,

Korey Bradbury
General Manager

MONTEBELLO LAND & WATER COMPANY
344 E. MADISON AVE / P.O. BOX 279 MONTEBELLO, CA 90640

BRUCE JUGAN
President

DAVE REGO
Vice President

KENNETH BRADBURY
Secretary

ZEKI KAYIRAN
Treasurer

NORM AKASHI
Director

KOREY BRADBURY
General Manager

Telephone
(323) 722-8654

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1/2/2026

County of Los Angeles
201 N Figueroa Street
Los Angeles, CA 90012

SUBJECT: 2025 Urban Water Management Plan Update

Dear Interested Parties

The Montebello Land and Water Company is currently in the process of reviewing its Urban Water Management Plan (UWMP) for the upcoming 2025 Update. The Urban Water Management Planning Act requires every urban water supplier, which provides water directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least once every five years. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The Montebello Land and Water Company is currently in the process of preparing the 2025 UWMP Update.

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Sincerely,

Korey Bradbury
General Manager

Whittier Daily News
Local. News. Matters.
whittierdailynews.com

181 W. Huntington Drive Suite#209
Monrovia, California 91016
(626) 544-0885
ealmeida@scng.com

Korey Bradbury
344 E. Madison Ave.
MONTEBELLO, CA 90640

Account Number:	5272431
Ad Order Number:	0011794768
Customer's Reference/PO Number:	
Publication:	Whittier Daily News
Publication Dates:	05/26/2026 and 06/02/2026
Total Amount:	$792.00
Payment Amount:	$0.00
Amount Due:	$792.00
Notice ID:	IBJYgZXfP1mMFN477j8s
Invoice Text:	To All Interested Parties: NOTICE OF PREPARATION AND PUBLIC HEARING FOR THE MONTEBELLO LAND AND WATER COMPANY'S 2025 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN The Montebello Land and Water Company (the "Company") is currently preparing an update to its Urban Water Management Plan ("Plan"), including the "Water Shortage Contingency Plan" ("WSCP") in compliance with the California Urban Water Management Planning Act. The current Plan was completed in 2021. An update is required every five years. The Company welcomes the input and involvement of all interested parties as it updated its Plan. The Plan describes the Company's planning efforts to ensure an adequate water supply to meet existing and future water demands under a range of water supply conditions, including water shortages. Draft portions of the Plan will be made available to appropriate water agencies including wholesale suppliers, water management agencies, and neighboring retail agencies as they are developed. The completed Draft 2025 Plan will be available for public review beginning May 22, 2026, on the Company's website at mtblw.com. The Company will conduct a public hearing at the following time and place to receive comments on the Draft 2025 Plan: Date: Tuesday, June 9, 2026 Time: 9:00 a.m. Location: 344 E. Madison Ave Montebello CA, 90640 All interested persons are invited to attend the public hearing and provide comments regarding the Draft 2025 Plan . Oral statements will be heard, but for accuracy of the record, all important testimony should be submitted in writing. For more information, please feel free to contact Korey Bradbury, General Manager at (323) 722-8654 (korey@mtblw.com [korey@mtblw.com]).

Whittier Daily News
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Whittier Daily News
181 W. Huntington Drive Suite#209
Monrovia, California 91016
(626) 544-0885

FILE NO. 0011794768

PROOF OF PUBLICATION (2015.5 C.C.P.)

STATE OF CALIFORNIA
County of Los Angeles County

I am a citizen of the United States and a resident of the county aforesaid; I am over the age of eighteen years, and not party to or interested in the above-entitled matter. I am the principal clerk of the printer of WHITTIER DAILY NEWS, a newspaper of general circulation for the City of Whittier, by the Superior Court of the County of Los Angeles County, State of California, on the date of October 10, 1960, Case Number 369393. The notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

05/26/2026, 06/02/2026

I declare under the penalty of perjury that the foregoing is true and correct.

Executed at Monrovia, California
On this 2nd day of June, 2026.

Eva Almeida
Signature

To All Interested Parties:

NOTICE OF PREPARATION AND PUBLIC HEARING FOR THE MONTEBELLO LAND AND WATER COMPANY'S 2025 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN

The Montebello Land and Water Company (the "Company") is currently preparing an update to its Urban Water Management Plan ("Plan"), including the "Water Shortage Contingency Plan" ("WSCP") in compliance with the California Urban Water Management Planning Act. The current Plan was completed in 2021. An update is required every five years. The Company welcomes the input and involvement of all interested parties as it updated its Plan.

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Whittier Daily News
Published: 5/26, 6/2/26

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Treasurer

NORM AKASHI
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Telephone
(323) 722-8654

Fax
(323) 722-5529

5/20/2026

City of Montebello
1600 W Beverly Blvd
Montebello, CA 90640

SUBJECT: Notice of Public Hearing for
2025 Urban Water Management Plan and
Water Shortage Contingency Plan

Dear Interested Parties:

Montebello Land and Water Company will hold a PUBLIC HEARING on June 9, 2026 for the purposes of adopting its 2025 Urban Water Management Plan and its Water Shortage Contingency Plan. Montebello Land and Water Company's 2025 Urban Water Management Plan incorporates Montebello Land and Water Company's Water Shortage Contingency Plan.

The 2025 Urban Water Management Plan and Water Shortage Contingency Plan were prepared pursuant to the "Urban Water Management Planning Act" and the California Water Code. The California Department of Water Resources requires every urban water supplier to prepare and adopt an Urban Water Management Plan, including the Water Shortage Contingency Plan, and periodically update the Urban Water Management Plan at least once every five years, in years ending in six and one.

Information regarding Montebello Land and Water Company's PUBLIC HEARING follows:

Date: Tuesday, June 9, 2026
Time: 9:00 AM
Place: 344 E. Madison Ave, Montebello CA, 90640

Montebello Land and Water Company invites all interested entities to attend and present their comments. A copy of the draft 2025 Urban Water Management Plan and Water Shortage Contingency Plan will be available at Montebello Land and Water Company's website. Please provide written comments by 5 p.m. on June 2, 2026 to Montebello Land and Water Company.

Sincerely,

Korey Bradbury
General Manager

MONTEBELLO LAND & WATER COMPANY
344 E. MADISON AVE / P.O. BOX 279 MONTEBELLO, CA 90640

BRUCE JUGAN
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5/20/2026

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Korey Bradbury
General Manager

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX E

CLIMATE CHANGE CONSIDERATIONS (CAL- ADAPT DATA)

Annual Averages

Explore projected changes in annual average Maximum Temperature, Minimum Temperature and Precipitation through end of this century for California.

EXPLORE DATA
ABOUT THE TOOL
RESOURCES
HELP

Central Basin.kml

Change Location

Projected changes in **Annual Average Precipitation** under a **Medium Emissions (RCP 4.5) Scenario**.

MODELED HISTORICAL
Baseline (1961-1990)
Change Period

30 YEAR AVG	30 YEAR RANGE
15.1 inch	3.9–33.7 inch

Learn More

FUTURE PROJECTIONS
Mid-Century (2035-2064)
Change Period

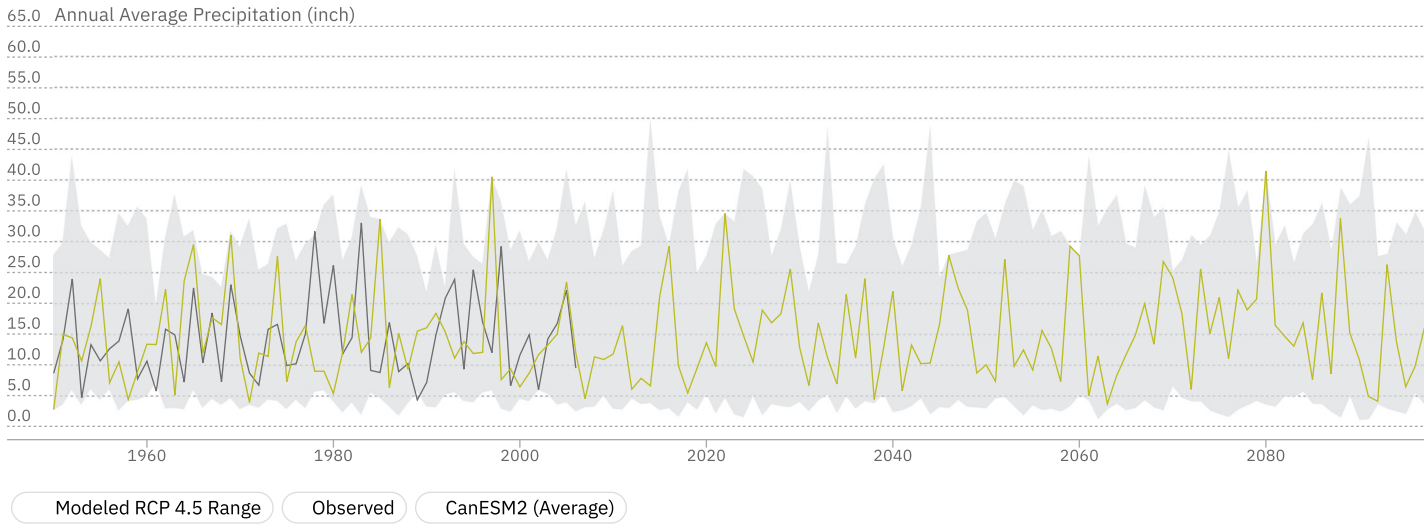
30 YEAR AVG	30 YEAR RANGE
14.2 inch	3.7–29.3 inch

Learn More

FUTURE PROJECTIONS
End-Century (2070-2099)
Change Period

30 YEAR AVG	30 YEAR RANGE
16.5 inch	4.1–41.5 inch

Learn More

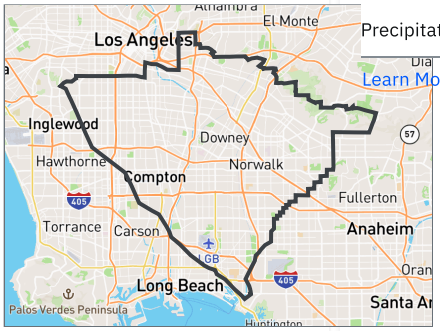


Source: Cal-Adapt. Data: LOCA Downscaled CMIP5 Climate Projections (Scripps Institution of Oceanography), Gridded Observed Meteorological Data (University of Colorado Boulder), LOCA Derived Products (Geospatial Innovation Facility).

Explain Chart

Download Chart Share

SELECT LOCATION



Learn More

SELECT CLIMATE VARIABLE

Precipitation

Learn More

SELECT SCENARIO

- Medium (RCP 4.5)
- High (RCP 8.5)

Learn More

SELECT MODELS

1 Select...

CanESM2

Learn More

About the Tool

Overall temperatures are projected to rise substantially throughout this century. These projections differ depending on the time of year and the type of measurement (highs vs. lows), all of which have different potential effects to the state's ecosystem health, agricultural production, water use and availability, and energy demand. On average, the projections show little change in total annual precipitation in California. Furthermore, among several models, precipitation projections do not show a consistent trend during the next century. The Mediterranean seasonal precipitation pattern is expected to continue, with most precipitation falling during winter from North Pacific storms. However, even modest changes would have a significant impact because California ecosystems are conditioned to historical precipitation levels and water resources are nearly fully utilized.

With this tool you can explore projections of annually averaged maximum temperature, minimum temperature and precipitation. These climate projections have been downscaled from global climate models from the CMIP5 archive, using the Localized Constructed Analogs (LOCA) statistical technique developed by Scripps Institution Of Oceanography. LOCA is a statistical downscaling technique that uses past history to add improved fine-scale detail to global climate models.

Data Sources

The following list of datasets were used to create this tool. Download data visualized in the charts by clicking the Download Chart button. For more download options follow the links below.



LOCA Downscaled CMIP5 Climate Projections

Scripps Institution of Oceanography

Daily climate projections for California at a resolution of 1/16° (about 6 km, or 3.7 miles) generated to support climate change impact studies for California's Fourth Climate Change Assessment. The data, derived from 32 coarse-resolution (~100 km) global climate models from the CMIP5 archive, were bias corrected and downscaled using the Localized Constructed Analogues (LOCA) statistical

method. The data cover 1950-2005 for the historical period and 2006-2100 (some models stop in 2099) for two future climate projections. Details are described in Pierce et al., 2018.

Download dataset:

- Cal-Adapt Data Download Tool
- Cal-Adapt Data Server - loca (netcdf)

References:

- LOCA Statistical Downscaling (link)
- Pierce et al. (2018). Climate, drought, and sea level rise scenarios for California's fourth climate change assessment. California's Fourth Climate Change Assessment, California Energy Commission. Publication Number: CNRA-CEC-2018-006. (link)



Gridded Observed Meteorological Data

University of Colorado Boulder

Historical observed daily temperature data from approximately 20,000 NOAA Cooperative Observer (COOP) stations form the basis of this gridded dataset from 1950–2013 at a spatial resolution of 1/16° (approximately 6 km). Observation-based meteorological data sets offer insights into changes to the hydro-climatic system by diagnosing spatio-temporal characteristics and providing a historical baseline for future projections. Details are described in Livneh et al., 2015.

Download dataset:

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- Cal-Adapt Data Server - livneh (netcdf)
- NOAA (netcdf)

References:

- Water and Climate Research Group, CIRES (link)
- Livneh et al. (2015). A spatially comprehensive, hydrometeorological data set for Mexico, the U.S., and Southern Canada 1950–2013. Scientific Data, 2(1). doi:10.1038/sdata.2015.42 (link)



LOCA Derived Products

Geospatial Innovation Facility

Datasets created from LOCA downscaled CMIP5 climate projections for Cal-Adapt tools. These currently include the modeled annual variability envelope (maximum and minimum from range of annual average values from all 32 GCMs); precalculated data tables of extreme heat counts for California counties and census tracts for 4 priority models and 2 scenarios.

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Resources

California Adaptation Clearinghouse

The Adaptation Clearinghouse is the State of California's consolidated searchable database of resources for local, regional and statewide climate adaptation planning and decision-making.

VIEW RESOURCE

California's 4th Climate Change Assessment

California's Fourth Climate Change Assessment advances actionable science that serves the growing needs of state and local-level decision-makers from a variety of sectors.

VIEW RESOURCE

Related Cal-Adapt Tools



Maps of Projected Change

Maps depicting long-term (30 years) changes in annual average temperature and precipitation.

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Get Started

An introduction to climate data, models, and projections.

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Frequently asked questions about Cal-Adapt's tools and data.

LEARN MORE

Cal-Adapt 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 the California Strategic Growth Council.

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State of California, Gavin Newsom, Governor.

Annual Averages

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EXPLORE DATA
ABOUT THE TOOL
RESOURCES
HELP

Central Basin.kml

Change Location

Projected changes in **Annual Average Maximum Temperature** under a **Medium Emissions (RCP 4.5) Scenario**.

MODELED HISTORICAL
Baseline (1961-1990)
Change Period

30 YEAR AVG	30 YEAR RANGE
74.7 °F	72.1–77.7 °F

Learn More

FUTURE PROJECTIONS
Mid-Century (2035-2064)
Change Period

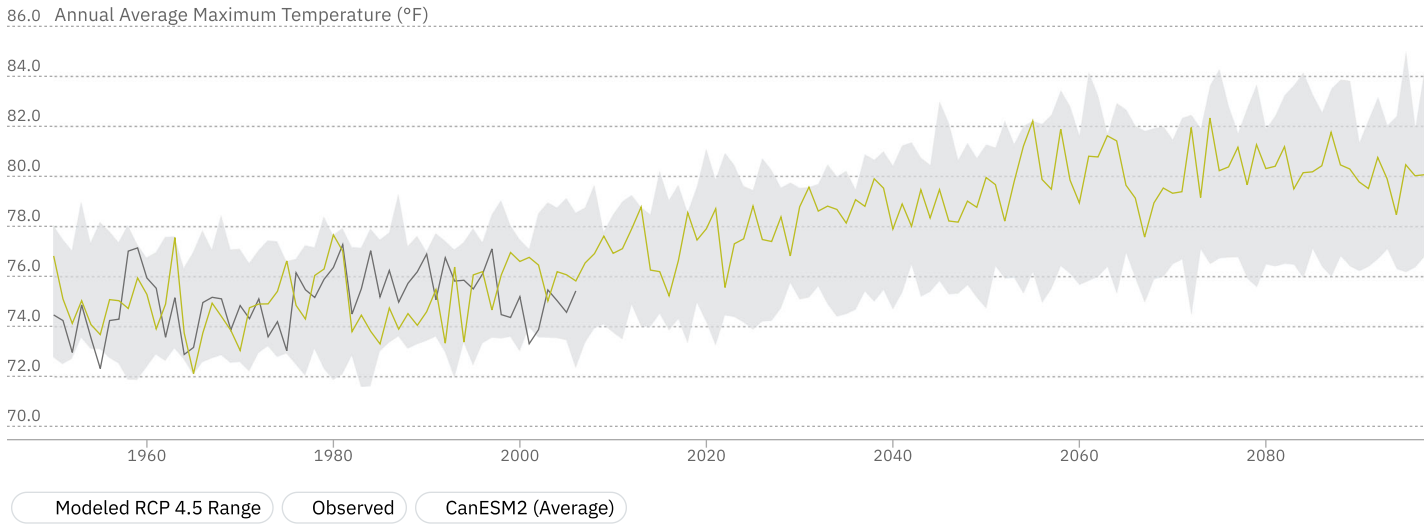
30 YEAR AVG	30 YEAR RANGE
79.6 °F	77.9–82.2 °F

Learn More

FUTURE PROJECTIONS
End-Century (2070-2099)
Change Period

30 YEAR AVG	30 YEAR RANGE
80.3 °F	78.5–82.3 °F

Learn More

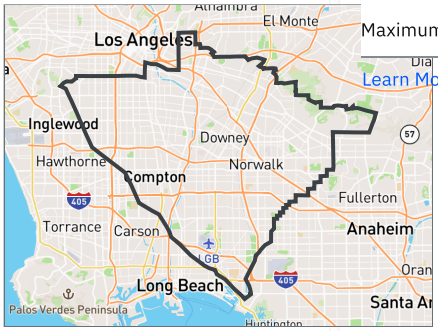


Source: Cal-Adapt. Data: LOCA Downscaled CMIP5 Climate Projections (Scripps Institution of Oceanography), Gridded Observed Meteorological Data (University of Colorado Boulder), LOCA Derived Products (Geospatial Innovation Facility).

Explain Chart

Download Chart Share

SELECT LOCATION



Learn More

SELECT CLIMATE VARIABLE

Maximum Temperature

Learn More

SELECT SCENARIO

- Medium (RCP 4.5)
- High (RCP 8.5)

Learn More

SELECT MODELS

1 Select...

CanESM2

Learn More

About the Tool

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Frequently asked questions about Cal-Adapt's tools and data.

LEARN MORE

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State of California, Gavin Newsom, Governor.

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX F

CENTRAL BASIN THIRD AMENDED JUDGMENT

WILLIAM F. KRUSE (CSB # 090231)
LAGERLOF, SENECAL, GOSNEY & KRUSE, LLP
301 N. Lake Avenue, 10th Floor
Pasadena, CA 91101-4108
626/793-9400; FAX 626/793-5900

Attorneys for CITY OF LAKEWOOD,
CITY OF LONG BEACH

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

CENTRAL AND WEST BASIN WATER REPLENISHMENT DISTRICT, etc., Plaintiff, vs. CHARLES E. ADAMS, et al., Defendant	Case No.: 786,656 THIRD AMENDED JUDGMENT (Declaring and establishing water rights in Central Basin, enjoining extractions therefrom in excess of specified quantities and providing for the storage and extraction of stored water.)
CITY OF LAKEWOOD, a municipal corporation, Cross-Complainant vs. CHARLES E. ADAMS, et al., Cross-Defendants.	Assigned for all purposes to Hon. Abraham Khan Dept. 51

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The original judgment in this action was entered on or about August 27, 1965. Pursuant to the reserved and continuing jurisdiction of the court under the Judgment herein, certain amendments to said Judgment and temporary orders have heretofore been made and entered. Continuing jurisdiction of the court for this action is currently assigned to Hon. Abraham Khan.

The Motion of Plaintiff WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA (which originally brought this action under its former name "Central and West Basin Water Replenishment District"), and of defendants, City of Lakewood, City of Long Beach, Golden State Water Company, California Water Service Company, City of Los Angeles, City of Cerritos, City of Downey, City of Signal Hill, Pico Water District, Bellflower-Somerset Mutual Water Company, LaHabra Heights County Water District, City of Norwalk, Orchard Dale Water District, Montebello Land & Water Company, South Montebello Irrigation District, Sativa Los Angeles County Water District, City of Vernon and Central Basin Municipal Water District ("Moving Parties") herein for further amendments to the Judgment, notice thereof and of the hearing thereon having been duly and regularly given to all parties, came on for hearing in Department 51 of the above-entitled court on December 18, 2013 at 9:00 a.m. before said Hon. Abraham Khan. This "Third Amended Judgment" incorporates amendments and orders heretofore made to the extent presently operable and amendments pursuant to said last mentioned motion. To the extent this Amended Judgment is a restatement of the Judgment as heretofore amended, it is for convenience in incorporating all matters in one document, is not a readjudication of such matters and is not intended to reopen any such matters. As used hereinafter the word "Judgment" shall include the original Judgment entered in this action as amended to date, including this Third Amended Judgment.

There exists in the County of Los Angeles, State of California, an underground water basin or reservoir known and hereinafter referred to as the "Central Basin" or "Basin" described in Appendix "1" to this Judgment.

Within this Judgment, the following terms, words, phrases and clauses are used by the Court with the following meanings:

"Adjudicated Storage Capacity" means 220,000 acre-feet of the Available Dewatered

Space which has been apportioned herein for Individual Storage Accounts and Community Storage.

"Administrative Body" is defined in Section II(A).

"Administrative Year" means the twelve (12) month period beginning July 1 and ending June 30.

"Allowed Pumping Allocation" is that quantity in acre feet which the Court adjudges to be the maximum quantity which a party should be allowed to extract annually from Central Basin as set forth in Part I hereof, which constitutes 80% of such party's Total Water Right.

"Allowed Pumping Allocation for a particular Administrative Year" and "Allowed Pumping Allocation in the following Administrative Year" and similar clauses, mean the Allowed Pumping Allocation as increased in a particular Administrative Year by any authorized carryovers pursuant to Section III(A) of this Judgment and as reduced by reason of any over-extractions in a previous Administrative Year.

"Artificial Replenishment" is the replenishment of Central Basin achieved through the spreading or injection of imported or recycled water for percolation thereof into Central Basin by a governmental agency, including WRD.

"Artificial Replenishment Water" means water captured or procured by WRD to replenish the Basin, either directly by percolating or injecting the water into the Basin, or through in lieu replenishment by substituting surface water (or payment therefor) in lieu of production and use of groundwater.

"Available Dewatered Space" means the total amount of space available to hold groundwater within the Central Basin without causing Material Physical Harm, which space is allocated between Adjudicated Storage Capacity and Basin Operating Reserve.

"Base Water Right" is the highest continuous extractions of water by a party from Central Basin for a beneficial use in any period of five consecutive years after the commencement of overdraft in Central Basin and prior to the commencement of this action, as to which there has been no cessation of use by that party during any subsequent period of five consecutive years. As employed in the above definition, the words "extractions of water by a party" and "cessation

of use by that party" include such extractions and cessations by any predecessor or predecessors in interest.

"Basin Operating Reserve" means a total of 110,000 acre feet of Available Dewatered Space available for Basin operations as provided in Section IV(L). The Basin Operating Reserve added to the Adjudicated Storage Capacity equals the amount of Available Dewatered Space.

"Calendar Year" is the twelve month period commencing January 1 of each year and ending December 31 of each year.

"Carryover" is defined in Section III(A).

"Carryover Conversion" means the process of transferring water properly held as Carryover into Stored Water, or the water so converted to Stored Water.

"Central Basin" is the underground basin or reservoir underlying the Central Basin Area, the exterior boundaries of which Central Basin are the same as the exterior boundaries of Central Basin Area.

"Central Basin Area" is the territory described in Appendix "1" to this Judgment and is a segment of the territory comprising Plaintiff District.

"Central Basin Water Rights Panel" means the constituent body of Watermaster consisting of seven (7) Parties elected from among parties holding Allowed Pumping Allocations as provided in Section II(B).

"CEQA" refers to the California Environmental Quality Act, Public Resources Code §§ 21000 *et seq*.

"Community Storage Pool" is defined in Section IV(E).

"Declared Water Emergency" means a period commencing with the adoption of a resolution of the Board of Directors of WRD declaring that conditions within the Central Basin relating to natural and imported supplies of water are such that, without implementation of the water emergency provisions of this Judgment, the water resources of the Central Basin risk degradation. Such Declaration may be made as provided in Section III(A)(3).

"Disadvantaged Community" means any area that is served by a Water Purveyor and that consists of one or more contiguous census tracts which, based upon the most-recent United

States Census data, demonstrates a median household income which is less than eighty percent (80%) of the median household income for all Census Tracts within the state of California. The identification of Disadvantaged Communities shall be made by Watermaster following each decennial census.

"Extraction," "extractions," "extracting," "extracted," and other variations of the same noun and verb, mean pumping, taking, diverting or withdrawing groundwater by any manner or means whatsoever from Central Basin.

"Imported Water" means water brought into Central Basin Area from a non-tributary source by a party and any predecessors in interest, either through purchase directly from Metropolitan Water District of Southern California ("MWD"), the Central Basin Municipal Water District ("CBMWD"), or any other MWD member agency and additionally, as to the Department of Water and Power of the City of Los Angeles, water brought into the Central Basin Area by that party by means of the Owens River Aqueduct. In the case of water imported for storage by a party pursuant to this Judgment, "Imported Water" means water brought into the Central Basin from any non-tributary source as one method for establishing storage in the Central Basin.

"Imported Water Use Credit" is the annual amount, computed on a calendar year basis, of Imported Water which any party and any predecessors in interest, who have timely made the required filings under Water Code Section 1005.1, have imported into Central Basin Area in any calendar year and subsequent to July 9, 1951, for beneficial use therein, but not exceeding the amount by which that party and any predecessors in interest reduces his or their extractions of groundwater from Central Basin in that calendar year from the level of his or their extractions in the preceding calendar year, or in any prior calendar year not earlier than the calendar year 1950, whichever is the greater.

"Individual Storage Allocation" is defined in Section IV(D).

"Majority Protest" means a written protest filed with the Administrative Body of Watermaster within sixty (60) days following a protested event or decision, which evidences the concurrence of a majority of the Allowed Pumping Allocations held within the Basin as of the

date thereof.

"Material Physical Harm" means material physical injury or a material diminution in the quality or quantity of groundwater available within the Basin to support extraction of Total Water Rights or Stored Water, that is demonstrated to be attributable to the placement, recharge, injection, storage or recapture of Stored Water in the Central Basin, including, but not limited to, degradation of water quality, liquefaction, land subsidence and other material physical injury caused by elevated or lowered groundwater levels. Material Physical Harm does not include "economic injury" that results from other than direct physical causes, including any adverse effect on water rates, lease rates, or demand for water. Once fully mitigated, physical injury shall no longer be considered to be material.

"Natural Replenishment" means and includes all processes other than "Artificial Replenishment" by which water may become a part of the groundwater supply of Central Basin.

"Natural Safe Yield" is the maximum quantity of groundwater, not in excess of the long term average annual quantity of Natural Replenishment, which may be extracted annually from Central Basin without eventual depletion thereof or without otherwise causing eventual permanent damage to Central Basin as a source of groundwater for beneficial use, said maximum quantity being determined without reference to Artificial Replenishment.

"Outgoing Watermaster" is the State of California, Department of Water Resources, the Watermaster appointed pursuant to the terms of the Judgment before this Third Amendment.

"Overdraft" is that condition of a groundwater basin resulting from extractions in any given annual period or periods in excess of the long term average annual quantity of Natural Replenishment, or in excess of that quantity which may be extracted annually without otherwise causing eventual permanent damage to the basin.

"Party" means a party to this action. Whenever the term "party" is used in connection with a quantitative water right, or any quantitative right, privilege or obligation, or in connection with the assessment for the budget of the Watermaster, it shall be deemed to refer collectively to those parties to whom are attributed a Total Water Right in Part I of this Judgment.

"Person" or "persons" include individuals, partnerships, associations, governmental

agencies and corporations, and any and all types of entities.

"Recycled Water" means water that has been reclaimed through treatment appropriate for its intended use in compliance with applicable regulations.

"Regional Disadvantaged Communities Incentive Program" means a program to be developed by Watermaster in the manner provided in Section II(H) of this Judgment, and approved by the Court, whereby a portion of the Community Storage Pool is made available to or for the benefit of Disadvantaged Communities, on a priority basis within the Central Basin.

"Replenishment Assessment" means the replenishment assessment imposed by WRD upon each acre-foot of groundwater extracted from the Central Basin pursuant to WRD's enabling act, California Water Code §§ 60000 et seq.

"Small Water Producers Group" means a body consisting of parties holding no greater than 5,000 acre-feet of Allowed Pumping Allocation, as set forth on Appendix 3 hereto and as may be modified from time to time by the Group's own procedures and the requirements set forth in Appendix 3.

"Storage Panel" or "Central Basin Storage Panel" means a bicameral constituent body of Watermaster consisting of (i) the Central Basin Water Rights Panel and (ii) the Board of Directors of WRD.

"Storage Project" means an activity pertaining to the placement, recharge, injection, storage, transfer, or recapture of Stored Water within the Basin, but does not include actions by WRD undertaken in connection with its replenishment activities.

"Stored Water" means water, including Recycled Water, held within Available Dewatered Space as a result of spreading, injection, in-lieu delivery, or Carryover Conversion, where there is an intention to subsequently withdraw the water for reasonable and beneficial use pursuant to this Judgment.

"Total Water Right" is the quantity arrived at in the same manner as in the computation of "Base Water Right," but including as if extracted in any particular year the Imported Water Use Credit, if any, to which a particular party may be entitled.

"Water" includes only non-saline water, which is that having less than 1,000 parts of

chlorides to 1,000,000 parts of water.

"Water Augmentation Project" means pre-approved physical actions and management activities that provide demonstrated appreciable increases in long-term annual groundwater yield in the Basin that are initiated as provided in this Judgment after January 1, 2013.

"Water Purveyor" means a Party (and successors in interest) which sells water to the public, whether a regulated public utility, mutual water company or public entity. As that term is used in Section III(B)(6), "Water Purveyor," in addition to the foregoing, means a Party which has a connection or connections for the taking of Imported Water through the Metropolitan Water District of Southern California ("MWD"), or through a MWD-member agency, or access to such Imported Water through such connection, and which normally supplies at least a part of its customers' water needs with such Imported Water.

"Watermaster" is defined in Part II and is comprised of (i) the Administrative Body, (ii) the Central Basin Water Rights Panel, and (iii) the Central Basin Storage Panel. Watermaster, and the various constituent bodies of Watermaster, as designated in this Judgment, exist as a special master pursuant to this Judgment and Watermaster serves at the pleasure of the Court. Nothing herein shall be construed as creating an independent designation of "Watermaster" as a public agency subject to the provisions of CEQA, nor does membership or participation as the designated Watermaster expand any statutory, constitutional, or other powers of the members serving as part of the Watermaster.

"West Coast Basin" is the groundwater basin adjacent to the Central Basin which is the subject of a separate adjudication of groundwater rights in *California Water Service Company, et al. v. City of Compton, et al.*, Los Angeles Superior Court Case No. 506806.

"WRD" or "Water Replenishment District" is the plaintiff herein, the Water Replenishment District of Southern California, a special district of the State of California, which brought this action under its former name, "Central and West Basin Water Replenishment District."

In those instances where any of the above-defined words, terms, phrases or clauses are utilized in the definition of any of the other above-defined words, terms, phrases and clauses,

such use is with the same meaning as is above set forth.

NOW THEREFORE, IT IS ORDERED, DECLARED, ADJUDGED AND DECREED WITH RESPECT TO THE ACTION AND CROSS-ACTION AS FOLLOWS:

I. DECLARATION AND DETERMINATION OF WATER RIGHTS OF PARTIES; RESTRICTION ON THE EXERCISE THEREOF.[1]

A. Determination of Rights of Parties.

(1) Each party, except defendants The City of Los Angeles and Department of Water and Power of the City of Los Angeles, whose name is set forth in Appendix 2 and by this reference made a part hereof, and after whose name there appears under the column "Total Water Right" a figure other than "0," is the owner of and has the right to extract annually groundwater from Central Basin for beneficial use in the quantity set forth after that party's name under said column "Total Water Right" as of the close of the Administrative Year ending June 30, 2012 in accordance with the Watermaster Reports on file with this Court and the records of the Plaintiff. This tabulation does not take into account additions or subtractions from any Allowed Pumping Allocation of a producer for the 2012-2013 Administrative Year, nor other adjustments not representing change in fee title to water rights, such as leases of water rights, nor does it include the names of lessees of landowners where the lessees are exercising the water rights. The exercise of all water rights is subject, however, to the provisions of this Judgment as hereinafter contained. All of said rights are of the same legal force and effect and are without priority with reference to each other. Each party whose name is set forth in the tabulation in Appendix "2" of this

[1] Headings in the Judgment are for purposes of reference and the language of said headings do not constitute, other than for such purpose, a portion of this Judgment.

Judgment, and after whose name there appears under the column "Total Water Right" the figure "0," owns no rights to extract any groundwater from Central Basin, and has no right to extract any groundwater from Central Basin.

(2) Defendant The City of Los Angeles is the owner of the right to extract fifteen thousand (15,000) acre feet per annum of groundwater from Central Basin, but it has the right and ability to purchase or lease additional rights to extract groundwater and increase its Allowed Pumping Allocation. Defendant Department of Water and Power of the City of Los Angeles has no right to extract groundwater from Central Basin except insofar as it has the right, power, duty or obligation on behalf of defendant The City of Los Angeles to exercise the water rights in Central Basin of defendant The City of Los Angeles. The exercise of said rights is subject, however, to the provisions of this Judgment hereafter contained, including but not limited to, sharing with other parties in any subsequent decreases or increases in the quantity of extractions permitted from Central Basin, pursuant to continuing jurisdiction of the Court, on the basis that fifteen thousand (15,000) acre feet (and any increase in its Allowed Pumping Allocation) bears to the Allowed Pumping Allocations of the other parties.

(3) No party to this action is the owner of or has any right to extract groundwater from Central Basin except as herein affirmatively determined.

B. Parties Enjoined as to Quantities of Extractions.

(1) Each party, other than The State of California and The City of Los Angeles and Department of Water and Power of The City of Los Angeles, is enjoined and restrained in any Administrative Year commencing after the date this Judgment becomes final from extracting from Central Basin any quantity of Water greater than the party's Allowed Pumping Allocation as hereinafter set forth next to the name of the party in the tabulation appearing in Appendix 2 at the end of this Judgment, subject to further provisions of this Judgment. Subject to such further provisions, the officials, agents and employees of The State of

California are enjoined and restrained in any such Administrative Year from extracting from Central Basin collectively any quantity of water greater than the Allowed Pumping Allocation of The State of California as hereinafter set forth next to the name of that party in the same tabulation. Each party adjudged and declared above not to be the owner of and not to have the right to extract groundwater from Central Basin is enjoined and restrained in any Administrative Year commencing after the date this Judgment becomes final from extracting any groundwater from Central Basin, except as may be hereinafter permitted to any such party under this Judgment.

(2) The total extraction right for each party includes a party's Allowed Pumping Allocation (to the extent not transferred by agreement or otherwise), any contractual right acquired through lease or other agreement to extract or use the rights of another party, and any right to extract Stored Water or Carryover as provided in this Judgment. No party may extract in excess of 140% of the sum of (i) the party's Allowed Pumping Allocation and (ii) the party's leased water, except upon prior approval by the applicable body of Watermaster as required pursuant to Section IV(J)as provided herein. Upon application, the body specified in Section IV(J) shall approve a party's request to extract water in excess of such limit, provided there is no Material Physical Harm. Requests to extract water in excess of such limit shall be reviewed and either approved or denied within thirty (30) days of such request.

(3) Defendant The City of Los Angeles is enjoined and restrained in any Administrative Year commencing after the date this Judgment becomes final from extracting from Central Basin any quantity of water greater than fifteen thousand (15,000) acre feet or its Allowed Pumping Allocation, as recognized by the Watermaster, if it acquires additional rights to pump groundwater through purchase or lease, subject to further provisions of this Judgment, including but not limited to, sharing with other parties in any subsequent decreases or increases in

the quantity of extractions permitted from Central Basin by parties, pursuant to continuing jurisdiction of the Court, on the basis that fifteen thousand (15,000) acre feet (or the adjusted Allowed Pumping Allocation if additional rights are acquired) bears to the Allowed Pumping Allocations of the other parties. Defendant Department of Water and Power of The City of Los Angeles is enjoined and restrained in any Administrative Year commencing after the date this Judgment becomes final from extracting from Central Basin any quantity of water other than such as it may extract on behalf of defendant The City of Los Angeles, and which extractions, along with any extractions by said City, shall not exceed that quantity permitted by this Judgment to that City in any Administrative Year. Whenever in this Judgment the term "Allowed Pumping Allocation" appears, it shall be deemed to mean as to defendant The City of Los Angeles the quantity of fifteen thousand (15,000) acre feet unless the City of Los Angeles has acquired through purchase or lease right to extract additional groundwater. The limit on extraction as provided in the preceding Section I(B)(1) shall also apply to The City of Los Angeles.

(4) Any rights decreed and adjudicated herein may be transferred, assigned, licensed or leased by the owner thereof provided, however, that no such transfer shall be complete until compliance with the appropriate notice procedures established by Watermaster.

(5) Unless a party elects otherwise, production of water from the Basin for the use or benefit of the parties hereto shall be counted against the party's total extraction right in the following order: (i) Increased extractions by certain qualified water rights holders pursuant to Section IV(K), (ii) Exchange Pool production, (iii) production of Carryover water, (iv) production of leased water, , (v) production of Allowed Pumping Allocation, (vi) production of Stored Water, (vii) production of Drought Carryover (according to Watermaster's Rules), and (viii) production of water under an agreement with WRD during a period of

emergency pursuant to Section III(B)(6).

C. Parties Enjoined as to Export of Extractions.

Except as expressly authorized herein, or upon further order of the Court, all parties are enjoined and restrained from transporting water extracted from the Central Basin outside the boundaries of the Central Basin Area. For purposes of this Section, water supplied by a Water Purveyor to its customers located within any of its service areas contiguous to the Central Basin or within WRD's service area shall be exempt from the export prohibition of this Section provided that the Water Purveyor also provides water to a service area that overlies the Basin in whole or in part. The foregoing exemption is not made, nor is it related to, a determination of an underflow between the basins, a cost or benefit allocation, or any other factor relating to the allocation of the Replenishment Assessment by WRD. Further, this injunction and restriction does not apply to export of water that will take place pursuant to contractual obligations specifically identified on Appendix 4, nor does it apply to export of Stored Water not having its origin in Carryover Conversion. The export identified on Appendix 4 may continue to the extent that any such extraction does not violate any other provisions of this Judgment, provided however that no such export identified on Appendix 4 shall exceed 5,000 acre-feet in any Year.

II. APPOINTMENT OF WATERMASTER; WATERMASTER ADMINISTRATION PROVISIONS.

The particular bodies specified below are, jointly, hereby appointed Watermaster, for an indefinite term, but subject to removal by the Court, to administer this Judgment. Such bodies, which together shall constitute the "Watermaster," shall have restricted powers, duties and responsibilities as specified herein, it being the court's intention that particular constituent bodies of Watermaster have only limited and specified powers over certain aspects of the administration of this Judgment. The Outgoing Watermaster will exercise reasonable diligence in the complete transition of Watermaster duties and responsibilities within a reasonable time

following entry of this order, and to make available to the new Watermaster all records concerning Watermaster activities. The chair of the Central Basin Water Rights Panel (defined below) shall thereafter represent the Watermaster before the Court.

A. The Administrative Body.

Plaintiff Water Replenishment District of Southern California ("WRD") is appointed the Administrative Body of the Central Basin Watermaster ("Administrative Body"). In order to assist the Court in the administration of the provisions of this Judgment and to keep the Water Rights Panel and the Court fully advised in the premises, the Administrative Body shall have the following duties, powers and responsibilities:

(1) To Require Reports, Information and Records.

In consultation with the Water Rights Panel, the Administrative Body shall require the parties to furnish such reports, information and records as may be reasonably necessary to determine compliance or lack of compliance by any party with the provisions of this Judgment.

(2) Storage Projects.

The Administrative Body shall exercise such powers as may be specifically granted to it under this Judgment with regard to Stored Water.

(3) Annual Report.

The Administrative Body shall prepare, on or before the 15th day of the fourth month following the end of the preceding Administrative Year, an annual report for the consideration of the Water Rights Panel. The Chair of the Water Rights Panel shall submit to the Court either (1) the annual report prepared by the Administrative Body, following the adoption by the Water Rights Panel, or (2) an annual report separately prepared and adopted by the Water Rights Panel. The annual report prepared by the Administrative Body shall be limited to the following, unless otherwise required by the Court:

(a) Groundwater extractions

(b) Storage Accounts maintained by each party

(c) Status of the Regional Disadvantaged Community Incentive Program, if approved by the Court

(d) Exchange Pool operation

(e) Use of Imported Water

(f) Violations of this Judgment and corrective action taken by bodies of Watermaster having jurisdiction as provided in this Judgment

(g) Change of ownership of Total Water Rights

(h) Watermaster administration costs

(i) Water spread or imported into the Basin

(j) Water Augmentation Projects

(k) Whether the Administrative Body has become aware of the development of a Material Physical Harm, or imminent threat of the development of a Material Physical Harm, as required pursuant to Section IV(B) of this Judgment

(l) Other matters as agreed with the Water Rights Panel

(m) Recommendations, if any.

In consultation with the Water Rights Panel, the Administrative Body shall provide reasonable notice to all parties of all material actions or determinations by Watermaster or any constituent body thereof, and as otherwise provided by this Third Amended Judgment.

(4) Annual Budget and Appeal Procedure in Relation Thereto.

By April 1 of each Administrative Year, the Administrative Body shall prepare a proposed administrative budget for the subsequent year stating the anticipated expense for performing the administrative functions specified in this Judgment (the "Administrative Budget"). The Administrative Body shall mail a copy of the proposed Administrative Budget to each of the Parties at least 60 days

before the beginning of each Administrative Year. The Administrative Budget mailed to the Parties shall provide sufficient detail in the Administrative Budget to demonstrate a separation in accounting between the Administrative Budget and WRD's Replenishment Assessment and operating budget. For the first Administrative Year of operation under this Third Amended Judgment, if the Administrative Body is unable to meet the above time requirement, the Administrative Body shall mail said copies as soon as possible. The first year the Administrative Budget is prepared, the amount of that budget shall not exceed an amount equal to fifty percent (50%) of the 2012-2013 charge for Watermaster service for the Central Basin collected from Parties by the California Department of Water Resources. At all times, the Administrative Body shall maintain a separation in accounting between the Administrative Budget and WRD's Replenishment Assessment and operating budget. All increases in future budgets for the Administrative Body above the amount set forth above shall be subject to approval by the Water Rights Panel following a public meeting to be held prior to the beginning of the Administrative Year, provided that the approved budget shall not be less than the amount of the first-year budget for the Administrative Body, except upon further order of the Court. Any administrative function by WRD already paid for by the Replenishment Assessment shall not be added as an expense in the Administrative Budget. Similarly, any expense paid for by the Administrative Budget shall not be added to WRD's operating budget, or otherwise added to the calculation of the Replenishment Assessment. While WRD may approve the proposed Administrative Budget at the same meeting in which WRD adopts its annual Replenishment Assessment or annual budget, the Administrative Body's budget shall be separate and distinct from the Replenishment Assessment imposed pursuant to Water Code §60317 and WRD's operating budget.

If approval by the Water Rights Panel is required pursuant to the

foregoing, the Water Rights Panel shall act upon the proposed budget within 15 calendar days after the public meeting. If the Water Rights Panel does not approve the budget prior to such deadline, the matter may be appealed to the Court within sixty (60) days. If any Party hereto has any objection to the Administrative Budget, it shall present the same in writing to Watermaster within 15 days after the date of mailing of said tentative budget by the Administrative Body. The Parties shall make the payments otherwise required of them to the Administrative Body even though an appeal of such budget may be pending. Upon any revision by the Court, the Administrative Body shall either remit to the Parties their pro rata portions of any reduction in the budget, or shall credit their accounts with respect to their budget assessments for the next ensuing Administrative Year, as the Court shall direct.

The amount of the Administrative Budget to be assessed to each party shall be determined as follows: If that portion of the final budget to be assessed to the Parties is equal to or less than $20.00 per party then the cost shall be equally apportioned among the Parties. If that portion of the final budget to be assessed to Parties is greater than $20.00 per party then each Party shall be assessed a minimum of $20.00. The amount of revenue expected to be received through the foregoing minimum assessments shall be deducted from that portion of the final budget to be assessed to the Parties and the balance shall be assessed to the Parties having Allowed Pumping Allocation, such balance being divided among them proportionately in accordance with their respective Allowed Pumping Allocation.

Payment of the assessment provided for herein, subject to adjustment by the Court as provided, shall be made by each such party prior to beginning of the Administrative Year to which the assessment relates, or within 40 days after the mailing of the tentative budget, whichever is later. If such payment by any Party is not made on or before said date, the Administrative Body shall add a penalty of 5% thereof to such party's statement. Payment required of any Party hereunder

may be enforced by execution issued out of the Court, or as may be provided by order hereinafter made by the Court, or by other proceedings by the Watermaster or by any Party on the Watermaster's behalf.

Any money unexpended at the end of any Administrative Year shall be applied to the budget of the next succeeding Administrative Year. The Administrative Body shall maintain no reserves.

Notwithstanding the above, no part of the budget of the Administrative Body shall be assessed to WRD or to any Party who has not extracted water from Central Basin for a period of two successive Administrative Years prior to the Administrative Year in which the tentative budget should be mailed by the Administrative Body under the provisions of this subparagraph (4).

(5) Rules.

The Administrative Body may adopt, and amend from time to time, rules consistent with this Judgment as may be reasonably necessary to carry out duties under the provisions of this Judgment within its particular area of responsibility. The Body shall adopt its first set of rules and procedures within three (3) months following entry of this Third Amended Judgment. The rules shall be effective on such date after the mailing thereof to the Parties as is specified by the Body, but not sooner than thirty (30) days after such mailing.

B. The Central Basin Water Rights Panel.

The Central Basin Water Rights Panel of the Central Basin Watermaster ("Water Rights Panel") shall consist of seven (7) members, each of which is a Party. The term of each member of the Panel, with the exception of the seat held by the Small Water Producers Group, as provided herein, shall be limited to four years. The Court will make the initial appointments to the Central Basin Water Rights Panel upon motion by Parties consistent with the categories set forth below at or about the time of entry of this Third Amended Judgment, and shall establish a procedure for the staggered terms of such members. Thereafter, elections of members of the Panel shall be held as provided herein. One (1) such member of the Water Rights Panel shall be

elected by vote of the Small Water Producers Group conducted in accordance with its own procedures, provided such Group, as of the date of the election, consists of at least five (5) members who are Water Purveyors. One (1) such member of the Water Rights Panel shall be elected by vote of Parties with Allowed Pumping Allocation of less than 5,000 acre-feet who are not members of the Small Water Producers Group or, if the Small Water Producers Group does not then qualify following a continuous six-month period of non-qualification as provided herein, then two (2) such members shall be so selected. One (1) such member of the Water Rights Panel shall be elected by vote of Parties with Allowed Pumping Allocation of at least 5,000 acre-feet but less than 10,000 acre-feet. Three (3) such members of the Water Rights Panel shall be elected by vote of Parties with Allowed Pumping Allocation of 10,000 acre-feet or greater. One (1) such member of the Water Rights Panel shall be elected by a vote of all holders of Allowed Pumping Allocations, with each such holder being entitled to one vote, such member to be elected by a plurality of the votes cast, following a nomination procedure to be established in the Water Rights Panel's rules. In the event of a tie, the seventh member shall be determined as may be provided in the Water Rights Panel's rules, or otherwise by the court. Except as otherwise provided in this Section, each such rights holder shall have the right to cast a total number of votes equal to the number of acre-feet of its Allowed Pumping Allocation (rounded to the next highest whole number). With the exception of voting for the seventh member, Parties shall be entitled to vote only for candidates within the category(ies) that represent that Party's Allowed Pumping Allocation. For example, parties who are members of the Small Water Producers Group are entitled to vote only for the Small Water Producer Group member and the seventh member of the Water Rights Panel, and so on. Parties are not permitted to split votes. The results of such election shall be reported to the Court for confirmation of each member's appointment to the Water Rights Panel of Watermaster. The elected members of the Water Rights Panel shall be those candidates receiving the highest vote total in their respective categories. The Water Rights Panel shall hold its first meeting within thirty (30) days of the date this Third Amended Judgment becomes final. The Water Rights Panel shall develop rules for its operation consistent with this Judgment. The Water Rights Panel shall take action, including the

election of its Chair, by majority vote of its members. Election of the Chair shall occur every two years, with no Party serving as Chair for consecutive terms. Members of the Water Rights Panel shall serve without compensation. All references to Annual Pumping Allocation, as used herein, are as determined by the last published Watermaster report.

(1) The Water Rights Panel shall have the following duties and responsibilities:

(a) Enforcement of Adjudicated Rights. As against the other bodies of Watermaster, the Water Rights Panel shall have exclusive authority to move the Court to take such action as may be necessary to enforce the terms of the Judgment with regard to the extraction of Allowed Pumping Allocation and the maintenance of adjudicated groundwater extraction rights as provided in this Judgment.

(b) Requirement of Measuring Devices. The Water Rights Panel shall require all parties owning or operating any facilities for the extraction of groundwater from Central Basin to install and maintain at all times in good working order at such party's own expense, appropriate measuring devices at such times and as often as may be reasonable under the circumstances and to calibrate or test such devices.

(c) Inspections by Watermaster. The Water Rights Panel may make inspections of groundwater production facilities, including aquifer storage and recovery facilities, and measuring devices at such times and as often as may be reasonable under the circumstances and to calibrate or test such devices.

(d) Reports. Annually, the Water Rights Panel, in cooperation with the Administrative Body, shall report to the Court, concerning any or all of the following:

(i) Groundwater extractions

(ii) Exchange Pool operation

(iii) Status of the Regional Disadvantaged Community Incentive Program, if approved by the Court

(iv) Violations of this Judgment and corrective action taken or sought

(v) Change of ownership of Total Water Rights

(vi) Assessments made by the Water Rights Panel and any costs incurred

(vii) Whether the Water Rights Panel has become aware of the development of a Material Physical Harm, or imminent threat of the development of a Material Physical Harm, as required pursuant to Section IV(B) of this Judgment

(viii) Recommendations, if any.

As provided in Section II.A(3), the Water Rights Panel may adopt the annual report prepared by the Administrative Body, and submit the same to the Court, or the Water Rights Panel may prepare, adopt and submit to the Court a separate report. The Chair of the Water Rights Panel shall be responsible for reporting to the Court concerning adjudicated water rights issues in the Basin.

(2) Assessment. The Water Rights Panel shall assess holders of water rights within the Central Basin an annual amount not to exceed $1.00 per acre-foot of Allowed Pumping Allocation, by majority vote of the members of the Water Rights Panel. The body may assess a higher amount, subject to being overruled by Majority Protest. The assessment is intended to cover any costs associated with reporting responsibilities, any Judgment enforcement action, and the review of storage projects as a component of the "Storage Panel" as provided below. It is anticipated that this body will rely on the Administrative Body's staff for the functions related to the Administrative Body's responsibilities, but the

Water Rights Panel may engage its own staff if required in its reasonable judgment. Assessments will constitute a lien on the water right assessed, enforceable as provided in this Judgment.

(3) Rules. The Water Rights Panel may adopt and amend from time to time, at an open meeting of that Panel, rules consistent with this Judgment as may be reasonably necessary to carry out duties under the provisions of this Judgment within its particular area of responsibility. The Panel shall adopt its first set of rules and procedures within three (3) months following entry of this Third Amended Judgment. The rules shall be effective on such date after the mailing thereof to the Parties as is specified by the Panel, but not sooner than thirty (30) days after such mailing.

C. The Storage Panel.

The Storage Panel of the Central Basin Watermaster ("Storage Panel") shall be a bicameral body consisting of (i) the Water Rights Panel and (ii) the Board of Directors of WRD. Action by the Storage Panel shall require separate action by a majority of each of its constituent bodies. The Storage Panel shall have the duties and responsibilities specified with regard to the Provisions for the Storage and Extraction of Stored Groundwater as set forth in Part IV and the other provisions of this Judgment.

D. Use of Facilities and Data Collected by Other Governmental Agencies.

Where practicable, the three bodies constituting the Central Basin Watermaster should not duplicate the collection of data relative to conditions of the Central Basin which is then being collected by one or more governmental agencies, but where necessary each such body may collect supplemental data. Where it appears more economical to do so, the Watermaster and its constituent bodies are directed to use such facilities of other governmental agencies as are available to it under either no cost or cost agreements with respect to the receipt of reports, billings to parties, mailings to parties, and similar matters.

E. Appeal from Watermaster Decisions.

Appeals concerning the budget proposed by the Administrative Body shall be governed by Section II(A)(4) of this Judgment. Appeals concerning decisions by the Storage Panel shall be governed by Section IV(P) of this Judgment. With respect to all other objections by a Party to any action or decision by the Watermaster, such objections will be governed by this Section II(E). Any party interested therein who objects to any rule, determination, order or finding made by the Watermaster or any constituent body thereof, may object thereto in writing delivered to the Administrative Body within 30 days after the date the Watermaster, or any constituent body thereof, mails written notice of the making of such rule, determination, order or finding. Within 30 days after such delivery the Watermaster, or the affected constituent body thereof, shall consider said objection and shall amend or affirm his rule, determination, order or finding and shall give notice thereof to all parties. Any such party may file with the Court within 60 days from the date of said notice any objection to such rule, determination, order or finding of the Watermaster, or any constituent body thereof, and bring the same on for hearing before the Court at such time as the Court may direct, after first having served said objection upon all other parties. The Court may affirm, modify, amend or overrule any such rule, determination, order or finding of the Watermaster or its affected constituent body. Any objection under this paragraph shall not stay the rule, determination, order or finding of the Watermaster. However, the Court, by *ex parte* order, may provide for a stay thereof on application of any interested party on or after the date that any such party delivers to the Watermaster any written objection.

F. Effect of Non-Compliance by Watermaster With Time Provisions.

Failure of the Watermaster to perform any duty, power or responsibility set forth in this Judgment within the time limitation herein set forth shall not deprive the Watermaster or its applicable constituent body of authority to subsequently discharge such duty, power or responsibility, except to the extent that any such failure by the Watermaster may have rendered some otherwise required act by a party impossible.

G. Limitations on Administrative Body.

WRD shall not acquire Central Basin water rights, nor lease Central Basin water or water rights to or from any Party or third party. However, the foregoing shall (i) not be interpreted to restrict WRD's ability or authority to acquire water from any source for purposes of Artificial or Natural Replenishment or for water quality activities, and (ii) not restrict WRD's authority under California Water Code Section 60000 et seq. to develop reclaimed, recycled or remediated water for groundwater replenishment activities.

H. Regional Disadvantaged Communities Incentive Program.

The Water Rights Panel, acting through the General Manager of WRD, shall develop a Regional Disadvantaged Communities Incentive Program, pursuant to which a portion of the Community Storage Pool is reserved for the benefit of Disadvantaged Communities within the Central Basin. Nothing in this Judgment, nor the establishment of such a program, shall diminish the rights otherwise granted to Parties under this Judgment, including but not limited to the right to place water in storage in the Community Storage Pool. The Water Rights Panel shall meet within thirty (30) days of its formation to identify and consider potential third-party independent consultants who may be retained to design the program, including those recommended by the General Manager of WRD. The Water Rights Panel shall select a consultant within thirty (30) days thereafter. In the event the General Manager of WRD objects to the selected consultant, in writing, then the Water Rights Panel and the General Manager of WRD shall exchange a list of no more than two (2) consultants each for further consideration. If the Water Rights Panel and the General Manager of WRD are unable to agree to a consultant within an additional thirty (30) days, then the Chair of the Water Rights Panel shall file a request with the Court for an order appointing a consultant. Upon selection of a third-party independent consultant, whether through the Water Rights Panel process or the court process identified herein, the consultant shall design a detailed program and deliver it to the Water Rights Panel within ninety (90) days of the consultant's retention. All costs associated with design of the program shall be paid for out of the Water Rights

Panel's assessment, as provided in Section II.B(2). The Water Rights Panel shall present the program to the Court for its review and approval within one year of entry of this Third Amended Judgment. If approved by the Court, the Water Rights Panel, acting through the General Manager of WRD, shall be responsible for administration of the Regional Disadvantaged Communities Incentive Program, including insuring that any funds generated through the program benefit Disadvantaged Communities. Any Storage Project established pursuant to this Program shall have priority to use up to 23,000 acre-feet of Available Storage within the Community Storage Pool, as further provided in Section IV.E(2). Watermaster shall report to the Court concerning such program as a part of its annual report.

III. PROVISIONS FOR PHYSICAL SOLUTION TO MEET THE WATER REQUIREMENTS IN CENTRAL BASIN.

In order to provide flexibility to the injunction set forth in Part I of the Judgment, and to assist in a physical solution to meet water requirements in Central Basin, the injunction so set forth is subject to the following provisions.

A. Carryover of Portion of Allowed Pumping Allocation.

(1) Amount of Carryover.

Each party adjudged to have a Total Water Right or water rights and who, during a particular Administrative Year, does not extract from Central Basin a total quantity equal to such party's Allowed Pumping Allocation for the particular Administrative Year, less any allocated subscriptions by such party to the Exchange Pool, or plus any allocated requests by such party for purchase of Exchange Pool water, is permitted to carry over (the "One Year Carryover") from such Administrative Year the right to extract from Central Basin in the next succeeding Administrative Year so much of said total quantity as it did not extract in the particular Administrative Year, not to exceed (i) the Applicable Percentage of such party's Allowed Pumping Allocation for the particular Administrative

Year, or 20 acre-feet, whichever of said percentage or 20 acre-feet is the larger, less (ii) the total quantity of water then held in that party's combined Individual and Community Storage accounts, as hereinafter defined, but in no event less than 20% of the party's Allowed Pumping Allocation for the particular Administrative Year. For purposes of this Section, the "Applicable Percentage" shall be as follows for the years indicated:

For the Administrative Year in which this Third Amended Judgment becomes final:	30%
For the next Administrative Year:	40%
For the next Administrative Year:	50%
For the next Administrative Year and years following:	60%

(2) Conversion of Carryover to Stored Water.

A party having Carryover may, from time to time, elect to convert all or part of such party's Carryover to Stored Water as authorized herein ("Carryover Conversion") upon payment of the Replenishment Assessment to WRD. Such Stored Water shall be assigned to that party's Individual Storage Allocation, if available, and otherwise to the Community Storage Pool.

(3) Declared Water Emergency.

The Board of Directors of WRD may, from time to time, declare a water emergency upon a determination that conditions within the Central Basin relating to natural and imported water supplies are such that, without implementation of the Declared Water Emergency provisions of this subsection, the water resources of the Central Basin risk degradation. In making such declaration, the Board of Directors shall consider any information and requests provided by water producers, purveyors and other affected entities and shall, for that purpose, hold a public hearing in advance of such declaration. A Declared Water Emergency

shall extend to the end of the Administrative Year during which such resolution is adopted, unless sooner ended by similar resolution.

(4) Drought Carryover.

Following the declaration of a Declared Water Emergency and until the Declared Water Emergency ends either by expiration or by resolution of the Board of Directors of WRD, each party adjudged to have a Total Water Right or water rights and who, during a particular Administrative Year, does not extract from Central Basin a total quantity equal to such party's Allowed Pumping Allocation for the particular Administrative Year, less any allocated subscriptions by such party to the Exchange Pool, or plus any allocated requests by such party for purchase of Exchange Pool water, is permitted to carry over (the "Drought Carryover") from such Administrative Year the right to extract from Central Basin so much of said total quantity as it did not extract during the period of the Declared Water Emergency, to the extent such quantity exceeds the One Year Carryover, not to exceed an additional 35% of such party's Allowed Pumping Allocation, or additional 35 acre feet, whichever of said 35% or 35 acre feet is the larger, less the amount of such party's Stored Water. Carryover amounts shall first be allocated to the One Year Carryover and any remaining carryover amount for that year shall be allocated to the Drought Carryover.

(5) Accumulated Drought Carryover.

No further amounts shall be added to the Drought Carryover following the end of the Declared Water Emergency, provided however that in the event another Declared Water Emergency is declared, additional Drought Carryover may be added, to the extent such additional Drought Carryover would not cause the total Drought Carryover to exceed the limits set forth above. The Drought Carryover shall be supplemental to and shall not affect any previous drought carryover acquired by a party pursuant to previous order of the court.

B. When Over-Extractions May be Permitted.

(1) Underestimation of Requirements for Water.

Any party hereto without Stored Water, having an Allowed Pumping Allocation, and not in violation of any provision of this Judgment may extract in an Administrative Year an additional quantity of water not to exceed: (a) 20% of such party's Allowed Pumping Allocation or 20 acre feet, whichever is greater, and (b) any amount in addition thereto which may be approved in advance by the Water Rights Panel of Watermaster.

(2) Reductions in Allowed Pumping Allocations in Succeeding Years to Compensate for Permissible Overextractions.

Any such party's Allowed Pumping Allocation for the following Administrative Year shall be reduced by the amount over-extracted pursuant to paragraph 1 above, provided that if the Water Rights Panel determines that such reduction in the party's Allowed Pumping Allocation in one Administrative Year will impose upon such a party an unreasonable hardship, the said reduction in said party's Allowed Pumping Allocation shall be prorated over a period of five (5) Administrative Years succeeding that in which the excessive extractions by the party occurred. Application for such relief to the Water Rights Panel must be made not later than the 40th day after the end of the Administrative Year in which such excessive pumping occurred. The Water Rights Panel shall grant such relief if such over-extraction, or any portion thereof, occurred during a period of Declared Water Emergency.

(3) Reductions in Allowed Pumping Allocations for the Next Succeeding Administrative Year to Compensate for Overpumping.

Whenever, pursuant to Section III(B)(1), a party over-extracts in excess of such party's Allowed Pumping Allocation plus that party's available One-Year Carryover and any Stored Water held by that party, and such excess has not been approved in advance by the Water Rights Panel, then such party's Allowed Pumping Allocation for the following Administrative Year shall be reduced by an

amount equivalent to its total over-extractions in the particular Administrative Year in which it occurred.

(4) Reports of Certain Over-extractions to the Court.

Whenever a party over-extracts in excess of 20% of such party's Allowed Pumping Allocation for the particular Administrative Year plus that party's available One-Year Carryover and any Stored Water held by that party, without having obtained prior approval of the Water Rights Panel, such shall constitute a violation of the Judgment and the Water Rights Panel shall make a written report to the Court for such action as the Court may deem necessary. Such party shall be subject to such injunctive and other processes and action as the Court might otherwise take with regard to any other violation of such Judgment.

(5) Effect of Over-extractions on Rights.

Any party who over-extracts from Central Basin in any Administrative Year shall not acquire any additional rights by reason of such over-extractions; nor shall any required reductions in extractions during any subsequent years reduce the Total Water Right or water rights of any party to the extent said over-extractions are in compliance with paragraph 1 above.

(6) Pumping Under Agreement With Plaintiff During Periods of Emergency.

Plaintiff WRD overlies Central Basin and engages in activities of replenishing the groundwaters thereof. Plaintiff by resolution has appropriated for use during emergencies the quantity of 17,000 acre feet of imported and reclaimed water replenished by it into Central Basin, and pursuant to such resolution Plaintiff reserves the right to use or cause the use of such quantity during such emergency periods for the benefit of Water Purveyors.

(a) Notwithstanding any other provision of this Judgment, parties who are Water Purveyors (including successors in interest) are authorized to enter into agreements with Plaintiff for extraction of a

portion of Plaintiff's 17,000 acre-feet of appropriated water, in excess of their respective Allowed Pumping Allocations for the particular Administrative Year when the following conditions are met:

(i) Plaintiff is in receipt of a resolution of the Board of Directors of the Metropolitan Water District of Southern California ("MWD") that there is an actual or immediately threatened temporary shortage of MWD's imported water supply compared to MWD's needs, or a temporary inability to deliver MWD's imported water supply throughout its area, which will be alleviated by overpumping from Central Basin.

(ii) The Board of Directors of both Plaintiff and Central Basin Municipal Water District by resolutions concur in the resolution of MWD's Board of Directors, and the Board of Directors of Plaintiff finds in its resolution that the average minimum elevation of water surface among those wells in the Montebello Forebay of the Central Basin designated as Los Angeles County Flood Control District Wells Nos. 1601T, 1564P, 1615P, and 1626L, is at least 43.7 feet above sea level. This computation shall be based upon the most recent "static readings" taken, which shall have been taken not more than four weeks prior. Should any of the wells designated above become destroyed or otherwise be in a condition so that readings cannot be made, or should the owner prevent their use for such readings, the Board of Directors of the Plaintiff may, upon appropriate engineering recommendation, substitute such other well or wells as it

may deem appropriate.

(iii) In said resolution, Plaintiff's Board of Directors sets a public hearing, and notice of the time, place and date thereof (which may be continued from time to time without further notice) is given by First Class Mail to the current designees of the Parties, filed and served in accordance with Section VI(C) of this Judgment. Said notice shall be mailed at least five (5) days before the scheduled hearing date.

(iv) At said public hearing, parties (including successors in interest) are given full opportunity to be heard, and at the conclusion thereof the Board of Directors of Plaintiff by resolution decides to proceed with agreements under this Section III(B)(6).

(b) All such agreements shall be subject to the following requirements, and such others as Plaintiff's Board of Directors shall require:

(i) They shall be of uniform content except as to quantity involved, and any special provisions considered necessary or desirable with respect to local hydrological conditions or good hydrologic practice.

(ii) They shall be offered to all Water Purveyors, excepting those which Plaintiff's Board of Directors determines should not overpump because such overpumping would occur in undesirable proximity to a sea water barrier project designed to forestall sea water intrusion, or within or in undesirable proximity to an area within Central Basin wherein groundwater levels are at an

elevation where overpumping is under all the circumstances then undesirable.

(iii) The maximum terms for the agreements shall be four (4) months, which agreements shall commence on the same date and end on the same date (and which may be executed at any time within the four-month period), unless an extension thereof is authorized by the Court, under Part V of this Judgment.

(iv) They shall contain provisions requiring that the Water Purveyor executing the agreement pay to the Plaintiff a price in addition to the applicable replenishment assessment determined on the following formula. The normal price per acre-foot of Central Basin Municipal Water District's (CBMWD) treated domestic and municipal water, as "normal" price of such category of water is defined in Section III(C)(10) (price to be paid for Exchange Pool Water) as of the beginning of the contract term less the deductions set forth in said paragraph 10 for the Administrative Year in which the contract term commences. The agreement shall provide for adjustments in the first of said components for any proportional period of the contract term during which the CBMWD said normal price is changed, and if the agreement straddles two administrative years, the said deductions shall be adjusted for any proportionate period of the contract term in which the amount thereof or of either subcomponent changes for purposes of said paragraph 10. Any price for a partial acre-foot shall be computed pro rata. Payments shall be due and

payable on the principle that over extractions under the agreement are of the last water pumped in the Administrative Year, and shall be payable as the agreement shall provide.

(v) They shall contain provisions that: (1) All of such agreements (but not less than all) shall be subject to termination by Plaintiff if, in the Judgment of Plaintiff's Board of Directors, the conditions or threatened conditions upon which they were based have abated to the extent over extractions are no longer considered necessary; and (2) that any individual agreement or agreements may be terminated if the Plaintiff's Board of Directors finds that adverse hydrologic circumstances have developed as a result of over extractions by any Water Purveyor(s) which have executed said agreements, or for any other reason that Plaintiff's Board of Directors finds good and sufficient.

(c) Other matters applicable to such agreements and overpumping thereunder are as follows, without need for express provisions in the agreements;

(i) The quantity of overpumping permitted shall be additional to that which the Water Purveyor could otherwise overpump under this Judgment.

(ii) The total quantity of permitted overpumping under all said agreements during said four months shall not exceed seventeen thousand (17,000) acre feet, but the individual Water Purveyor shall not be responsible or affected by any violation of this requirement. That total is additional to over extractions otherwise permitted under

this Judgment.

(iii) Only one four month period may be utilized by Plaintiff in entering into such agreements, as to any one emergency or continuation thereof declared by MWD's Board of Directors under Section III(B)(6)(a).

(iv) If any party claims it is being damaged or threatened with damage by the over extractions by any party to such an agreement, the first party or the Water Rights Panel may seek appropriate action of the Court for termination of any such agreement upon notice of hearing to the party complaining, to the party to said agreement, to the plaintiff, and to any parties who have filed a request for special notice. Any termination shall not affect the obligation of the party to make payments under the agreement for over extractions which did occur thereunder.

(v) Plaintiff shall maintain separate accounting of the proceeds from payments made pursuant to agreements entered into under this Part. Said fund shall be utilized solely for purposes of replenishment in replacement of waters in Central Basin and West Basin. Plaintiff shall as soon as practicable cause replenishment in Central Basin by the amounts to be overproduced pursuant to this Paragraph 6, whether through spreading, injection, or in lieu agreements.

(vi) Over extractions pursuant to the agreements shall not be subject to the "make up" provisions of the Judgment as amended, provided that if any party fails to make payments as required by the agreement, Plaintiff may

require such "make up" under Section III(B)(3) of this Judgment.

(vii) A Water Purveyor under any such agreement may, and is encouraged to enter into appropriate arrangements with customers who have water rights in Central Basin under or pursuant to this Judgment whereby the Water Purveyor will be assisted in meeting the objectives of the agreement.

(7) Exemption for Extractors of Contaminated Groundwater.

Any party herein may petition WRD for a Non-consumptive Water Use Permit as part of a project to remedy or ameliorate groundwater contamination. If the petition is granted as set forth in this paragraph, the petitioner may extract the groundwater as permitted hereinafter, without the production counting against the petitioner's production rights.

(a) If the Board of WRD determines by Resolution that there is a problem of groundwater contamination that a proposed program will remedy or ameliorate, an operator may make extractions of groundwater to remedy or ameliorate that problem without the production counting against the petitioner's production rights if the water is not applied to beneficial surface use, its extractions are made in compliance with all the terms and conditions of the Board Resolution, and the Board has determined in the Resolution either of the following:

(i) The groundwater to be extracted is unusable and cannot be economically treated or blended for use with other water.

(ii) The proposed program involves extraction of usable water in the same quantity as will be returned to the

underground without degradation of quality.

(b) The Resolution may provide those terms and conditions the Board deems appropriate, including, but not limited to, restrictions on the quantity of the extractions to be so exempted, limitations on time, periodic reviews, requirement of submission of test results from a Board-approved laboratory, and any other relevant terms or conditions.

(c) Upon written notice to the operator involved, the Board may rescind or modify its Resolution. The rescission or modification of the Resolution shall apply to groundwater extractions occurring more than ten (10) days after the rescission or modification. Notice of rescission or modification shall be either mailed first class mail, postage prepaid, at least two weeks prior to the meeting of the Board at which the rescission or modification will be made to the address of record of the operator or personally delivered two weeks prior to the meeting.

(d) The Board's decision to grant, deny, modify or revoke a permit or to interrupt or stop a permitted project may be appealed to this court within thirty days of the notice thereof to the applicant and upon thirty days' notice to the designees of all parties herein.

(e) WRD shall monitor and periodically inspect the project for compliance with the terms and conditions for any permit issued pursuant to these provisions.

(f) No party shall recover costs from any other party herein in connection with determinations made with respect to this Part.

(8) "Call" on Carryover Converted to Stored Water.

Where any Party has elected, as permitted by Section III(A)(2), to convert Carryover to Stored Water, any other Party which has not, within the previous ten (10) years, been granted approval to extract Carryover Conversion under this

Section III(B)(8) more than five (5) times, may apply to the Storage Panel for the right to extract all or a portion of that Carryover Conversion in the year such Conversion occurs. The Storage Panel shall grant such request, providing there is no Material Physical Harm, if it determines that leased groundwater to meet the applicant's needs within the Basin cannot be obtained for less than forty-five percent (45%) of MWD's Imported Water rate for delivery of untreated water to the Central Basin spreading facilities (which rate is presently MWD's "Full Service Untreated Volumetric Cost, Tier 1"), and that the applicant will fully extract its Allowed Pumping Allocation, Carryover, and Stored Water, if any, in addition to its permitted overextraction under Section III(B)(1), prior to accessing such Carryover Conversion.

Upon such approval, the applicant may thereafter extract such water as provided herein. A Party so extracting groundwater shall fully restore such extracted water (either through under-extraction of its rights or through importing water) during the five-year period following the Year in which the extraction under this Section occurs. Otherwise, the extracting Party shall pay to the Watermaster an amount equal to 100% of MWD's Imported Water rate for purchase and delivery of untreated water to the Central Basin spreading facilities (which rate is presently MWD's "Full Service Untreated Volumetric Cost, Tier 1") whether or not such water is available that year, for the year during which is the fifth anniversary of the year during which such Carryover Conversion extraction occurs, multiplied by the amount of Carryover Conversion so extracted and not restored during such five-year period. Payment shall be made within thirty (30) days of demand by Watermaster. No Replenishment Assessment shall be due on Carryover Conversion so extracted. However, the Party must deposit with the Watermaster an amount equal to the Replenishment Assessment that would otherwise be imposed by WRD upon such extraction. If the party restores the water within the 5-year repayment period, then the Watermaster shall

promptly return the deposit to the Party, without interest. If the Party does not restore the water within the 5-year repayment period, the deposit shall be credited towards the Party's obligation to pay 100% of MWD's Imported Water rate as required herein.

Should there be multiple requests to so extract Carryover Conversion in the same year, the Storage Panel shall allocate such extraction right such that each requesting party may extract a pro rata portion of the available Carryover Conversion for that year. No party may extract in excess of 2,500 acre feet of groundwater pursuant to this Section III(B)(8) in a single Year. Amounts paid to Watermaster hereunder shall be used by WRD solely for purchase of water for replenishment in the Basin. Watermaster, through the Storage Panel, shall give reasonable notice to the Parties of any application to so extract Carryover Conversion in such manner as the Storage Panel shall determine, including, without limitation, notice by electronic mail or by website posting, at least ten (10) days prior to consideration of any such application.

C. Exchange Pool Provisions.

(1) Definitions.

For purposes of these Exchange Pool provisions, the following words and terms have the following meanings:

(a) "Exchange Pool" is the arrangement hereinafter set forth whereby certain of the parties, ("Exchangees") may, notwithstanding the other provisions of the Judgment, extract additional water from Central Basin to meet their needs, and certain other of the parties ("Exchangors"), reduce their extractions below their Allowed Pumping Allocations in order to permit such additional extractions by others.

(b) "Exchangor" is one who offers, voluntarily or otherwise, pursuant to subsequent provisions, to reduce its extractions below its Allowed Pumping Allocation in order to permit such additional

extractions by others.

(c) "Exchangee" is one who requests permission to extract additional water from Central Basin.

(d) "Undue hardship" means unusual and severe economic or operational hardship, other than that arising (i) by reason of any differential in quality that might exist between water extracted from Central Basin and water available for importation or (ii) by reason of any difference in cost to a party in subscribing to the Exchange Pool and reducing its extractions of water from Central Basin in an equivalent amount as opposed to extracting any such quantity itself.

(2) Parties Who May Purchase Water Through the Exchange Pool.

Any party not having existing facilities for the taking of imported water as of the beginning of any Administrative Year, and any party having such facilities as of the beginning of any Administrative Year who is unable, without undue hardship, to obtain, take, and put to beneficial use, through its distribution system or systems existing as of the beginning of the particular Administrative Year, imported water in a quantity which, when added to its Allowed Pumping Allocation for that particular Administrative Year, will meet its estimated needs for that particular Administrative Year, may purchase water from the Exchange Pool, subject to the limitations contained in this Section III(C) (Subpart "C" hereinafter).

(3) Procedure for Purchasing Exchange Pool Water.

Not later than the 40th day following the commencement of each Administrative Year, each such party desiring to purchase water from the Exchange Pool shall file with the Watermaster a request to so purchase, setting forth the amount of water in acre feet that such party estimates that it will require during the then current Administrative Year in excess of the total of:

(a) Its Allowed Pumping Allocation for that particular

Administrative Year; and

(b) The imported water, if any, which it estimates it will be able, without undue hardship, to obtain, take and put to beneficial use, through its distribution system or systems existing as of the beginning of that particular Administrative Year.

Any party who as of the beginning of any Administrative Year has existing facilities for the taking of imported water and who makes a request to purchase from the Exchange Pool must provide with such request substantiating data and other proof which, together with any further data and other proof requested by the Water Rights Panel, establishes that such party is unable without undue hardship, to obtain, take and put to beneficial use through its said distribution system or systems a sufficient quantity of imported water which, when added to its said Allowed Pumping Allocation for the particular Administrative Year, will meet its estimated needs. As to any such party, the Water Rights Panel shall make a determination whether the party has so established such inability, which determination shall be subject to review by the court under the procedure set forth in Part II of this Judgment. Any party making a request to purchase from the Exchange Pool shall either furnish such substantiating data and other proof, or a statement that such party had no existing facilities for the taking of imported water as of the beginning of that Administrative Year, and in either event a statement of the basis for the quantity requested to be purchased.

(4) Subscriptions to Exchange Pool.

(a) Required Subscription. Each party having existing facilities for the taking of imported water as of the beginning of any Administrative Year hereby subscribed to the Exchange Pool for purposes of meeting Category (a) requests thereon, as more particularly defined in paragraph 5 of this Subpart C, twenty percent

(20%) of its Allowed Pumping Allocation, or the quantity of imported water which it is able, without undue hardship, to obtain, take and put to beneficial use through its distribution system or systems existing as of the beginning of the particular Administrative Year in addition to such party's own estimated needs for imported water during that Administrative Year, whichever is the lesser. A party's subscription under this subparagraph (a) and subparagraph (b) of this paragraph 4 is sometimes hereinafter referred to as a "required subscription."

(b) Report to Watermaster Water Rights Panel by Parties with Connections and Unable to Subscribe 20%. Any party having existing facilities for the taking of imported water and estimating that it will be unable, without undue hardship, in that Administrative Year to obtain, take and put to beneficial use through its distribution system or systems existing as of the beginning of that Administrative Year, sufficient imported water to further reduce its extractions from the Central Basin by twenty percent (20%) of its Allowed Pumping Allocation for purposes of providing water to the Exchange Pool must furnish not later than the 40th day following the commencement of such Administrative Year substantiating data and other proof which, together with any further data and other proof requested by the Water Rights Panel, establishes said inability or such party shall be deemed to have subscribed twenty percent (20%) of its Allowed Pumping Allocation for the purpose of providing water to the Exchange Pool. As to any such party so contending such inability, the Water Rights Panel shall make a determination whether the party has so established such inability, which determination shall be subject to review by the Court under the procedure set forth in Part II of this Judgment.

(c) Voluntary Subscriptions. Any party, whether or not having

facilities for the taking of imported water, who desires to subscribe to the Exchange Pool a quantity or further quantity of its Allowed Pumping Allocation, may so notify the Water Rights Panel in writing of the quantity of such offer on or prior to the 40th day following the commencement of the particular Administrative Year. Such subscriptions are referred to hereinafter as "voluntary subscriptions." Any Exchangor who desires that any part of its otherwise required subscription not needed to fill Category (a) requests shall be available for Category (b) requests may so notify the Water Rights Panel in writing on or prior to said 40th day. If all of that Exchangor's otherwise required subscription is not needed in order to fill Category (a) requests, the remainder of such required subscription not so used, or such part thereof as such Exchangor may designate, shall be deemed to be a voluntary subscription.

(5) Limitations on Purchases of Exchange Pool Water and Allocation of Requests to Purchase Exchange Pool Water Among Exchangors.

(a) Categories of Requests. Two categories of Exchange Pool requests are established as follows:

(i) Category (a) requests. The quantity requested by each Exchangee, whether or not that Exchangee has an Allowed Pumping Allocation, which quantity is not in excess of 150% of its Allowed Pumping Allocation, if any, or 100 acre feet, whichever is greater. Requests or portions thereof within the above criteria are sometimes hereinafter referred to as "Category (a) requests."

(ii) Category (b) requests. The quantity requested by each Exchangee having an Allowed Pumping Allocation to the extent the request is in excess of 150% of that Allowed

Pumping Allocation or 100 acre feet, whichever is greater, and the quantity requested by each Exchangee having no Allowed Pumping Allocation to the extent the request is in excess of 100 acre feet. Portions of requests within the above criteria are sometimes hereinafter referred to as "Category (b) requests."

(b) Filling of Category (a) Requests. All Exchange Pool subscriptions, required and voluntary, shall be available to fill Category (a) requests. Category (a) requests shall be filled first from voluntary subscriptions, and if voluntary subscriptions should be insufficient to fill all Category (a) requests required subscriptions shall be then utilized to fill Category (a) requests. All Category (a) requests shall be first filled before any Category (b) requests are filled.

(c) Filling of Category (b) Requests. To the extent that voluntary subscriptions have not been utilized in filling Category (a) requests, Category (b) requests shall be filled only out of any remaining voluntary subscriptions. Required subscriptions will then be utilized for the filling of any remaining Category (b) requests.

(d) Allocation of Requests to Subscriptions When Available Subscriptions Exceed Requests. In the event the quantity of subscriptions available for any category of requests exceeds those requests in that category, or exceeds the remainder of those requests in that category, such requests shall be filled out of such subscriptions proportionately in relation to the quantity of each subscription.

(e) Allocation of Subscriptions to Category (b) Requests in the Event of Shortage of Subscriptions. In the event available subscriptions are insufficient to meet Category (b) requests, available subscriptions shall be allocated to each request in the proportion that

the particular request bears to the total requests of the particular category.

(6) Additional Voluntary Subscriptions.

If subscriptions available to meet the requests of Exchangees are insufficient to meet all requests, additional voluntary subscriptions may be solicited and received from parties by the Water Rights Panel. Such additional subscriptions shall be allocated first to Category (a) requests to the extent unfilled, and next to Category (b) requests to the extent unfilled. All allocations are to be otherwise in the same manner as earlier provided in paragraph 5 (a) through 5 (e) inclusive.

(7) Effect if Category (a) Requests Exceed Available Subscriptions, Both Required and Voluntary.

In the event that the quantity of subscriptions available to fill Category (a) requests is less than the total quantity of such requests, the Exchangees may, nonetheless, extract the full amount of their Category (a) requests otherwise approved by the Water Rights Panel as if sufficient subscriptions were available. The amounts received by the Water Rights Panel on account of that portion of the approved requests in excess of the total quantities available from Exchangors shall be paid by the Water Rights Panel to WRD in trust for the purpose of purchasing imported water and spreading the same in Central Basin for replenishment thereof. Thereafter WRD may, at any time, withdraw said funds or any part thereof so credited in trust for the aforesaid purpose, or may by the 40th day of any Administrative Year utilize all or any portion of said funds for the purchase of water available from subscriptions by Exchangors in the event the total quantity of such subscriptions exceeds the total quantity of approved requests by parties to purchase Exchange Pool water. To the extent that there is such an excess of available subscriptions over requests and to the extent that the existing credit in favor of WRD is sufficient to purchase such excess quantity at

the price established for Exchange Pool purchases during that Administrative Year, the money shall be paid to the Exchangors in the same manner as if another party had made such purchase as an Exchangee. WRD shall not extract any such Exchange Pool water so purchased.

(8) Additional Pumping by Exchangees Pursuant to Exchange Pool Provisions.

An Exchangee may extract from Central Basin in addition to its Allowed Pumping Allocation for a particular Administrative Year that quantity of water which it has requested to purchase from the Exchange Pool during that Administrative Year and which has been allocated to it pursuant to the provisions of paragraphs 5, 6 and 7. The first pumping by an Exchangee in any Administrative Year shall be deemed to be pumping of the party's allocation of Exchange Pool water.

(9) Reduction in Pumping by Exchangors.

Each Exchangor shall in each Administrative Year reduce its extractions of water from Central Basin below its Allowed Pumping Allocation for the particular year in a quantity equal to the quantity of Exchange Pool requests allocated to it pursuant to the provisions of paragraphs 4, 5, 6 and 7 of this Subpart C.

(10) Price to be Paid for Exchange Pool Water.

The price to be paid by Exchangees and to be paid to Exchangors per acre foot for required and voluntary subscriptions of Exchangors utilized to fill requests on the Exchange Pool by Exchangees shall be the dollar amount computed as follows by the Water Rights Panel for each Administrative Year. The "normal" price as of the beginning of the Administrative Year charged by Central Basin Municipal Water District (CBMWD) for treated MWD (Metropolitan Water District of Southern California) water used for domestic and municipal purposes shall be determined, and if on that date there are any changes

scheduled during that Administrative Year in CBMWD's "normal" price for such category of water, the weighted daily "normal" CBMWD price shall be determined and used in lieu of the beginning such price; and there shall be deducted from such beginning or weighted price, as the case may be, the "incremental cost of pumping water in Central Basin" at the beginning of the Administrative Year and any then current rate or rates, of assessments levied on the pumping of groundwater in Central Basin by Plaintiff District and any other governmental agency. The "normal" price charged by CBMWD shall be the highest price of CBMWD for normal service excluding any surcharge or higher rate for emergency deliveries or otherwise failing to comply with CBMWD rates and regulations relating to earlier deliveries. The "incremental cost of pumping water in Central Basin" as of the beginning of the Administrative Year shall be deemed to be the Southern California Edison Company Schedule No. PA-1 rate per kilowatt-hour, including all adjustments and all uniform authorized additions to the basic rate, multiplied by 560 kilowatt-hours per acre-foot, rounded to the nearest dollar (which number of kilowatt-hours has been determined to represent the average energy consumption to pump an acre-foot of water in Central Basin). In applying said PA-1 rate the charge per kilowatt-hour under the schedule shall be employed and if there are any rate blocks then the last rate block shall be employed. Should a change occur in Edison schedule designations, the Water Rights Panel shall employ that applicable to motors used for pumping water by municipal utilities.

(11) Carry-over of Exchange Pool Purchases by Exchangees.

An Exchangee who does not extract from Central Basin in a particular Administrative Year a quantity of water equal to the total of (a) its Allowed Pumping Allocation for that particular Administrative Year, reduced by any authorized amount of carryover into the next succeeding Administrative Year pursuant to the provisions of Section III(A) of this Judgment, and (b) the quantity

that it purchased from the Exchange Pool for that particular Administrative Year, may carry over into the next succeeding Administrative Year the right to extract from Central Basin a quantity equal to the difference between said total and the quantity actually extracted in that Administrative Year, but not exceeding the quantity purchased from the Exchange Pool for that Administrative Year. Any such carryover shall be in addition to that provided in said Section III(A).

If the "Basinwide Average Exchange Pool Price" in the next succeeding Administrative Year exceeds the "Exchange Pool Price" in the previous Administrative Year any such Exchangee exercising such carryover rights hereinabove provided shall pay to the Watermaster, forthwith upon the determination of the "Exchange Pool Price" in said succeeding Administrative Year, and as a condition to such carryover rights, an additional amount determined by multiplying the number of acre feet of carryover by the difference in "Exchange Pool Price" as between the two Administrative Years. Such additional payment shall be miscellaneous income to the Watermaster which shall be applied by it against that share of the Watermaster's Administrative Body's budget to be paid by the parties to this Agreement for the second Administrative Year succeeding that in which the Exchange Pool water was so purchased. For purposes of this paragraph, the term Basinwide Average Exchange Pool Price means the average price per acre foot paid for Exchange Pool water produced within the Central Basin during the year for which such determination is to be made, taking into account all Exchange Pool transactions consummated during that year.

(12) Notification by Watermaster to Exchangors and Exchangees of Exchange Pool Requests and Allocations Thereof and Price of Exchange Pool Water.

Not later than the 65th day after the commencement of each Administrative Year, the Administrative Body of Watermaster shall determine

and notify all Exchangors and Exchangees of the total of the allocated requests for Exchange Pool water and shall provide a schedule divided into categories of requests showing the quantity allocated to each Exchangee and a schedule of the allocation of the total Exchange Pool requirements among the Exchangors. Such notification shall also advise Exchangors and Exchangees of the prices to be paid to Exchangors for subscriptions utilized and the Exchange Pool Price for that Administrative Year as determined by the Water Rights Panel. The determinations of the Watermaster in this regard shall be subject to review by the Court in accordance with the procedure set forth in Part II of this Judgment.

(13) Payment by Exchangees.

Each Exchangee shall, on or prior to last day of the third month of each Administrative Year, pay to the Watermaster one-quarter of said price per acre-foot multiplied by the number of acre feet of such party's approved request and shall, on or before the last day of each of the next succeeding three months, pay a like sum to the Watermaster. Such amounts must be paid by each Exchangee regardless of whether or not it in fact extracts or uses any of the water it has requested to purchase from the Exchange Pool.

(14) Payments to Exchangors.

As soon as possible after receipt of moneys from Exchangees, the Watermaster shall remit to the Exchangors their pro rata portions of the amount so received in accordance with the provisions of paragraph 10 above.

(15) Delinquent Payments.

Any amounts not paid on or prior to any due date above shall carry interest at the rate of 1% per month or any part of a month. Any amounts required to be so paid may be enforced by the equitable powers of the Court, including, but not limited to, the injunctive process of the Court. In addition thereto, the Watermaster, as Trustee for the Exchangors and acting through the Water Rights Panel, may enforce such payment by any appropriate legal action, and shall be

entitled to recover as additional damages reasonable attorneys' fees incurred in connection therewith. If any Exchangee shall fail to make any payments required of it on or before 30 days after the last payment is due, including any accrued interest, said party shall thenceforward not be entitled to purchase water from the Exchange Pool in any succeeding Administrative Year except upon order of the Court, upon such conditions as the Court may impose.

IV. PROVISIONS FOR THE STORAGE OF WATER AND THE EXTRACTION OF STORED WATER.

A. Adjudication of Available Dewatered Space, Storage Capacity and Storage Apportionment.

There exists within the Basin a substantial amount of available space which has not been optimally utilized for basin management and for storage of native and imported waters. The Court finds and determines that (i) there is 330,000 acre feet of Available Dewatered Space in the Basin; (ii) use of this Available Dewatered Space will increase reasonable and beneficial use of the Basin by permitting the more efficient procurement and management of Replenishment Water, conjunctive use, and for direct and in-lieu recharge, thereby increasing the prudent storage and recovery of Stored Water for later use by parties to this Judgment, conservation of water and reliability of the water supply available to all Parties; and (iii) use of the Available Dewatered Space pursuant to the terms and conditions of this Judgment will not result in Material Physical Harm.

B. Avoidance of Material Physical Harm.

It is essential that the 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. Accordingly, in the event Watermaster becomes aware of the development of a Material Physical Harm, or imminent threat of the development of a Material Physical Harm, relating to the

use of the Available Dewatered Space, Watermaster shall, within thirty (30) days thereafter, notice a hearing before the Court and concurrently file a report with the Court, served on all parties, which shall explain the relevant facts then known to Watermaster relating to the Material Physical Harm, or imminent threat thereof, including without limitation, the location of the occurrence, the source or cause, existing and potential physical impacts or consequences of the identified or threatened material Physical Harm, and any recommendations to remediate the identified or threatened Material Physical Harm.

C. Apportionment of Available Dewatered Space.

To fairly balance the needs of the divergent interests of parties having water rights in the Basin, on the one hand, and the replenishment functions of WRD on the other hand, and in consideration of the shared desire and public purpose of removing impediments to the voluntary conservation, storage, exchange and transfer of water, all of the Available Dewatered Space is hereby adjudicated and apportioned into complimentary classifications of Stored Water and a Basin Operating Reserve as set forth in this Part IV. The apportionment contemplates flexible administration of storage capacity where use is apportioned among competing needs, while allowing all Available Dewatered Space to be used from time to time on a "space available" basis, subject to the priorities specified in this Judgment, and as further defined in Section IV(I) of this Judgment. The Court further finds and determines that, of the Available Dewatered Space, there is 220,000 acre-feet of storage capacity in the Central Basin which is presently available ("Adjudicated Storage Capacity"). The use of Adjudicated Storage Capacity as provided in this Judgment will not adversely affect the efficient operation of the Basin or the recharge of water necessary for the production of the parties' respective Allowed Pumping Allocations. The apportionment of Adjudicated Storage Capacity as provided herein will allow for flexible administration of groundwater storage within the Basin. The Adjudicated Storage Capacity is hereby assigned to Individual Storage Allocations and Community Storage as provided herein, provided however that if all

space in a particular classification is fully occupied then, on a "space available" basis, to available space within the other classifications of Adjudicated Storage Capacity and, only then, to available space within Basin Operating Reserve.

The Court further finds and determines that, out of the Available Dewatered Space, there is 110,000 acre feet that should be set aside for use by WRD as a Basin Operating Reserve, provided in Section IV(L), and subject to temporary occupancy by Stored Water as permitted hereunder.

No storage of water shall occur in the Basin except in conformity with this Judgment.

D. Individual Storage Allocation.

Each Party having an adjudicated groundwater extraction right hereunder shall have a priority right to store water in an Individual Storage Account, through conversion of Carryover to Stored Water as provided herein, or by any means authorized by this Judgment, up to a maximum of 50% of such party's Allowed Pumping Allocation. The cumulative quantity of Adjudicated Storage Capacity subject to individual storage allocation is 108,750 acre-feet. In recognition of prior importation of water which was introduced into the Basin as Stored Water, and which has not yet been extracted, the Court finds and determines that, as of the date of this Order, the following Parties have occupied a portion of their respective Individual Storage Allocations and have all associated rights therein, as follows:

City of Long Beach:	13,076.8 acre-feet
City of Lakewood:	500 acre-feet
City of Downey:	500 acre-feet
City of Cerritos	500 acre-feet

E. Community Storage; Regional Disadvantaged Communities Incentive Program.

In addition to Individual Storage Allocation, a Party that has fully occupied its Individual Storage allocation may, on a first in time, first in right basis (subject to the

limits expressed below) place water into storage in the "Community Storage Pool." The cumulative quantity of Adjudicated Storage Capacity allocated to Community Storage shall be 111,250 acre-feet. So long as there is available capacity in the Community Storage Pool, any Party may store water in the Community Storage Pool through conversion of Carryover to Stored Water as provided herein, or by any other means authorized by this Judgment, provided such Party has first fully occupied that party's available Individual Storage Allocation.

(1) Parties to this Judgment which, as of January 1, 2013, held Allowed Pumping Allocation of not greater than 5,000 acre-feet shall have a first priority right to occupy, in the aggregate, up to 10,000 acre-feet of storage space within the Central Basin Community Storage Pool, on the basis of first in time, first in right.

(2) Water stored pursuant to the Regional Disadvantaged Communities Incentive Program shall have a second priority right to occupy up to 23,000 acre-feet within the Community Storage Pool, on such terms as shall be determined by the Court.

(3) Any further storage in excess of the maximum quantity of Community Storage will be on a "space-available" interim basis. From time to time, and on a "space-available" basis, the total quantity of water available for storage is permitted to exceed Adjudicated Storage Capacity for the Community Storage Pool on an interim basis. This interim storage may occur if storage capacity exists as a result of unused Adjudicated Storage Capacity within other classifications, or available space exists in the Basin Operating Reserve. Such interim storage, however, is subject to priority rights to such Dewatered Space as provided in this Judgment. A party that seeks to convert the water temporarily held in interim storage to a more firm right, may contract for the use of another party's Individual Storage Allocation, or may add such water to the Community Storage Pool once space therein becomes available.

(4) After a party occupies available storage capacity within the Community Storage Pool and then withdraws water from the Community Storage Pool, the storing party will be allowed a period of twenty-four (24) months to refill the evacuated storage before the capacity will be determined excess and available for use by other parties. Once the Basin's Community Storage Pool has been filled for the first time, a party may exercise its twenty-four (24) month refill priority only once, and then only provided there is then capacity available to permit that party to refill the vacated space. Except to the extent Community Storage space may be subject to such priority right to re-fill, all space therein shall be occupied on a first in time, first in right basis.

(5) A party that has occupied storage in the Community Storage Pool for ten (10) consecutive years shall be deemed to extract its Stored Water first in subsequent years (notwithstanding the order of water production set forth in Section I(B)(3)) until its entire Community Storage account has been extracted, but thereafter may again make use of Community Storage on the same terms available to other parties on a first in time, first in right, space-available basis.

(6) Any quantity of water held in the Community Storage Pool for a term greater than ten (10) consecutive years shall be assessed an annual water loss equal to 5% of the lowest quantity of water held within the party's Community Storage Pool account at any time during the immediately preceding ten-year period. The lowest quantity means the smallest amount of water held by the Party in the Community Storage Pool during any of the preceding ten (10) years, with a new loss calculation being undertaken every year. Water subject to the loss assessment will be deemed dedicated to the Basin Operating Reserve in furtherance of the physical solution without compensation. Water lost to the Basin shall constitute water replenished into the Central Basin for the benefit of all parties

F. Limit on Storage.

Irrespective of the category of storage utilized, each party to this Judgment may not cumulatively have in storage at any time Stored Water totaling more than two hundred percent (200%) of that party's Allowed Pumping Allocation. Subject to the foregoing, the right to produce Stored Water may be freely transferred to another party to this Judgment, or as otherwise permitted herein.

G. Extractions of Stored Water; Exemption from Replenishment Assessment.

The Court finds and declares that the extraction of Stored Water as permitted hereunder does not constitute "production of groundwater" within the meaning of Water Code Section 60317 and that no Replenishment Assessment shall be levied on the extraction of Stored Water. WRD has stipulated to the same. This determination reflects the practical application of certain provisions of this Judgment concerning storage of water, including, without limitation, understanding the following: (1) payment of the Replenishment Assessment is required upon the conversion of Carryover Water into storage, and; (2) developed water introduced into the Basin for storage by or on behalf of a Party through spreading or injection need not be replenished by WRD and should not be subject to the Replenishment Assessment.

H. Storage Procedure.

The Administrative Body shall (i) prescribe forms and procedures for the orderly reporting of Stored Water, (ii) maintain records of all water stored in the Basin, and (iii) undertake monitoring and modeling of Stored Water as may be reasonably required. As to any Storage Projects that will require review and approval by the Storage Panel, the Administrative Body shall provide appropriate applications, and shall work with project applicants to complete the application documents for presentation to the Storage Panel. The Administrative Body shall be responsible for conducting any groundwater modeling necessary to evaluate a proposed Storage Project. The proponent of a proposed project will bear all costs associated with the review of the application for approval of the project and all costs associated with its implementation. Nothing in this Judgment shall alter the applicant(s) duty to comply with CEQA or to meet other legal requirements as to any

proposed Storage Project. Within thirty (30) days after final submission of the storage application documents, the Administrative Body shall provide notice of the storage application (either by electronic mail or U.S. postal mail), together with a copy of the application documents, to all parties possessing an Allowed Pumping Allocation, and to any other person requesting notice thereof. Following notice, any necessary hearings before the Storage Panel shall be conducted as provided in Section IV(O) of this Judgment.

I. Loss of Stored Water/Relative Priority.

To balance the need to protect priority uses of storage and to encourage the full utilization of Adjudicated Storage Capacity and Basin Operating Reserve where it can be accommodated without interference with priority uses, and except as otherwise provided in this Judgment, no water held in any authorized storage account will be deemed lost from that storage account unless the cumulative quantity of water held as Stored Water plus the quantity of water held within the Basin Operating Reserve exceeds 330,000 acre-feet. Where all Adjudicated Storage Capacity and Basin Operating Reserve has been occupied, the first Stored Water to be deemed lost shall be the last water stored as Community Storage. Upon receipt of a bona fide request by another use entitled to priority hereunder, Watermaster shall issue a notice requiring the other parties to evacuate their Stored Water. Any Stored Water that is not evacuated shall be deemed dedicated to the Basin Operating Reserve in furtherance of the physical solution without compensation and accounted for accordingly.

J. Limits on Extraction.

Anything in this Judgment to the contrary notwithstanding, no party shall extract greater than 140% of the sum of (i) the party's Allowed Pumping Allocation and (ii) the party's leased water, except upon prior approval by the Water Rights Panel. For this purpose, a party's total extraction right for a particular year shall include that party's Allowed Pumping Allocation and any contractual right through lease or other means to utilize the adjudicated rights of another party. Where such proposed extraction would

occur within the Central Basin Pressure Area as defined by Watermaster consistent with historical records, the Water Rights Panel shall submit such request for review by the Board of WRD. The Water Rights Panel shall not approve any request for over-extraction within the Pressure Area without a written finding by the Board of WRD that such over-extraction will not cause Material Physical Harm. The role of the Board of WRD in this process shall not be read to expand or restrict WRD's statutory authority. Consideration shall be on an expedited basis.

K. Increased Extractions in the Central Basin for Certain Water Purveyors.

(1) This Court also maintains continuing jurisdiction over the West Coast Basin, which bounds the Central Basin to the west.

(2) Certain Water Purveyors are parties to both this Amended Judgment and the judgment governing the West Coast Basin and serve communities overlying both the Central Basin and the West Coast Basin.

(3) Certain Water Purveyors may exceed their Allowed Pumping Allocation in any Administrative Year, subject to all of the following conditions:

(a) The Water Purveyor is one of the following eligible Parties:

(i) City of Los Angeles

(ii) Golden State Water Company

(iii) California Water Service Company.

(b) Increased extractions pursuant to this Section shall not exceed 5,000 acre-feet per Water Purveyor for the particular Administrative Year.

(c) Increased extractions pursuant to this Section shall not exceed the Water Purveyor's unused "Adjudicated Rights" in the West Coast Basin.

(d) Increased extractions pursuant to this Section shall not result in Material Physical Harm.

(4) Notwithstanding the foregoing, nothing herein permits extraction

of water within the Central Basin in excess of 140% of Allowed Pumping Allocation for the particular Administrative Year, except as otherwise permitted under this Judgment.

(5) Replenishment of any water extracted from the Central Basin pursuant to this Section shall occur exclusively in the Central Basin.

(6) The benefits of this Section are made available only to the certain Water Purveyors that serve communities overlying the Central Basin and communities overlying the West Basin, in recognition of the management of water resources by those Water Purveyors to serve such overlying communities. It is not made, nor is it related to, a determination of an underflow between the basins, a cost or benefit allocation, or any other factor relating to the allocation of the Replenishment Assessment.

L. Special Provisions for Temporary Storage within Community Storage Pool.

The Central Basin Municipal Water District ("CBMWD") shall take such action as may be necessary to reduce its Allowed Pumping Allocation to five (5) acre-feet or fewer by December 31, 2018, and has agreed, by stipulation, not to acquire any additional Central Basin water rights. Upon application by CBMWD, the Storage Panel may, after making each of the findings required in this subsection, approve storage of water by CBMWD within the Community Storage Pool subject to the stated conditions. The Storage Panel may only authorize such storage after finding each of the following to be true as of the date of such approval:

(1) CBMWD (a) then owns five (5) acre-feet or fewer of Allowed Pumping Allocation, and (b) has not produced water utilizing any extraction rights it holds within the Basin but has only engaged in the sale or leasing of those rights to others.

(2) There is available space for Storage within the Community Storage

Pool.

(3) CBMWD has identified a source of imported water that may be brought into the Basin and stored underground.

(4) The water identified for storage (a) is unlikely to be acquired by other parties through surface delivery for use within the Basin, and (b) was offered to WRD to purchase for replenishment purposes at the same price that CBMWD otherwise sells imported water to WRD and WRD declined to purchase said water, within a reasonable period of time.

(5) There will be no Material Physical Harm associated with the introduction of the water into storage, or its extraction, in the manner approved by the Storage Panel.

The condition expressed in Section IV(L)(1)(a) above shall not be operative until January 1, 2019, or upon reduction of CBMWD's Allowed Pumping Allocation to five (5) acre-feet or fewer, whichever first occurs. CBMWD may not extract the Stored Water, and may instead only transfer that Stored Water to a party having extraction rights, or to WRD for replenishment purposes only. Such Stored Water not so transferred within three (3) years following its storage may be purchased by WRD, at its option, for replenishment purposes only, at a price not exceeding the actual cost incurred by CBMWD in importing and storing the water in the first instance, plus a reasonable administrative charge for overhead not exceeding five percent (5%) of the price paid by CBMWD for the water with no other fees or markups imposed by CBMWD. Except as otherwise permitted in this Section, any such Stored Water held by CBMWD for a term greater than three (3) years shall be assessed an annual water loss equal to 10% of the amount of such Stored Water at the end of each year. Water subject to the loss

assessment will be deemed dedicated to the Basin Operating Reserve in furtherance of the physical solution without further compensation. The Storage Panel shall grant CBMWD one or more extensions of such term, not exceeding total extensions of three (3) additional years, following public hearing, if the Storage Panel determines that the Stored Water has been actively marketed by CBMWD for transfer to Parties on reasonable terms in the previous year. The Storage Panel may impose such additional reasonable conditions as it determines to be appropriate. Any review by the Storage Panel hereunder shall only occur at a public hearing held following at least 15 days' (but not more than 30 days') mailed notice to all Parties to this Judgment, at which hearing an opportunity for public comment shall be afforded in advance of any such decision. However, the Storage Panel may consider an application on shorter notice under exigent circumstances, including the potential loss of the water proposed to be stored if action is not taken sooner. CBMWD shall have the right to appeal any action or inaction by the Storage Panel to this court. The storage and extraction of Stored Water hereunder shall otherwise be subject to all other provisions of this Judgment. The court finds and declares that this subsection constitutes a "court order issued by a court having jurisdiction over the adjudication of groundwater extraction rights within the groundwater basin where storage is sought" within the meaning of Water Code §71610(b)(2)(B). Nothing in this provision impedes CBMWD's ability to store water pursuant to a contract with an adjudicated groundwater extraction rights holder as permitted by Water Code § 71610(b)(2)(A) and otherwise in accordance with this Judgment.

M. Basin Operating Reserve.

It is in the public interest and in furtherance of the physical solution for WRD to prudently exercise its statutory discretion to purchase, spread, and inject Replenishment Water, to provide for in-lieu replenishment, and otherwise to fulfill its replenishment function within the Basin as provided in Water Code Section 60000 et. seq. Hydrologic,

regulatory and economic conditions now prevailing within the State require that WRD be authorized to exercise reasonable discretion and have flexibility in the accomplishment of its replenishment function. Accordingly, WRD may pre-purchase or defer the purchase of Replenishment Water, and may otherwise purchase and manage available sources of Replenishment Water under the most favorable climatic and economic conditions as it may determine reasonable and prudent under the circumstances. It is the intent of the parties to preserve space for such replenishment activities, including capture of natural inflows during wet years, recapture of water when possible, and artificial replenishment when water is available at discounted rate, for the benefit of the Basin and the parties to the Judgment. The Basin Operating Reserve is intended to allow WRD to meet its replenishment needs to make APA available for extraction by all water rights holders. Accordingly, WRD shall have a priority right to occupy up to 110,000 acre-feet of the Available Dewatered Space as the "Basin Operating Reserve" for the acquisition and replenishment of water, or to ensure space remains available in the Basin to capture natural inflows during wet years for the benefit of the parties to the Judgment, to offset over-production. The priority right is not intended to allow WRD to sell or lease stored water, storage, or water rights. To the extent WRD does not require the use of all of such Basin Operating Reserve, that portion of the Basin Operating Reserve that is not then being used shall be available to other Parties to store water on a temporary and space-available basis. No Party may use any portion of the Basin Operating Reserve for space-available storage unless that Party has already maximized its allowed Storage pursuant to its Individual Storage Allocation and all available Community Storage is already in use. WRD's failure to use any portion of its Basin Operating Reserve shall not cause forfeiture or create a limitation of its right to make use of the designated space in the future. WRD's first priority right to this category of space shall be absolute. To the extent that there is a conflict between WRD and a third party regarding the availability of and desire to use any portion of the space available for replenishment up to the maximum limits set forth in this section, the interests of WRD will prevail. If a party other than

WRD is using the Basin Operating Reserve space on a "space available" basis and a conflict develops between WRD and the storing party, the storing party will, upon notice from WRD, evacuate the Stored Water within ninety (90) days thereafter. In such event, temporary occupancy within the Basin Operating Reserve shall be first in time, first in right, and the last Party to store water shall be required to evacuate first until adequate space shall be made available within the Basin Operating Reserve to meet WRD's needs. The storing party or parties assume all risks of waste, spill and loss regardless of the hardship. Stored Water that is not evacuated following WRD's notice of intent to occupy the Basin Operating Reserve will be deemed dedicated to the Basin Operating Reserve in furtherance of the physical solution without compensation and accounted for accordingly. Nothing herein shall permit WRD to limit or encumber, by contract or otherwise, its right to use the Basin Operating Reserve for Replenishment purposes for any reason, or to make space therein available to any person by any means. Notwithstanding the foregoing, to the extent excess space is available, water evacuated from the Basin Operating Reserve as provided in this Section shall be deemed added to available space within the Individual Storage Allocations and Community Storage Pool, subject to the priority rights otherwise provided in this Judgment.

N. Water Augmentation.

The parties, in coordination with WRD, may undertake projects that add to the long-term reliable yield of the Basin. Innovations and improvements in practices that increase the conservation and maximization of the reasonable and beneficial use of water should be promoted. To the extent that Parties to the Judgment, in coordination with WRD, implement a project that provides additional long-term reliable water supply to the Central Basin, the annual extraction rights in the Central Basin will be increased commensurately in an amount to be determined by the Storage Panel to reflect the actual yield enhancement associated with the project. Augmented supplies of water resulting from such a project may be extracted or stored as permitted in this Judgment in the same manner as other water. Participation in any Water Rights Augmentation Project shall be

voluntary. A party may elect to treat a proposed project as a Water Augmentation Project (for the purpose of seeking an increase in that party's Allowed Pumping Allocation) or may elect to treat such a project as a Storage Project under the other provisions of this Judgment. The terms of participation in any Water Augmentation Project will be at the full discretion of the participating parties. All Water Augmentation Projects will be approved by the Storage Panel.

(1) Participating Parties.

Parties who propose a Water Augmentation Project ("Project Leads") may do so in their absolute discretion, upon such terms as they may determine. All other parties to this Judgment will be offered an opportunity to participate in the Water Augmentation Project on condition that they share proportionally in common costs and benefits, and assume the obligation to bear exclusively the cost of any improvements that are required to accommodate their individual or particular needs. Notice shall be provided which generally describes the project and the opportunity to participate with sufficient time for deliberation and action by any of these parties who could potentially participate. Disputes over the adequacy of notice shall be referred to the Storage Panel, and then to the Court under its continuing jurisdiction. Parties who elect to participate ("Project Participants") may do so provided they agree to offer customary written and legally binding assurances that they will bear their proportionate costs attributable to the Water Rights Augmentation Project, or provide other valuable consideration deemed sufficient by the Project Leads and the Project Participants.

(2) Determination of Additional Extraction Rights.

The amount of additional groundwater extraction as a result of a Water Augmentation project will be determined by the Storage Panel, subject to review by the Court. The determination will be based upon substantial evidence which supports the finding that the Water Augmentation project will increase the long-term sustainable yield of the respective Basin by an amount at least equal to the

proposed increase in extraction rights.

(3) Increase in Extraction Rights.

A party that elects to participate and pays that party's full pro-rata share of costs associated with any Water Augmentation Project and/or reaches an agreement with other participants based upon other valuable consideration acceptable to the Project Leads and Project Participants, will receive a commensurate increase in extraction rights. Non-participating parties will not receive an increase or a decrease in extraction rights. Any party that elects not to participate will not be required to pay any of the costs attributable to the particular Water Augmentation Project, whether directly or indirectly as a component of the WRD Replenishment Assessment.

(4) Nominal Fluctuations.

Because water made available for Water Rights Augmentation will be produced annually, fluctuations in groundwater levels will be temporary, nominal and managed within the Basin Operating Reserve.

(5) Availability of New Water.

The amount of additional groundwater extraction established as a result of a Water Augmentation Project shall be equal to the quantity of new water in the Basin that is attributable to that Water Augmentation Project. No extraction shall occur and no extraction right shall be established until new water has been actually introduced into the Basin as a result of the Project. Any approval for a Water Augmentation Project shall include provisions (a) requiring regular monitoring to determine the actual amount of such new water made available, (b) requiring make-up water or equivalent payment therefor to the extent that actual water supply augmentation does not meet projections, and (c) adjusting extraction rights attributable to the Water Augmentation Project to match the actual water created. The right to extract augmented water from the Basin resulting from a party's participation in a Water Augmentation Project shall be accounted for

separately and shall not be added to a party's Allowed Pumping Allocation. No Replenishment Assessment shall be levied against the extraction of augmented water.

(6) Limitation.

Notwithstanding the foregoing, WRD will not obtain any water rights or extraction rights under this Judgment by virtue of its participation in a Water Augmentation Project. If WRD participates in a Water Rights Augmentation Project through funding or other investments, its allocation of new water from the project shall be used to offset its replenishment responsibilities.

O. Limits on Watermaster Review.

It shall not be necessary for Watermaster, or any constituent body thereof, to review or approve any of the following before the affected Party may proceed: (i) exercise of adjudicated water rights consistent with this Judgment, except for extraction above 140% of a Party's extraction right as set out in Section IV(J) of this Judgment; (ii) replenishment of the Basin with Replenishment Water by WRD consistent with Water Code Section 60000 et seq., including replenishment of water produced by water rights holders through the exercise of adjudicated water rights; (iii) WRD's operations within the Basin Operating Reserve; (iv) Carryover Conversion or other means of the filling of the Individual Storage Accounts and the Community Storage Pool, as provided in this Judgment, as long as existing water production, spreading, or injection facilities are used; and (v) individual transfers of the right to produce Stored Water as permitted in Section IV(F). All other Storage Projects and all Water Augmentation Projects shall be subject to review and approval as provided herein, including (i) material variances to substantive criteria governing projects exempt from the review and approval process, (ii) modifications to previously approved Storage Projects and agreements, (iii) a party's proposal for Carryover Conversion in quantities greater than the express apportionment of Adjudicated Storage Capacity on a non-priority, space-available, interim basis, and (iv) Storage, by means other than Carryover Conversion, when new production,

spreading, or injection facilities are proposed to be utilized.

P. Hearing Process For Watermaster Review.

The following procedures shall be followed by Watermaster where Watermaster review of storage or extraction of Stored Water is required or permitted under this Judgment:

(1) No later than thirty (30) days after notice has been issued for the storage application, the matter shall be set for hearings before the Storage Panel. A staff report shall be submitted by WRD staff in conjunction with the completed storage application documents and the Water Rights Panel may prepare an independent staff report, if it elects to do so.

(2) The Board of WRD and the Water Rights Panel (sitting jointly as the Storage Panel) shall conduct a joint hearing concerning the storage application.

(3) All Watermaster meetings shall be conducted in the manner prescribed by the applicable Rules and Regulations. The Rules shall provide that all meetings of Watermaster shall be open to water rights holders and that reasonable notice shall be given of all meetings.

(4) The Board of WRD and the Water Rights Panel shall each adopt written findings explaining its decision on the proposed Storage Project, although if both entities reach the same decision on the Storage Project, they shall work together to adopt a uniform set of findings.

(5) Unless both the Board of WRD and the Water Rights Panel approve the Storage Project, the Storage Project application shall be deemed denied (a "Project Denial"). If both the Board of WRD and the Water Rights Panel approve the Storage Project, the Storage Project shall be deemed approved (a "Project Approval").

Q. Trial Court Review

(1) The applicant may seek the Storage Panel's reconsideration of a

Project Denial. However, there shall be no process for mandatory reconsideration or mediation of a Project Approval or a Project Denial either before the Administrative Body, or before the Water Rights Panel.

(2) Any Party may file an appeal from a Project Approval or Project Denial with this Court, as further described in Section II(F).

(3) In order to (a) promote the full presentation of all relevant evidence before the Storage Panel in connection with its consideration of any proposed Storage Project, (b) achieve an expeditious resolution of any appeal to the Court, and (c) accord the appropriate amount of deference to the expertise of the Storage Panel, the appeal before the Court shall be based solely on the administrative record, subject only to the limited exception in California Code of Civil Procedure section 1094.5(e).

(4) If both the WRD Board and the Water Rights Panel each vote to deny or approve a proposed Storage Project, it shall be an action by the Storage Panel and that decision shall be accorded by the Court deference according to the substantial evidence test. If one of the reviewing bodies votes to approve the proposed Storage Project and the other reviewing body votes to deny the proposed storage project, then the Court's review shall be *de novo*, although still restricted to the administrative record. In the case of any *de novo* Trial Court review, the findings made by the respective Watermaster bodies shall not be accorded any weight independent of the evidence supporting them.

R. Space Available Storage, Relative Priority, and Dedication of "Spilled" Water.

To balance the need to protect priority uses of storage and to encourage the full utilization of Available Dewatered Space within the Adjudicated Storage Capacity and the Basin Operating Reserve, any Party may make interim, temporary use of then currently unused Available Dewatered Space within any category of Adjudicated Storage Capacity, and then if all Adjudicated Storage Capacity is being fully used for Stored

Water within the Basin Operating Reserve ("Space-Available Storage"), subject to the following criteria:

(1) Any Party may engage in Space-Available Storage without prior approval from Watermaster provided that the storing Party or Parties shall assume all risks of waste, spill, and loss regardless of the hardship. Whenever the Storage Panel determines that a Party is making use of excess Available Dewatered Space for Space-Available Storage, the Storage Panel shall issue written notice to the Party informing them of the risk of spill and loss.

(2) Whenever the Available Dewatered Space is needed to accommodate the priority use within a respective category of Adjudicated Storage Capacity, or WRD seeks to make use of its priority right to the Basin Operating Reserve to fulfill its replenishment function, the Storage Panel shall issue a notice to evacuate the respective category of Adjudicated Storage Capacity or Basin Operating Reserve, as applicable, within the time-periods set forth within this Amended Judgment. To the extent the Stored Water is not timely evacuated such Stored Water will be placed into any other excess Available Dewatered Space, first within the Adjudicated Storage Capacity, if available, and then if all Adjudicated Storage Capacity is being fully used for Stored Water within the Basin Operating Reserve. If no excess Available Dewatered Space is available within the Basin Operating Reserve, then the Stored Water shall be deemed spilled and will be deemed dedicated to the Basin Operating Reserve in furtherance of the physical solution without compensation and accounted for accordingly. A Party that seeks to convert the Stored Water temporarily held in interim storage as Space-Available Storage to a more firm right, may in its discretion, contract for the use of another Party's Individual Storage Allocation, or may add such water to the Community Storage Pool once space therein becomes available.

(3) No Stored Water will be deemed abandoned unless the cumulative

quantity of water held as Stored Water plus the quantity of water held in the Basin Operating Reserve exceeds 330,000 (three hundred and thirty thousand) acre-feet in the Central Basin.

V. CONTINUING JURISDICTION OF THE COURT.

The Court hereby reserves continuing jurisdiction and upon application of any interested party, or upon its own motion, may review and redetermine the following matters and any matters incident thereto:

A. Its determination of the permissible level of extractions from Central Basin in relation to achieving a balanced basin and an economic utilization of Central Basin for groundwater storage, taking into account any then anticipated artificial replenishment of Central Basin by governmental agencies for the purpose of alleviating what would otherwise be annual overdrafts upon Central Basin and all other relevant factors.

B. Whether in accordance with applicable law any party has lost all or any portion of his rights to extract groundwater from Central Basin and, if so, to ratably adjust the Allowed Pumping Allocations of the other parties and ratably thereto any remaining Allowed Pumping Allocation of such party.

C. To remove any Watermaster or constituent body appointed from time to time and appoint a new Watermaster; and to review and revise the duties, powers and responsibilities of the Watermaster or its constituent bodies and to make such other and further provisions and orders of the Court that may be necessary or desirable for the adequate administration and enforcement of the Judgment.

D. To revise the price to be paid by Exchangees and to Exchangors for Exchange Pool purchases and subscriptions.

E. In case of emergency or necessity, to permit extractions from Central Basin for such periods as the Court may determine: (i) ratably in excess of the Allowed Pumping Allocations of the parties; or (ii) on a non-ratable basis by certain parties if

either compensation or other equitable adjustment for the benefit of the other parties is provided. Such overextractions may be permitted not only for emergency and necessity arising within Central Basin area, but to assist the remainder of the areas within The Metropolitan Water District of Southern California in the event of temporary shortage or threatened temporary shortage of its imported water supply, or temporary inability to deliver the same throughout its area, but only if the court is reasonably satisfied that no party will be irreparably damaged thereby. Increased energy cost for pumping shall not be deemed irreparable damage. Provided, however, that the provisions of this subparagraph will apply only if the temporary shortage, threatened temporary shortage, or temporary inability to deliver was either not reasonably avoidable by the Metropolitan Water District, or if reasonably avoidable, good reason existed for not taking the steps necessary to avoid it.

F. To review actions of the Watermaster.

G. To assist the remainder of the areas within The Metropolitan Water District of Southern California within the parameter set forth in subparagraph (e) above.

H. To provide for such other matters as are not contemplated by the Judgment and which might occur in the future, and which if not provided for would defeat any or all of the purposes of this Judgment to assure a balanced Central Basin subject to the requirements of Central Basin Area for water required for its needs, growth and development.

The exercise of such continuing jurisdiction shall be after 30 days' notice to the parties, with the exception of the exercise of such continuing jurisdiction in relation to subparagraphs E and G above, which may be *ex parte*, in which event the matter shall be forthwith reviewed either upon the Court's own motion or the motion of any party upon which 30 days' notice shall be so given. Within ten (10) days of obtaining any *ex parte* order, the party so obtaining the same shall mail notice thereof to the other parties. If any other party desires Court review thereof, the party obtaining the *ex parte* order shall bear the reasonable expenses of mailing notice of the proceedings, or may in lieu thereof undertake the mailing. Any contrary or

modified decision upon such review shall not prejudice any party who relied on said *ex parte* order.

VI. GENERAL PROVISIONS.

A. Judgment Constitutes Inter Se Adjudication.

This Judgment constitutes an inter se adjudication of the respective rights of all parties, except as may be otherwise specifically indicated in the listing of the water rights of the parties of this Judgment, or in Appendix "2" hereof. All parties to this Judgment retain all rights not specifically determined herein, including any right, by common law or otherwise, to seek compensation for damages arising out of any act or omission of any person. This Judgment constitutes a "court order" within the meaning of Water Code Section 71610(B)(2)(b).

B. Assignment, Transfer, Etc., of Rights.

Subject to the other provision of this Judgment, and any rules and regulations of the Watermaster requiring reports relative thereto, nothing herein contained shall be deemed to prevent any party hereto from assigning, transferring, licensing or leasing all or any portion of such water rights as it may have with the same force and effect as would otherwise be permissible under applicable rules of law as exist from time to time.

C. Service Upon and Delivery to Parties of Various Papers.

Service of the Judgment on those parties who have executed that certain Stipulation and Agreement for Judgment or who have filed a notice of election to be bound by the Exchange Pool provisions shall be made by first class mail, postage prepaid, addressed to the designee and at the address designated for that purpose in the executed and filed Counterpart of the Stipulation and Agreement for Judgment or in the executed and filed "Notice of Election to be Bound by Exchange Pool Provisions," as the case may be, or in any substitute designation filed with the Court.

Each party who has not heretofore made such a designation shall, within 30 days after the Judgment shall have been served upon that party, file with the Court, with proof

of service of a copy upon the Watermaster, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon that party or delivered to that party are to be so served or delivered.

A later substitute designation filed and served in the same manner by any party shall be effective from the date of filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that party.

Delivery to or service upon any party by the Watermaster, by any other party, or by the Court, or any item required to be served upon or delivered to a party under or pursuant to the Judgment may be by deposit in the mail, first class, postage prepaid, addressed to the designee and at the address in the latest designation filed by that party.

D. Judgment Does Not Affect Rights, Powers, Etc., of Plaintiff District.

Nothing herein constitutes a determination or adjudication which shall foreclose Plaintiff District from exercising such rights, powers, privileges and prerogatives as it may now have or may hereafter have by reason of provisions of law.

E. Continuation of Order under Interim Agreement.

The order of Court made pursuant to the "Stipulation and Interim Agreement and Petition for Order" shall remain in effect through the Administrative Year in which this Judgment shall become final (subject to the reserved jurisdiction of the Court).

F. Effect of Extractions by Exchangees; Reductions in Extractions.

With regard to Exchange Pool purchases, the first extractions by each Exchangee shall be deemed the extractions of the quantities of water which that party is entitled to extract pursuant to his allocation from the Exchange Pool for that Administrative Year. Each Exchangee shall be deemed to have pumped his Exchange Pool request so allocated for and on behalf of each Exchangor in proportion to each Exchangor's subscription to the Exchange Pool which is utilized to meet Exchange Pool requests. No Exchangor shall ever be deemed to have relinquished or lost any of its rights determined in this

Judgment by reason of allocated subscriptions to the Exchange Pool. Each Exchangee shall be responsible as between Exchangors and that Exchangee, for any tax or assessment upon the production of groundwater levied for replenishment purposes by WRD or by any other governmental agency with respect to water extracted by such Exchangee by reason of Exchange Pool allocations and purchases. No Exchangor or Exchangee shall acquire any additional rights, with respect to any party to this action, to extract waters from Central Basin pursuant to Water Code Section 1005.1 by reason of the obligations pursuant to and the operation of the Exchange Pool.

G. Judgment Binding on Successors, Etc.

This Judgment and all provisions thereof are applicable to and binding upon not only the parties to this action, but as well to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys in fact of any such persons.

H. Costs.

No party shall recover its costs herein as against any other party.

I. Intervention of Successors in Interest and New Parties.

Any person who is not a party (including but not limited to successors or parties who are bound by this Judgment) and who proposes to produce water from the Basin, store water in the Basin, or exercise water rights of a predecessor may seek to become a party to this Judgment through a Stipulation in Intervention entered into with the Plaintiff. Plaintiff may execute said Stipulation on behalf of the other parties herein, but such Stipulation shall not preclude a party from opposing such intervention at the time of the court hearing thereon. Said Stipulation for Intervention must thereupon be filed with the Court, which will consider an order confirming said intervention following thirty (30) days' notice to the parties. Thereafter, if approved by the Court, such intervenor shall be a party bound by this Judgment and entitled to the rights and privileges accorded under the physical solution herein.

J. Effect of this Amended Judgment on Orders Filed Herein.

This Third Amended Judgment shall not abrogate such rights of additional carryover of unused water rights as may otherwise exist pursuant to orders herein filed June 2, 1977 and September 29, 1977.

THE CLERK WILL ENTER THIS THIRD AMENDED JUDGMENT FORTHWITH.

DATED: _____

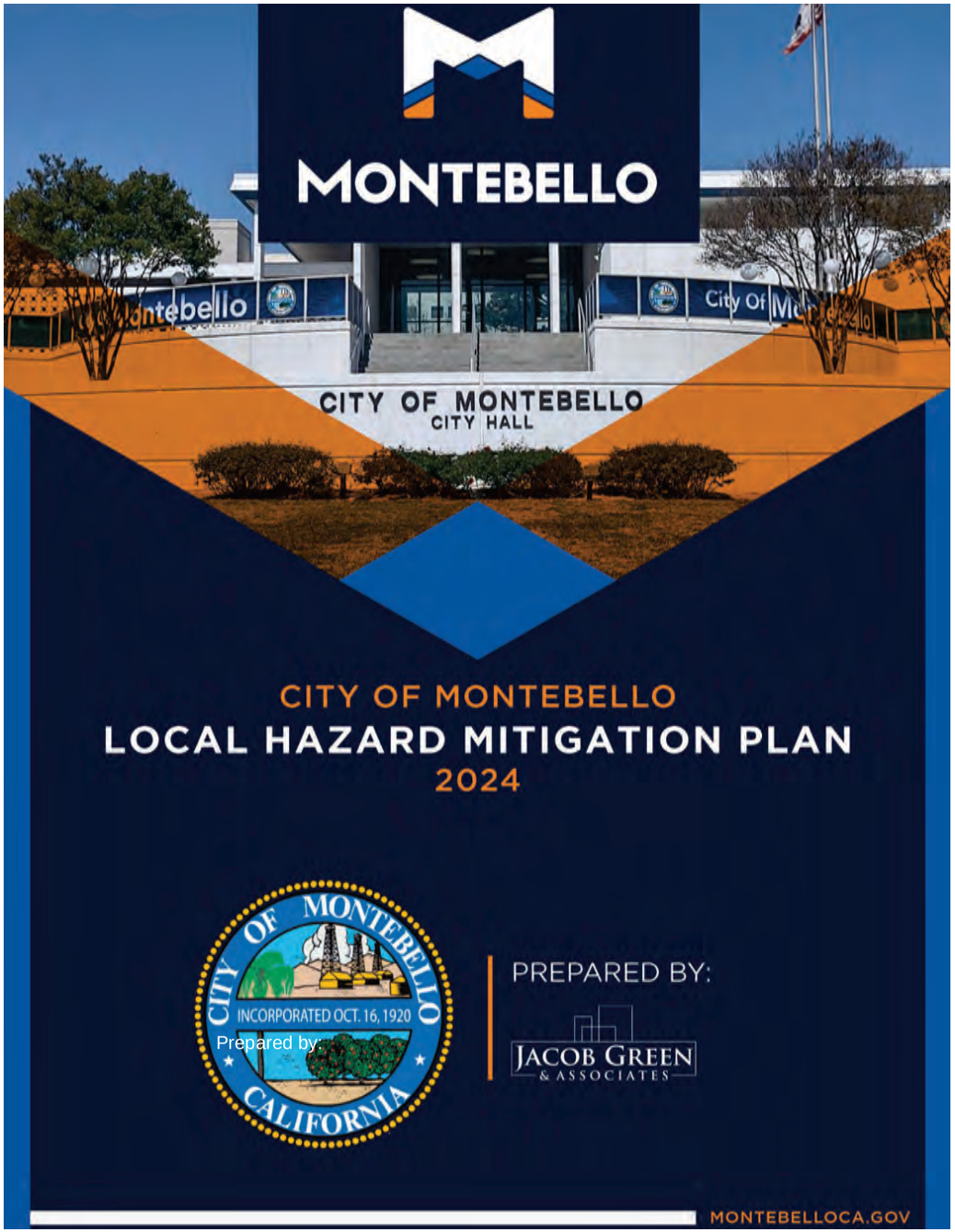
_____
Judge of the Superior Court

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX G

CITY OF MONTEBELLO LOCAL HAZARD MITIGATION PLAN



Prepared by:

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APPENDIX E: LHMP ADOPTION CITY COUNCIL MINUTES NOVEMBER 20, 2023 (RESOLUTION 2.O) ..... ERROR! BOOKMARK NOT DEFINED.

EXECUTIVE SUMMARY

This is the City of Montebello's Local Hazard Mitigation Plan (LHMP) update for 2024. Hazard mitigation plans are intended to serve as a guide for communities to reduce adverse impacts from natural and human-caused hazards. While not required under Federal law, preparation, adoption of an LHMP gives communities access to Federal Emergency Management Agency (FEMA) grant programs to help pay for mitigation actions specified in the LHMP.

FEMA requires that LHMPs be updated every five (5) years to remain active and eligible for funding projects. The City's last update was completed in XXXX. This present update of the LHMP has been thoroughly revised from earlier updates, with particular attention given to FEMA's recent guidance requiring a focus on climate impacts and equity.

The LHMP consists of the following sections:

- An overview of the purpose of hazard mitigation planning.
- A profile of Montebello, including its history, climate, demographics, infrastructure, and vulnerable communities.
- An examination of twelve hazards chosen in cooperation with the City:
    - Extreme Heat
    - Drought
    - Earthquake
    - High wind/storms
    - Fire
    - Power Outage
    - Cyberattack/IT outage
    - Flooding
    - Dam failure
    - Terrorism
    - Infectious disease/pandemic
- An assessment of Montebello's capabilities to mitigate these hazards.
- A list of potential mitigation actions to address these hazards, along with suggested strategies to prioritize mitigation efforts.
- A description of the planning process and how the LHMP will be maintained and updated in the future.

The update was submitted to California Governor's Office of Emergency Services (Cal OES) and the Federal Emergency Management Agency (FEMA) for plan approval on XXXXXXX. The Local Hazard Mitigation Plan was submitted to the Montebello City Council on XXXXXXX..

Copies of City Staff Reports to the Montebello City Council and City Council Resolutions are on file with the Montebello City Clerk's Office and available via the Montebello Community Safety Department.

PLANNING TEAM

Fire Department

Angelica Palmeros
Alfredo Estrada
Veronica Lara

Stakeholder Group

TO BE FILLED IN AFTER SECOND STAKEHOLDER MEETING

Jacob Green and Associates

Patrick Marchman, AICP, SCR, Project Manager

SECTION 1 – INTRODUCTION

Hazard Mitigation

The goal of hazard mitigation is to reduce the frequency and severity of disasters, minimize their impact on communities, and promote resilience and sustainability in the face of future emergencies. This can include measures such as building codes and standards, zoning regulations, evacuation plans, early warning systems, and disaster-resistant infrastructure. By taking a proactive approach to disaster risk reduction, we can help to save lives, reduce the economic impact of disasters, and ensure that communities are better prepared to respond to and recover from emergencies.

Hazard mitigation planning improves a community's ability to effectively respond to natural disasters by establishing plans for maintaining continuity of operations for both government and community entities. The process involves identifying attainable goals to reduce the risk of injury, loss of life, and property damage from hazardous events, and developing strategies and activities to mitigate their effects.

Hazard mitigation planning is intended to be a participatory process that involves government agencies, stakeholders, and the public. The planning process includes scheduled events that encourage participation and ensure that a comprehensive approach is taken to address current and future hazards. By incorporating a systematic and inclusive approach, the local hazard mitigation plan (LHMP) helps to reduce the community's vulnerability to disasters and promote resilience.

As the impacts of global climate change have become increasingly apparent, explicitly integrating climate concerns into hazard mitigation planning has become necessary to most fully understanding a jurisdiction's future risk and designing effective strategies to mitigate that risk. The most recent update of FEMA's local hazard mitigation planning guidance, effective as of April 2023, includes a deeper focus on climate impacts and adaptation.

Purpose and Authority

The City of Montebello's 2024 Local Hazard Mitigation Plan (LHMP) outlines the potential natural and human-caused hazards that pose a threat to the citizens, resources, and property in the City. The plan also outlines the city's objectives and commitment to reducing the risks associated with these hazards.

The focus of this LHMP is on the hazards that pose the greatest risk to the city, as determined through a comprehensive hazard risk assessment and input from local officials. Hazards of lesser concern may still be evaluated but may not be fully addressed in this plan update. The updated risk assessment will help the city prioritize and update mitigation actions based on the hazards that pose the greatest risk to lives and property.

The LHMP has been developed in compliance with current federal and state regulations governing local hazard mitigation plans and has been adopted in accordance with standard local procedures. The plan will be monitored regularly and revised as necessary to maintain compliance with the provisions, rules, and legislation outlined in Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, FEMA's Final Rule published in the Federal Register, the Flood Insurance Reform Act of 2004 and 2012, and the Homeowner Flood Insurance Affordability Act.

The U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act and emphasized the need for state and local governments to closely coordinate their mitigation planning activities. The development of a hazard mitigation plan is a specific eligibility requirement for any local government applying for federal mitigation grant funds. These funds include Building Resilient Infrastructure in Communities (BRIC), Hazard Mitigation Grant Program (HMGP) and Flood Mitigation Assistance (FMA), all administered by FEMA.

- Building Resilient Infrastructure in Communities (BRIC): The Building Resilient Infrastructure and Communities (BRIC) program prioritizes innovative projects that reduce risk and address climate change impacts, emphasizing the protection of critical infrastructure and public safety. Subapplicants must submit their proposals to their respective state, territory, or tribal government for review and submission to FEMA. Project requirements mandate that projects align with the goals of BRIC, focusing on hazard mitigation, resilience building, and addressing climate change impacts. Applicants and subapplicants must also have a FEMA-approved Hazard Mitigation Plan at the time of application and prior to receiving funding. The majority of BRIC funding is distributed through a national competition based on the merits of submitted projects, prioritizing innovative solutions, scalability, and significant risk reduction. BRIC funding typically requires a cost share from the applicant, with FEMA covering up to 75% of the project cost. The remaining 25% must be provided by the applicant, sourced from state, local, or tribal funds, or other non-federal sources.
- Hazard Mitigation Grant Program (HMGP): To qualify for post-disaster mitigation funds, local jurisdictions must have an approved mitigation plan from FEMA. HMGP provides funds to states, territories, Indian tribal governments, local governments, and eligible private non-profit organizations (such as hospitals and special needs populations) following a presidential disaster declaration.

- Flood Mitigation Assistance (FMA): A community must have an approved mitigation plan from FEMA to be eligible for FMA grants to implement flood mitigation, acquisition, or elevation of flood-prone homes. The community must also participate in the National Flood Insurance Program (NFIP) since one of the goals of FMA is to reduce or eliminate NFIP claims.
- Pre-Disaster Mitigation (PDM): PDM aids states, territories, Indian tribal governments, and local governments in implementing a sustained pre-disaster hazard mitigation program. To be eligible for PDM funding, communities must have an approved LHMP from FEMA. Although FEMA has discontinued the PDM program with the introduction of Building Resilient Infrastructure in Communities (BRIC), communities with projects currently funded by PDM through its most recent allocations must still be covered by a FEMA-approved LHMP.

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SECTION 2 – COMMUNITY PROFILE

This is an overview of the City of Montebello with information about the community's physical setting, history, economy and demographics, current and future land uses, and key infrastructure. The Community Profile establishes the baseline conditions that informs the development of hazard mitigation actions.

2.1 Setting and Location

The City of Montebello has a total land area of 8.25 square miles. The City of Montebello is located approximately 7 miles southeast of downtown Los Angeles and is bounded by the cities of Monterey Park and Rosemead on the north, the City of Commerce and unincorporated portions of Los Angeles County on the west, the Whittier Narrows Recreation area on the east, the City of Commerce on the southwest and the City of Pico Rivera on the southeast. With easy access to major highways like the I-5 and I-710, Montebello is well-connected to the broader metropolitan region.

Montebello's topography is a mix of flatlands and gently rolling hills. The northern part of Montebello features more pronounced hills and elevated areas, offering scenic views of the San Gabriel Mountains and the Greater Los Angeles basin. These hills are part of the Monterey Park Hills, which extend into neighboring cities. This hilly terrain includes residential neighborhoods with winding streets and hillside homes that take advantage of the picturesque vistas. The southern part of the city, in contrast, is relatively flatter, making it more suitable for commercial and industrial developments.

In addition to its hills and flatlands, Montebello is also home to the Rio Hondo River, which runs along its eastern boundary. The river and its accompanying greenbelt provide recreational opportunities and a natural habitat for local wildlife.

2.2 History

The land that would become the City of Montebello was originally named *Tovaangar*, inhabited by the Gabrielino-Tongva people. This area, characterized by flatlands and chaparral-studded hills, was a significant part of the indigenous world that stretched across what is now Southern California. The Gabrielino-Tongva were hunter-gatherers who lived in temporary villages near stable water sources.

The Spanish established Mission San Gabriel Arcangel in 1771 on what is now Montebello. However, the mission was soon moved due to a flood, leaving the original site as a historical landmark. During the Spanish and Mexican periods, the land that would become Montebello was part of several large ranchos. The most notable of these is Rancho La Merced, home to the still-standing Sanchez Adobe, the oldest structure in Montebello, which also played a role in the Mexican-American War during the Battle of Rio San Gabriel in 1847.

Following the Mexican-American War, much of the land around Montebello passed through several owners. In 1885, a group of Los Angeles businessmen, including Isaias Hellman and Harris Newmark, purchased large tracts of this land. By 1900, the Montebello Land and Water Company had been incorporated, and with the help of hydraulic engineer William Mulholland, a water system was constructed, making the area suitable for development.

The city was officially founded on October 16, 1920, by early settlers and developers who saw the potential for a thriving community. Initially named Newmark, the town was soon renamed Montebello, meaning "beautiful mountain" in Italian, reflecting the area's picturesque hills and landscapes. Originally an agricultural community, Montebello had an ideal climate, productive soil, and an abundance of water for farming. From the turn of the century continuing through the 1920's, the area was well known for its production of flowers, vegetables, berries, and fruits.

The discovery of oil by Standard Oil Company on the Anita Baldwin property in 1917, brought about a new era for the City. By 1920, Montebello Oil Fields accounted for one-eighth of total California crude oil production. On October 19, 1920, Montebello was incorporated as the 35th of the present cities in Los Angeles County. Since that time the Montebello Oil Fields continues to be in use in varying degrees based on location. Also, Montebello Gas Storage Facility (operated by Southern California Gas Company) is actively producing and processing natural gas. According to Southern California Gas Company in 2016, the site includes a total of 46 active wells producing 1 million cubic feet of natural gas from residual supplies and 100 barrels of oil every day.

The advent of the automobile and the construction of major roads, including Whittier Boulevard and Beverly Boulevard, shaped Montebello's development in the 1920s. The area also became an industrial hub, with the establishment of the Simons Brick Company and other factories, which created demand for housing and spurred further residential development. By the mid-20th century, the city's landscape was transformed by suburbanization, with the construction of new residential subdivisions and public institutions, such as a new civic center.

In recent decades, Montebello has focused on redevelopment, particularly in the Montebello Hills, where new residential and commercial developments have been planned and constructed. The city's population has become increasingly diverse, with a significant majority identifying as Hispanic or Latino, alongside a notable Armenian American community.

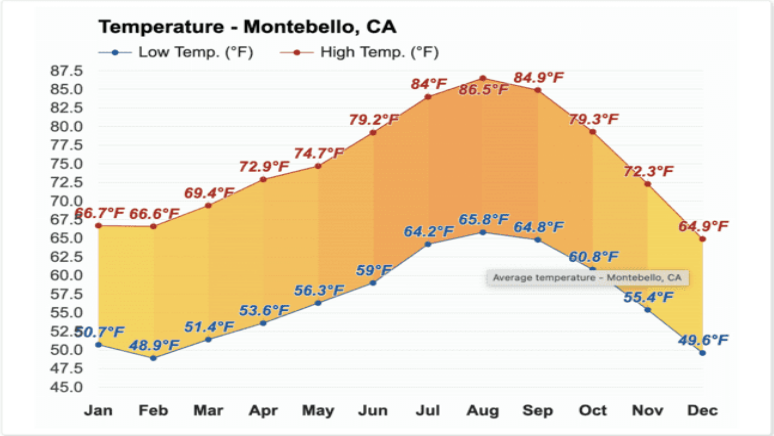
Today, Montebello is a vibrant city with a diverse economy that has evolved from its historical roots in oil production to a more varied economic base. The city's economy is now driven by retail, manufacturing, healthcare, and education sectors. The Montebello Town Center, a major shopping mall, serves as a significant retail destination in the area. Additionally, the city is home to several healthcare facilities, including the Beverly Hospital, which provides essential medical services to the community.

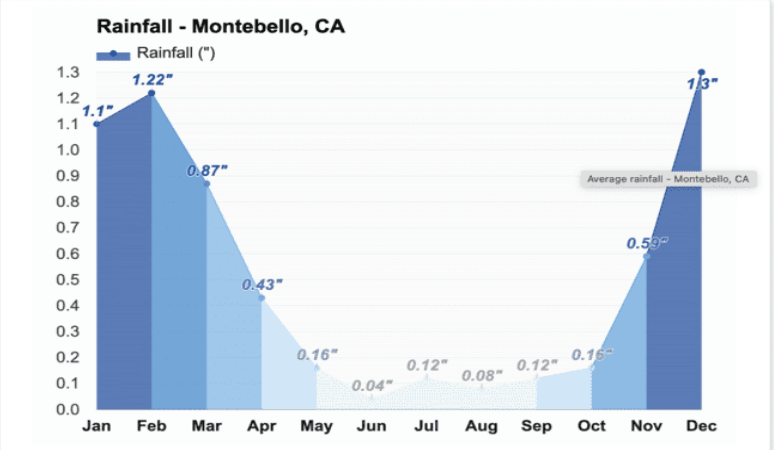
2.3 Climate

The City of Montebello is located 15 miles inland from the Pacific Ocean. Montebello experiences a Mediterranean climate characterized by mild, wet winters and hot, dry summers. The city's climate is classified as Csa according to the Köppen climate classification system. Average high temperatures in Montebello range from around 68°F (20°C) in January to approximately 89°F (32°C) in August. During the summer months, temperatures can occasionally soar above 100°F (38°C), particularly during heatwaves. Winters are generally mild, with average low temperatures fluctuating between 46°F (8°C) in January to 63°F (17°C) in July.

Annual precipitation in Montebello averages about 15 inches (380 mm), with the majority of rainfall occurring between November and March. December, January, and February are typically the wettest months, with each month receiving approximately 3 inches (76 mm) of rain. In contrast, the summer months are exceptionally dry, often experiencing little to no rainfall. Montebello enjoys approximately 284 sunny days per year, significantly higher than the national average of 205 sunny days, contributing to its warm and inviting climate.

Marine layer clouds are common early in the day, and the City's proximity to the Pacific Ocean helps moderate temperatures and provides a cooling effect, particularly in the evenings. The coastal influence means that while daytime temperatures can be quite high during summer, the evenings are usually cooler and more comfortable. The region rarely experiences extreme weather events such as heavy snowfall or severe storms.





Source:: https://www.weather-us.com/en/california-usa/montebello-climate (retrieved August 2024)

2.4 Climate Change

Like much of Southern California, the Los Angeles area, including Montebello, is projected to experience rising temperatures due to climate change. The National Climate Assessment notes that by the mid-century, the average annual temperature in California is expected to increase by 5-8°F (2.8-4.4°C) compared to the historical average. The city's average summer temperatures, which currently peak around 89°F (32°C), will increase, leading to a higher incidence of days exceeding 100°F (38°C). These extreme heat events pose health risks, particularly for vulnerable populations such as the elderly, children, and those with preexisting health conditions. Increased heat can also exacerbate the urban heat island effect, making the city even hotter and increasing energy demand for cooling.A sustained power outage during an extreme heat event could be life-threatening.

The IPCC reports suggest that climate change could bring changes in precipitation patterns to the region. Although the city currently receives about 15 inches (380 mm) of rain annually, climate models predict more variability in rainfall, with an increased likelihood of both severe droughts and intense rainfall events. Prolonged drought conditions could strain water resources, impacting agriculture, landscaping, and everyday water use. Conversely, when heavy rainfall occurs, it can lead to flooding, particularly in low-lying areas and regions near the Rio Hondo River. Flooding can damage homes, infrastructure, and disrupt transportation systems, necessitating costly repairs and mitigation efforts.

Higher temperatures can lead to increased ground-level ozone formation, exacerbating smog and worsening respiratory conditions such as asthma and bronchitis. Additionally, the frequency and intensity of wildfires in California are projected to rise, increasing the likelihood of smoke and particulate matter impacting air quality in Montebello, even if the fires occur at a distance.

Reduced snowpack in the nearby Sierra Nevada mountains, combined with increased evaporation rates, can impact the availability of water supply, as California relies on snowmelt for its water sources. Water scarcity can affect the local economy, particularly sectors that rely heavily on water, such as agriculture and landscaping.

Changes in temperature and precipitation can alter local ecosystems, affecting plant and animal species. Urban green spaces and natural habitats may experience shifts in vegetation types, with some native species struggling to survive while invasive species become more prevalent. This can reduce biodiversity and disrupt the balance of local ecosystems.

The increased need for energy during heatwaves can drive up utility costs for residents and businesses. The costs associated with climate adaptation and mitigation measures, such as

upgrading infrastructure to withstand extreme weather or implementing water conservation programs, can strain municipal budgets.

2.5 Demographics

Montebello experienced steady population growth in its earlier days and a boom after the end of World War II. Population growth continued into the 1980's though the rate of growth slowed in the decade following 2000 due to demographic trends and limited new housing development. The average annual growth rate from 2000 to 2023 was minimal, around 0.17% per year, with more years of decline than growth, particularly following the COVID-19 pandemic. Between 2020 and 2023, Montebello's population decreased by about 2,418 people, a significant drop of 3.87% during this period.

As of 2024, the city's population is estimated to be around 59,209, representing a decrease of approximately 5.16% since the 2020 census when the population was recorded at 62,433. This decline is part of a broader trend over the last decade, with the population peaking in 2015 at 63,641 before gradually decreasing.

Population and Racial/Ethnic Composition

Population Data	Estimate
Total population (estimate as of July 1, 2024)	59,209
SEX	
Male	48.74%
Female	51.26%
AGE	
Under 18 years	21.72%
65 years and over	16.31%
RACE AND HISPANIC ORIGIN	
Two or more races	10.41%
One race	89.59%
Caucasian	31.03%
Black or African American	0.88%
American Indian and Alaska Native	2.65%
Asian	13.64%
Native Hawaiian and Other Pacific Islander	0.07%
Hispanic or Latino (of any race)	84.36%

Education

Label	Estimate
High school graduate or higher; percentage of persons age 25+	82.7%
Bachelor's degree or higher; percentage of persons age 25+	21.5%

Income

According to data from the U.S. Census Bureau and the latest available statistics, the estimated median household income in Montebello, CA, as of 2024 is $72,317. The per capita income in Montebello as of 2024 is estimated to be $26,320.

2.6 Housing and Development

Montebello has a housing history that spans over a century. The city was incorporated in 1920, and its early housing stock primarily consisted of single-family homes built in the popular Craftsman and California Bungalow styles of the 1920s and 1930s. Following World War II, Montebello experienced a significant housing boom. By 1960, the population had grown to 32,097, spurring rapid expansion of the housing stock, with many ranch-style homes being constructed throughout the 1950s and 1960s.

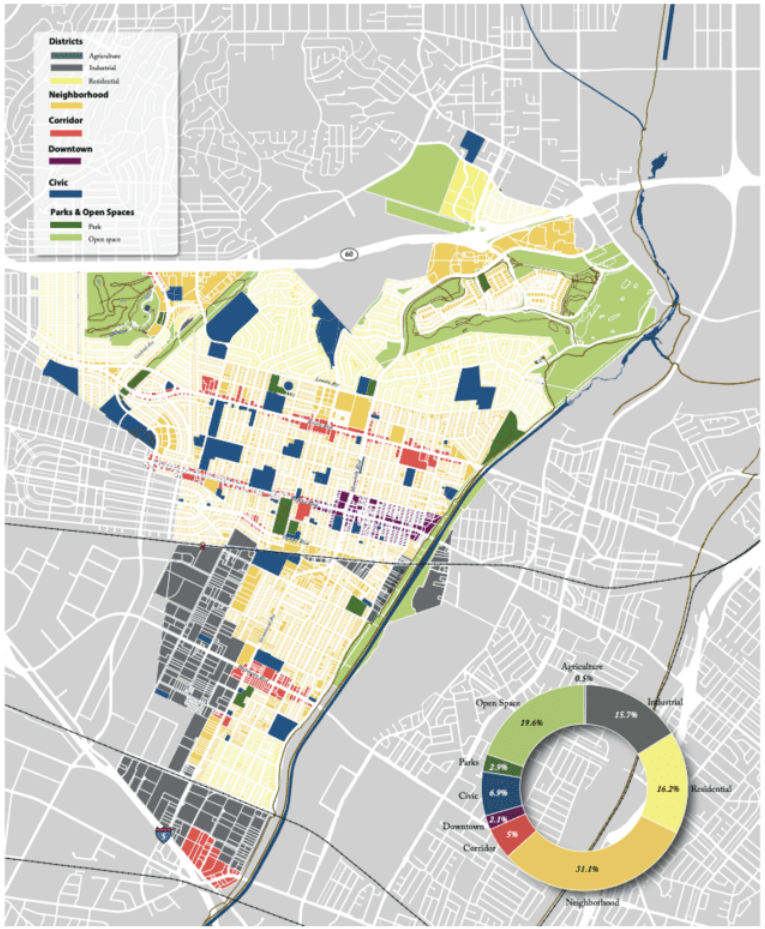
The late 20th century saw a diversification of Montebello's housing types. More multi-family units were built in the 1970s and 1980s to accommodate the growing population. According to the 1990 census, Montebello had 19,000 housing units, with a median home value of $195,800. By 2000, the number of housing units had increased to 19,800. The 2000 census also reported that 60.0% of housing units were owner-occupied, while 40.0% were renter-occupied.

As of the 2020 census, Montebello's housing stock had grown modestly to approximately 20,100 units. The city's housing mix includes single-family homes, townhouses, condominiums, and apartment complexes. Like much of the Los Angeles area, Montebello has experienced significant home value appreciation over the past decades. As of early 2024, the median home value in Montebello was estimated to be around $710,000. However, this figure can fluctuate based on market conditions.

The rental market in Montebello remains strong. As of 2024, the average rent for a one-bedroom apartment was $1,879 per month, varying based on location and amenities. The city's proximity to downtown Los Angeles, about 8 miles east, makes it attractive to commuters, contributing to high demand and low inventory in recent years. Approximately 46.1% of housing units were owner-occupied, while 53.9% were renter-occupied, showing a continued shift towards renting compared to the 2000 census figures.

As of the latest U.S. Census Bureau data (2023):

- Owner-occupied housing rate: 46.1%
- Median value of owner-occupied housing units: $710,000
- Median selected monthly owner costs with a mortgage: $2,855
- Median gross rent: $1,879
- Number of households: 19,241
- Persons per household: 3.2



Source: 2024-2040 Montebello General Plan

2.7 Economy

Montebello, California, boasts a diverse and dynamic economy that has evolved significantly from its early roots in agriculture and oil production. Montebello's economy is now driven by various sectors, including retail, manufacturing, healthcare, education, and energy.

Retail

The Montebello Town Center, a major regional shopping mall, serves as a significant retail hub, attracting visitors from throughout the area. This retail center includes a variety of stores, restaurants, and entertainment options, contributing to local employment and economic activity. Additionally, the city features numerous small businesses, restaurants, and service-oriented establishments that cater to the needs of residents and visitors alike. The retail sector not only provides jobs but also generates substantial sales tax revenue, which supports municipal services and infrastructure.

Manufacturing and Industrial

The city hosts several manufacturing companies that produce a wide range of goods, from consumer products to industrial components. These businesses benefit from Montebello's strategic location near major transportation routes, including highways and railroads, which facilitate the efficient movement of goods.

Healthcare

The city is home to several healthcare facilities, including Beverly Hospital, a key provider of medical services in the region. Beverly Hospital offers a range of healthcare services, from emergency care to specialized treatments, and employs a significant number of healthcare professionals. In addition to Beverly Hospital, Montebello has various clinics, medical offices, and senior care facilities that collectively support the health and well-being of the community while contributing to the local economy.

Education

The Montebello Unified School District (MUSD) is the largest employer in the City, with multiple schools providing jobs for administrators, teachers, and custodians, as well jobs located at the central administration offices. MUSD operates numerous elementary, middle, and high schools, providing education to thousands of students. The district also offers adult education programs, vocational training, and special education services.

Energy

The Montebello Oil Fields, discovered in 1917, were once a major source of crude oil production in California. While oil production has decreased over the years, the Montebello Gas Storage Facility, operated by the Southern California Gas Company, remains an active site. This facility includes 46 active wells producing 1 million cubic feet of natural gas and 100 barrels of oil daily as of 2016.

City of Montebello Industry
(Source: American Community Survey - 2024)

Industry	2024	
	Number	Percent %
Agriculture, forestry, fishing and hunting, and mining	98	0.40%
Construction	1,457	5.70%
Manufacturing	2,830	11.00%
Wholesale Trade	1,350	5.20%
Retail Trade	2,940	11.40%
Transportation and Warehousing, and Utilities	1,900	7.40%
Information	590	2.30%
Finance and insurance, and real estate and rental and leasing	1,600	6.20%
Professional, scientific, and management, and administrative and waste management services	2,520	9.80%
Educational services, and health care and social assistance	5,690	22.00%
Arts, entertainment, and recreation, and accommodation and food services	2,340	9.10%
Other services, except public administration	1,740	6.70%
Public administration	1,320	5.10%

Table: City of Montebello Occupation
(Source: American Community Survey - 2014)

Occupation	2014	
	Number	Percent
Civilian employed population (16 years and over)	27,040	100.00%
Management, business, science, and arts occupations	7,950	29.40%
Service occupations	4,580	16.90%
Sales and office occupations	7,460	27.60%
Natural resources, construction, and maintenance occupations	2,100	7.80%
Production, transportation, and material moving	4,950	18.30%

2.8 Infrastructure

Electricity and Natural Gas: Montebello's electricity infrastructure is a critical component of its urban framework, ensuring reliable power supply to its approximately 63,000 residents and numerous businesses. The city's electricity needs are primarily served by Southern California Edison (SCE), which is one of the largest electric utilities in the United States. SCE's extensive service area covers a large portion of Southern California, including Montebello, and serves millions of customers. The local electricity distribution network consists of several substations, transformers, and distribution lines that convert high-voltage electricity from transmission lines into lower voltages suitable for residential and commercial use.

The natural gas infrastructure in Montebello is managed by Southern California Gas Company (SoCalGas), the largest natural gas distribution utility in the United States. SoCalGas provides natural gas services to Montebello and a vast area of Southern California, serving millions of residential, commercial, and industrial customers. The natural gas infrastructure in Montebello includes an extensive network of high-pressure transmission pipelines and lower-pressure distribution pipelines that transport natural gas from processing facilities to end users. A significant component of this infrastructure is the Montebello Gas Storage Facility, operated by SoCalGas. As of 2016, this facility includes 46 active wells that have produced up to 1 million cubic feet of natural gas and 100 barrels of oil per day.

Water Infrastructure: According to the City of Montebello General Plan, water service for the City is provided by five service providers in five different districts: California Water Service

Company, Central Basin/Metropolitan Water District (MWD), Montebello Land and Water, San Gabriel Valley Water Company, and the South Montebello Irrigation District

The primary sources of water for Montebello are groundwater and imported water. Groundwater is drawn from the Central Basin and the San Gabriel Basin, which are significant aquifers in the region. These basins are managed to ensure sustainable water extraction and maintain water quality. The city operates several wells that extract groundwater, which is then treated to meet state and federal water quality standards. In addition to groundwater, Montebello imports water from the Metropolitan Water District of Southern California (MWD), which sources water from the Colorado River and the State Water Project. This imported water supplements the local supply, particularly during dry periods or when groundwater levels are low.

Montebello's water distribution system comprises over 100 miles of pipelines, ensuring that water reaches every corner of the city. The system includes multiple reservoirs with a combined storage capacity of millions of gallons, providing a buffer to meet peak demand and emergency needs. For example, the city has several storage tanks and reservoirs, such as the Montebello Hills Reservoir, which has a capacity of approximately 5 million gallons. These storage facilities are strategically located to maintain consistent water pressure and supply throughout the city.

Wastewater Infrastructure: The wastewater system is managed by the Sanitation Districts of Los Angeles County, specifically the Los Angeles County Sanitation District No. 2, which oversees wastewater collection and treatment for Montebello and the surrounding areas.

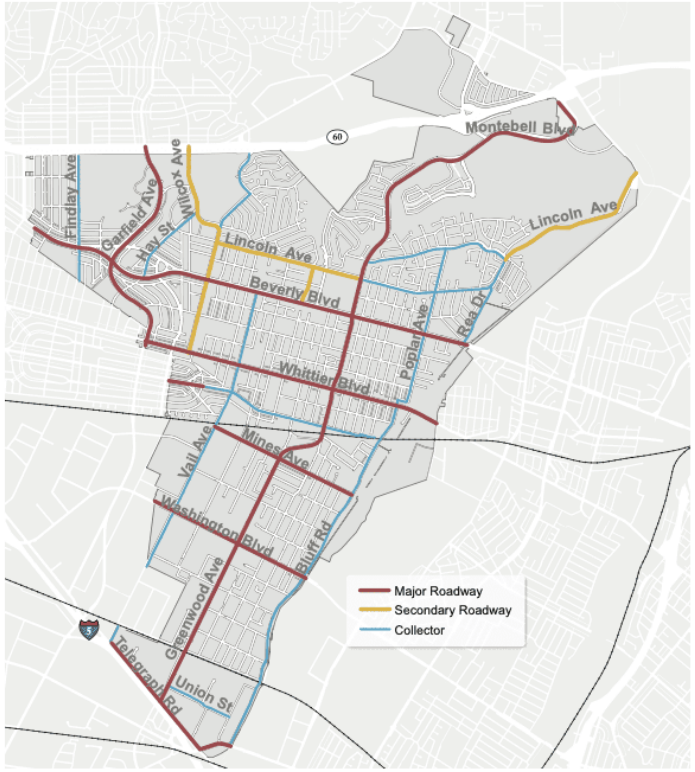
The city's wastewater collection system includes an extensive network of over 100 miles of sewer pipelines, ranging in diameter to accommodate varying volumes of wastewater. These pipelines transport wastewater from residential, commercial, and industrial sources to regional treatment facilities. The system also includes several pumping stations that help move wastewater through the system, particularly in areas where gravity flow is insufficient.

Wastewater from Montebello is primarily treated at the Joint Water Pollution Control Plant (JWPCP) in Carson, one of the largest wastewater treatment plants in the world. This facility, operated by the Sanitation Districts of Los Angeles County, treats an average of 330 million gallons of wastewater per day. The treatment process at JWPCP involves several stages, including primary, secondary, and tertiary treatment, to remove solids, organic matter, and other contaminants. Advanced treatment processes, such as biological nutrient removal and disinfection, ensure that the treated effluent meets stringent regulatory standards before being discharged into the Pacific Ocean or reused for various purposes.

In addition to centralized treatment at JWPCP, Montebello's wastewater infrastructure includes local initiatives to manage stormwater and reduce inflow and infiltration (I&I) into the sewer system. I&I can significantly impact the capacity and efficiency of the wastewater system, particularly during heavy rain events. The city implements regular maintenance programs, such as sewer line cleaning, inspections, and repairs, to minimize I&I and ensure the system operates effectively.

Montebello is also involved in regional efforts to promote water recycling and reuse. The Sanitation Districts of Los Angeles County operate several water reclamation plants that treat wastewater to a high standard, making it suitable for non-potable uses such as landscape irrigation, industrial processes, and groundwater recharge.

Road and Highway Network



Source: 2024-2040 Montebello General Plan

Montebello's road network includes a mix of local streets, arterial roads, and major highways. Key thoroughfares such as Beverly Boulevard, Whittier Boulevard, and Montebello Boulevard are critical for local traffic, providing direct routes to commercial, residential, and industrial areas. The city is bounded by the Santa Ana Freeway (Highway 5) on the south and the Pomona Freeway (605 Freeway) on the east. These freeways are major north-south transportation routes. The city is also served by the Pomona Freeway (State Route 60) and the San Gabriel River Freeway (Interstate 605), which runs east-west through the southern part of Montebello, while the San Gabriel River Freeway provides north-south access, linking the city to other parts of Los Angeles County and beyond.

Public Transit

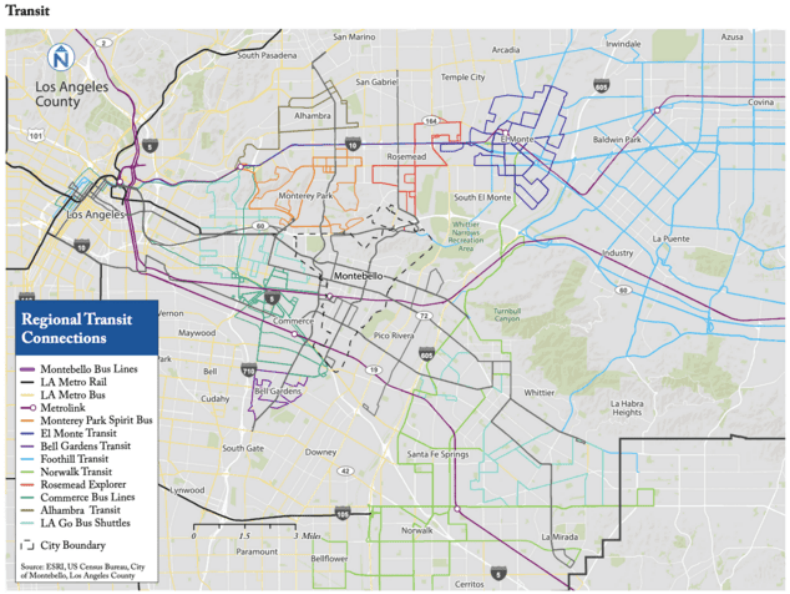


Figure A.9. Montebello Bus Lines and Connecting Transit Providers. Source Nelson\Nygaard.

Source: 2024-2040 Montebello General Plan

Public transportation in Montebello is primarily provided by Montebello Bus Lines (MBL), the third-largest municipal bus system in Los Angeles County. MBL operates a fleet of over 66 buses that serve 8 local and express routes, covering approximately 1.2 million miles annually and providing over 8 million passenger trips each year. Key routes include the Line 10 and Line 20, which offer direct connections to downtown Los Angeles and neighboring cities.

Additionally, Montebello is served by the Los Angeles County Metropolitan Transportation Authority (Metro), which provides bus and rail services that connect the city to the wider Los Angeles metropolitan area. The Metro Gold Line, with a station in nearby East Los Angeles, offers light rail service to downtown Los Angeles and Pasadena.

Pedestrian and Bicycle Infrastructure

The city has implemented several initiatives to enhance walkability and bikeability, including the construction of dedicated bike lanes, improved sidewalks, and pedestrian crossings. The Montebello Boulevard Bikeway and the Rio Hondo Bike Path are notable examples, providing safe and convenient routes for cyclists.

Rail and Freight Transportation

Montebello is also a key hub for freight transportation, with several rail lines operated by Union Pacific Railroad and BNSF Railway passing through the city. These rail lines are crucial for the movement of goods, connecting Montebello to major industrial and distribution centers across the region. South Montebello is home to 10 major trucking company terminals.

2.9 Historically Vulnerable Populations

Low-Income Residents (Major Hazards: Extreme Heat, Drought, Earthquake, High Wind/Storms)

Low-income residents in Montebello are particularly vulnerable to disasters due to limited financial resources, which restrict their ability to prepare for, respond to, and recover from emergencies. Approximately 15% of Montebello's population lives below the poverty line, which is higher than the national average. These residents often reside in older housing stock that may not meet current building codes for disaster resilience, making their homes more susceptible to damage from earthquakes, floods, and other hazards. Additionally, low-income families may lack access to insurance, savings, and other financial resources necessary for recovery, prolonging their displacement and hardship following a disaster.

Elderly Individuals (Major Hazards, Earthquake, Power Outages, Infectious Disease/Pandemic)

Elderly individuals in Montebello, who make up about 13.6% of the city's population, face unique challenges in disaster situations. Older adults are particularly vulnerable to the health impacts of natural disasters due to factors such as existing health conditions (heart disease, diabetes, dementia), reliance on caregivers, decreased physical mobility, and dependence on

medications and medical equipment. These conditions can complicate their ability to respond to emergencies, making them more susceptible to injury, illness, and even death during extreme weather events. Additionally, climate change can exacerbate air quality issues, increase exposure to heatwaves, and lead to the spread of infectious diseases, all of which pose significant risks to older populations .

Economically, the increase in frequency and severity of extreme weather events results in higher living costs, especially for insurance, potentially leaving many older adults uninsured or financially strained. Housing challenges also arise as the aging infrastructure may not be resilient to the effects of climate change, and many older adults live in areas more susceptible to these events. Social isolation, which is more common in older age, further increases risk during disasters .

People with Disabilities (Major Hazards: Earthquake, Power Outages)

People with disabilities represent another vulnerable group in Montebello. Disabilities can affect mobility, communication, and the ability to perform daily activities, all of which are critical during emergencies. Approximately 10.3% of Montebello's population has a disability. These individuals may require special accommodations, such as accessible transportation and communication aids, to receive emergency notifications and evacuate safely. Emergency shelters and response plans must be inclusive to address the needs of individuals with physical, sensory, and cognitive disabilities, ensuring they receive adequate care and support during disasters.

Minority Communities (Major Hazards: Earthquake, Fire, Power Outage)

Montebello is a diverse city, with Hispanic or Latino residents comprising over 75% of the population. Minority communities often face systemic barriers that increase their vulnerability to disasters, including language barriers, lower income levels, and limited access to healthcare and social services. Language barriers can hinder the ability to receive and understand emergency communications, while economic disadvantages limit their capacity to prepare for and recover from disasters. Minority communities may also experience discrimination and social inequities that exacerbate the impacts of disasters.

Unhoused (Major Hazards: Extreme Heat, Drought, Fire, High Wind/Storms, Infectious Disease/Pandemic):

As of the latest data, Los Angeles County, which includes Montebello, has one of the highest numbers of unhoused individuals in the United States, with estimates suggesting that there are over 66,000 people experiencing homelessness countywide. While specific numbers for Montebello are not always readily available, the city, like many in the region, faces challenges related to homelessness.

Unhoused populations are uniquely vulnerable to many of the natural hazards mentioned in this Plan, most notably extreme heat and wildfire. The unhoused population in Montebello faces severe impacts from natural disasters due to their continuous exposure to the elements, limited access to information, and inadequate shelter. Extreme weather conditions, such as heatwaves and heavy rains, pose significant health risks, including heat exhaustion and the spread of diseases. These individuals often lack basic emergency supplies and access to healthcare, exacerbating their vulnerability during emergencies. Communication barriers mean many are not promptly informed about impending disasters, while evacuation challenges arise from the lack of personal transportation and resources.

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SECTION 3 – HAZARD IDENTIFICATION AND RISK ASSESSMENT

Element B: Risk Assessment Requirements

B1. Does the plan include a description of the type, location and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))

This section discusses the types of hazards that might reasonably impact the City of Montebello. It describes how they are measured, a history of these hazards and the future risk they pose. This chapter also discusses how hazards in the plan were selected and prioritized.

3.1 Historic Disaster Declarations

Since 1969, Los Angeles County has received 81 total Federal disaster declarations. The following data comes from FEMA's Disaster Declarations for States and Counties (https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties)

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Flood	Los Angeles County	DR-253-CA	1969	January	1/26/1969	SEVERE STORMS & FLOODING	CA
Fire	Los Angeles County	DR-295-CA	1970	September	9/29/1970	FOREST & BRUSH FIRES	CA
Other	Los Angeles County	DR-299-CA	1971	February	2/9/1971	SAN FERNANDO EARTHQUAKE	CA
Flood	Los Angeles County	DR-547-CA	1978	February	2/15/1978	COASTAL STORMS, MUDSLIDES & FLOODING	CA
Fire	Los Angeles County	EM-3067-CA	1978	October	10/29/1978	BRUSH FIRES	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Flood	Los Angeles County	DR-615-CA	1980	February	2/21/1980	SEVERE STORMS, MUDSLIDES & FLOODING	CA
Fire	Los Angeles County	DR-635-CA	1980	November	11/27/1980	BRUSH & TIMBER FIRES	CA
Tropical Storm	Los Angeles County	DR-677-CA	1983	February	2/9/1983	COASTAL STORMS, FLOODS, SLIDES & TORNADOES	CA
Other	Los Angeles County	DR-799-CA	1987	October	10/7/1987	EARTHQUAKE & AFTERSHOCKS	CA
Flood	Los Angeles County	DR-812-CA	1988	February	2/5/1988	SEVERE STORMS, HIGH TIDES & FLOODING	CA
Fire	Los Angeles County	DR-872-CA	1990	June	6/30/1990	FIRES	CA
Freezing Temperature	Los Angeles County	DR-894-CA	1991	February	2/11/1991	SEVERE FREEZE	CA
Flood	Los Angeles County	DR-935-CA	1992	February	2/25/1992	RAIN/SNOW/WIND STORMS, FLOODING, MUDSLIDES	CA
Fire	Los Angeles County	DR-942-CA	1992	May	5/2/1992	FIRE DURING A PERIOD OF CIVIL UNREST	CA
Flood	Los Angeles County	DR-979-CA	1993	February	2/3/1993	SEVERE WINTER STORM, MUD & LAND SLIDES, & FLOODING	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	DR-1005-CA	1993	October	10/28/1993	FIRES, MUD/LANDSLIDES, FLOODING, SOIL EROSION	CA
Other	Los Angeles County	DR-1008-CA	1994	January	1/17/1994	NORTHRIDGE EARTHQUAKE	CA
Severe Storm	Los Angeles County	DR-1046-CA	1995	March	3/12/1995	SEVERE WINTER STORMS, FLOODING LANDSLIDES, MUD FLOW	CA
Severe Storm	Los Angeles County	DR-1044-CA	1995	January	1/10/1995	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, MUD FLOWS	CA
Fire	Los Angeles County	EM-3120-CA	1996	October	10/23/1996	SEVERE FIRESTORMS	CA
Severe Storm	Los Angeles County	DR-1203-CA	1998	February	2/9/1998	SEVERE WINTER STORMS AND FLOODING	CA
Fire	Los Angeles County	FM-2417-CA	2002	June	6/6/2002	CA - COPPER FIRE - 06-06-2002	CA
Fire	Los Angeles County	FM-2464-CA	2002	September	9/24/2002	WILLIAMS FIRE	CA
Fire	Los Angeles County	FM-2462-CA	2002	September	9/4/2002	LEONA FIRE	CA
Fire	Los Angeles County	DR-1498-CA	2003	October	10/27/2003	WILDFIRES, FLOODING, MUDFLOW AND DEBRIS FLOW DIRECTLY RELATED T	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	FM-2502-CA	2003	October	10/25/2003	CA-VERDALE FIRE 10-25-2003	CA
Fire	Los Angeles County	FM-2466-CA	2003	January	1/7/2003	CA - WILDFIRE (PACIFIC FIRE) - 01-06-2003	CA
Fire	Los Angeles County	FM-2534-CA	2004	July	7/18/2004	CA-FOOTHILL WILDFIRE-07-18-2004	CA
Fire	Los Angeles County	FM-2535-CA	2004	July	7/21/2004	CA-CROWN WILDFIRE-07-21-2004	CA
Fire	Los Angeles County	FM-2528-CA	2004	July	7/14/2004	CA - PINE FIRE - 7-13-2004	CA
Fire	Los Angeles County	FM-2583-CA	2005	September	9/28/2005	TOPANGA FIRE	CA
Tropical Storm	Los Angeles County	EM-3248-CA	2005	September	9/13/2005	HURRICANE KATRINA EVACUATION	CA
Severe Storm	Los Angeles County	DR-1577-CA	2005	February	2/4/2005	SEVERE STORMS, FLOODING, DEBRIS FLOWS, AND MUDSLIDES	CA
Severe Storm	Los Angeles County	DR-1585-CA	2005	April	4/14/2005	SEVERE STORMS, FLOODING, LANDSLIDES, AND MUD AND DEBRIS FLOWS	CA
Fire	Los Angeles County	DR-1731-CA	2007	October	10/24/2007	WILDFIRES, FLOODING, MUD FLOWS, AND DEBRIS FLOWS	CA
Fire	Los Angeles County	FM-2736-CA	2007	October	10/22/2007	RANCH FIRE	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	FM-2732-CA	2007	October	10/21/2007	CANYON FIRE	CA
Fire	Los Angeles County	FM-2733-CA	2007	October	10/21/2007	BUCKWEED FIRE	CA
Fire	Los Angeles County	FM-2708-CA	2007	July	7/8/2007	CANYON FIRE	CA
Fire	Los Angeles County	FM-2694-CA	2007	May	5/10/2007	ISLAND FIRE	CA
Fire	Los Angeles County	FM-2691-CA	2007	May	5/9/2007	GRIFFITH PARK FIRE	CA
Fire	Los Angeles County	EM-3279-CA	2007	October	10/23/2007	WILDFIRES	CA
Freezing Temperature	Los Angeles County	DR-1689-CA	2007	March	3/13/2007	SEVERE FREEZE	CA
Fire	Los Angeles County	DR-1810-CA	2008	November	11/18/2008	WILDFIRES	CA
Fire	Los Angeles County	FM-2788-CA	2008	October	10/12/2008	MAREK FIRE	CA
Fire	Los Angeles County	FM-2792-CA	2008	November	11/15/2008	FREEWAY FIRE COMPLEX	CA
Fire	Los Angeles County	FM-2789-CA	2008	October	10/13/2008	SESNON FIRE	CA
Fire	Los Angeles County	FM-2791-CA	2008	November	11/15/2008	SAYRE FIRE	CA
Fire	Los Angeles County	FM-2763-CA	2008	April	4/27/2008	SANTA ANITA FIRE	CA
Fire	Los Angeles County	FM-2828-CA	2009	August	8/28/2009	PV FIRE	CA
Fire	Los Angeles County	FM-2830-CA	2009	August	8/28/2009	STATION FIRE	CA
Fire	Los Angeles County	FM-2851-CA	2010	July	7/30/2010	CROWN FIRE	CA
Severe Storm	Los Angeles County	DR-1884-CA	2010	March	3/8/2010	SEVERE WINTER STORMS, FLOODING, AND DEBRIS AND MUD FLOWS	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	FM-5025-CA	2013	June	6/2/2013	POWERHOUSE FIRE	CA
Fire	Los Angeles County	FM-5051-CA	2014	January	1/16/2014	COLBY FIRE	CA
Fire	Los Angeles County	FM-5124-CA	2016	June	6/5/2016	OLD FIRE	CA
Fire	Los Angeles County	FM-5129-CA	2016	June	6/21/2016	FISH FIRE	CA
Fire	Los Angeles County	FM-5132-CA	2016	July	7/9/2016	SAGE FIRE	CA
Fire	Los Angeles County	FM-5135-CA	2016	July	7/23/2016	SAND FIRE	CA
Flood	Los Angeles County	DR-4305-CA	2017	March	3/16/2017	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	CA
Fire	Los Angeles County	EM-3396-CA	2017	December	12/8/2017	WILDFIRES	CA
Fire	Los Angeles County	FM-5201-CA	2017	September	9/2/2017	LA TUNA FIRE	CA
Fire	Los Angeles County	FM-5225-CA	2017	December	12/5/2017	CREEK FIRE	CA
Fire	Los Angeles County	FM-5226-CA	2017	December	12/5/2017	RYE FIRE	CA
Fire	Los Angeles County	FM-5227-CA	2017	December	12/6/2017	SKIRBALL FIRE	CA
Fire	Los Angeles County	DR-4407-CA	2018	November	11/12/2018	WILDFIRES	CA
Fire	Los Angeles County	DR-4353-CA	2018	January	1/2/2018	WILDFIRES, FLOODING, MUDFLOWS, AND DEBRIS FLOWS	CA
Fire	Los Angeles County	EM-3409-CA	2018	November	11/9/2018	WILDFIRES	CA
Fire	Los Angeles County	FM-5280-CA	2018	November	11/9/2018	WOOLSEY FIRE	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	FM-5293-CA	2019	October	10/11/2019	SADDLE RIDGE FIRE	CA
Fire	Los Angeles County	FM-5296-CA	2019	October	10/24/2019	TICK FIRE	CA
Fire	Los Angeles County	FM-5297-CA	2019	October	10/28/2019	GETTY FIRE	CA
Fire	Los Angeles County	DR-4569-CA	2020	October	10/16/2020	WILDFIRES	CA
Fire	Los Angeles County	FM-5374-CA	2020	September	9/13/2020	BOBCAT FIRE	CA
Other	Los Angeles County	DR-4482-CA	2020	March	3/22/2020	COVID-19 PANDEMIC	CA
Other	Los Angeles County	EM-3428-CA	2020	March	3/13/2020	COVID-19	CA
Flood	Los Angeles County	EM-3592-CA	2023	March	3/10/2023	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, AND MUDSLIDES	CA
Flood	Los Angeles County	EM-3591-CA	2023	January	1/9/2023	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	CA
Flood	Los Angeles County	DR-4683-CA	2023	January	1/14/2023	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, AND MUDSLIDES	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Severe Storm	Los Angeles County	DR-4699-CA	2023	April	4/3/2023	SEVERE WINTER STORMS, STRAIGHT-LINE WINDS, FLOODING, LANDSLIDES, AND MUDSLIDES	CA
Severe Storm	Los Angeles County	DR-4769-CA	2024	April	4/13/2024	SEVERE WINTER STORMS, TORNADOES, FLOODING, LANDSLIDES AND MUDSLIDES	CA

3.1.1 Hazard Selection

Hazards for the 2024 LHMP were determined by examining hazards previously analyzed in the most recent LHMP revision as well as additional hazards identified by the City through internal solicitation from participants in the internal interview process for the LHMP.

The National Risk Index identifies 18 specific hazards that may affect communities across the United States. Not all of these hazards were included in the 2023 LHMP. Each hazard is addressed below along with justifications as to why they may not have been included.

Hazard	Included	Explanation
Avalanche	No	The City of Montebello does not experience significant snowfall; therefore, this hazard Is not applicable to the City.
Coastal Flooding	No	The City of Montebello does not have any coastline; therefore, this hazard is not applicable to the City.
Cold Wave	No	Southern California is known for its temperate and warm climate; therefore, this hazard is not applicable to the City.
Drought	Yes	This hazard is included in the LHMP.
Earthquake	Yes	This hazard is included in the LHMP.
Hail	No	This hazard was not identified through any of the interviews with City staff; therefore, this hazard was not determined to be significant enough to include in the LHMP. Related hazards are included as “High wind/storms
Heat Wave	Yes	This hazard is included under “Extreme Heat”.
Hurricane	No	Hurricanes rarely impact Southern California; therefore, this hazard is not applicable to the City. Similar impacts are examined under “Heavy Rain” and “Extreme Wind”.
Ice Storm	No	Southern California is known for its temperate and warm climate; therefore, this hazard is not applicable to the City.
Landslide	No	Due to its topography, the City of Montebello does not face significant threats from landslide; therefore, this hazard is not applicable to the City.
Lightning	No	This hazard was not determined to be significant enough to include in the LHMP. Related hazards are included as “High wind/storms”.

Riverine Flooding	Yes	This hazard is included as “Flooding”
Strong Wind	Yes	This hazard is included as “High wind/storms”.
Tornado	No	Tornadoes are extremely rare in Southern California; therefore, this hazard is not applicable to the City.
Tsunami	No	The City of Montebello does not border a major body of water and is sufficiently inland to be insulated from immediate tsunami impacts; therefore, this hazard is not applicable to the City.
Volcanic Activity	No	There are no active volcanos in Southern California; therefore, this hazard is not applicable to the City.
Wildfire	Yes	This hazard is included under “Fire”.
Winter Weather	No	Southern California is known for its temperate and warm climate; therefore, this hazard is not applicable to the City.

3.2 Hazard Scoring, Prioritization and Probability

On June 12, 2024, a hazards and vulnerability assessment workshop was conducted with the City of Montebello and with local stakeholders. During the workshop, attendees evaluated the risk of hazards included in previous LHMP documents as well as additional hazards suggested by attendees.

The following hazards were evaluated in Montebello’s local hazard mitigation plan update:

- Extreme Heat
- Drought
- Earthquake
- High wind/storms
- Fire
- Power outage
- Cyberattack/IT disruption
- Flooding
- Dam failure
- Terrorism
- Infectious disease

Based in part on elements of the Critical Priority Risk Index, modified for an increased emphasis on future risks using standard climate risk assessment categorization, participants were asked to give their opinion on the assigned scores for each hazard.

This information was used to calculate the Modified Calculated Probability Risk Index score. The CPRI is a common methodology used in hazard mitigation plans to quantify risk. However, it does not give sufficient weight to risks from climate change or other future events.

The Modified CPRI is calculated in the following manner:

*((Severity (Present)*0.3)+(Probability (Present)*0.45)+(Severity (Future)*0.3)+(Probability (Future)*0.45))*

Score values assigned are listed below, and the highest possible score was 75:

- 1 – Negligible
- 2 – Minor
- 3 – Moderate
- 4 – Major
- 5 - Extreme

	Severity (present)	Probability (present)	Present Risk Score	Severity (future)	Probability (future)	Future Risk Score	Modified CPRI
Extreme heat	3	4	12	5	5	25	6.45
Drought	3	4	12	4	5	20	6.15
Earthquake	4	3	12	4	3	12	5.1
High wind/storms	4	3	12	4	3	12	5.1
Fire	3	3	9	3	4	12	4.95
Power outage	4	2	8	5	3	15	4.95
Cyberattack/IT disruption	3	2	6	5	3	15	4.65
Flooding	3	3	9	3	3	9	4.5
Dam Failure	3	2	6	3	2	6	3.6
Terrorism	3	2	6	3	2	6	3.6
Infectious disease/pandemic	3	2	6	3	2	6	3.6
Severity & Probability Scores	1 - Negligible						
	2 - Minor						
	3 - Moderate						
	4 - Major						
	5 - Extreme						
Modified CPRI	((Severity (present)*0.3)+(Probability (present)*0.45)+(Severity (future)*0.3)+(Probability (future)*0.45))						

This LHMP will use the following definitions throughout Section 3 to allow policymakers and planners to use the LHMP to inform City priorities and planning decisions.

Probability	Definition
Very Unlikely	Less than 5% probability of occurrence
Unlikely	Greater than 5% and less than 30% probability of occurrence
Moderate	Greater than 30% and less than 60% probability of occurrence
Likely	Greater than 60% and less than 95% probability of occurrence
Very Likely	Greater than 95% probability of occurrence

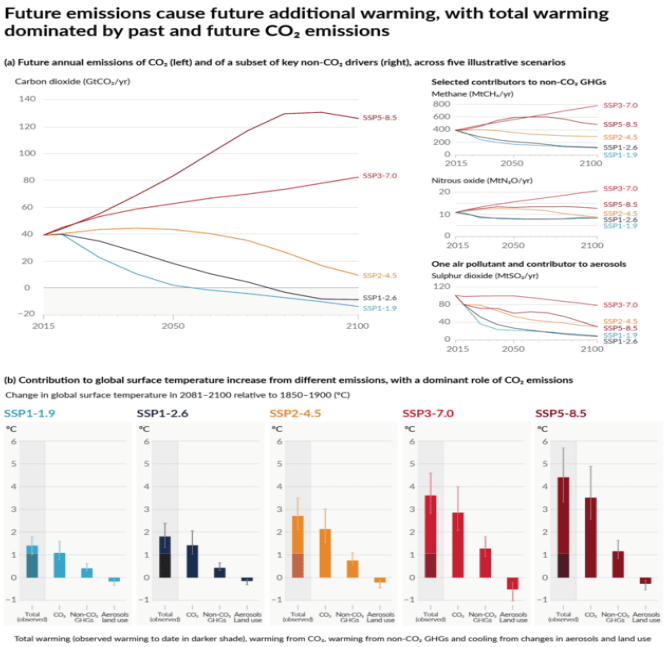
For the purposes of this LHMP, the timescale for probability, unless otherwise specified, will be 5 years, the current duration of an approved LHMP.

3.3 Global Climate Change

Global climate change is one of the defining phenomena of the 21st century and is emphasized in FEMA's revised hazard mitigation planning guidance as of April 19, 2023. Climate change is caused by increasing emissions of specific gasses, primarily carbon dioxide (CO2) and the feedback loops caused by those emissions increasing overall global temperatures. As of 2023, current concentrations of CO2 in the atmosphere are equivalent to those last seen in the Pliocene era between 2 and 5 million years ago before the Ice Ages, where global sea levels were on average 20 feet higher than today.

Climate change is not, by itself, a discrete hazard, and will not be considered as such in this LHMP. Instead, climate will be considered in each individual hazard description, as well as within individual mitigation actions. Climate change is best thought of as, in security parlance, a threat multiplier, or as "loading the dice", amplifying the impacts of existing hazards, shifting the probability of extreme events, and extending new hazards to regions that previously have not experienced them.

National and intergovernmental efforts to establish consensus climate projections include the Intergovernmental Panel on Climate Change and the National Climate Assessment in the United States (the Fifth Assessment is currently in preparation). The IPCC uses a representative concentration pathway (RCP) and associated shared socioeconomic pathways (SSP) to illustrate likely outcomes of varying emissions levels.



At the time of writing (2023), given national pledges and observed trends in measurable emissions, the most probably emission scenario is the upper end of RCP4.5, which results in an increase of between 2.2 and 3.5 degrees Celsius over preindustrial temperatures. By 2100, a significant increase by any measure over the 1.5 degree Celsius boundary set by the 2015 Paris Accords. This outcome is subject to several significant caveats:

- This assumes that all national pledges are followed through upon, which is highly questionable given political realities.
- This also neglects the potential for feedback loops or unpredictable events such as major methane releases due to arctic thawing that may temporarily significantly increase greenhouse gases in the atmosphere.
- Many projections assume the development and widespread use of carbon capture and sequestration (CCS) technology to draw down carbon out of the atmosphere. As of yet, CCS technology has not been proven to scale, and the extent of deployment required for CCS to impact projections will be extraordinarily broad and expensive.

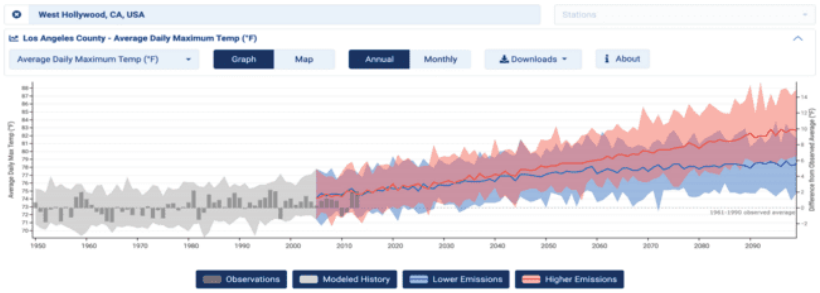
- Finally, a consensus is not a prediction – it is a product of a scientific process that is heavily impacted by political considerations. It can be thought of as a set of ranges, not as a hard number.

Many climate risk analyses today use RCP8.5, or "business as usual" projections as their baseline, which was the most likely outcome as of as little as three years ago. More recent projections have shifted to RCP4.5, but RCP8.5 is still completely in the realm of possibility and is more likely than the extremely optimistic projection of RCP1.9.

For the City of Montebello:

- Under RCP 4.5, future model-average temperature values in Montebello are projected to increase by 4.1°F by mid-century (2035-2064) and 5.2°F by end of century (2070-2099).
- Under RCP 8.5, future model-average temperature values are projected to increase by 4.9°F by mid-century and 8.2°F by end of century.

Below are a few of the most relevant aspects of climate change for hazard mitigation planning:



Source: U.S. Climate Resilience Toolkit Climate Explorer for Montebello, California

- Many of climate change's impacts have resulted in greater unpredictability. For example, many regions are projected to experience both too little rain (increasing droughts) and too much rain (in severe events such as rain bombs or atmospheric rivers). Averages tend to obscure these kinds of extremes. Increasingly over the past several years, these kinds of almost stochastic events have increased all over the world.
- Projections by their nature tend to assume steady, linear change. Given what has been observed above, this is unlikely on either a local scale or a macrolevel scale. Planners should assume that surprises are likely to occur and plan accordingly.

- While overall climate projections have been remarkably accurate in terms of global temperature, many of the impacts of these temperature rises have been faster than expected, in some cases significantly so, with observed phenomena occurring today that researchers expected to see decades later. Planners should assume that impacts will occur on shorter time scales than anticipated – acting sooner will save money, time, and effort later.

This is important for planners and decision makers to keep in mind. Past conditions are no longer as reliable as guides to future conditions as they once might have been.

3.4 Hazard Profiles

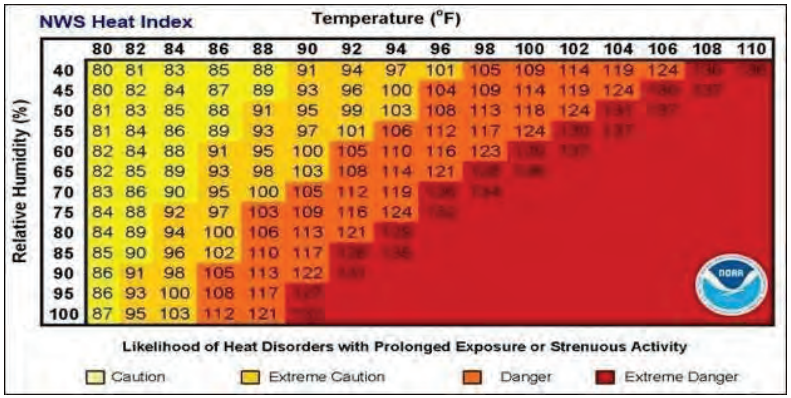
3.4.1 Extreme Heat

Hazard Description

Extreme heat refers to a period of abnormally high temperatures in a specific location. As defined by CalAdapt (https://cal-adapt.org/tools/extreme-heat/), there are three major types of extreme heat events:

- Extreme heat days, which exceed 98% of all historic high temperatures for the area between April and October from 1961 to 1990.
- Warm nights, which exceed 98% of all historic minimum daytime temperatures observed between April and October from 1961 to 1990.
- Extreme heat waves, a successive series of extreme heat days and warm nights defined as a minimum of four successive extreme heat days and warm nights.

Different regions will experience extreme heat events differently due to variations in historic high temperatures. For example, an extreme heat day on the coast will feel distinct from an extreme heat day in the high desert due to the impact of humidity on people's perception of heat. Humid conditions make a day feel hotter than non-humid conditions, even if the temperature is the same, resulting in a difference known as the heat index. A 90-degree day with 50 percent humidity feels like 95°F, whereas a 90°F day with 90 percent humidity feels like 122°F.



National Weather Service Extreme Heat Index

Prolonged exposure to extreme heat can be hazardous to public health, as the human body is less able to withstand high temperatures for extended periods of time. This can result in heat exhaustion and dehydration, which may progress to heat stroke and organ failure if internal body temperature surpasses 105 degrees Fahrenheit. Without intervention, this can be fatal.

While Montebello and the Los Angeles area experience moderate temperatures throughout the year, citizens are still vulnerable to unusually hot weather during the summer or early fall months.

Location and Extent

Extreme heat events occur with the same intensity and duration across all locations in Montebello and are not limited to any specific part of the City. Extreme heat does have disproportionate impacts depending on the type and age of building, however. Many older buildings may not have the same cooling capacity or may be more vulnerable to power outages and loss or air conditioning. Residential buildings of this age in Montebello are disproportionally occupied by lower income tenants.

Previous Occurrences

Extreme heat events are not unusual in the Los Angeles metropolitan area, which the City of Montebello is a part of. Some recent examples include:

- **2006 North American Heat Wave**
  - **Date**: July 2006
  - **Duration**: Approximately two weeks
  - **Peak Temperatures**: Temperatures soared above 100°F (38°C), with some days reaching 112°F (44°C).
- **2010 California Heat Wave**
  - **Date**: September 2010
  - **Duration**: Several days
  - **Peak Temperatures**: Temperatures reached up to 113°F (45°C) in parts of Los Angeles County.
- **2017 Western North America Heat Wave**
  - **Date**: June - September 2017
  - **Duration**: Multiple heat waves throughout the summer
  - **Peak Temperatures**: Temperatures consistently exceeded 100°F (38°C), with peaks around 108°F (42°C).
- **2018 Southern California Heat Wave**
  - **Date**: July 2018
  - **Duration**: Several days
  - **Peak Temperatures**: Temperatures peaked at 111°F (44°C).
- **2020 Labor Day Weekend Heat Wave**
  - **Date**: September 2020
  - **Duration**: Labor Day weekend
  - **Peak Temperatures**: Temperatures soared to 121°F (49°C) in parts of Los Angeles County.
- **2021 Western North America Heat Wave**
  - **Date**: June 2021
  - **Duration**: Several days
  - **Peak Temperatures**: Temperatures reached up to 115°F (46°C).

Probability of Future Events and Impacts of Climate Change

Overall probability over next five years: ***Likely.***

The following illustration from NOAA's Climate Explorer details the probability of days in Montebello with high temperatures over 95 degrees Fahrenheit to 2100 under multiple emissions scenarios.



The frequency and intensity of extreme heat events is growing. According to California's Fourth Climate Assessment for the Los Angeles Region:

> *The average hottest day of the year is expected to increase roughly 4-7°F under RCP4.5 and 7-10°F under RCP8.5 by the late 21st century. Similar to the spatial pattern in annual max temperature changes, the largest changes in extremes are found in the interior of the region, and particularly the valleys, while the smallest changes are generally confined to coastal regions.*
>
> *The number of extremely hot days Is expected to Increase In the future. For instance, LA International Airport (LAX) historically experiences less than 15 days per year with temperatures equal to or greater than 90°F (Cayan et al. 2018). By the end of the century under RCP8.5, LAX is projected to experience 50–90 such days per year (Pierce et al. 2018). Sun et al. (2015) similarly found that land locations are projected to experience 60–90 additional extremely hot days (greater than or equal to 95°F) per year by the end of the century, with the exception of the highest elevations and regions along the coast, where increases are only a few days.*

3.4.2 Drought

Hazard Description

By one count, there are over 150 definitions for "drought". The National Weather Service describes drought as "*a deficiency of moisture that results in adverse impacts on people, animals, or vegetation over a sizeable area.*" For the purposes of this LHMP, drought will be defined as a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage,

Drought is a natural occurrence in all climates, both in regions with high and low average rainfall. Droughts typically are declared when lasting for a calendar season or longer and can be categorized into five different types: meteorological, agricultural, hydrologic, socioeconomic, and ecological.

- **Meteorological**: This type of drought refers to a decrease in rainfall that deviates from the normal precipitation pattern. It includes changes in the amount, intensity, or timing of rainfall, as well as changes in temperature, humidity, and wind patterns. The threshold for defining meteorological drought varies from country to country. In the United States, a meteorological drought is declared if there is less than 2.5mm of rainfall in 48 hours. This type of drought is the first stage to be detected. Broader multi-year precipitation patterns can give rise to drought conditions. In California, the El Niño Southern Oscillation (ENSO) cycle, a regional meteorological event in the Pacific Ocean, is important in the region's hydrologic regime. The ENSO cycle consists of changes in ocean water and air temperature and results in two phases: El Niño, a warm and wet phase, and La Niña, a dry and cold phase. When La Niña is active, it can lead to below-normal precipitation levels in California and frequently lead to drought conditions.
- **Agricultural:** This type of drought is characterized by insufficient moisture conditions that cause lasting damage to crops and other vegetation. It is dependent on factors such as rainfall, temperature, topography, soil permeability, evapotranspiration, vegetative demand, and more. Agricultural drought begins when the available soil moisture only supports a fraction of the actual evapotranspiration rate.
- **Hydrological:** This type of drought is related to the effects of reduced precipitation on the surface or subsurface water supply. During the latter part of the hydrological cycle, water infiltrates into the groundwater. The subsurface water supply is the last component to return to normal when meteorological conditions and aquifer recharge return to normal.
- **Socioeconomic:** This type of drought occurs when the consequences of drought start to impact social and economic systems. It arises when the demand for an economic good is greater than the available supply due to drought-related weather conditions.

Examples of such goods include water, food grains, dairy products, hydroelectric power, and more. Socioeconomic drought affects both individuals and the population as a whole.

- **Ecological:** This type of drought is defined as a widespread and prolonged deficit in naturally available water supplies that leads to multiple stressors across ecosystems. This includes changes in both natural and managed hydrology.

Determining the onset and end of a drought can be challenging compared to sudden and discrete weather events such as hurricanes, tornadoes, and thunderstorms. Early signs of a drought can be difficult to detect, and it may take some time, perhaps even weeks, or months, before it is recognized. The conclusion of a drought is also challenging to identify for the same reasons. Droughts can range in duration from a few weeks to several years and in some cases, even persist for a decade or more.

Drought primes the conditions for a variety of other hazards by drying soil out, which reduces its capacity to absorb water. Thus, when precipitation returns, the soil is less able to hold onto water, increasing runoff and the risk of floods. Due to the soil's reduced ability to bond together, dry earth is more prone to erosion and landslides. In addition, the lack of participation effects plants and other vegetation in natural places as the lack of nutrients makes them more vulnerable to pests and diseases and the lack of internal water raises the possibility of wildfires.

Drought should not be viewed as merely a physical phenomenon or natural event. Its impacts on society result from the interplay between a natural event (less precipitation than expected resulting from natural climatic variability) and the demand people place on water supply. Human beings often exacerbate the impact of drought. Recent droughts in both developing and developed countries and the resulting economic and environmental impacts and personal hardships have underscored the vulnerability of all societies to this "natural" hazard.

California's extensive system of water supply infrastructure - its reservoirs, groundwater basins, and inter-regional conveyance facilities - mitigates the effect of short-term dry periods for most water users. Defining when a drought begins is a function of drought impacts to water users. Hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users elsewhere, or for water users having a different water supply. Individual water suppliers may use criteria such as rainfall/runoff, amount of water in storage, or expected supply from a water wholesaler to define their water supply conditions.

Location and Extent

The entirety of the City of Montebello is susceptible to drought. The impact of drought is regional in nature, and typically would extend far beyond the city limits of Montebello to include the whole of southern California.

Of the many varied indexes used to measure drought, the Palmer Drought Severity Index (PDSI) is the most commonly used drought index in the United States. Developed by meteorologist Wayne Palmer, the PDSI is used to measure dryness based on recent temperature compared to the amount of precipitation. It utilizes a number range, 0 as normal, drought shown in terms of minus numbers, and wetness shown in positive numbers. The PDSI is most effective at analyzing long-range drought forecasts or predications. Thus, the PDSI is very effective at evaluation trends in the severity and frequency of prolonged periods of drought, and conversely wet weather. The National Oceanic and Atmospheric Administration (NOAA) publish weekly Palmer maps, which are also used by other scientists to analyze the long-term trends associated with global warming and how this has affected drought conditions.

Category	Description	Example Percentile Range for Most Indicators	Values for Standard Precipitation Index and Standardized Precipitation-Evapotranspiration Index
None	Normal or wet conditions	31 or above	-0.49 or above
D0	Abnormally Dry	21 to 30	-0.5 to -0.79
D1	Moderate Drought	11 to 20.99	-0.8 to -1.29
D2	Severe Drought	6 to 10.99	-1.3 to -1.59
D3	Extreme Drought	3 to 5.99	-1.6 to -1.99
D4	Exceptional Drought	0 to 2.99	-2.0 or less

US Drought Monitor Classification Scheme.
Source: https://droughtmonitor.unl.edu/About/AbouttheData/DroughtClassification

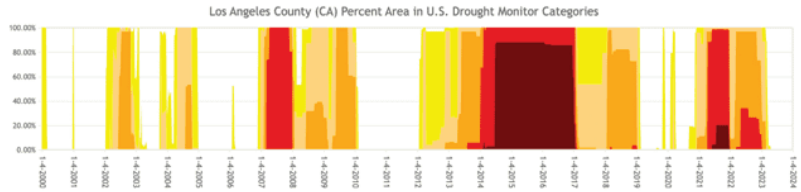
Previous Occurrences

The region's Mediterranean climate makes it especially susceptible to variations in rainfall. Severe water shortages could have a bearing on the economic well-being of the community. Comparison of climate (rainfall) records from Los Angeles with water well records beginning in 1930 from the San Gabriel Valley indicates the existence of wet and dry cycles on a 10-year scale as well as for much longer periods. The climate record for the Los Angeles region beginning in 1890 suggests drying conditions over the last century.

With respect to the present day, climate data also suggests that the last significant wet period was the 1940s. Well level data and other sources seem to indicate the historic high groundwater levels (reflecting recharge from rainfall) occurred in the same decade. Since that

time, rainfall (and groundwater level trends) appears to be in decline. This slight declining trend, however, is not believed to be significant. Climatologists compiled rainfall data from 96 stations in the State that spanned a 100-year period between 1890 and 1990. An interesting note is that during the first 50 years of the reporting period, there was only one year (1890) that had more than 35 inches of rainfall, whereas the second 50-year period recording of 5 year intervals (1941, 1958, 1978, 1982, and 1983) that exceeded 35 inches of rainfall in a single year. The year of maximum rainfall was 1890 when the average annual rainfall was 43.11 inches. The second wettest year on record occurred in 1983 when the State's average was 42.75 inches.

Montebello, like the rest of California, has experienced many drought events throughout its history. California was in some form of drought for 376 consecutive weeks from December 20, 2011, until March 14, 2017. By summer of 2014, almost all of California was experiencing level D2 (severe drought) conditions. By 2015, emergency water saving mandates were enacted, which required all jurisdictions to reduce water use by no less than 25 percent. In late 2016 and early 2017, consecutive occurrences of heavy rain helped end the drought conditions in the state. The following winter, in late 2017 and early 2018, rains did not occur to the same level and slight drought conditions again affected the state. This moderate drought was again abated in the winter season of late 2018 and early 2019, when heavy rains ended any existing drought conditions. Drought conditions returned shortly thereafter, with water restrictions being eased after the intense precipitation events of early 2023.



Los Angeles County Percent Area in Drought Categories

Source: https://droughtmonitor.unl.edu/dmData/Timeseries.aspx

Probability of Future Events and Impacts of Climate Change

Overall probability over next five years: ***Likely.***

Periodic drought has been a fact of life in California since before written records were kept. However, global climate change has already had a significant impact, in part fueling the North American West's "megadrought", as of 2023 in its 23rd year and being the driest period in over 1,200 years. October 2019 through September 2022 were California's driest years on record.

Paradoxically, climate change has also brought historic rainstorms and flood events, as conditions whipsaw between drought and flooding. This increased variability and oscillation between too little rain and too much rain is a hallmark of climate projections and is playing out in real time.

Atmospheric rivers (narrow corridors of concentrated moisture in the atmosphere) are largely responsible for precipitation patterns across the southern California region, and coupled with topographical influences, can create intense storms. Cal-Adapt climate projections predict that the likelihood and duration of atmospheric rivers will increase, leading to increased likelihoods of flood events.

Predictions for extreme weather events show that no major trend changes are expected under either scenario. However, as noted above for patterns in precipitation, whiplash events are expected to increase. When years with elevated numbers of extreme rain events follow dry years, the likelihood and severity of mudslides and flooding increases. This is largely due to reductions in vegetation during dry years, which otherwise stabilize soil. Conversely, dry years that follow upticks in extreme rain events can lead to wildfires. This is due to increased presence of fuel sources for wildfire in the form of dry vegetation.

These whiplash events will increase vulnerability to both fire and floods. A tragic example the Hawai'i fires on the island of Maui that consumed the historic royal capital of Lahaina in August 2023, killing large numbers of people. The compounding nature of this disaster – high winds driving fires on an island experiencing extended drought conditions – illustrates that drought is not only an absence of water but can be an accelerant for devastating wildfires.

According to California's Fourth Climate Change Assessment's Los Angeles Region survey, published in 2019:

> *Anthropogenic warming has increased the probability that low-precipitation years coincide with warm years, increasing the current risk and severity of droughts and low snowpack in California (Difenbaugh et al. 2015; Berg and Hall 2017; Williams et al. 2015). Atmospheric conditions conducive to California droughts, such as a persistent*

region of high pressure in the northeastern Pacific Ocean, may have also become more frequent in recent decades (Swain et al. 2016). GCMs (global climate models) project significantly drier soils in the future over the Southwest (including California), with more than an 80% chance of a multidecadal drought during 2050–2099 under RCP8.5 (Cook et al. 2015).

The effects of climate change on drought are expected to be mixed. For Instance, in some years, climate change-enhanced weather patterns such as those during the El Nino Southern Oscillation (ENSO) phase may bring more rainfall to California and Montebello, alleviating drought conditions. On the other hand, it may also extend the La Niña phase of ENSO, leading to longer periods without precipitation. Furthermore, climate change is projected to cause more frequent and prolonged heat waves in California, increasing the average temperature. During such events, the water supply may be diverted for essential cooling needs, including those of the elderly and to maintain critical City operations, leading to greater water consumption. If a heat wave were to occur during a drought, it would place even more strain on the water supply.

3.4.3 Earthquake

Hazard Description

An earthquake is a sudden, violent movement of the earth's surface that is caused by volcanic activity or tectonic movement along fault lines and the subsequent release of energy in the form of seismic waves. The effects of an earthquake can be widespread and include surface faulting, shaking of the ground, landslides, soil liquefaction, changes in the earth's tectonic structure, tsunamis, and oscillations in large bodies of water.

The point where two tectonic plates meet is called a fault line, and earthquakes often occur along these lines. In California, the San Andreas Fault is the most well-known fault line, where the North American Plate and the Pacific Plate come together. Over time, the constant friction between these two plates has caused the intersection to break into smaller faults, making the area more prone to earthquakes. The Earth's surface may show visible signs of fault lines in the form of sudden changes or breaks in the landscape.

Earthquakes strike suddenly, without warning. Earthquakes can occur at any time of the year and at any time of the day or night. On a yearly basis, 70 to 75 damaging earthquakes occur throughout the world. To this point, a 5.1 earthquake occurred on Sunday, August 20, 2023 during the landfall of Hurricane Hilary, the first tropical storm to arrive in California in 84 years.

The two main types of earthquakes that can occur in each region are strike-slip and dip-slip earthquakes. Strike-slip earthquakes occur on vertical or nearly vertical faults, where the plates of the Earth's crust move mostly horizontally. The direction of movement across the fault determines if it is a right lateral fault or a left lateral fault. Dip-slip earthquakes occur on slanted faults where the blocks of the Earth's crust shift mostly vertically. If the Earth above the fault moves downward, it is called a normal fault, and if it moves upward, it is known as a reverse fault. If the reverse fault has a dip of 45 degrees or less, it is referred to as a thrust fault.

The region close to a fault line is vulnerable to damage due to the possibility of a fault rupture, resulting in the shifting and displacement of the land on either side of the fault, which may move a few inches to several feet in opposite directions. Buildings and infrastructure near, on top of, or crossing a fault line may be severely damaged or even destroyed. Some faults have only recently formed in geological history and are known as Quaternary faults. These faults, which have developed within the past 1.8 million years, are a concern as they are most likely to be active and cause future earthquakes. The Alquist-Priolo Earthquake Fault Zoning Act permits the California State Geologist to identify zones around active faults as Alquist-Priolo Special Study Zones, which are designated as special regulatory areas. These zones require further study to determine the location of the fault and the extent of the area prohibited from surface construction above the known location of an active fault.

Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Ground motion is the vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter. Soft soils can further amplify ground motions. The severity of these effects is dependent on the amount of energy released from the fault or epicenter. One way to express an earthquake's severity is to compare its acceleration to the normal acceleration due to gravity. The acceleration due to gravity is often called "g". A ground motion with a peak ground acceleration of 100%g is very severe. Peak Ground Acceleration (PGA) is a measure of the strength of ground motion. PGA is used to project the risk of damage from future earthquakes by showing earthquake ground motions that have a specified probability (10%, 5%, or 2%) of being exceeded in 50 years. These ground motion values are used for reference in construction design for earthquake resistance. The ground motion values can also be used to assess relative hazard between sites, when making economic and safety decisions.

An earthquake generates different types of seismic shock waves that travel outward from the focus or point of rupture on a fault. Seismic waves that travel through the earth's crust are called body waves and are divided into primary (P) and secondary (S) waves. Because P waves move faster (1.7 times) than S waves, they arrive at the seismograph first. By measuring the time delay between arrival of the P and S waves and knowing the distance to the epicenter, seismologists can compute the magnitude for the earthquake.

The Richter magnitude scale, named after seismologist Charles F. Richter, measures the amount of energy released by an earthquake at its source. The scale ranges from 0 to 10, with each increase of one representing an earthquake 10 times stronger than the previous one. However, because it is a logarithmic scale, the energy released increases by a factor of 32 for each one-point increase in magnitude. For example, an earthquake with a magnitude of 6.0 releases 32 times more energy than an earthquake with a magnitude of 5.0. In terms of actual energy released, however, each one-point increase on the Richter scale corresponds to about a 32-fold increase in energy released. Therefore, a Magnitude 7 (M7) earthquake is 100 times (10 X 10) more powerful than a M5 earthquake and releases 1,024 times (32 X 32) the energy.

The Modified Mercalli Scale (MMI) is another means for rating earthquakes, but one that attempts to quantify intensity of ground shaking. Intensity under this scale is a function of distance from the epicenter (the closer to the epicenter the greater the intensity), ground acceleration, duration of ground shaking, and degree of structural damage. The Mercalli intensity scale measures the effects of an earthquake on people, structures, and the

environment. It is based on observations of damage and shaking intensity rather than on instrumental measurements. The scale ranges from I to XII, with each level representing a different level of damage and impact. For example, an earthquake with an intensity of I would be felt only by a few people under very special circumstances, while an earthquake with an intensity of XII would cause total destruction of buildings and infrastructure.

The Richter Magnitude Scale

Richter Magnitudes	Earthquake Effects
Less than 3.5	Generally, not felt but recorded.
3.5-5.4	Often felt, but rarely causes damage.
Under 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
6.1-6.9	Can be destructive in areas up to about 100 kilometers across where people live.
7.0-7.9	Major earthquake. Can cause serious damage over larger areas.
8 or greater	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

Source: https://www.usgs.gov/natural-hazards/earthquake

Modified Mercalli Intensity Scale for Earthquakes

Scale	Intensity	Description of Effects	Corresponding Richter Scale Magnitude
I	Instrumental	Detected only on seismographs	
II	Feeble	Some people feel it	<4.2
III	Slight	Felt by people resting; like a truck rumbling by	
IV	Moderate	Felt by people walking	
V	Slightly Strong	Sleepers awake; church bells ring	<4.8

Scale	Intensity	Description of Effects	Corresponding Richter Scale Magnitude
VI	Strong	Trees sway: suspended objects swing, objects fall off shelves	<5.4
VII	Very Strong	Mild alarm; walls crack; plaster falls	<6.1
VIII	Destructive	Moving cars uncontrollable; masonry fractures; poorly constructed buildings damaged.	
IX	Ruinous	Some houses collapse; ground cracks; pipes break open	<6.9
X	Disastrous	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread	<7.3
XI	Very Disastrous	Most buildings and bridges collapse; roads, railways, pipes, and cables destroyed	
XII	Catastrophic	Total destruction: trees fall; ground rises and falls in waves	>8.1

Source: https://www.usgs.gov/natural-hazards/earthquake

Earthquake Related Hazards

Ground shaking, landslides, liquefaction, and amplification are the specific hazards associated with earthquakes. The severity of these hazards depends on several factors, including soil and slope conditions, proximity to the fault, earthquake magnitude, and the type of earthquake.

Ground Shaking

Ground shaking is the motion felt on the earth's surface caused by seismic waves generated by the earthquake. It is the primary cause of earthquake damage.

While not all earthquakes are strong enough to cause noticeable shaking, the intensity of ground shaking is proportional to the amount of energy released from the earthquake, which is determined by the length and depth of the fault that caused it. Typically, areas closest to the fault rupture experience stronger ground shaking, while areas farther away experience weaker shaking. Buildings on poorly consolidated and thick soils will typically see more damage than buildings on consolidated soils and bedrock. Ground shaking can result in structural damage or collapse, and it can also harm underground utilities or pipelines, leading to flooding if water lines are broken.

Earthquake-Induced Landslide Potential

Generally, these types of failures consist of rock falls, disrupted soil slides, rock slides, soil lateral spreads, soil slumps, soil block slides, and soil avalanches. Areas having the potential for earthquake-induced landslides generally occur in areas of previous landslide movement, or where local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements.

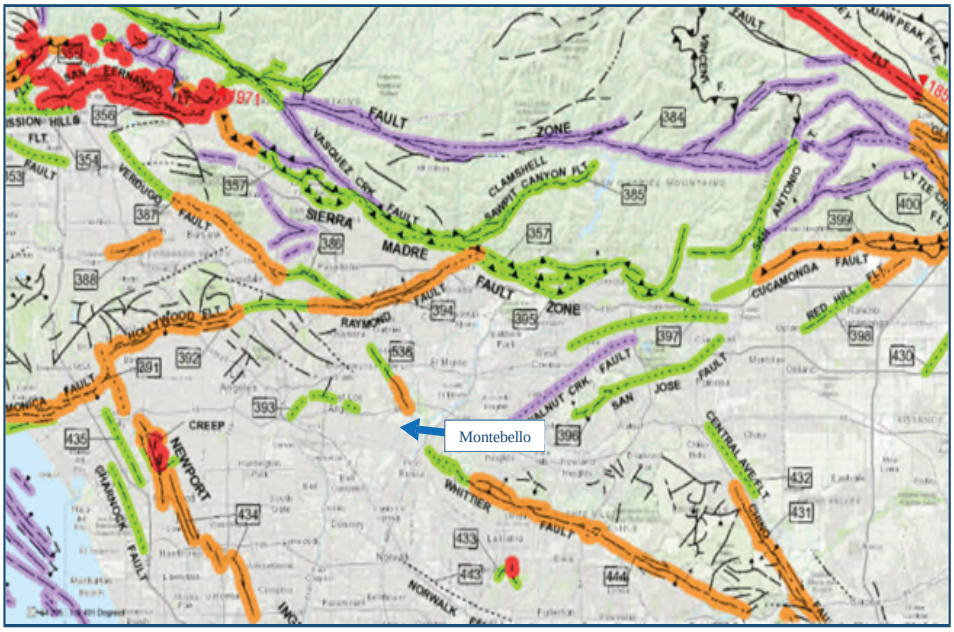
Liquefaction

Liquefaction occurs when ground shaking causes wet granular soils to change from a solid state to a liquid state. This results in the loss of soil strength and the soil's ability to support weight. Buildings and their occupants are at risk when the ground can no longer support these structures. Liquefaction generally occurs during significant earthquake activity, and structures located on soils such as silt or sand may experience significant damage during an earthquake due to the instability of structural foundations and the moving earth. Many communities in Southern California are built on ancient river bottoms and have sandy soil. In some cases, the soil may be subject to liquefaction, depending on the depth of the water table.

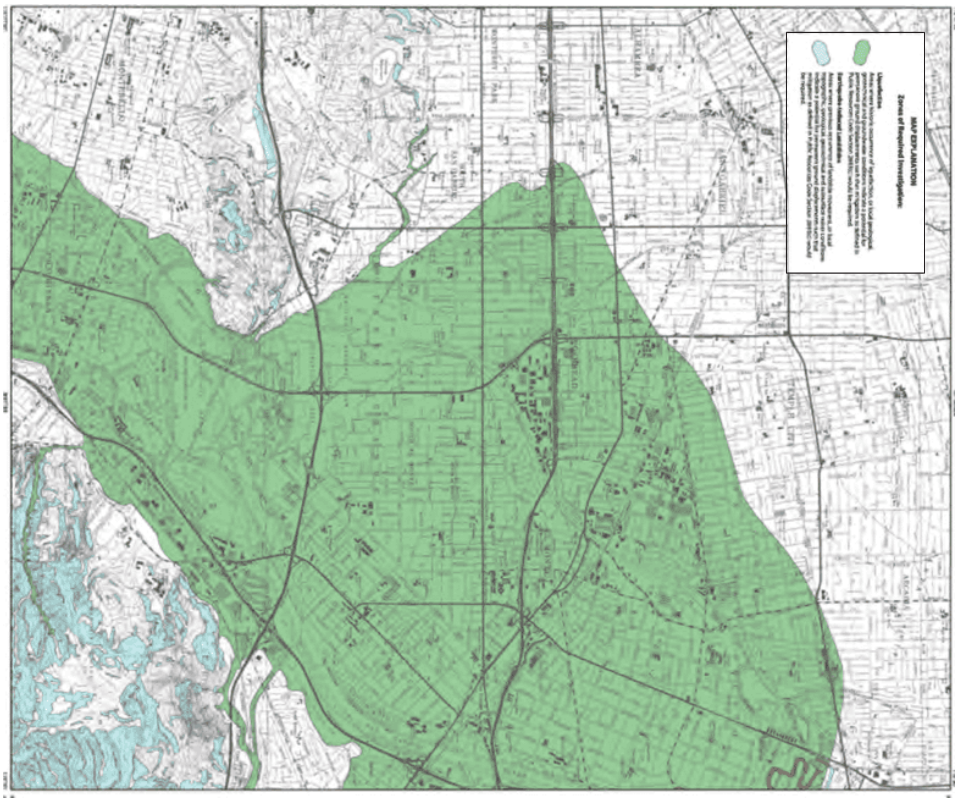
Although there is no standard method for measuring the scale of liquefaction, other factors can be used to gauge the extent of damage caused by it. These include the type of soil, the strength of the seismic shaking in the affected area, the size of the affected region, and the degree of destruction caused by the liquefaction.

Location and Extent

Regional Faults - Source: State of California Department of Conservation



Landslide and Liquefaction Zones in Montebello



Earthquakes that could affect the City would most likely originate from the Newport-Inglewood, San Andreas, Whittier, Puente Hills, or Sierra Madre Faults. These faults are close enough in proximity or expected to generate strong enough shaking that could significantly impact the City.

- **Newport-Inglewood:** The Newport-Inglewood Fault Zone lies approximately 14 miles southwest of Montebello. The Newport-Inglewood Fault System is a nearly linear alignment of faults extending 45 miles along the southwestern side of the Los Angeles basin. It can be traced as a series of topographic hills, ridges, and mesas from the Santa Monica Mountains to Newport Beach, where it trends offshore. Structures along the zone of deformation act as groundwater barriers and, at greater depths, as petroleum traps. Continuing seismic activity has been evidenced most prominently in recent times by the 1920 Inglewood and 1933 Long Beach earthquakes.
- **San Andreas** The San Andreas Fault Zone is located approximately 34 miles northeast of the City of Montebello. This fault zone extends from the Gulf of California northward to the Cape Mendocino area where it continues northward along the ocean floor. The total length of the San Andreas Fault Zone is approximately 750 miles. The activity of the fault has been recorded during historic events, including the 1906 (M8.0) event in San Francisco and the 1857 (M7.9) event between Cholame and San Bernardino, where at least 250 miles of surface rupture occurred. These seismic events are among the most significant earthquakes in California history. Geologic evidence suggests that the San Andreas Fault has a 50 percent chance of producing a magnitude 7.5 to 8.5 earthquake (comparable to the great San Francisco earthquake of 1906) within the next 30 years.
- **Whittier:** The Whittier fault zone lies approximately 7 miles southeast of Montebello. The Whittier Fault is a 25 mile right-lateral strike-slip fault that runs along the Chino Hills range between the cities of Chino Hills and Whittier. It is estimated that this fault could generate up to a magnitude 7.2 earthquake.
- **Puente Hills:** The Puente Hills Fault is located approximately 8 miles south of the City. According to USGS, the Puente Hills Fault was most recently responsible for the M5.1 La Habra earthquake on March 28, 2014 which caused an estimated $2.6 million in damage. The USGS estimates that a future, larger M7.5 earthquake along the Puente Hills Fault could kill 3,000 to 18,000 people and cause up to $250 billion in Southern California region. In contrast, a larger M8.0 quake along the San Andreas would cause an estimated 1,800 deaths.
- **Sierra Madre:** The Sierra Madre Fault Zone lies approximately 12 miles northeast of Montebello. This fault zone is a series of moderate angle, north-dipping, reverse faults (thrust faults). Movement along these frontal faults has resulted in the uplift of the San Gabriel Mountains. According to the Southern California Earthquake Data Center, rupture on the Sierra Madre Fault Zone (theoretically) could be limited to one segment at a time, it has recently been suggested that a large event on the San Andreas Fault to the north (like that of 1857) could cause simultaneous rupture on reverse faults south of the San Gabriel Mountains – the Sierra Madre Fault Zone being a prime example of such. Whether this could rupture multiple Sierra Madre Fault Zone segments simultaneously is unknown. Seismic activity on the Sierra Madre Fault is expected to have a maximum magnitude of 7.2.

Beyond these known faults, there are a potentially large number of “blind” faults that underlie the surface of Southern California. One such blind fault was involved in the Whittier Narrows earthquake in October 1987.

Although the most famous of the faults, the San Andreas, can produce an earthquake with a magnitude of 8+ on the Richter scale, some of the “lesser” faults have the potential to inflict greater damage on the urban core of the Los Angeles Basin. Seismologists believe that a 6.0 earthquake on the Newport-Inglewood would result in far more damage than a “great” quake on the San Andreas, because the San Andreas is relatively remote from the urban centers of Southern California.

Previous Occurrences

The following data comes from FEMA’s Disaster Declarations for States and Counties (https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties).:

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Other	Los Angeles County	DR-299-CA	1971	February	2/9/1971	SAN FERNANDO EARTHQUAKE	CA
Other	Los Angeles County	DR-799-CA	1987	October	10/7/1987	EARTHQUAKE & AFTERSHOCKS	CA
Other	Los Angeles County	DR-1008-CA	1994	January	1/17/1994	NORTHRIDGE EARTHQUAKE	CA

Paleoseismological research indicates that large magnitude (8.0+) earthquakes occur on the San Andreas Fault at intervals between 45 and 332 years with an average interval of 140 years. Other lesser faults have also caused very damaging earthquakes since 1857. Notable earthquakes include the 1933 Long Beach Earthquake, the 1971 San Fernando Earthquake, the 1987 Whittier Earthquake and the 1994 Northridge Earthquake.

In the past several decades, earthquakes of magnitude 5.0 or greater occurred in the Los Angeles Area, with the most recent being the La Habra earthquake (magnitude 5.1) March 28th, 2014. For the La Habra earthquake, the epicenter was one mile east of La Habra and four miles north of Fullerton. An aftershock (magnitude 4.1) centered near the Los Angeles County community of Rowland Heights the following day. The second most recent earthquake with a magnitude of 5.0 or greater in the Los Angeles Area was the July 29th, 2008 Chino Hills earthquake, with the epicenter located 28 miles east-southeast of downtown Los Angeles.

Earthquakes in southern California have been frequent, with many impacting the City of Montebello and surrounding communities. Among the more notable area:

- **1933 Long Beach Earthquake**
  - **Date**: March 10, 1933
  - **Magnitude**: 6.4
  - **Epicenter**: Near Long Beach, California
  - **Impact on Montebello**: This earthquake caused extensive damage across the Los Angeles Basin. Montebello experienced structural damage to buildings, particularly older structures and unreinforced masonry buildings.
- **1971 San Fernando Earthquake**
  - **Date**: February 9, 1971
  - **Magnitude**: 6.6
  - **Epicenter**: Near Sylmar in the San Fernando Valley, California
  - **Impact on Montebello**: Montebello felt strong shaking, leading to minor to moderate structural damage. The earthquake caused widespread damage in the greater Los Angeles area, including collapsed buildings, freeway overpasses, and utility disruptions.
- **1987 Whittier Narrows Earthquake**
  - **Date**: October 1, 1987
  - **Magnitude**: 5.9
  - **Epicenter**: Near Rosemead, California, approximately 10 miles from Montebello
  - **Impact on Montebello**: The close proximity of the epicenter to Montebello resulted in significant shaking and damage to buildings and infrastructure. Several structures in Montebello suffered cracks and other structural issues, and there were reports of gas leaks and minor injuries.
- **1994 Northridge Earthquake**
  - **Date**: January 17, 1994
  - **Magnitude**: 6.7
  - **Epicenter**: Northridge, in the San Fernando Valley, California

  - **Impact on Montebello**: Although the epicenter was farther from Montebello, the city still experienced strong shaking. The earthquake caused structural damage, including cracked walls and foundations. It also disrupted utilities and services.
- **2014 La Habra Earthquake**
  - **Date**: March 28, 2014
  - **Magnitude**: 5.1
  - **Epicenter**: La Habra, California, approximately 15 miles from Montebello
  - **Impact on Montebello**: Montebello experienced noticeable shaking, which resulted in minor structural damage such as cracked walls and fallen items within buildings.
- **2019 Ridgecrest Earthquakes**
  - **Dates**: July 4 and July 5, 2019
  - **Magnitudes**: 6.4 and 7.1
  - **Epicenters**: Near Ridgecrest, California, approximately 150 miles from Montebello
  - **Impact on Montebello**: Despite the distance, Montebello felt the shaking from these significant earthquakes. There was no major damage reported, but the events highlighted the widespread reach of seismic activity in Southern California and the necessity for ongoing preparedness.

Probability of Future Events and Impacts of Climate Change

Overall probability over next five years: ***Moderate.***

There is a higher likelihood of large earthquakes occurring in the Los Angeles region compared to other parts of California, due to the presence of multiple faults that can cause multi-fault ruptures. On average, it is expected that a quake measuring 6.0 or greater in magnitude will occur in Southern California every few years. It is not possible to predict when a major earthquake will occur, but the USGS has estimated that there is a 75% chance that one or more earthquakes with a magnitude of 7.5 or greater will occur within the next thirty years.

3.4.4 High Wind/Storms

Hazard Description

High wind

High winds can result from thunderstorm inflow and outflow or downburst winds when the storm cloud collapses, and can result from strong frontal systems, or gradient winds (high or low pressure systems) moving across the land. High winds are speeds reaching 50 mph or greater, either sustaining or gusting.

Windstorms can damage buildings, power lines, and other property and infrastructure due to falling trees and branches. For example, tree limbs breaking in winds of 45 mph can be thrown over 75 feet. During wet winters, saturated soils cause trees to become less stable and more vulnerable to uprooting from high winds. In addition, windstorm activity can negatively impact transportation routes and power outages.

Perhaps the greatest danger from windstorm activity in Southern California comes from the combination of the Santa Ana winds with the major fires that occur every few years in the urban/wildland interface. With the Santa Ana winds driving the flames, the speed and reach of the flames is even greater than in times of calm wind conditions. The higher fire hazard raised by a Santa Ana wind condition requires that even more care and attention be paid to proper brush clearances on property in the wildland/urban interface areas.

Storms

When heavy rain occurs, it can fall at a rate so high that the water is unable to drain away quickly enough. This can result in flooding, causing inundation and potential damage to buildings, road networks, public areas, utilities, critical infrastructure, and other assets. In California, heavy rainfall events are typically brief and intense bursts of rain, although in some instances, heavy rain can persist for several days.

Precipitation levels in California fluctuate from year to year, largely dependent on the amount of moisture the state receives from atmospheric rivers. These rivers are pathways along which moist air travels from the tropics to the continents, and when this moisture reaches California, it can fall as either rain or snow. One of the most well-known atmospheric rivers in California is the "Pineapple Express," which brings wet air from the ocean surrounding Hawaii to California. In some years, a substantial amount of moisture can be transported by atmospheric rivers, resulting in heavy rainfall events in California.

The weather pattern known as El Niño, or the Southern Oscillation, is another factor that can influence rainfall in southern California, especially during winter. El Niño occurs when the

surface of the eastern tropical Pacific Ocean warms, causing warm, moist air to evaporate into the atmosphere. This moisture is then carried by winds to the eastern Pacific and the American continents, where it can result in increased rainfall. While El Niño doesn't always lead to increased rainfall, it generally increases the likelihood of a winter with above-average precipitation. Anomalous events such as Hurricane Hilary in 2023 are another example of extreme weather that could cause flooding

Location and Extent

The entirety of the City of Montebello is susceptible to severe wind and storm events.

The complex topography of Southern California combined with various atmospheric conditions creates numerous scenarios that may cause widespread or isolated Santa Ana events. Commonly, Santa Ana winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra Mountains and west of the Rocky Mountains including most of Nevada and Utah). Clockwise circulation around the center of this high pressure area forces air downslope from the high plateau. The air warms as it descends toward the California coast at the rate of 5 degrees Fahrenheit per 1000 feet due to compressional heating. Thus, compressional heating provides the primary source of warming. The air is dry since it originated in the desert, and it dries out even more as it is heated.

Santa Ana winds generally occur below the passes and canyons of the coastal ranges of Southern California and in the Los Angeles Basin. Santa Ana winds often blow with exceptional speed in the Santa Ana Canyon (the canyon from which it derives its name). Forecasters at the National Weather Service in Oxnard and San Diego usually place speed minimums on these winds and reserve the use of "Santa Ana" for winds greater than 25 knots.

Santa Ana winds commonly occur between October and February with December having the highest frequency of events. Summer events are rare. Wind speeds are typically north to east at 35 knots through and below passes and canyons with gusts to 50 knots. Stronger Santa Ana winds can have gusts greater than 60 knots over widespread areas and gusts greater than 100 knots in favored areas. Frequently, the strongest winds in the basin occur during the night and morning hours due to the absence of a sea breeze. The sea breeze which typically blows onshore daily, can moderate the Santa Ana winds during the late morning and afternoon hours.

The measurement of winds typically employs the Beaufort scale, which was created in 1805 and sorts wind occurrences based on their speed and effects on a force scale ranging from 0 to 12. Wind events classified as force 9 or higher are typically recognized as severe wind events.

Beaufort Scale

Beaufort number	Wind Speed (mph)	Seaman's term		Effects on Land
0	Under 1	Calm		Calm; smoke rises vertically.
1	1-3	Light Air		Smoke drift indicates wind direction; vanes do not move.
2	4-7	Light Breeze		Wind felt on face; leaves rustle; vanes begin to move.
3	8-12	Gentle Breeze		Leaves, small twigs in constant motion; light flags extended.
4	13-18	Moderate Breeze		Dust, leaves and loose paper raised up; small branches move.
5	19-24	Fresh Breeze		Small trees begin to sway.
6	25-31	Strong Breeze		Large branches of trees in motion; whistling heard in wires.
7	32-38	Moderate Gale		Whole trees in motion; resistance felt in walking against the wind.
8	39-46	Fresh Gale		Twigs and small branches broken off trees.
9	47-54	Strong Gale		Slight structural damage occurs; slate blown from roofs.
10	55-63	Whole Gale		Seldom experienced on land; trees broken; structural damage occurs.
11	64-72	Storm		Very rarely experienced on land; usually with widespread damage.
12	73 or higher	Hurricane Force		Violence and destruction.

Source:

Table 8-1. Intensity of Rain or Ice Pellets Based on Rate-of-Fall

Intensity	Criteria
Light	Up to 0.10 inch per hour; maximum 0.01 inch in 6 minutes.
Moderate	0.11 inch to 0.30 inch per hour; more than 0.01 inch to 0.03 inch in 6 minutes.
Heavy	More than 0.30 inch per hour; more than 0.03 inch in 6 minutes.

Table 8-2. Estimating Intensity of Rain

Intensity	Criteria
Light	From scattered drops that, regardless of duration, do not completely wet an exposed surface up to a condition where individual drops are easily seen.
Moderate	Individual drops are not clearly identifiable; spray is observable just above pavements and other hard surfaces.
Heavy	Rain seemingly falls in sheets; individual drops are not identifiable; heavy spray to height of several inches is observed over hard surfaces.

https://www.icams-portal.gov/resources/ofcm/fmh/FMH1/fmh1_2019.pdf

Previous Occurrences

The following data comes from FEMA's Disaster Declarations for States and Counties (https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties).

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Severe Storm	Los Angeles County	DR-1046-CA	1995	March	3/12/1995	SEVERE WINTER STORMS, FLOODING LANDSLIDES, MUD FLOW	CA
Severe Storm	Los Angeles County	DR-1044-CA	1995	January	1/10/1995	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, MUD FLOWS	CA
Severe Storm	Los Angeles County	DR-1203-CA	1998	February	2/9/1998	SEVERE WINTER STORMS AND FLOODING	CA
Severe Storm	Los Angeles County	DR-1577-CA	2005	February	2/4/2005	SEVERE STORMS, FLOODING, DEBRIS FLOWS, AND MUDSLIDES	CA
Severe Storm	Los Angeles County	DR-1585-CA	2005	April	4/14/2005	SEVERE STORMS, FLOODING, LANDSLIDES, AND MUD AND DEBRIS FLOWS	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Severe Storm	Los Angeles County	DR-1884-CA	2010	March	3/8/2010	SEVERE WINTER STORMS, FLOODING, AND DEBRIS AND MUD FLOWS	CA
Severe Storm	Los Angeles County	DR-4699-CA	2023	April	4/3/2023	SEVERE WINTER STORMS, STRAIGHT-LINE WINDS, FLOODING, LANDSLIDES, AND MUDSLIDES	CA
Tropical Storm	Los Angeles County	DR-677-CA	1983	February	2/9/1983	COASTAL STORMS, FLOODS, SLIDES & TORNADOES	CA
Tropical Storm	Los Angeles County	EM-3248-CA	2005	September	9/13/2005	HURRICANE KATRINA EVACUATION	CA

Probability of Future Events and Impacts of Climate Change

Overall probability over next five years: ***Likely.***

The probability of high wind events in Montebello and the surrounding areas depends on several factors, including atmospheric conditions, the location and topography of the region, and the season. The probability of high wind events is highest during the fall and winter months, when the Santa Ana winds are most likely to occur. However, these events can occur at any time of year and can vary in intensity and duration.

It is difficult to predict exactly how climate change will impact high wind events in the Montebello area and surrounding region. Conflicting research points to possibilities of both decreasing or increasing frequencies of Santa Ana wind events overall. One 2019 study posits that Santa Ana winds will decrease in frequency during the fall, while a follow-up 2022 study finds that only the so-called "cold" winds that bring snow to mountains are likely to measurably decrease.

In either scenario, however, while the chronological distribution of severe winds may shrink overall, changes in precipitation patterns may result in increased danger from high winds. Due to increased periods of dryness between precipitation in summer and a shift in fall precipitation later in the year towards winter, there is a possibility that the window for wildfires will follow the Santa Ana winds. With increased dryness in vegetation, this has the potential for more damaging fires.

The following chart from NOAA's Climate Explorer describes trends in the number of days with rainfall greater than 3 inches to 2100.



Montebello can expect to experience more frequent and intense heavy rainstorms due to the expected increase in the frequency and overall amount of rainfall in California. According to California's Fourth Climate Assessment for the Los Angeles Region:

> *Atmospheric rivers are regions of high water vapor transport from the tropics to the Pacific Coast of the U.S. that can produce intense topographic-induced precipitation along southern California mountain ranges (Neiman et al. 2008; J. Kim et al. 2012; Harris and Carvalho 2017; Guan et al. 2013; Payne and Magnusdottir 2014). Such events have helped pull the region out of droughts, although they are also responsible for devastating floods and mudslides (Ralph et al. 2006; Guan et al. 2013; M. D. Dettinger 2013). Between 1979-2013, 72 atmospheric rivers were identified as landfalling along the coast of southern California, approximately 2-3 events each year, though significant interannual variability exists. The frequency of atmospheric rivers over southern California has a potential connection to some natural climate variability patterns (Neiman et al. 2008; J. Kim et al. 2012; Harris and Carvalho 2017; Guan et al. 2013; Payne and Magnusdottir 2014).*
>
> *Analysis of several previous-generation GCMs by (Dettinger 2011a) suggest that the frequency of atmospheric river events may increase in the future, and that the storms themselves will be associated with higher water vapor transport rates compared to historical conditions. Moreover, the peak season of atmospheric rivers may also lengthen, which could extend the food-hazard season in California. The current generation of GCMs project a nearly 40% increase in precipitation during atmospheric river events over southern California by the late-21st century under RCP8.5. The number of atmospheric river events is also projected to increase in the future, possibly around a doubling of days by the end of the century (Warner et al. 2015; Hagos et al. 2016; Gao et al. 2015). Understanding future characteristics of atmospheric rivers, particularly over local spatial scales in California, remains an active area of research.*

Increased periods of little to no rainfall and associated drying out of soils could also contribute to reduced absorptive capacity and increased surface transport of water from heavy rainfall, intensifying localized flooding.

3.4.5 Fire

Hazard Description

A wildfire is an uncontrolled fire spreading through vegetative fuels and exposing or possibly consuming structures. They often begin unnoticed and spread quickly. Naturally occurring and non-native species of grasses, brush, and trees fuel wildfires. A wildland fire is a wildfire in an area in which development is essentially nonexistent, except for roads, railroads, power lines and similar facilities. A wildland/urban interface fire is a wildfire in a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

Wildfire behavior is based on three primary factors: fuel, topography, and weather. The type, and amount of fuel, as well as its burning qualities and level of moisture affect wildfire potential and behavior. The continuity of fuels, expressed in both horizontal and vertical components is also a determinant of wildfire potential and behavior. Topography is important because it affects the movement of air (and thus the fire) over the ground surface. The slope and shape of terrain can change the speed at which the fire travels, and the ability of firefighters to reach and extinguish the fire. Weather affects the probability of wildfire and has a significant effect on its behavior. Temperature, humidity and wind (both short and long term) affect the severity and duration of wildfires.

Wildfires tend to occur most frequently in the summer when dry brush provides fuel for flames to spread rapidly. Ignition sources for wildfires can include campfires that were not properly extinguished, discarded cigarettes, burning debris, lightning strikes, or intentional acts of arson. Wildfires can start as slow burns along the forest floor, damaging and killing trees. As they spread to the tops of trees, wind can carry the flames from one tree to another, causing the fire to spread more rapidly. Typically, the first indication of a wildfire is the presence of dense smoke.

For thousands of years, fires have been a natural part of the ecosystem in Southern California. Wildfires can occur anywhere, with variation in size, intensity, location, and duration. People start more than 80 percent of wildfires, usually as debris burns, arson, or carelessness. Lightning strikes are the next leading cause of wildfires.

The danger to people and property is particularly high in the wildland urban interface (WUI), where development meets undeveloped open grassland or fire-adapted forest ecosystems, and during conditions, when vegetation is especially susceptible to fire. The classic wildland/urban interface exists where well-defined urban and suburban development presses up against open expanses of wildland areas; the mixed wildland/urban interface is characterized by isolated homes, subdivisions, and small communities situated predominantly in wildland settings. The occluded wildland/urban interface exists where islands of wildland vegetation occur inside a largely urbanized area.

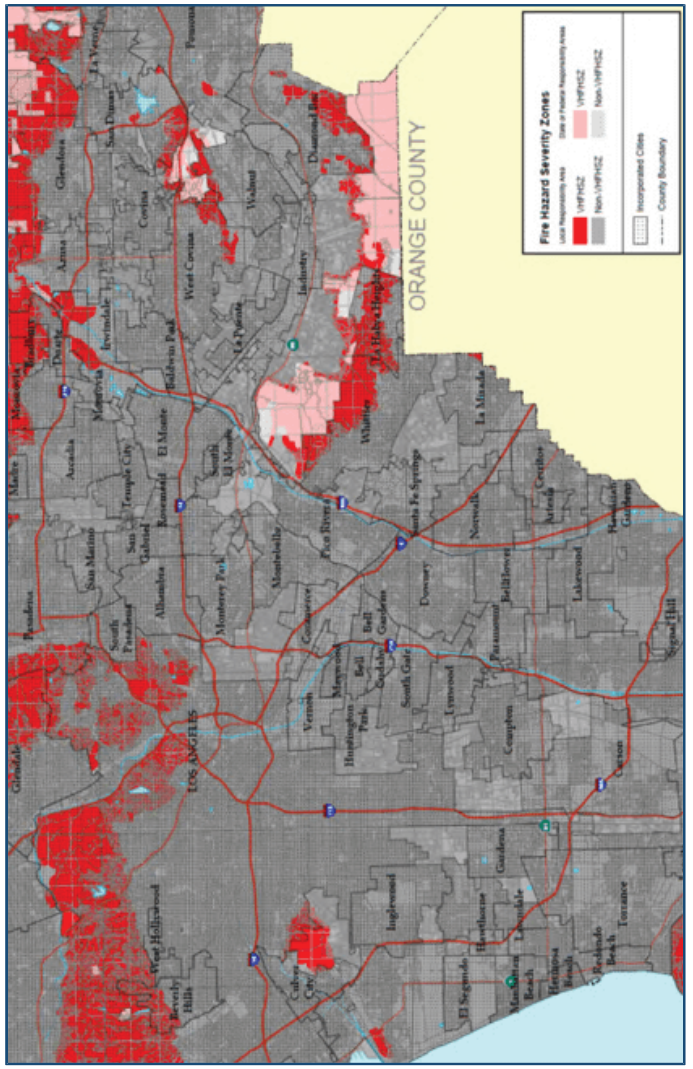
One challenge Southern California faces regarding the wildfire hazard is from the increasing number of houses being built on the urban/wildland interface. Every year the growing population expands further into the hills and mountains, including forest lands. The increased "interface" between urban/suburban areas, and the open spaces created by this expansion, produces a significant increase in threats to life and property from fires, and pushes existing fire protection systems beyond original or current design and capability.

Property owners in the interface are often not aware of the problems and fire hazards or risks on their own property. A house surrounded by brushy growth rather than cleared space allows for greater continuity of fuel and increases the fire's ability to spread. After decades of fire suppression "dog-hair" thickets have accumulated, which enable high intensity fires to flare and spread rapidly.

Topography influences the movement of air, thereby directing a fire course. For example, if the percentage of uphill slope doubles, the rate of spread in wildfire will likely double. Gulches and canyons can funnel air and act as chimneys, which intensify fire behavior and cause the fire to spread faster. Solar heating of dry, south-facing slopes produces up slope drafts that can complicate fire behavior. Unfortunately, hillsides with hazardous topographic characteristics are also desirable residential areas in many communities. Owners often prefer homes that are private with scenic views, nestled in vegetation, and use natural materials. A private setting is usually far from public roads, or hidden behind a narrow, curving driveway. These conditions, however, make evacuation and firefighting difficult.

Areas where annual precipitation is less than 30 inches per year are extremely fire susceptible. High-risk areas in Southern California share a hot, dry season in late summer and early fall when high temperatures and low humidity favor fire activity. The so-called "Santa Ana" winds, which are heated by compression as they flow down to Southern California from Utah, create a particularly high risk, as they can rapidly spread what might otherwise be a small fire.

Map: Local, State, and Federal Responsibility Areas - Very High Fire Hazard Severity Zones (Source: CAL FIRE)



Location and Extent

The City of Montebello is not within a designated very high fire hazard severity zone (VHFHSZ). However, the immediate areas due east of Montebello including the City of Whittier and the unincorporated community of Hacienda Heights are at severe risk to wildfires. These areas are at significant risk during the summer months, extended periods of heat, and long periods of no rain. Strong, easterly Santa Ana winds have the potential to direct wildfires from the west into the City of Montebello.

Regardless of whether fire itself spreads, smoke is very likely to impact the City, whether from adjacent fires or more severe fires further away. Smoke from fires can severely impact air quality and increase health risks for vulnerable populations, including children and the elderly.

Fire Danger Rating System

Fire Danger Rating	Description
Low (L)	Fuels do not ignite readily from small firebrands, although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate (M)	Fires can start from most accidental causes, but except for lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H)	All fine dead fuels ignite readily, and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.
Very High (VH)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics, such as long-distance spotting and fire whirlwinds when they burn into heavier fuels.
Extreme (E)	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes, or the fuel supply lessens.

Source: U.S. Forest Service's Wildland Fire Assessment System (USFS WFAS)

Urban Fires due to Seismic Events

Urban fires are a constant threat in the City, given the seismic hazards of fault rupture, strong ground shaking, and liquefaction. In the United States, fires following earthquakes have caused the largest losses associated with earthquakes. Urban fires following earthquakes are driven by two key features: 1) the earthquake is likely to ignite multiple, nearly simultaneous fires; and 2) the earthquake is likely to damage and disrupt fire suppression by severing water pipelines and delaying the arrival of adequate fire-fighting equipment and personnel.

There have been no recent fires due to seismic events in the City of Montebello.

Previous Occurrences

The following data comes from FEMA's Disaster Declarations for States and Counties (https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties; retrieved November 18, 2023).

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	DR-295-CA	1970	September	9/29/1970	FOREST & BRUSH FIRES	CA
Fire	Los Angeles County	EM-3067-CA	1978	October	10/29/1978	BRUSH FIRES	CA
Fire	Los Angeles County	DR-1005-CA	1993	October	10/28/1993	FIRES, MUD/LANDSLIDES, FLOODING, SOIL EROSION	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	DR-635-CA	1980	November	11/27/1980	BRUSH & TIMBER FIRES	CA
Fire	Los Angeles County	DR-872-CA	1990	June	6/30/1990	FIRES	CA
Fire	Los Angeles County	DR-942-CA	1992	May	5/2/1992	FIRE DURING A PERIOD OF CIVIL UNREST	CA
Fire	Los Angeles County	EM-3120-CA	1996	October	10/23/1996	SEVERE FIRESTORMS	CA
Fire	Los Angeles County	FM-2417-CA	2002	June	6/6/2002	CA - COPPER FIRE - 06-06-2002	CA
Fire	Los Angeles County	FM-2464-CA	2002	September	9/24/2002	WILLIAMS FIRE	CA
Fire	Los Angeles County	FM-2462-CA	2002	September	9/4/2002	LEONA FIRE	CA
Fire	Los Angeles County	DR-1498-CA	2003	October	10/27/2003	WILDFIRES, FLOODING, MUDFLOW AND DEBRIS FLOW DIRECTLY RELATED T	CA
Fire	Los Angeles County	FM-2502-CA	2003	October	10/25/2003	CA-VERDALE FIRE 10-25-2003	CA
Fire	Los Angeles County	FM-2466-CA	2003	January	1/7/2003	CA - WILDFIRE (PACIFIC FIRE) - 01-06-2003	CA
Fire	Los Angeles County	FM-2534-CA	2004	July	7/18/2004	CA-FOOTHILL WILDFIRE-07-18-2004	CA
Fire	Los Angeles County	FM-2535-CA	2004	July	7/21/2004	CA-CROWN WILDFIRE-07-21-2004	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	FM-2528-CA	2004	July	7/14/2004	CA - PINE FIRE - 7-13-2004	CA
Fire	Los Angeles County	FM-2583-CA	2005	September	9/28/2005	TOPANGA FIRE	CA
Fire	Los Angeles County	DR-1731-CA	2007	October	10/24/2007	WILDFIRES, FLOODING, MUD FLOWS, AND DEBRIS FLOWS	CA
Fire	Los Angeles County	FM-2736-CA	2007	October	10/22/2007	RANCH FIRE	CA
Fire	Los Angeles County	FM-2732-CA	2007	October	10/21/2007	CANYON FIRE	CA
Fire	Los Angeles County	FM-2733-CA	2007	October	10/21/2007	BUCKWEED FIRE	CA
Fire	Los Angeles County	FM-2708-CA	2007	July	7/8/2007	CANYON FIRE	CA
Fire	Los Angeles County	FM-2694-CA	2007	May	5/10/2007	ISLAND FIRE	CA
Fire	Los Angeles County	FM-2691-CA	2007	May	5/9/2007	GRIFFITH PARK FIRE	CA
Fire	Los Angeles County	EM-3279-CA	2007	October	10/23/2007	WILDFIRES	CA
Fire	Los Angeles County	DR-1810-CA	2008	November	11/18/2008	WILDFIRES	CA
Fire	Los Angeles County	FM-2788-CA	2008	October	10/12/2008	MAREK FIRE	CA
Fire	Los Angeles County	FM-2792-CA	2008	November	11/15/2008	FREEWAY FIRE COMPLEX	CA
Fire	Los Angeles County	FM-2789-CA	2008	October	10/13/2008	SESNON FIRE	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	FM-2791-CA	2008	November	11/15/2008	SAYRE FIRE	CA
Fire	Los Angeles County	FM-2763-CA	2008	April	4/27/2008	SANTA ANITA FIRE	CA
Fire	Los Angeles County	FM-2828-CA	2009	August	8/28/2009	PV FIRE	CA
Fire	Los Angeles County	FM-2830-CA	2009	August	8/28/2009	STATION FIRE	CA
Fire	Los Angeles County	FM-2851-CA	2010	July	7/30/2010	CROWN FIRE	CA
Fire	Los Angeles County	FM-5025-CA	2013	June	6/2/2013	POWERHOUSE FIRE	CA
Fire	Los Angeles County	FM-5051-CA	2014	January	1/16/2014	COLBY FIRE	CA
Fire	Los Angeles County	FM-5124-CA	2016	June	6/5/2016	OLD FIRE	CA
Fire	Los Angeles County	FM-5129-CA	2016	June	6/21/2016	FISH FIRE	CA
Fire	Los Angeles County	FM-5132-CA	2016	July	7/9/2016	SAGE FIRE	CA
Fire	Los Angeles County	FM-5135-CA	2016	July	7/23/2016	SAND FIRE	CA
Fire	Los Angeles County	EM-3396-CA	2017	December	12/8/2017	WILDFIRES	CA
Fire	Los Angeles County	FM-5201-CA	2017	September	9/2/2017	LA TUNA FIRE	CA
Fire	Los Angeles County	FM-5225-CA	2017	December	12/5/2017	CREEK FIRE	CA
Fire	Los Angeles County	FM-5226-CA	2017	December	12/5/2017	RYE FIRE	CA
Fire	Los Angeles County	FM-5227-CA	2017	December	12/6/2017	SKIRBALL FIRE	CA
Fire	Los Angeles County	DR-4407-CA	2018	November	11/12/2018	WILDFIRES	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	DR-4353-CA	2018	January	1/2/2018	WILDFIRES, FLOODING, MUDFLOWS, AND DEBRIS FLOWS	CA
Fire	Los Angeles County	EM-3409-CA	2018	November	11/9/2018	WILDFIRES	CA
Fire	Los Angeles County	FM-5280-CA	2018	November	11/9/2018	WOOLSEY FIRE	CA
Fire	Los Angeles County	FM-5293-CA	2019	October	10/11/2019	SADDLE RIDGE FIRE	CA
Fire	Los Angeles County	FM-5296-CA	2019	October	10/24/2019	TICK FIRE	CA
Fire	Los Angeles County	FM-5297-CA	2019	October	10/28/2019	GETTY FIRE	CA
Fire	Los Angeles County	DR-4569-CA	2020	October	10/16/2020	WILDFIRES	CA
Fire	Los Angeles County	FM-5374-CA	2020	September	9/13/2020	BOBCAT FIRE	CA

Large fires have been part of the Southern California landscape for millennia. Indigenous communities used controlled fires to shape the landscape to their benefit. In the aftermath of Mexican and later American colonization, California's fire regime was significantly altered. Early US forest management practices centered around the idea of fire suppression, which reduced the frequency of fires in proximity to settlements but ultimately increased their intensity by allowing vegetation to build up and fuel more intense fires.

Notable fires outside of Montebello that have nevertheless impacted the City's air quality include:

- **1989 Montebello Hills Fire**
  - **Date**: October 3, 1989
  - **Location**: Montebello Hills
  - **Impact**: This wildfire burned approximately 300 acres in the Montebello Hills area. The fire threatened several homes and caused evacuations in nearby neighborhoods. Firefighters were able to contain the blaze within a day, but not before it caused significant damage to local vegetation and disrupted daily life for many residents. T

- **2008 Montebello Brush Fire**
  - **Date**: June 16, 2008
  - **Location**: Montebello Hills
  - **Impact**: The fire broke out in the brushy areas of the Montebello Hills, burning around 150 acres. It required a substantial firefighting effort, including ground crews and aerial support, to bring it under control. The fire threatened nearby homes, prompting temporary evacuations and road closures. While no homes were lost, the fire underscored the ongoing risk posed by the dry, brush-covered hills in and around Montebello.
- **2016 Garfield Fire**
  - **Date**: October 19, 2016
  - **Location**: South Garfield Avenue and Via San Clemente
  - **Impact**: The Garfield Fire burned approximately 40 acres in a residential area of Montebello. The fire started in a vacant lot and quickly spread due to high winds and dry conditions. Several homes were threatened, and residents were evacuated as a precaution. The firefighting effort involved multiple agencies and was successful in preventing any structural damage to homes.
- **2020 Whittier Narrows Fire**
  - **Date**: August 13, 2020
  - **Location**: Whittier Narrows Recreation Area, near Montebello
  - **Impact**: Although the fire started in the Whittier Narrows Recreation Area, its proximity to Montebello meant that the city was affected by smoke and air quality issues. The fire burned over 80 acres and required extensive firefighting efforts, including water-dropping helicopters and ground crews.
- **2021 Montebello Hills Fire**
  - **Date**: June 15, 2021
  - **Location**: Montebello Hills
  - **Impact**: A fire broke out in the Montebello Hills, burning approximately 50 acres of brush. The fire was driven by high winds and dry vegetation, making it challenging to contain. Firefighters from multiple agencies responded, utilizing both ground crews and aerial support. Evacuations were ordered for homes in the immediate vicinity, and several roads were closed.
- **2022 Montebello Industrial Fire**
  - **Date**: April 10, 2022
  - **Location**: Industrial area near Greenwood Avenue and Olympic Boulevard
  - **Impact**: This fire broke out in an industrial area of Montebello, affecting several warehouses and storage facilities. The blaze caused significant property damage and released large plumes of smoke, affecting air quality in the surrounding neighborhoods.

Also, in 2015, an unhoused man sparked a 384-acre wildfire in the Rio Hondo Riverbed while cooking food in the brush. Although no structures were damaged, four firefighters suffered minor injuries while fighting the fire.

Probability of Future Events and Impacts of Climate Change

Overall probability over next five years: ***Moderate.***

Wildfires can occur at any time of the year, although over the past two decades, wildfire season has begun to extend into the cooler months. The frequency and severity of fires are increasing due to higher temperatures and drier climates. Climate change is projected to lead to increased temperatures and more frequent/intense droughts, resulting in more dry plant matter available and a higher risk of wildfires statewide.

In a low-emissions (conservative) scenario, burned acreage in Los Angeles County is expected to increase 16% by 2050. According to California's Fourth Climate Assessment for the Los Angeles Region:

> *Future projections by Jin et al. (2015) using statistical models indicate that southern California may experience a larger number of wildfires and burned area by the mid-21st century under RCP8.5. Overall burned area is projected to increase over 60% for Santa Ana-based fires and over 75% for non-Santa Ana fires. New wildfire projections were developed for the Assessment (Westerling et al. 2018) using different statistical models than those used by Jin et al. (2015), which also incorporated new datasets of future climate data and land use. Compared to the observed 1950- 2009 historical average area burned of 53,300 hectares (Jin et al. 2015), the modeled 1976-2005 historical average area burned is roughly 16,000 hectares (Westerling et al. 2018). This discrepancy highlights that large uncertainties remain in current wildfire models and is an area where further research is required. Based on the projections developed by Westerling et al. (2018), the annual burned area over the LA region may increase over 2000 hectares by the mid-21st century under RCP4.5 or RCP8.5 compared to simulated historical conditions. Similar, yet potentially slightly lower, increases are projected by the late-21st century, as continued warming (even with moderate precipitation increases) could lead to overall fuel declines necessary for wildfire.*

And in August 2023, *Nature* published "Climate warming increases extreme daily wildfire growth risk in California" (https://www.nature.com/articles/s41586-023-06444-3.epdf) that further attempted to quantify future wildfire risk. Brown et al. conclude that as of the time of publication (August 2023), aggregate expected frequency of extreme wildfire events has grown by 25% over pre-industrial conditions. Under lower emissions scenarios, the aggregate expected frequency of extreme wildfire events more than doubles from today to 59% relative to pre-industrial conditions, and under very high-emissions scenarios increases by 172%.

3.4.6 Power Outage

Hazard Description

A power outage is a temporary loss of electricity to a home or business due to a disruption in the power supply. There are several causes of power outages, including severe weather conditions such as thunderstorms, high winds, and extreme heat. In Southern California, power outages can also be caused by wildfires, earthquakes, and equipment failures.

During times of extreme heat, power outages can be particularly hazardous to a city. High temperatures can cause increased demand for electricity as people turn up their air conditioning units, leading to strain on the power grid. This can result in blackouts or brownouts, which can lead to several hazards.

Location and Extent

The entirety of the City of Montebello is vulnerable to power outages.

The location and duration of power outages can vary depending on the cause of the outage. For example, power outages caused by weather events such as thunderstorms or wildfires may be localized, affecting only a few neighborhoods or communities. On the other hand, power outages caused by equipment failures or grid overloads may be more widespread and impact larger areas or even entire regions.

Previous Occurrences

Minor power outages are a not-infrequent occurrence in any grid system. Several major incidents that impacted Los Angeles County include:

- **1987 Whittier Narrows Earthquake Power Outage**
  - **Date**: October 1, 1987
  - **Cause**: Earthquake
  - **Impact**: The Whittier Narrows Earthquake caused widespread power outages across the Los Angeles area, including Montebello. The shaking damaged power lines and transformers, leading to prolonged outages. Many residents were without electricity for hours to days as utility crews worked to repair the damage and restore service.
- **2006 Heat Wave Power Outage**
  - **Date**: July 2006
  - **Cause**: Extreme heat and high electricity demand

  - **Impact**: During the 2006 heat wave, record-high temperatures led to a surge in electricity usage as residents and businesses relied heavily on air conditioning. The increased demand overwhelmed the power grid, causing rolling blackouts and localized power outages throughout Southern California, including Montebello. Thousands of residents experienced power cuts, which in some cases lasted for several hours.
- **2011 Windstorm Power Outage**
  - **Date**: November 30 - December 1, 2011
  - **Cause**: High winds
  - **Impact**: A powerful windstorm with gusts up to 100 mph caused extensive damage to the power infrastructure in Montebello and surrounding areas. Downed trees and power lines led to widespread outages affecting thousands of residents. Some areas were without power for several days as crews worked to clear debris and repair the damaged lines.
- **2014 Santa Ana Winds Power Outage**
  - **Date**: October 2014
  - **Cause**: Santa Ana winds
  - **Impact**: Strong Santa Ana winds brought gusts of up to 60 mph to Montebello, causing trees to fall and power lines to snap. The high winds led to power outages affecting thousands of households and businesses. Restoration efforts were complicated by the widespread nature of the damage and the continuing high winds.
- **2016 Pineapple Express Storms Power Outage**
  - **Date**: January 2016
  - **Cause**: Heavy rain and high winds
  - **Impact**: The Pineapple Express weather pattern brought heavy rainfall and strong winds to Montebello, leading to significant power outages. Flooding and wind damage caused power lines to fail, leaving many residents without electricity. The outages lasted from several hours to days, depending on the severity of the damage in different areas.
- **2017 Heat Wave Power Outage**
  - **Date**: September 2017
  - **Cause**: Extreme heat and high electricity demand
  - **Impact**: A severe heat wave in September 2017 led to record temperatures in Montebello and the surrounding areas. The increased demand for air conditioning put immense pressure on the power grid, resulting in rolling blackouts and power outages. Thousands of residents were affected, experiencing disruptions that lasted several hours.
- **2020 Labor Day Weekend Heat Wave Power Outage**
  - **Date**: September 2020
  - **Cause**: Extreme heat and high electricity demand

    - **Impact**: Over the Labor Day weekend, Montebello and much of Southern California faced an intense heat wave, with temperatures soaring above 100°F. The excessive heat led to a spike in electricity use, causing strain on the power grid and resulting in rolling blackouts and power outages. Many residents experienced interruptions in their electricity supply, lasting from a few hours to more than a day in some areas.
- **2021 Wind Event Power Outage**
    - **Date**: January 2021
    - **Cause**: High winds
    - **Impact**: A severe wind event in January 2021 brought gusts up to 60 mph, causing extensive damage to the power infrastructure in Montebello. The high winds knocked down trees and power lines, leading to widespread outages. Thousands of residents and businesses were affected, with some areas experiencing power cuts lasting several days.

One particularly dangerous scenario, exemplified by the 2006 summer heat wave, is a power outage amid a severe heat wave. This scenario, which is likely to result in fatalities, is unfortunately becoming more probable as climate impacts grow.

Probability of Future Events and Impacts of Climate Change

Overall probability over next five years: ***Moderate.***

The likelihood of future power outages impacting the City of Montebello may increase because of climate change and the associated risks of wildfires and extreme heat events.

Wildfires have become increasingly common and severe in California beyond the traditional fire season in recent years, with record-breaking fires causing widespread damage and disruption to power infrastructure. Power lines and equipment damaged by wildfires can lead to power outages and disruptions to essential services, such as hospitals and emergency response systems. Los Angeles County, with its dry climate and high wildfire risk, may be particularly vulnerable to these types of power outages.

In addition to the risk of wildfires, extreme heat events associated with climate change can also increase the likelihood of power outages. High temperatures can put strain on the power grid, leading to equipment failures and blackouts. In Los Angeles County, which experiences hot and dry summers, this risk is particularly acute.

To mitigate the risks of future power outages, Los Angeles County, and utility providers such as Southern California Edison (SCE) have implemented measures such as grid upgrades, equipment maintenance, and emergency response plans. SCE has also implemented Public Safety Power Shutoffs (PSPS) to reduce the risk of wildfire-related power outages. PSPS is a proactive measure in which SCE intentionally shuts off power to certain areas during periods of high fire risk to reduce the risk of equipment-related fires. While these measures can help reduce the risk of power outages, they may not eliminate the risk, especially during extreme weather events.

3.4.7 Cyberattack/IT Disruption

Hazard Description

A cyberattack is a malicious attempt to damage, disrupt, or gain unauthorized access to a computer system, network, or device. These attacks can take many forms and can be launched from anywhere in the world. However, IT disruptions can also occur due to non-malicious reasons such as software failures, hardware malfunctions, power outages, and natural disasters. Regardless of their origin, an IT disruption can be extremely problematic for a modern community.

Cyberattacks on local governments and businesses are becoming increasingly common as more services move online and more data is stored in digital formats. These attacks can include phishing scams, ransomware attacks, and distributed denial-of-service (DDoS) attacks. In a phishing scam, an attacker sends a legitimate-looking email or message to trick the target into revealing sensitive information like usernames and passwords. In a ransomware attack, malware encrypts a victim's data, with attackers demanding payment for the decryption key. A DDoS attack involves flooding a website or server with traffic, making it unavailable to legitimate users.

Cyberattacks on local governments can be particularly damaging, disrupting critical services such as emergency response systems, public utilities, and transportation networks. They can also result in the theft of sensitive data, including personal information, financial data, and intellectual property. Similarly, businesses are vulnerable to cyberattacks, which can lead to significant financial losses, reputational damage, and legal liability. On the other hand, IT disruptions not resulting from malicious attacks can still cause severe impacts. For example, a software glitch could disable critical systems, a hardware failure could lead to data loss, and a power outage could interrupt services.

Location and Extent

The threat of cyberattacks and IT disruptions is ever-changing and growing as work processes become increasingly digitized. The vulnerability of cloud-based systems may lead to attempts to segregate parts of the cloud or create “mini-clouds.” Additionally, the proliferation of artificial intelligence (AI) may increase susceptibility to cyberattacks as AI becomes more pervasive and supplements or replaces human-based knowledge.

Cyberattacks and IT disruptions are generally not geographically confined to a single location. They can target specific organizations, departments, or entire municipal IT networks. For example, cloud storage used by a city may be physically distributed among many servers in various locations, some potentially far from the city itself. This distributed nature means that an attack or disruption in one location can have widespread impacts, affecting services and operations across multiple areas.

Previous Occurrences

Cyberattacks are often not publicized, and as such, there is not a detailed record of cyberattacks potentially available to the public against Montebello city government or local businesses.

However, there have been several high-profile cyberattacks and IT disruptions that illustrate the nature of the threat:

- **2013 City of Detroit Cyberattack**
    - **Date**: April 2013
    - **Type**: Ransomware
    - **Impact**: Detroit experienced a ransomware attack where hackers demanded approximately $800,000 to unlock the city's data. The attack was discovered before any payment was made, highlighting the city's vulnerability. Detroit chose not to pay the ransom and instead focused on enhancing its cybersecurity defenses.
- **2018 City of Atlanta Cyberattack**
    - **Date**: March 2018
    - **Type**: Ransomware (SamSam)
    - **Impact**: Atlanta was hit by a SamSam ransomware attack that encrypted a significant portion of the city's data and disrupted various municipal services, including bill payments and court records. The attackers demanded a ransom of approximately $51,000 in Bitcoin. The attack caused major operational disruptions and led to a recovery cost estimated at $17 million, underscoring the severe financial and operational impact of such attacks.
- **2019 Baltimore Cyberattack**
    - **Date**: May 2019
    - **Type**: Ransomware (RobbinHood)
    - **Impact**: Baltimore was targeted by the RobbinHood ransomware, which paralyzed the city's computer systems and disrupted various services, including water billing, property transactions, and email systems. The attackers demanded a ransom of 13 Bitcoin (about $76,000 at the time), which the city refused to pay. The recovery efforts took months and cost the city an estimated $18 million, including system restoration and lost revenue.
- **2019 New Orleans Cyberattack**

    - **Date**: December 2019
    - **Type**: Ransomware
    - **Impact**: New Orleans experienced a ransomware attack that forced the shutdown of its IT systems to prevent the spread of the malware. The attack led to the declaration of a state of emergency and disrupted municipal operations, including email systems and public safety services. The city incurred significant costs related to recovery and system upgrades, estimated at several million dollars.
- **2020 Durham, North Carolina Cyberattack**
    - **Date**: March 2020
    - **Type**: Ransomware (Ryuk)
    - **Impact**: Durham's IT systems were compromised by the Ryuk ransomware, affecting various municipal services and operations. The attack disrupted the city's phone systems, email, and other critical services. The city worked with cybersecurity experts to restore systems and enhance security measures, incurring substantial recovery costs.
- **2020 Knoxville, Tennessee Cyberattack**
    - **Date**: June 2020
    - **Type**: Ransomware
    - **Impact**: Knoxville's computer systems were targeted by a ransomware attack that encrypted data and disrupted city operations. The attack affected internal services, including email and payment processing systems. The city worked with external consultants to restore systems and improve cybersecurity protocols.
- **2021 Oldsmar, Florida Water Treatment Plant Cyberattack**
    - **Date**: February 2021
    - **Type**: Unauthorized Access
    - **Impact**: Hackers gained access to the water treatment plant's control systems in Oldsmar, Florida, and attempted to increase the amount of sodium hydroxide (lye) in the water supply to dangerous levels. The attack was detected and halted before any harm could occur, highlighting the vulnerabilities in municipal infrastructure and the potential for cyberattacks to pose public safety risks.
- **2021 City of Tulsa Cyberattack**
    - **Date**: May 2021
    - **Type**: Ransomware
    - **Impact**: Tulsa's IT systems were affected by a ransomware attack that disrupted various municipal services, including online billing and utility payment systems. The city worked to contain the attack and restore services, implementing additional security measures to prevent future incidents.
- **2022 City of Quincy, Massachusetts Cyberattack**

    - **Date**: January 2022
    - **Type**: Ransomware
    - **Impact**: Quincy experienced a ransomware attack that affected several city departments, including the police department. The attack disrupted email systems and access to important records. The city collaborated with cybersecurity experts to recover data and enhance its cybersecurity infrastructure.
- **2022 City of Alexandria, Louisiana Cyberattack**
    - **Date**: March 2022
    - **Type**: Ransomware
    - **Impact**: Alexandria's computer systems were hit by a ransomware attack that encrypted data and disrupted city operations, including utility billing and emergency services. The city declared a state of emergency and worked with external consultants to recover data and secure its systems.
- **2024 CrowdStrike Update Incident**
    - **Date**: July 2024
    - **Type**: Software update problem
    - **Impact**: CrowdStrike, a prominent cybersecurity company, experienced a significant incident involving a faulty update to its Falcon Sensor security software. The update, part of their Rapid Response Content, was intended to enhance security by incorporating new data on hacking tactics. However, it inadvertently caused widespread crashes on Microsoft Windows systems running the software. This resulted in approximately 8.5 million systems worldwide being affected, causing significant disruptions for businesses and government entities alike. The faulty update triggered an "out-of-bounds memory read" error, leading to the infamous "blue screen of death" on affected systems. The incident was not caused by a cyberattack but rather by a defect that went undetected during CrowdStrike's validation process.

Probability of Future Events

Overall probability over next five years: ***Very Likely.***

The future probability of cyberattacks and IT disruptions impacting city governments is increasingly high, driven by the expanding digitalization of public services and the growing sophistication of cyber threats. According to a 2022 report by Cybersecurity Ventures, global cybercrime costs are expected to reach $10.5 trillion annually by 2025, up from $3 trillion in 2015. This significant rise underscores the escalating threat landscape facing city governments.

City governments are particularly vulnerable due to their reliance on digital infrastructure to manage critical services such as emergency response, public utilities, transportation, and

healthcare. A survey by the International City/County Management Association (ICMA) in 2020 found that 44% of local governments experienced a cyberattack within the previous year.

Ransomware attacks, in particular, pose a significant threat to city governments. In 2020, the FBI's Internet Crime Complaint Center (IC3) received nearly 2,500 ransomware complaints, with adjusted losses totaling over $29.1 million. The actual figures are likely higher, as many incidents go unreported. Moreover, the Center for Strategic and International Studies (CSIS) reported that ransomware attacks on state and local governments increased by 50% from 2019 to 2020.

IT disruptions, whether due to cyberattacks, system failures, or other causes, are also a growing concern. The Uptime Institute's 2021 Global Data Center Survey revealed that 69% of data center operators experienced an outage in the past three years, with 10% of those being classified as severe or serious. Given the increasing complexity and interconnectivity of city government IT systems, the likelihood of significant disruptions is expected to rise.

3.4.8 Flooding

Hazard Description

Floods are among the most common and most widespread of all natural disasters. Almost every community in the United States has, at some point, experienced flooding.

Floods are typically caused by excessive precipitation and can be influenced by various factors such as topography, weather patterns, soil moisture, vegetation, and impervious surfaces. Drainages and streams can overflow if their capacity is surpassed by rainwater. In urban areas, the presence of pavement and other impermeable surfaces reduces the ground's ability to absorb excess water, necessitating the use of storm channels or waterways.

Floods can cause secondary hazards such as erosion or scouring of stream banks, roadway embankments, foundations, footings for bridge piers, and other features. High-velocity flow and debris carried by floodwaters can also cause impact damage to structures, roads, bridges, culverts, and other features, with debris accumulating on bridge piers and in culverts. In addition, floods can lead to the release of sewage and hazardous or toxic materials when wastewater treatment plants are inundated, storage tanks are damaged, and pipelines are severed.

The standard for flooding is the so-called "100-year flood," a benchmark used by the Federal Emergency Management Agency to establish a standard of flood control in communities throughout the country. Thus, the 100-year flood is also referred to as the "regulatory" or "base" flood.

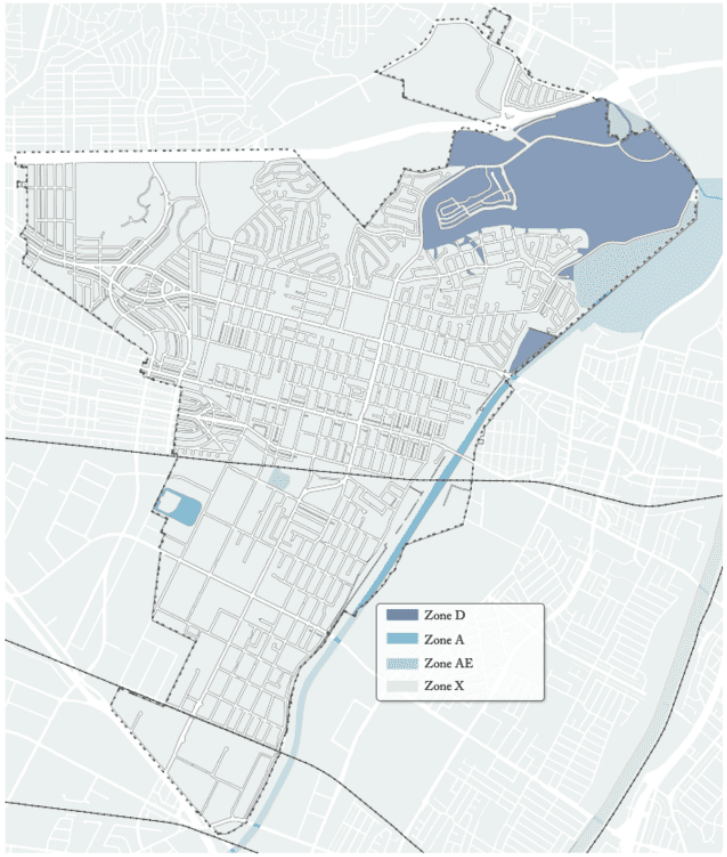
It is important to note that it does not mean that only one flood of that size will occur every 100 years. What it means is that there is a one percent chance of a flood of that intensity and elevation happening in any given year. In other words, it is the flood elevation that has a one percent chance of being equaled or exceeded each year. And it could occur more than once in a relatively short period of time. (By comparison, the 10-year flood means that there is a ten percent chance for a flood of its intensity and elevation to happen in any given year.) The three most prevalent categories described on FIRMs are:

- **Special Flood Hazard Area:** The area within a 100-year floodplain.
- **Moderate Flood Hazard Area:** The area outside of the 100-year floodplain but within the 500-year floodplain.
- **Minimum Flood Hazard Area:** The area outside of the 500-year floodplain.

Category	Description
A	*Within a 100-year flood plain, but the water height of the 100-year flood is not known.*
A1-30 or AE	*Within a 100-year flood plain and the water height of the 100-year flood is known.*
AO	*Within a 100-year flood plain, and the water height of the 100-year flood is between one and three feet but not specifically known.*
A99	*Within a 100-year flood plain, protected by flood protection infrastructure such as dams or levees.*
AH	*Within a 100-year flood plain, and the water height of the 100-year flood is between one and three feet and is specifically known.*
AR	*Within a 100-year flood plain, protected by flood protection infrastructure that is not currently effective, but is being rebuilt to provide protection.*
V	*Within a 100-year flood plain for coastal floods, but the water height of the flood is not known.*
V1-30 or VE	*Within a 100-year flood plain for coastal floods and the water height of the flood is known.*
VO	*Within a 100-year flood plain for shallow coastal floods with a height between one and three feet.*
B	*Within a 500-year flood plain, or within a 100-year flood plain with a water height less than one foot (found on older maps)*
C	*Outside of the 500-year flood plain (found on older maps)*
X	*Outside of the 500-year flood plain (found on newer maps)*
X500	*Within a 500-year flood plain, or within a 100-year flood plain with a water height less than one foot (found on newer maps)*
D	*Within an area with a potential and undetermined flood hazard.*
M	*Within an area at risk of mudslides from a 100-year flood event.*
N	*Within an area at risk of mudslides from a 500-year flood event.*
P	*Within an area at risk of mudslides from a potential and undetermined flood event.*
E	*Within an area at risk of erosion from a 100-year flood event.*

Flash floods typically occur during the rainy seasons of fall and winter. The region's dry soil makes matters worse since water has little chance to absorb the rainfall only adding to the problem. Flash floods occur suddenly, usually within 6 hours of the rain event, and result from heavy localized rainfall or levee failures. Flash floods can begin before the rain stops. Water level on small streams may rise quickly in heavy rainstorms, especially near the headwaters of river basins. Heavy rains can also cause flash flooding in areas where the floodplain has been urbanized.

Many people are killed by flash floods when driving or walking on roads and bridges that are covered by water. In fact, flash floods are the number one weather-related killer in the United States. Even six inches of fast-moving flood water can knock a person off their feet, and a depth of only two feet of water will float many of today's automobiles.



Location and Extent

There are four major areas of the City that are susceptible to flash flooding:

- West side of Grant Rea Park along the Rio Hondo Channel
- Garfield Avenue between Via Paseo and Beverly Boulevard
- East side of Rio Hondo Channel from Beverly Terrace to Mines Avenue
- Mines Avenue from Maple Avenue to Greenwood Avenue
-

Additional low-lying portions of the city are susceptible to urban flooding, due to a combination of factors including debris accumulating in storm drains, aged drainage systems, and high concentrations of surface impermeability.

The vast majority of Montebello does not lie within a 100- or 500- year floodplain, as delineated by the Federal Emergency Management Agency (FEMA). However, the potential for a localized flood event still exists within Montebello.

Two types of flooding primarily affect the City of Montebello: slow-rise or flash flooding. Slow-rise floods in Montebello may be preceded by a warning period of hours or days. Evacuation and sandbagging for slow-rise floods have often effectively lessened flood related damage. Conversely, flash floods are most difficult to prepare for, due to extremely limited, if any, advance warning and preparation time. Unlike most of California, the areas of Los Angeles County that are subject to slow-rise flooding are not associated with overflowing rivers, aqueducts, canals or lakes. Slow-rise flooding in Montebello is usually the result of one or a combination of the following factors: extremely heavy rainfall, saturated soil, area recently burned in wildfires with inadequate new ground cover growth, or heavy rainfall with runoff from melting mountain snow.

Portions of the City of Montebello are prone to urban flooding, also sometimes referred to as ponding, due to debris accumulation on storm drains and in flood control channels and basins, overburdened pumping stations and aged drainage systems. Low-lying areas of the City are particularly susceptible to urban flooding.

Urban Flooding

As land is converted from fields or woodlands to roads and parking lots, it loses its ability to absorb rainfall. Urbanization of a watershed changes the hydrologic systems of the basin. Heavy rainfall collects and flows faster on impervious concrete and asphalt surfaces. The water moves from the clouds, to the ground, and into streams at a much faster rate in urban areas. Adding these elements to the hydrological systems can result in flood waters that rise very rapidly and peak with violent force.

The City of Montebello has a high concentration of impermeable surfaces that either collect water, or concentrate the flow of water in unnatural channels. During periods of urban flooding, streets can become swift moving rivers and basements can fill with water. Storm drains often back up with vegetative debris causing additional, localized flooding.

Riverine Flooding

Riverine flooding is the overbank flooding of rivers and streams. The natural processes of riverine flooding add sediment and nutrients to fertile floodplain areas. Flooding in large river systems typically results from large-scale weather systems that generate prolonged rainfall over a wide geographic area, causing flooding in hundreds of smaller streams, which then drain into the major rivers. Shallow area flooding is a special type of riverine flooding. FEMA defines shallow flood hazards as areas that are inundated by the 100-year flood with flood depths of only one to three feet. These areas are generally flooded by low velocity sheet flows of water.

Flood control channels and basins are at risk of overflowing their banks during times of heavy rainfall and reservoir water release, specifically the Rio Hondo Flood Control Channel which runs north to south through the length of City and the San Gabriel River basin, which runs along the east side of the City. The Los Angeles County Department of Public Works and the Army Corp of Engineers are responsible for notifying the jurisdiction at the onset of planned water releases.

Previous Occurrences

The following data comes from FEMA's Disaster Declarations for States and Counties (https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties; retrieved November 18, 2023).

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Flood	Los Angeles County	DR-253-CA	1969	January	1/26/1969	SEVERE STORMS & FLOODING	CA
Flood	Los Angeles County	DR-547-CA	1978	February	2/15/1978	COASTAL STORMS, MUDSLIDES & FLOODING	CA
Flood	Los Angeles County	DR-615-CA	1980	February	2/21/1980	SEVERE STORMS, MUDSLIDES & FLOODING	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Flood	Los Angeles County	DR-812-CA	1988	February	2/5/1988	SEVERE STORMS, HIGH TIDES & FLOODING	CA
Flood	Los Angeles County	DR-935-CA	1992	February	2/25/1992	RAIN/SNOW/WIND STORMS, FLOODING, MUDSLIDES	CA
Flood	Los Angeles County	DR-979-CA	1993	February	2/3/1993	SEVERE WINTER STORM, MUD & LAND SLIDES, & FLOODING	CA
Flood	Los Angeles County	DR-4305-CA	2017	March	3/16/2017	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	CA
Flood	Los Angeles County	EM-3592-CA	2023	March	3/10/2023	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, AND MUDSLIDES	CA
Flood	Los Angeles County	EM-3591-CA	2023	January	1/9/2023	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	CA
Flood	Los Angeles County	DR-4683-CA	2023	January	1/14/2023	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, AND MUDSLIDES	CA

Average annual precipitation in Los Angeles County ranges from 13 inches on the coast to approximately 40 inches on the highest point of the Peninsular Mountain Range that transects the County. Several factors determine the severity of floods, including rainfall intensity and duration. A large amount of rainfall over a short time span can result in flash flood conditions. A sudden thunderstorm or heavy rain, dam failure, or sudden spills can cause flash flooding. The

National Weather Service's definition of a flash flood is a flood occurring in a watershed where the time of travel of the peak of flow from one end of the watershed to the other is less than six hours.

The towering mountains that give the Los Angeles region its spectacular views also wring a great deal of rain out of the storm clouds that pass through. Because the mountains are so steep, the rainwater moves rapidly down the slopes and across the coastal plains on its way to the ocean.

Naturally, this rainfall moves rapidly downstream, often with severe consequences for anything in its path. In extreme cases, flood-generated debris flows will roar down a canyon at speeds near 40 miles per hour with a wall of mud, debris and water, tens of feet high. Flooding occurs when climate, geology, and hydrology combine to create conditions where water flows outside of its usual course.

Probability of Future Events and Impact of Climate Change

Overall probability over next five years: ***Unlikely.***

The probability of future flooding events in and around Montebello is difficult to predict with certainty, but climate change is expected to increase the frequency and severity of extreme weather events, including heavy rainfall and flooding. The topography of the City and the neighborhoods surrounding it make the potential damage from a future flood event more possible at some point.

According to the Fifth National Climate Assessment, Southern California is expected to experience more frequent and intense precipitation events, which can increase the risk of flash flooding and mudslides. Paradoxically, an increased likelihood of drought is likely to intensify flood events as ground absorptive capacity for water decreases.

In *Science* in August 2022, (https://www.science.org/doi/10.1126/sciadv.abq0995), Huang and Swain conclude that both regular and extreme flood events affecting California are becoming more likely:

> *Meanwhile, a growing body of research suggests that climate change is likely increasing the risk of extreme precipitation events along the Pacific coast of North America, including California,, and of subsequent severe flood events. The primary physical mechanism responsible for this projected regional intensification of extreme precipitation is an increase in the strength of cool-season atmospheric river (AR) events. Previous analyses have suggested that the thermodynamically driven increase in atmospheric water vapor with warming is directly responsible for most of this projected AR*

intensification, with the remainder contributed by shifts in regional atmospheric circulation. There is also evidence that increased radiative forcing may result in an eastward shifted expression of atmospheric circulation anomalies associated with both the Madden-Julian Oscillation and the El Niño–Southern Oscillation (ENSO)–forced component of the Pacific North American pattern —both of which would increase the subseasonal variability of cool season precipitation over and near California. Compounding the increase in extreme precipitation associated with AR events are warming temperatures themselves —which raise the mean elevation of snow accumulation in mountainous areas, increase instantaneous runoff rates as rain falls at the expense of snow, and raise the risk of "rain on snow" events. Collectively, these previous research findings motivate the question of whether climate change may substantially affect the odds of "low probability but high consequence" flood events.

3.4.9 Dam Failure

Hazard Description

Dam failure refers to the catastrophic breach or collapse of a dam, resulting in the uncontrolled release of the reservoir's water downstream. This can occur due to various reasons, including structural deficiencies, design flaws, natural disasters, lack of maintenance, overtopping, and seismic activities. Dam failures can be sudden, with little to no warning, or they can develop gradually as issues within the dam structure worsen over time. Structural deficiencies, weaknesses in the design, construction, or materials used in the dam, can lead to structural failure. Overtopping, excessive water flow over the top of the dam, often due to heavy rainfall or inadequate spillway capacity, can erode the dam structure. Uncontrolled seepage through the dam or its foundation can weaken the structure, leading to failure. Natural disasters, such as earthquakes, landslides, or extreme weather events, can compromise the integrity of the dam. Poor maintenance and lack of regular inspections can allow small issues to grow into major problems. Operational errors, such as mistakes in the management and operation of the dam, including improper water level management, can also lead to failure.

The failure of a dam can have devastating impacts on neighboring communities, causing loss of life, extensive property damage, and long-term environmental consequences. The uncontrolled release of water can lead to rapid and widespread flooding downstream, inundating homes, businesses, infrastructure, and agricultural lands. The floodwaters can be deep and fast-moving, increasing the potential for destruction and making escape difficult for residents. The extent of flooding can vary depending on the volume of water in the reservoir, the geography of the downstream area, and the nature of the breach. The rapid onset of flooding can trap people in their homes or vehicles, leading to drowning and injuries. The suddenness of a dam failure can complicate evacuation efforts, increasing the risk to human life. The destruction of buildings, including homes, businesses, and public buildings in the path of the floodwaters, can be severe. Roads, bridges, power lines, and communication networks can be washed away or damaged, disrupting transportation and utilities, leading to significant economic losses both immediate and long-term.

Environmental consequences can include severe erosion, altering landscapes and depositing large amounts of sediment downstream. The flood can contaminate water sources with debris, chemicals, and sewage, leading to water quality issues that can affect human health and aquatic life. Natural habitats for wildlife can be destroyed, leading to loss of biodiversity and long-term ecological impacts. Residents affected by the flooding may be displaced for extended periods, facing challenges in finding temporary shelter and eventually rebuilding their homes. The trauma and stress associated with the disaster can have long-lasting effects on the mental health of survivors. Recovery and rebuilding can take years, requiring significant financial resources and coordinated efforts from local, state, and federal agencies.

The Oroville Dam Spillway Incident in February 2017 serves as a case study. Heavy rainfall led to the damage of both the main and emergency spillways of the Oroville Dam, prompting concerns of a potential dam failure. Nearly 188,000 people were evacuated as a precaution. While the dam itself did not fail, the incident highlighted the potential risks and led to significant repairs and safety improvements. The Oroville incident underscored the importance of regular maintenance, infrastructure investment, and emergency preparedness to prevent and mitigate the impacts of potential dam failures.

Location and Extent

Whittier Narrows Dam

Whittier Narrows Dam is a flood risk management and water conservation project constructed in 1957 and operated by the U.S. Army Corps of Engineers, Los Angeles District. The project is located, as its name implies, at the "Whittier Narrows," a natural gap in the hills that form the southern boundary of the San Gabriel Valley. The Rio Hondo and the San Gabriel rivers flow through this gap and are impounded by the reservoir. The communities of Montebello and Pico Rivera are located immediately downstream

Whittier Narrows Dam, a typically dry flood risk management structure located 11 miles east of downtown Los Angeles, has been reclassified from Dam Safety Action Classification (DSAC) 2 to DSAC 1. The DSAC 1 rating indicates that the U.S. Army Corps of Engineers considers the incremental risk – the combination of life or economic consequences with the likelihood of failure – to be very high. The reclassification as DSAC 1 identifies the dam as one of the highest priority dam safety projects in the Corps' portfolio of dams. In a May 25, 2016, memorandum to Col. Kirk Gibbs, commander of the Corps' Los Angeles District, Mr. James Dalton, chief of Engineering and Construction at Corps headquarters, emphasized that new findings with respect to the anticipated performance of the spillway gates drove the reclassification.

The Los Angeles District is currently working with a nationwide team of experts to develop a plan to reduce the risk associated with the spillway. The Corps anticipates that some of the potential solutions will be in operation prior to the 2016-2017 winter rains; other measures will likely be installed before the end of 2017.

Garvey Reservoir

Garvey Reservoir, owned by the Metropolitan Water District of Southern California (MWD), stores municipal water supplies for MWD customers. The reservoir lies impounded behind a north dam and a south dam. MWD completed a substantial overhaul of the facility in 1999 to address seepage and ensure overall reservoir integrity. The state Department of Conservation, Division of Dam Safety conducts periodic dam inspections to verify the dams' ability to withstand

seismic stresses. A major seismic event has the potential to cause significant damage and potential failure at this facility.

According to the City of Monterey Park's website, in the unlikely event of a conjectured catastrophic failure at Garvey Reservoir, properties to the north and south of the reservoir could be flooded. If the south dam failed, flood waters of average depth six to seven feet would cascade down the slope bank and into the residential neighborhoods below. At the Pomona Freeway, the water would spread laterally along the north side of the freeway before flowing through freeway under crossings into the City of Montebello.

Previous Occurrences s

St. Francis Dam Failure (1928)

- **Date**: March 12, 1928
- **Location**: Near Santa Clarita, California
- **Cause**: Structural failure due to poor geological understanding and design flaws
- **Impact**: The failure of the St. Francis Dam resulted in one of the worst civil engineering disasters in American history. The collapse unleashed a massive wall of water, estimated at 12.4 billion gallons, that swept through the San Francisquito Canyon and into the Santa Clara River Valley, eventually reaching the Pacific Ocean. The flood killed approximately 431 people and caused extensive damage to homes, infrastructure, and farmland.

Baldwin Hills Dam Failure (1963)

- **Date**: December 14, 1963
- **Location**: Los Angeles, California
- **Cause**: Structural failure due to subsidence and leakage
- **Impact**: The Baldwin Hills Dam, a reservoir for urban water supply, failed suddenly, releasing approximately 250 million gallons of water into the surrounding residential area. The flood resulted in five fatalities and destroyed or damaged numerous homes and properties. The dam's failure was attributed to ground subsidence and internal erosion caused by leakage.

Lower San Fernando Dam Failure (1971)

- **Date**: February 9, 1971
- **Location**: San Fernando Valley, California
- **Cause**: Earthquake-induced liquefaction
- **Impact**: The Lower San Fernando Dam was severely damaged during the 1971 San Fernando earthquake (magnitude 6.6). The seismic activity caused liquefaction of the dam's foundation materials, leading to a near-collapse. Although the dam did not fail completely, it suffered significant structural damage, and the reservoir was rapidly drained to prevent a catastrophic breach.

Lower Jones Tract Levee Breach (2004)

- **Date**: June 3, 2004
- **Location**: Sacramento-San Joaquin Delta, California
- **Cause**: Levee breach due to unknown causes, possibly rodent burrows or structural weakness
- **Impact**: The levee breach in the Sacramento-San Joaquin Delta flooded the entire Lower Jones Tract, an area of about 12,000 acres, with water from the delta. The flooding caused extensive agricultural damage, impacted local communities, and necessitated a large-scale emergency response to repair the levee and pump out the water. This event highlighted the vulnerability of the Delta's levee system and the need for ongoing maintenance and reinforcement.

Oroville Dam Spillway Incident (2017)

- **Date**: February 2017
- **Location**: Oroville, California
- **Cause**: Damage to main and emergency spillways due to heavy rainfall and inadequate maintenance
- **Impact**: The Oroville Dam, the tallest dam in the United States, faced a critical situation when the main spillway was severely damaged during heavy rainfall. The emergency spillway, used for the first time in the dam's history, also showed signs of failure. Nearly 188,000 people were evacuated as a precautionary measure. Although the dam itself did not fail, the incident underscored the need for vigilant maintenance and robust emergency response plans. The repairs and upgrades following the incident cost hundreds of millions of dollars and led to a comprehensive review of dam safety protocols.

Probability of Future Events and Impacts of Climate Change

Overall probability over next five years: ***Unlikely.***

Whittier Narrows Dam serves primarily for flood control, water conservation, and recreation. The future risks associated with this dam include seismic activity, as it is situated in a seismically active region near major fault lines like the San Andreas Fault and the Whittier Fault. A strong earthquake could potentially damage the dam's structure or induce liquefaction in the foundation materials, leading to partial or total failure. Another concern is aging infrastructure, given that the dam was completed in 1957. Over time, materials degrade, and components may become less reliable without regular maintenance and upgrades, increasing the risk of structural failure. Additionally, changes in hydrological patterns due to climate change could lead to increased hydraulic load on the dam. Intense and frequent storms could result in higher inflows, putting additional stress on the dam's spillway and structural integrity. Human error, such as mismanagement of water levels or delayed response to structural issues, could also contribute to dam failure. Should Whittier Narrows Dam fail, it would result in catastrophic flooding downstream, affecting densely populated areas including parts of Los Angeles, Montebello, Pico Rivera, and other neighboring communities. This would cause extensive property damage, economic losses, potential casualties, and long-term environmental impacts due to erosion, habitat destruction, and water contamination.

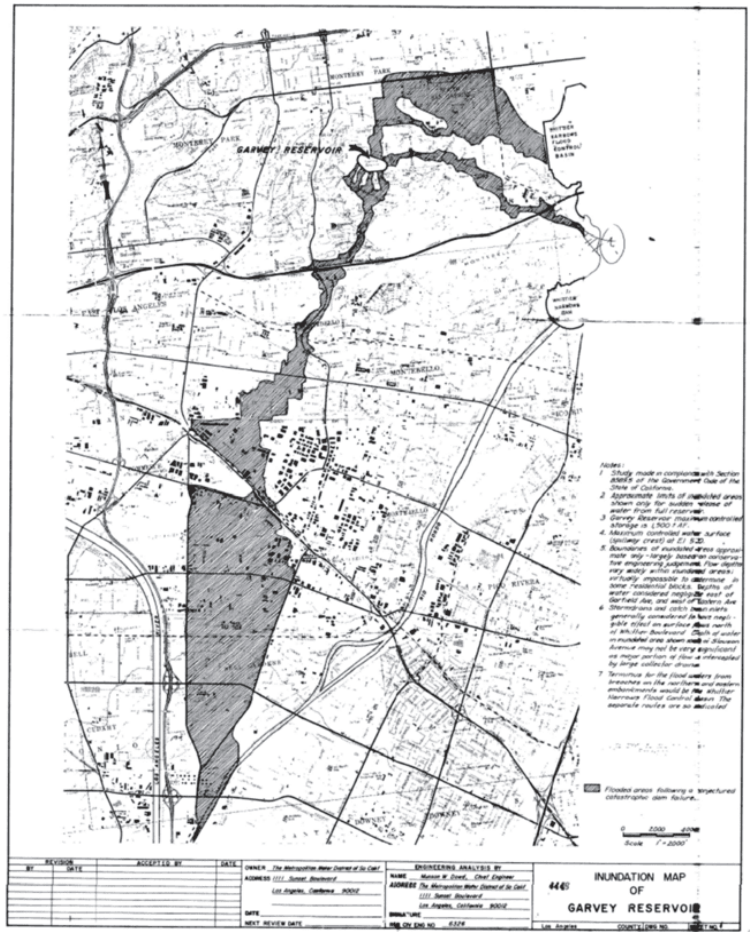
Garvey Reservoir is primarily used for water storage for municipal use and flood control. The future risks for Garvey Reservoir include seismic activity, as it is also in a seismically active area. A major earthquake could damage the dam or its foundation, potentially leading to failure. Increased frequency and intensity of storms due to climate change could result in higher water inflows, overwhelming the reservoir's capacity and spillway design. Structural integrity may be compromised over time due to aging materials, increasing the likelihood of leaks or breaches if not properly maintained. Human error in managing water levels and structural integrity checks could also contribute to the risk of failure. Failure of Garvey Reservoir would release a significant volume of water into the surrounding area, causing flooding in Monterey Park and potentially impacting nearby communities including Montebello. This would result in property damage, infrastructure disruptions, potential casualties, and environmental effects such as soil erosion, habitat destruction, and water contamination.

Climate change poses several additional risks that can exacerbate the likelihood of dam failure. Increased precipitation and storm intensity are expected due to climate change, leading to greater inflows into reservoirs. This increased hydraulic load can stress dam structures and spillways beyond their design capacity, leading to overtopping or structural damage. Alternating periods of severe drought and heavy rainfall can weaken dam structures, with drought causing soil desiccation and cracks, and subsequent heavy rains exploiting these weaknesses, increasing the risk of structural failure. Elevated temperatures can accelerate the degradation of construction materials used in dams, reducing their lifespan and structural integrity. Some studies suggest that climate change could influence seismic activity indirectly by altering groundwater levels and distribution. Changes in water pressure and weight can affect fault lines, potentially increasing the frequency of earthquakes in certain regions.

Map: Dam Failure Inundation – Whittier Narrows Dam (HAZUS) Source: Emergency Planning Consultants



Map: Dam Failure Inundation – Garvey Reservoir (Source: Cal OES Dam Safety Program)



3.4.10 Terrorism/Active Assailant

Hazard Description

Terrorism is defined as the use of violence and intimidation in the pursuit of political, ideological, or religious aims. Terrorism can take many forms, but generally involves attacks or threats that are intended to cause harm, fear, or disruption to the community. Here are some examples of the types of terrorism that could impact an American city (cyberattacks are described in the preceding section):

- **Domestic Terrorism:** Domestic terrorism refers to acts of violence committed by individuals or groups based in the United States who seek to promote a political or social agenda. Domestic terrorism can take many forms, including hate crimes, extremist attacks, and targeted violence.
- **International Terrorism:** International terrorism refers to acts of violence committed by individuals or groups who are based outside of the United States and seek to cause harm to American interests. International terrorism can include attacks on American citizens, businesses, or institutions, as well as attacks on foreign targets that have an impact on American interests.
- **Biological Terrorism:** Biological terrorism refers to the intentional release of biological agents, such as viruses or bacteria, with the intention of causing harm to the public. Biological terrorism can cause widespread illness or death, as well as panic and fear within the community.
- **Chemical Terrorism:** Chemical terrorism refers to the intentional release of chemical agents with the intention of causing harm to the public. Chemical terrorism can cause widespread illness or death, as well as damage to infrastructure and the environment.

Location and Extent

While Montebello itself has not been a known target of past terrorist activities, its proximity to Los Angeles, a major urban center, can potentially increase its vulnerability due to the interconnected nature of urban areas. Factors influencing the probability of an attack include Montebello's location within Los Angeles County, near a major metropolis, which can indirectly influence its risk. Major cities often present more attractive targets due to their symbolic value, population density, and economic importance. Additionally, any city with critical infrastructure, such as transportation hubs, power grids, or water supplies, can be seen as a potential target. While Montebello does not host nationally significant infrastructure, it does have local and regional assets that could be targeted to cause disruption.

A prime example is the attacks on electrical transformers in the United States that have highlighted significant vulnerabilities in the nation's power grid. Notable incidents include the 2013 Metcalf sniper attack in San Jose, California, where unknown assailants fired over 100 rounds of ammunition into the Metcalf substation, severely damaging 17 transformers and causing $15 million in damage. The 2016 Utah substation attack saw an unknown individual or group damaging critical equipment at the Monument Substation, resulting in localized power outages and demonstrating the need for enhanced physical security. In December 2022, multiple substations in Moore County, North Carolina, were targeted by gunfire, leading to widespread power outages for tens of thousands of residents and underscoring the urgent need for improved security measures. Additionally, a series of coordinated attacks in 2023 targeted multiple substations in the Pacific Northwest, causing significant disruptions and prompting calls for increased security and advanced surveillance technologies.

Historically, smaller cities and suburbs like Montebello have been less targeted compared to larger urban centers. However, recent trends show that terrorists sometimes target less prominent locations to exploit perceived lower security measures. The effectiveness of local law enforcement, their collaboration with federal agencies, and the presence of proactive security measures can significantly reduce the likelihood of successful terrorist activities. Potential types of terrorist activities include attacks on public gatherings, where large groups of people gather, such as shopping centers, public events, or community festivals. These areas can be vulnerable due to the high concentration of individuals and the challenge of securing large open spaces. Vehicle ramming attacks, a common method used by terrorists, involve using vehicles to ram into crowds. This type of attack requires minimal resources and can be executed with little planning. Active shooter incidents may also occur, with terrorists conducting armed attacks in public spaces, targeting civilians to cause maximum fear and casualties. The use of improvised explosive devices (IEDs) in public places, buildings, or transportation systems remains a significant threat, as such attacks can cause extensive damage and casualties.

Previous Occurrences

There have been no major instances of terrorism directed at the City of Montebello since its founding.

Probability of Future Events

Overall probability over next five years: ***Unlikely***.

It is very difficult to predict the probability of future terrorist or active assailant-related events. While there is no way to eliminate the risk of such events, law enforcement and emergency services can take proactive measures to prevent and respond to potential threats.

3.4.11 Epidemic/Pandemic

Hazard Description

An infectious disease is a disease caused by pathogenic microorganisms, characterized by clinical symptoms. Infectious diseases pose a major threat worldwide and cause millions of deaths annually. Transmission of infectious diseases can occur through various modes such as direct physical contact with infected individuals, exposure to contaminated food or water, exposure to bodily fluids, contact with contaminated objects, airborne inhalation, or vector-borne dissemination.

An infectious disease can be classified based on its impact as endemic, epidemic, or pandemic. Endemic diseases are consistently present but at low levels (e.g., chicken pox in the United States). Epidemic diseases are sudden severe outbreaks (e.g., the bubonic plague during Medieval times). A pandemic disease is an epidemic that spreads widely across a region, continent, or the world (e.g., the 1957 flu pandemic caused millions of deaths globally). With global travel and trade, fears of pandemics have increased in recent years due to the potential for rapid spread.

A pandemic is defined by the CDC as a worldwide epidemic that affects many people and crosses international borders, creating a public health emergency that impacts all sectors of society. It occurs when a virus undergoes significant antigenic drift or shift, resulting in a new and efficient strain that spreads from person-to-person without pre-existing immunity. The severity of the outbreak is generally unpredictable.

A high number of infectious disease cases can strain healthcare infrastructure. The impact on morbidity and mortality may differ depending on the disease; it can disproportionately affect either younger and healthier people, as seen in the 1918 influenza pandemic, or older and medically-at-risk people, as happened with the recent COVID-19 outbreak. This can lead to worker shortages due to illness, isolation/quarantine, or caring for sick family members. It may also disrupt daily life and lead to shortages of goods and services. Strategies like "stay-at-home" orders and closing non-essential businesses can limit disease transmission but may also create additional burdens on productivity and essential services.

Location and Extent

A pandemic of a human infectious disease has the potential to impact the entire country. Due to the integration of business and social activities both nationally and internationally, it is unreasonable to assume that any location would be exempt from the threat of a pandemic. Locations with high population concentration, such as schools, retail areas, and special event venues, are at the greatest risk.

Recent data on the COVID-19 outbreak indicates that individuals living in densely populated urban areas were more prone to contracting the virus, potentially due to close contact with other residents or visitors from other places. The ease of global transportation makes it increasingly challenging to contain local outbreaks, as infected or exposed individuals travel for business and leisure, possibly disseminating the disease worldwide within hours.

Previous Occurrences

The following data comes from FEMA's Disaster Declarations for States and Counties (https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties; retrieved November 18, 2023).

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Other	Los Angeles County	DR-4482-CA	2020	March	3/22/2020	COVID-19 PANDEMIC	CA
Other	Los Angeles County	EM-3428-CA	2020	March	3/13/2020	COVID-19	CA

- **Typhoid (19th and early 20th centuries):** Before the advent of modern sanitation and water treatment systems, California, like many other places, faced occasional outbreaks of typhoid fever.
- **Spanish Flu (1918 Influenza Pandemic):** The Spanish flu was a devastating influenza pandemic that swept across the globe between 1918 and 2020.
- **HIV/AIDS Epidemic (1980s - Present):** The HIV/AIDS epidemic has had a profound impact on California, particularly in cities like San Francisco and Los Angeles.
- **H1N1 Influenza (2009 Pandemic):** In 2009, a novel strain of influenza A (H1N1) emerged and caused a global pandemic.
- **Hepatitis A Outbreak (2017-2018):** California experienced a hepatitis A outbreak primarily affecting unhoused populations in 2017-2018.
- **COVID-19 Pandemic (2020 - 2022):** The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, had a significant impact on California.
- **Tuberculosis Epidemics (Various Periods):** Tuberculosis (TB) has been a recurring public health concern in California, particularly in densely populated urban areas.
- **West Nile Virus Outbreaks (Various Periods):** West Nile virus, transmitted by mosquitoes, has caused outbreaks in California over the years.
- **Measles Outbreaks (Multiple Occurrences):** Measles, a highly contagious viral disease, has had sporadic outbreaks in California over the years. These outbreaks have been attributed to low vaccination rates in some communities,

Probability of Future Occurrences and Impacts of Climate Change

Overall probability over next five years: ***Very unlikely.***

Pandemics are relatively rare when compared to the frequency of natural disasters. When they do occur, however, they can have far-reaching effects. Even suppressed outbreaks of disease can have significant impacts to the localities they affect.

It is difficult to accurately predict the likelihood of future pandemics. However, human encroachment into formerly natural areas worldwide increase the risk of hitherto unknown animal diseases making the jump into human populations. Public health systems should be aware of the potential for new diseases that may pose a threat to the populations they serve, and they should expect future pandemics to appear, some potentially more deadly than COVID-19. Climate change may impact the emergence and transmission of viruses by extending the habitat range of animals that carry them. Already, viruses such as West Nile or Zika have appeared in areas previously not hosting these viruses. It is likely that future diseases from warmer climates will spread along with those climates

SECTION 4 – VULNERABILITY ASSESSMENT

Element B: Risk Assessment Requirements
B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))

4.1 Lifelines and Critical Infrastructure



FEMA-Defined Community Lifelines

FEMA's Lifelines are a framework for identifying and prioritizing critical infrastructure and services that are essential to the functioning of communities during and after a disaster. The Lifelines framework was developed by the Federal Emergency Management Agency (FEMA) to help emergency managers and first responders prioritize their response efforts and allocate resources during a disaster.

The concept of Lifelines emerged from the realization that disasters can have wide-ranging impacts on a community's infrastructure and services, and that disruptions to these critical systems can significantly hinder response and recovery efforts. The Lifelines framework was developed to identify these critical systems and services and prioritize them based on their importance to overall community functioning and resilience.

There are eight FEMA Lifelines, each of which represents a critical area of infrastructure or service. Critical facilities are categorized under the following lifelines:

- **Safety and Security:** This includes law enforcement/security, search and rescue, fire services, government service, and responder safety.
- **Food, Water, and Shelter:** This encompasses evacuations, schools, food/potable water, shelter, durable goods, water infrastructure, and agriculture.
- **Health and Medical:** This lifeline involves medical care (hospitals), patient movement, public health, fatality management, health care, and supply chain.
- **Energy:** Power (grid), temporary power, and fuel.

- **Communications:** This includes infrastructure, alerts, warnings, messages, 911 and dispatch, responder communications, and financial services.
- **Transportation:** This encompasses highway/roadway, mass transit, railway, aviation, and pipeline.
- **Hazardous Materials:** This includes facilities, hazardous debris, pollutants, and contaminants.
- **Water Systems:** This includes potable water infrastructure and wastewater management.

The Lifelines framework is designed to help emergency managers and first responders prioritize their response efforts and allocate resources based on the criticality of each Lifeline. By prioritizing the most critical Lifelines, emergency responders can work to restore essential services and infrastructure more quickly, which can help to speed up the overall recovery process and reduce the impact of the disaster on the community.

City of Montebello Critical Facilities List

Name	Address	Lifeline	Critical Rank
City Hall	1600 W. Beverly Boulevard	Safety and Security	High
Montebello Fire Department (Station No. 56)	600 N. Montebello Boulevard	Safety and Security	High
Montebello Fire Station No. 56	1166 S. Greenwood Avenue	Safety and Security	High
Montebello Fire Station No. 57	2950 Via Acosta Street	Safety and Security	High
Montebello Police Department	1600 W. Beverly Boulevard	Safety and Security	High
Beverly Hospital	309 W. Beverly Boulevard	Health and Medical	Critical
Whittier Narrows Dam	909 N. Lincoln Avenue	Water Systems	Critical
Hazardous Materials Sites	This information is maintained by the City of Montebello Fire Department and is available upon request.	Hazardous Materials	Critical

4.2 Individual Hazard Vulnerability Analysis

A vulnerability assessment in its simplest form is a simultaneous look at the geographical location of hazards and an inventory of the underlying land uses (populations, structures, etc.). Facilities that provide critical and essential services following a major emergency are of particular concern because these locations house staff and equipment necessary to provide important public safety, emergency response, and/or disaster recovery functions.

This section serves to identify each hazard confronting the community and its vulnerabilities to that hazard.

4.3.1. Extreme Heat

4.3.1.1 Overall Vulnerability and Impact

The City of Montebello, along with the rest of Southern California, is increasingly vulnerable to extreme heat. Extreme heat includes heatwaves and sustained heat events.

4.3.1.2 Population

Extreme heat can have serious consequences for human health, including headaches, dizziness, weakness, cramping, nausea, vomiting, confusion, dehydration, and even death. Vulnerable populations such as the very young, elderly, the unhoused and those with special needs or disabilities are particularly at risk, especially during prolonged heat waves.

The following demographic groups may be especially susceptible to the effects of extreme heat:

- Women who are pregnant
- Persons with medical conditions (e.g., heart disease, diabetes, high blood pressure, insulin-dependent, dialysis)
- Persons with mental illness/disabilities or cognitive disorders
- Persons who use medical equipment (e.g., ventilators, oxygen, G-tubes)
- Individuals with drug or alcohol dependencies
- Persons with mobility devices (e.g., wheelchairs, walkers, canes)
- Persons who are non-ambulatory
- Persons who are socially isolated
- Persons who do not speak English with minimal access to current weather information in their own language.

4.3.1.3 Critical Facilities

Extreme heat can affect critical infrastructure such as roads, bridges, power lines, and water supply systems. Heat stress on metal and road materials, as well as increased use, can cause system breakdowns and outages as well as outright damage, as seen during the "heat dome" event in the Pacific Northwest in 2021. Additionally, the high demand for energy due to the increased use of air conditioning during heat events can cause utility "brownouts" and "blackouts."

Power outages by themselves are a significant enough hazard in Montebello to be mentioned separately later in this section.

4.3.1.4 Non-Critical Facilities

Sustained extreme heat can have impacts on physical infrastructure such as overhead and transmission wires. By encouraging residences and businesses to use air conditioning, it can also put pressure on the power grid, increasing the possibility of power loss.

4.3.1.5 Environment

Prolonged extreme heat can cause severe damage to the natural environment, particularly the water supply, which can affect drinking water as well as other uses. The combination of extreme heat and drought can result in significant crop loss and increase the risk of wildfire. While Montebello has no predominately-agricultural land, this will affect plant growth and survival from personal gardens to shade trees and recreational landscapes.

4.3.1.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. However, as extreme heat events become more likely and more intense due to climate change, the vulnerability of the City will only grow. Therefore, vulnerability to extreme heat has increased since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to extreme heat due to land use has remained the same since the last approved plan.

Population shifts: Population has increased but not significantly so since the last approved plan. However, as extreme heat events become more likely and more intense due to climate change, the vulnerability of the City will only grow. Therefore, vulnerability to extreme heat due to population shifts has increased since the last approved plan.

4.3.1.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: There are no specific impacts from extreme heat on monolingual Spanish-speaking populations.

Unhoused: Unhoused populations are at great risk from extreme heat events, even more so if they are accompanied by power outages.

Behavioral Health: There are no specific impacts from extreme heat on populations with behavioral health issues.

Older Adults: Older adults are particularly vulnerable to extreme heat events.

4.3.2 Drought

4.3.2.1 Overall Vulnerability and Impact

The City of Montebello, like its surrounding communities, are vulnerable to drought and secondary impacts of decreasing availability of water. Rising temperatures in California are expected to impact and reduce water supplies across the state. Much of California's water comes from snowmelt in the High Sierra, a part of the Sierra Nevada mountain range. As temperatures rise due to climate change, the precipitation that would have fallen as snow is expected to become rainfall, leading to less snowfall and therefore, less meltwater from the Sierra Nevada snowpack, reducing the water that would have flowed into Southern California's reservoirs and aqueducts. This could lead to a strain on the City's imported water supply, resulting in a greater reliance on local groundwater in Los Angeles County.

4.3.2.2 Population.

The entire population of the City of Montebello is vulnerable to drought. Drought impacts the entire city through reductions in water supply and related impacts. A shortage of water in individuals can cause dehydration, which can lead to symptoms such as headaches, dizziness, weakness, cramping, nausea, vomiting, confusion, and, in extreme cases, death. Drought also often coincides with high temperatures, exacerbating the effects and putting vulnerable populations, such as young children, the elderly, and those with disabilities, at greater risk.

4.3.2.3 Critical Facilities.

Drought does not have significant direct physical impacts on critical infrastructure with the exception of water utility lines and facilities and plants at recreational facilities.

During droughts, water customers are instructed to use less water, which in turn leads to decreased revenue for local water utilities with no reduction in fixed costs. As a result, water utilities often raise rates to make up for lost revenue. The reduction in water flow also leads to decreased sewage flows, causing an increase in contaminants in the water supply. This can affect the availability of drinking water and water for agriculture, leading to a decrease in food supply, a loss of biodiversity, increased mortality in humans and animals, an increase in disease, and a rise in endangered species.

4.3.2.4 Non-Critical Facilities.

Drought does not have major structural impacts on non-critical facilities but can impact residential water availability. Increased prices may result in lower-income populations using less water, increasing the likelihood of dehydration or other negative health impacts.

4.3.2.5 Environment

The environmental effects of drought are widespread and reach beyond geographic boundaries. Drought conditions result in decreased water availability for plant and animal habitat from sources such as lakes, streams, aquifers, soil, wetlands, springs, and other surface and subsurface sources. This reduction in water quality can alter the levels of salinity, bacteria, turbidity, pH, and temperature, potentially affecting the aquatic habitat of plants and animals, and the health of livestock if they ingest too much salt or bacteria.

4.3.2.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. Increased water use efficiency has decreased overall water use by many metrics. However, increasing temperatures and changing precipitation patterns have increased uncertainty around planning for drought. Overall, vulnerability to drought from development has remained the same since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to drought from land use has remained the same since the last approved plan.

Population shifts: Population has increased but not significantly so since the last approved plan. Vulnerability from drought due to population shifts has remained the same since the last approved plan.

4.3.2.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: There are no specific impacts from drought on monolingual Spanish-speaking populations.

Unhoused: There are secondary impacts due to drought from potential increases in water costs on unhoused populations. Associated heat waves may significantly impact unhoused populations.

Behavioral Health: There are no specific impacts from drought on populations experiencing behavioral health issues.

Older Adults: Older adults may be vulnerable to increased water costs and reduced water intake during drought; associated heat waves may significantly impact older adults.

4.3.3 Earthquake

4.3.3.1 Overall Vulnerability and Impact

The City of Montebello, along with surrounding communities, is historically vulnerable to earthquakes. Earthquakes are traditionally one of the major hazards impacting California, and significant attention has been paid to understanding and mitigating against earthquake impacts.

Earthquakes can cause significant damage to the built environment, including collapsed structures that may trap or bury individuals, resulting in loss of life and expensive cleanup efforts. Many buildings in California, including Montebello, were constructed before 1993, when building codes were less stringent, and retrofitting is not mandatory except in certain circumstances, leading to a high number of vulnerable structures. After an earthquake, significant time is devoted to the removal of debris from various structures, including brick, glass, wood, steel, concrete building components, and office or home contents following damage.

Seismic activity poses a significant threat to businesses, from large corporations to small retail shops. Even a single day of production downtime can result in tremendous economic loss, particularly for businesses with national or global markets. These losses can be a burden for owners who may struggle to recover. According to FEMA, forty percent of businesses fail to reopen after a disaster, and another twenty-five percent fail within one year. Similarly, statistics from the United States Small Business Administration show that over ninety percent of businesses fail within two years after being hit by a disaster.

Fires are frequently triggered by downed power lines or broken gas mains during earthquakes. If fire stations sustain damage, there is a reduced chance of responders being able to promptly put out fires. Additionally, major incidents require a greater allocation of resources, leaving smaller fires and issues with little or inadequate attention in the initial hours following a significant earthquake event. The associated loss of electricity can also lower water pressure, further impeding firefighting efforts.

4.3.3.2 Population

The entire population of Montebello is vulnerable to an earthquake. Both indoor and outdoor environments can be hazardous during earthquakes, with collapsed buildings, falling equipment, and moving debris causing death and injury. Additionally, downed power lines, as well as broken water and gas lines, pose threats to human life.

4.3.3.3 Critical Facilities

Every structure in the City is potentially at risk during an earthquake.

An earthquake can cause damage to structures, utilities, transportation routes, and communication resulting in loss of revenue and ability to provide emergency, essential, and non-essential services. In addition, recovery includes substantial debris removal issues and multiple building inspections.

4.3.3.4 Non-Critical Facilities

Specific non-critical facilities vulnerable in the City of Montebello include various residential and commercial properties, social service agencies, and government resources. Older residential structures constructed before the introduction of stringent earthquake-related construction codes are particularly vulnerable to earthquakes. A severe earthquake could result in many of these buildings sustaining serious damage or even collapsing, leading to injury or loss of life.

Any substantial damage to housing stock in the City would result in additional constraints on housing supply, potentially leading to strain on many sectors of the City's population.

4.3.3.5 Environment

There are no major discrete environmental impacts from earthquakes. The ecology of California is well-adapted to them.

4.3.3.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. However, housing prices, as in many other markets in the United States , have increased far in excess of wages. This has greatly increased the difficulty of purchasing housing and, in the case of lower-income renters, has increased the chance of becoming unhoused. Any earthquake and the resulting damage to housing stock would greatly increase these strains. Therefore, vulnerability to earthquake due to development has increased since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to earthquake has remained the same since the last approved plan.

Population shifts: Population has increased but not significantly so since the last approved plan. Overall population vulnerability to earthquakes has increased since the last approved plan.

4.3.3.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: Monolingual Spanish-speaking populations may be more likely to occupy older residential properties, and therefore be more vulnerable to earthquakes.

Unhoused: Due to their lack of stable housing, homeless people are at a higher risk of injury during an earthquake. They may be exposed to falling debris, collapsing structures, and hazardous conditions. Earthquakes can destroy existing makeshift shelters used by homeless individuals, leaving them without a place to seek refuge. This may also increase the likelihood of negative health impacts.

Behavioral Health: Disruptions to health care services and related organizations from earthquakes may have an impact on behavioral health services and their ability to reach out to impacted individuals.

Older Adults: Older adults may be more likely if lower-income to occupy older residential properties. They may also be more vulnerable to earthquake-related injuries.

4.3.4 High Wind/Storms

4.3.4.1 Overall Vulnerability and Impact

The City of Montebello seasonally experiences severe wind. Windstorms can cause damage to buildings, block roads and bridges, and damage traffic signals, streetlights, and parks, among other things. The inability to access emergency services due to blocked roads can limit the response operations during a windstorm, while industry and commerce can suffer losses from interrupted electric services and extended road closures. Such losses to buildings, personnel, and equipment, as well as service interruptions, may impact the local economy following a windstorm event.

4.3.4.2 Population

Population vulnerability to severe wind in the City of Montebello varies by incident. Very few injuries to people are recorded during the types of high winds that Southern California experiences. Most damage is to property, but roads blocked by fallen trees during a windstorm may have severe consequences to people who need access to emergency services. Unhoused people may be more vulnerable than others to the effects of severe wind including of flying objects.

In the event of a windstorm or microburst, emergency personnel may be required to respond to damage sustained by both residential and commercial structures, especially those with weak reinforcement. The debris carried by extreme winds can contribute to loss of life and failure of protective building elements. Downed trees, power lines, and damaged property can hinder emergency response and disaster recovery efforts.

4.3.4.3 Critical Facilities.

All critical facilities are at risk for damage from severe winds which can damage structures, roads, traffic signals, and streetlights.

Above-ground utility infrastructure is at special risk from severe wind. Falling trees have been a leading cause of power outages. Windstorms, including strong microbursts and Santa Ana winds, can result in flying debris and downed utility lines. Even in minor windstorm events, tree limbs can break in winds as low as 45 mph and be thrown over 75 feet, causing damage to overhead power lines. This can result in electric power lines falling to the ground, posing a potential risk of fatal electric shock.

4.3.4.4 Non-Critical Facilities.

All above-ground non-critical facilities in the City of Montebello are at risk for damage from severe winds.

Residential and commercial structures with weak reinforcement are vulnerable to windstorm damage. Wind pressure can push walls, doors, and windows inward, while passing currents create suction forces that pull building components and surfaces outward. Extreme wind forces can cause a building or its roof to fail, resulting in significant damage. In addition, even winds of 45 mph can cause tree limbs to become flying debris and damage structures. Overhead power lines can also be damaged and falling trees can bring electric power lines down to the pavement, creating a risk of electric shock.

Strong windstorms can affect local transportation by causing trees and electrical wires to fall onto streets and highways, leading to road closures. During periods of very strong winds, major highways may also be temporarily closed to trucks and recreational vehicles. However, these disruptions are usually short-lived and do not have a significant long-term economic impact on the region.

4.3.4.5 Environment

Strong winds may down trees, including those in City parks or street trees that provide shade for pedestrians.

4.3.4.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. Vulnerability to severe wind has remained the same since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to severe wind has remained the same since the last approved plan.

Population shifts: Population has increased but not significantly so since the last approved plan. Overall population vulnerability to cyberattack has remained the same since the last approved plan.

4.3.4.7 Impacts on Vulnerable Populations

Monolingual Spainsh-speaking Populations: There are no specific impacts from severe wind on Russian-speaking populations.

Unhoused: Unhoused populations may be subject to greater impacts from severe wind if outside without shelter.

Behavioral Health: There are no specific impacts from severe wind on populations with behavioral health issues.

Older Adults: There are no specific impacts from severe wind on older adults. Power outages due to severe wind may be a secondary impact.

4.3.5 Wildfire

4.3.5.1 Overall Vulnerability and Impact

Southern California's brush plants are largely composed of chaparral, which grows quickly and leaves behind dead vegetation that is nutrient-rich and released into the soil through burning. Some chaparral plants, like *Ceanothus*, have flammable resin coatings on their leaves, while others, such as chamise (greasewood), produce volatile gases when burned and leave a water-resistant residue in the soil that can cause erosion on denuded slopes, increasing the risk of post-fire flash flooding and mudslides in nearby communities.

4.3.5.2 Population

More recently developed commercial and residential areas in the northern hills of Montebello are more vulnerable to potential fires than more urbanized lower parts of the City. Curvier access roads that are not As discussed above, smoke from wildfires in other areas can directly and adversely impact human health due to reductions in air quality.

4.3.5.3 Critical Facilities

There are no identified critical facilities at direct risk of fire in Montebello. However, fire also has several secondary effects, such as overburdened public utilities, reduced water supplies, disrupted communication systems due to downed utility lines and damaged transformers and road closures, that may have secondary impacts on critical facilities.

Wildfires can cause damage to structures, utilities, transportation routes, and communication resulting in loss of revenue and ability to provide emergency, essential, and non-essential services. The total area affected is less than one square mile.

4.3.5.4 Non-Critical Facilities

The specific non-critical facilities vulnerable in the City of Montebello include major commercial and residential properties in the north of Montebello.

4.3.5.5 Environment

Bare hillsides after major fires increase the flow of water and material downhill. This can lead to an increased chance of landslide or mudflow after a rain event as a secondary hazard.

4.3.5.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. Vulnerability to wildfire has remained the same since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to wildfire has remained the same since the last approved plan.

Population shifts: Population has increased but not significantly so since the last approved plan. There has been a statistically significant increase in the unhoused population. Therefore, overall population vulnerability to wildfire has increased since the last approved plan.

4.3.5.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking populations: There are no specific impacts from wildfire on Russian-speaking populations; however, immigrant communities sometimes are less likely to have advanced central air and heating systems, making them potentially more vulnerable to impacts from wildfire smoke.

Unhoused: Without permanent shelter, unhoused populations may experience greater adverse health impacts due to smoke from wildfires.

Behavioral Health: There are no specific impacts from wildfire on populations with behavioral health issues. Populations with behavioral health issues may have a more difficult time in terms of evacuations, whether from wildfire danger or into safe spaces during severe smoke events.

Older Adults: Older adults often have a higher instance of respiratory issues, and therefore more vulnerable to the impacts of smoke from wildfires than other populations.

4.3.6 Power Outage

4.3.6.1 Overall Vulnerability and Impact

The City of Montebello is vulnerable to power outages impacting part of all of the City. Compounding issues such as the growing age of the electrical grid, increased demands due to growing IT applications such as the cloud and artificial intelligence and increasing high temperatures due to climate change combine to greatly increase the likelihood of power outages impacting the City.

4.3.6.2 Population

While vulnerable populations such as older adults and the unhoused may be impacted first, extended power outages could impact all of the inhabitants of the City without regard to income.

One of the most significant hazards of power outages during extreme heat is the risk of heat-related illnesses. When power goes out, air conditioning units and fans stop working, which can lead to indoor temperatures rising quickly. This can lead to dehydration, heat exhaustion, and even heatstroke, especially among vulnerable populations such as the elderly, young children, and those with preexisting medical conditions.

Historically, sustained extreme heat events have resulted in significant deaths among vulnerable populations without air conditioning or working fans, such as the 1995 Chicago heat wave.

4.3.6.3 Critical Facilities

All government facilities can be affected by rolling blackouts and power failures. It is predicted that the State of California will experience more rolling blackouts in the future.

In addition to homes and businesses, power outages can also impact essential services such as hospitals, emergency response systems, and water treatment facilities. Emergency response systems such as 911 call centers and police and fire departments also rely on electricity to function, and a power outage can hinder their ability to respond to emergencies quickly.

Water treatment facilities are another critical service that can be impacted by power outages. These facilities rely on electricity to pump and treat water, and a loss of power can result in a disruption in the water supply or a decrease in water quality.

4.3.6.4 Non-Critical Facilities

All neighborhoods in West Hollywood are vulnerable to rolling blackouts and power outages. The most immediate impact of a power outage is typically felt in homes and businesses. When the power goes out, residents and employees may experience a loss of lighting, heating, or cooling, and access to electronic devices. This can result in inconvenience, discomfort, and potential safety hazards, especially if the outage occurs at night or during extreme weather conditions.

Power outages also affect traffic signals. In the event of other major disasters that cause power outages, this can be a compounding hazard that affects the ability of people to evacuate and the ability of responders to enter the City.

4.3.6.5 Environment

There are relatively few impacts on the natural environment due to power outages.

4.3.6.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. However, increasing power demands from a variety of sources and vulnerability to extreme weather events increase the strain on the power grid. Vulnerability to power outages due to development has increased since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to power outages due to land use remained the same since the last approved plan.

Population shifts: Population has decreased but not significantly so since the last approved plan. However, increasing demands and vulnerabilities impacting the power grid as well as increasing high temperatures increase the vulnerability from power outages to various populations in the City. Therefore, overall population vulnerability to power outages has increased since the last approved plan.

4.3.6.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: There are no specific impacts from power outages on monolingual Spanish-speaking populations.

Unhoused: There may be significant impacts from power outages on unhoused populations. Unhoused populations may have reduced access to medical facilities or treatment.

Behavioral Health: There may be significant additional vulnerabilities to power outages among populations with behavioral health issues.

Older Adults: Older adults are more vulnerable to periods of extreme heat, and power outages can put many at severe risk.

4.3.7 Cyberattack/IT Disruption

4.3.7.1 Overall Vulnerability and Impact

The City of Montebello, like governments throughout the country, are increasingly vulnerable to cyberattacks. Cyberattacks can impact local government, services, and businesses in a variety of ways, depending on the type and severity of the attack.

Laptops generally have 4-5 hours of power capacity, so in the event of a power outage, they could quickly run down without available power sources. And without an operating network to log in to, their utility would be seriously compromised. This becomes an issue in the case of another pandemic or other situation requiring widespread remote work as during the beginning of the COVID-19 pandemic – ensuring operation of the network will be key to ensuring the continued functioning of the City.

4.3.7.2 Population

The general population may be subject to cyberattack through attacks on other institutions or individual responses to phishing or other online scams. In addition, certain populations such as the elderly, disabled, and unhoused people may be more vulnerable to the impacts of cyberattacks on local government and services. For example, if emergency services or public utilities are disrupted, these populations may have a more difficult time accessing the resources they need to stay safe and healthy.

4.3.7.3 Critical Facilities

Every facility today is to some degree supported by IT technology, from access systems to the power grid. Beyond specific critical facilities, other elements of infrastructure could be affected, from traffic lights to modern electric vehicles.

Local Government:

- Emergency Services: Cyberattacks can disrupt emergency services such as 911 systems, which can prevent people from getting the help they need in a timely manner.
- Public Utilities: Cyberattacks can target public utilities such as water and power systems, potentially causing widespread outages and other disruptions.
- Transportation Networks: Cyberattacks can target transportation networks such as traffic signals and public transit systems, causing delays and safety hazards.
- Public Records: Cyberattacks can compromise public records such as birth certificates, social security numbers, and other sensitive information.

Services:

- Financial Services: Cyberattacks can target financial institutions such as banks and credit unions, potentially compromising sensitive financial data and disrupting financial transactions.
- Healthcare: Cyberattacks can compromise healthcare systems, putting patient data and even lives at risk.

4.3.7.4 Non-Critical Facilities

Virtually all non-critical facilities are vulnerable to cyberattack, although to lesser degrees.

Businesses:

- Intellectual Property: Cyberattacks can target businesses' intellectual property such as trade secrets, patents, and other sensitive information.
- Financial Information: Cyberattacks can compromise businesses' financial data, potentially leading to financial losses and reputational damage.
- Supply Chain Disruptions: Cyberattacks can disrupt businesses' supply chains, causing delays and financial losses.

4.3.7.5 Environment

Cyberattack has no direct impact on the environment. Shutdowns of certain systems may cause events that have impacts on the environment, however.

4.3.7.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. However, as networked systems and new forms of information technology such as artificial intelligence become more common, the City's vulnerability to cyberattack will only grow. Vulnerability to cyberattack has increased since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to cyberattack has remained the same since the last approved plan.

Population shifts: Population has increased but not significantly so since the last approved plan. Cyberattacks have also become more sophisticated and widespread in the past several years Therefore, overall population vulnerability to cyberattack has increased since the last approved plan.

4.3.7.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: There are no specific impacts from cyberattack on Russian-speaking populations. Linguistic barriers may impede communication with and disseminating information to Russian-speaking populations during or after an event.

Unhoused: There are no specific impacts from cyberattack on unhoused populations.

Behavioral Health: Disruptions to health care services and related organizations from cyberattack may have an impact on behavioral health services and their ability to reach out to impacted individuals.

Older Adults: Disruptions to community and medical services from cyberattack may have direct impacts to services for older adults, including on their health and well-being.

4.3.8 Floods

4.3.8.1 Overall Vulnerability and Impact

The high density and associated impervious surfaces can impede natural water absorption and increase runoff during heavy rain events, potentially leading to localized flooding. The City's terrain includes hilly and sloped areas in its north, which can contribute to runoff during heavy rains. The Rio Hondo riverbed during prolonged and severe precipitation events could be an issue as well.

4.3.8.2 Population

Impact on population is limited mostly to development in proximity to the Rio Hondo River. The potential for harm to any unhoused persons camping in the Rio Hondo riverbed could be higher, however.

4.3.8.3 Critical Facilities

No specific critical facilities in the City of Montebello stand out for their greater vulnerability to flooding. However, during heavy rain events, stormwater can quickly overwhelm the capacity of storm drains, leading to flooding in streets and neighborhoods and potentially impacting critical facilities in the vicinity. This excess water can also flow into the sewer system, causing it to become overloaded and leading to backups and overflows in other areas.

In addition, stormwater runoff can carry pollutants, such as debris, trash, chemicals, and sediment, into the sewer system. These pollutants can cause blockages and damage to pipes and equipment, as well as pose a risk to human health and the environment.

4.3.8.4 Non-Critical Facilities.

No specific categories of non-critical facilities stand out in the City of Montebello for their vulnerability to flooding. Flooding can cause damage to structures, utilities, transportation routes, and communication resulting in loss of revenue and ability to provide emergency, essential, and non-essential services.

As described above, flash flooding after extreme events may impact both critical and non-critical facilities. Roads may act as channels for floodwaters, making crossing roads hazardous and damaging or even washing away vehicles.

The extent and nature of property damage from floods depend on the velocity and depth of floodwaters. Basement flooding and soil saturation from flood events can lead to significant

damage. Most flood damage occurs from water penetrating materials that are vulnerable to loss, such as wood, insulation, wallboard, fabric, furnishings, floor coverings, and appliances. In some cases, flood damage can make homes unlivable.

4.3.8.5 Environment

Any sustained flooding event is likely to impact the City's natural environment by potentially putting stress on aging trees and vegetation.

4.3.8.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. However, as the intensity of extreme rain events increases due to climate change, the risk of anomalous events impacting the City of Montebello is growing. Therefore, vulnerability to flooding has increased since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. However, as the intensity of extreme rain events increases due to climate change, the risk of anomalous events impacting the City of Montebello is growing. Therefore, vulnerability to flooding has increased since the last approved plan.

Population shifts: Population has increased but not significantly so since the last approved plan. However, as the intensity of extreme rain events increases due to climate change, the risk of anomalous events impacting the City of Montebello is growing. Therefore, vulnerability to flooding has increased since the last approved plan.

4.3.8.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: There are no specific impacts from flooding on monolingual Spanish-speaking populations.

Unhoused: Unhoused populations may be more vulnerable to floods due to their lack of permanent shelter. Any unhoused persons camping in vicinity of the Rio Hondo riverbed during potential flooding events could be impaced.

Behavioral Health: There are no specific impacts from flooding on populations experiencing behavioral health issues.

Older Adults: Older adults may have mobility issues preventing them from moving to higher or safer ground in the event of flooding.

4.3.9 Dam Failure

4.3.9.1 Overall Vulnerability and Impact

A dam failure could lead to catastrophic flooding, impacting densely populated areas downstream. The impact would be severe, causing extensive property damage, economic losses, potential casualties, and long-term environmental damage.

4.3.9.2 Population

The population at risk includes residents of the communities located downstream of Whittier Narrows Dam and Garvey Reservoir including Montebello. These areas are densely populated, and a dam failure could directly affect a large number of households.

4.3.9.3 Critical Facilities

While there may be no specific identified critical facilities at risk, the failure of a dam could severely disrupt essential services, complicating rescue operations and causing long-term outages in utilities, water supply, and emergency medical services.

4.3.9.4 Non-Critical Facilities

Non-critical facilities could suffer severe damage or destruction, leading to long-term economic impacts and displacement of residents and businesses.

4.3.9.5 Environment

The environmental impact of a dam failure would be substantial, including severe erosion, habitat destruction, and water contamination. Floodwaters could carry debris, chemicals, and sewage downstream, leading to long-term damage to aquatic ecosystems and a loss of biodiversity in affected areas.

4.3.9.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. Vulnerability to dam failure from development has remained the same since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to dam failure from land use has remained the same since the last approved plan.

Population shifts: Population has decreased but not significantly so since the last approved plan. Overall population vulnerability to dam failure from population shifts has remained the same since the last approved plan.

4.3.9.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: There are no specific impacts from dam failure on monolingual Spanish-speaking populations.

Unhoused: There may be significant impacts from infectious disease on unhoused populations. The unhoused population, often residing in areas close to rivers or under bridges, is particularly vulnerable to sudden flooding, with few resources to escape or recover from such disasters.

Behavioral Health: There may be significant additional vulnerabilities to dam failure among populations with behavioral health issues. The trauma associated with a dam failure, including loss of homes and loved ones, could exacerbate mental health issues in the affected population, leading to increased anxiety, depression, and stress-related disorders.

Older Adults: Older adults may be more vulnerable to dam failure than other populations due to limited mobility.

4.3.10 Terrorism/Armed Assailant

4.3.10.1 Overall Vulnerability and Impact

Terrorism, whether from an organized group or from a lone active assailant, is a constant shadow over many aspects of life in the United States. These kind of events can be carried out not only with guns but with explosive devices or sabotage of infrastructure such as attacks on electrical transformers or attempts to poison water supplies.

4.3.10.2 Population

Overall population vulnerability is difficult to ascertain. Settings with large numbers of people are more vulnerable to armed assailants. The entire population is vulnerable to larger-scale attacks.

4.3.10.3 Critical Facilities

Critical infrastructure, such as power plants, water treatment facilities, and communication systems, are essential to the functioning of the City. An attack on these facilities could disrupt vital services and cause significant damage to the City's infrastructure.

4.3.10.4 Non-Critical Facilities

Businesses are vulnerable to terrorism. Public spaces, such as parks, shopping districts, and public transportation hubs, are potential targets for terrorist attacks. For example, an attack on a crowded public space could cause mass casualties and widespread panic.

4.3.10.5 Environment

The natural environment itself is not a major target of potential terrorist or active assailant incidents in the City of Montebello. Depending on the mode of attack, the natural environment could be impacted by attacks directed on other targets.

4.3.10.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. However, the political climate in the United States has fostered an increase in armed groups and individuals motivated by ideology that are capable of violence. Therefore, vulnerability to terrorism due to development has increased since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to terrorism has remained the same since the last approved plan.

Population shifts: Population has decreased but not significantly so since the last approved plan. Therefore, vulnerability to terrorism due to population shifts has decreased since the last approved plan.

4.3.10.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: There are no specific impacts from terrorism on monolingual Spanish-speaking populations.

Unhoused: There are no specific impacts from terrorism on unhoused populations.

Behavioral Health: There are no specific impacts from terrorism on populations experiencing behavioral health issues.

Older Adults: There are no specific impacts from terrorism on older populations.

4.3.11 Infectious Disease

4.3.11.1 Overall Vulnerability and Impact

The City of Montebello is vulnerable to infectious disease. The vulnerability of a specific population to epidemic or pandemic is affected by several variables, including virus type, affected demographics, and environmental factors such as seasonality and individual medical conditions. While the Spanish Flu of 1920 impacted largely healthy young people, the COVID-19 pandemic was most impactful for elderly individuals, with morbidity and mortality rates highest among those aged 65 and older, particularly those 85 and older.

4.3.11.2 Population

The entire population of the City of Montebello is vulnerable to infectious disease. Most diseases impact certain segments of the population more than others; COVID-19 disproportionally affected the elderly and others with existing co-morbidities. Future pandemics may impact different population sectors.

4.3.11.3 Critical Facilities

As infectious disease impacts humans directly, it does not directly impact critical physical infrastructure. It would, however, impact staffing and human systems that support the physical infrastructure of the City. The City's recent experience of dealing with the COVID-19 pandemic revealed both strengths and vulnerabilities that could be considered in future pandemic planning.

4.3.11.4 Non-Critical Facilities

Infectious disease does not directly impact non-critical physical infrastructure. Businesses and other entities may be impacted, however, due to closures and other mitigation measures. The economy can be Impacted by infectious disease outbreaks through measures such as limiting travel and public events, and closing non-essential businesses, creating a high demand for healthcare resources.

4.3.11.5 Environment

Infectious disease impacting humans does not directly impact the natural environment. Some diseases originating in animals may impact humans under the right conditions.

4.3.11.6 Changes in Development Since Last Approved Plan

Development: There have been no significant changes in development since the last approved plan. Vulnerability to infectious disease from development has remained the same since the last approved plan.

Land Use: There have been no significant changes in land use since the last approved plan. Vulnerability to infectious disease from land use has remained the same since the last approved plan.

Population shifts: Population has increased but not significantly so since the last approved plan. Overall population vulnerability to infectious disease from population shifts has remained the same since the last approved plan.

4.3.11.7 Impacts on Vulnerable Populations

Monolingual Spanish-speaking Populations: There are no specific impacts from infectious disease on monolingual Spanish-speaking populations.

Unhoused: There may be significant impacts from infectious disease on unhoused populations. Unhoused populations may have reduced access to medical facilities or treatment.

Behavioral Health: There may be significant additional vulnerabilities to infectious disease among populations with behavioral health issues.

Older Adults: Older adults are often more vulnerable to infectious disease than other populations.

4.4 National Flood Insurance Program Participation

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date	Tribal
060720	MONTEBELLO, CITY OF	LOS ANGELES COUNTY		6/18/87	9/26/08	6/18/87	No

The City of Montebello currently participates in the National Flood Insurance Program. Created by Congress in 1968, the NFIP makes flood insurance available in communities that enact minimum floodplain management rules consistent with the Code of Federal Regulations §60.3.

Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

The built areas of the City are in “Flood Zone X” and “Flood Zone D”. Zone X is defined as the area outside the 500-year flood and protected by levee from 100-year flood. Zone D is defined as areas in which flood hazards are undetermined (no analysis of flood hazards has been conducted), but possible.

According to FEMA, the City of Montebello is designated a No Special Flood Hazard Area (NSFHA). A Non-Special Flood Hazard Area (NSFHA) is an area that is in a moderate- to low-risk flood zone (Zones B, C, X Pre- and Post-FIRM). An NSFHA is not in any immediate danger from flooding caused by overflowing rivers or hard rains. However, it’s important to note that structures within a NSFHA are still at risk. In fact, over 20- percent of all flood insurance claims come from areas outside of mapped high-risk flood zones.

Moderate to Low Risk Areas

In communities that participate in the NFIP, flood insurance is available to all property owners and renters in these zones:

ZONE	DESCRIPTION
B and X (shaded)	Area of moderate flood hazard, usually the area between the limits of the 100- year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
C and X (unshaded)	Area of minimal flood hazard, usually depicted on FIRMs as above the 500- year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.

High Risk Areas

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all of these zones:

ZONE	DESCRIPTION
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
AE	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
A1-30	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
AO	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.

ZONE	DESCRIPTION
AR	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
A99	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.

Undetermined Risk Areas

ZONE	DESCRIPTION
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.

- **Adoption of NFIP minimum floodplain management criteria via local regulation.** No portions of Montebello lie within a federally designated mandatory flood insurance zone.
- **Adoption of the latest effective Flood Insurance Rate Map (FIRM).** The City of Montebello adopted the latest effective Flood Insurance Rate Map on XXXXXXX
- **Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHA's.** There are no portions of the City of Montebello that are within an SFHA.
- **Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP.** The City of Montebello's City Engineer is responsible for implementing the addressed commitments and requirements of the NFIP.
- **Description of how participants implement the substantial improvement/substantial damage provisions of their floodplain management regulations after an event.** The City of Montebello's City Engineer will implement all applicable provisions after a flood event. Chapter 15.40, *Flood Damage Prevention* (https://library.municode.com/ca/montebello/codes/code_of_ordinances?nodeId=TIT

15BUCO_CH15.40FLDAPR_15.40.020FI) details Montebello's specific floodplain management regulations.

Repetitive Loss Properties (RLPs) are most susceptible to flood damages; therefore, they have been the focus of flood hazard mitigation programs. Unlike a Countywide program, the Floodplain Management Plan (FMP) for repetitive loss properties involves highly diversified property profiles, drainage issues, and property owner's interest. It also requires public involvement processes unique to each RLP area. The objective of an FMP is to provide specific potential mitigation measures and activities to best address the problems and needs of communities with repetitive loss properties. A repetitive loss property is one for which two or more claims of $1,000 or more have been paid by the National Flood Insurance Program (NFIP) within any given ten-year period.

There are no repetitive loss properties within the boundaries of the City of Montebello.

Planning Director

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SECTION 5 – CAPABILITY ASSESSMENT

Element C: Mitigation Strategy Requirements
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))

A capability assessment is an in-depth look at community mechanisms (such as plans, codes, ordinances, staffing, etc.) in place to support proposed mitigation activities. Performing the capability assessment helps communities identify regulatory, administrative, technical, and fiscal capacities and capabilities, and to consider ways that these tools can be used to further hazard mitigation and disaster resiliency goals.

5.1 Planning and Regulatory Capabilities

The Planning & Community Development Department plays a crucial role in shaping the city's growth, development, and overall community well-being. The department oversees several key areas, including the Planning Division, Economic Development Division, Housing Division, and Code Enforcement Division. Each of these divisions is integral to ensuring that Montebello remains a vibrant and livable city, balancing the need for development with the preservation of the community's character and resources. The department's responsibilities range from implementing the city's General Plan and Zoning Code to managing economic initiatives that stimulate local businesses and support job creation.

The Housing Division within the department is particularly focused on providing affordable housing solutions, ensuring that low and moderate-income residents have access to safe and adequate housing. This includes the management of Community Development Block Grant (CDBG) and HOME Investment Partnerships programs, which fund various housing and community improvement projects. The department also handles building safety, code enforcement, and parking enforcement, ensuring that the city's buildings and infrastructure meet safety standards and that community standards are maintained through regular inspections and enforcement actions.

Regarding hazard mitigation and disaster planning, the Fire Department is involved in efforts to enhance the city's resilience to natural disasters. This includes integrating hazard mitigation strategies into the General Plan and other long-term planning documents. The department also collaborates with other city departments, such as Public Works, to ensure that infrastructure improvements align with disaster preparedness goals.

Policy and Regulatory Resources

Policy and Regulatory Resources	Link / Location
2024-2040 General Plan	https://www.montebelloca.gov/departments/planning_community_development/planning_division/advanced_planning
Flood Damage Prevention	https://library.municode.com/ca/montebello/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.40FLDAPR
Buildings and Construction Code	https://library.municode.com/ca/montebello/codes/code_of_ordinances?nodeId=TIT15BUCO
Seismic Safety Code	https://library.municode.com/ca/montebello/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.36SESACO
Stormwater and Urban Runoff Pollution Prevention	https://library.municode.com/ca/montebello/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.36STWAURRUPOPR
Subdivisions	https://library.municode.com/ca/montebello/codes/code_of_ordinances?nodeId=TIT16SU
Zoning	https://library.municode.com/ca/montebello/codes/code_of_ordinances?nodeId=TIT17ZO

Administrative Resources

Administrative Resources	Link / Location
Commissions and Committees	https://www.montebelloca.gov/departments/administration/city_clerks_office/commissions_and_committees
Fire	https://www.montebelloca.gov/departments/fire
Planning & Community Development	https://www.montebelloca.gov/departments/planning_community_development
Police	https://www.montebelloca.gov/departments/police
Public Works	https://www.montebelloca.gov/departments/public_works

5.2 Technical and Fiscal Capabilities

The City of Montebello's Finance Department is integral to managing the city's financial health, overseeing various functions such as budgeting, revenue collection, and financial reporting. The department handles major revenue streams including property taxes, sales taxes, and utility user taxes, which are essential for funding city services and projects. Additionally, the Finance Department is responsible for accounts payable, payroll, purchasing, and managing the city's investment portfolio.

In October 2021, the California State Auditor's report on high-risk local government agencies identified the City of Montebello as one of the entities facing significant financial challenges. Montebello ranked as one of the 18 local government agencies at high risk, primarily due to ongoing fiscal deficits and poor financial management practices. The audit revealed that Montebello had a general fund deficit of $15.6 million as of the end of the fiscal year 2020, and the city's general fund reserves were completely depleted. Additionally, the city faced substantial unfunded pension liabilities, contributing to its precarious financial position. The report highlighted the need for Montebello to implement stronger governance and oversight to mitigate these risks and ensure long-term fiscal sustainability.

Furthermore, the report underscores the importance of transparency in financial reporting and the adoption of sound fiscal practices to address Montebello's financial vulnerabilities. The audit called attention to the city's difficulty in maintaining balanced budgets and its reliance on short-term borrowing to cover operational costs. Without significant reforms and proactive financial management, Montebello could face increasing financial difficulties, potentially leading to insolvency or an inability to fund essential public services. The city's overall financial health was rated as high risk, emphasizing the urgency of addressing these fiscal challenges to avoid further deterioration of its financial stability.

From a fiscal perspective, Montebello's ability to finance mitigation options is supported by its taxation authority and access to funding through grants and bonds. The city can leverage its revenue streams, such as property taxes and special assessments, to fund climate-related projects. Additionally, Montebello can apply for state and federal grants aimed at disaster resilience and environmental sustainability, providing further financial resources for mitigation efforts.

The City of Montebello can apply for funding under FEMA programs such as the Hazard Mitigation Grant Program (HMGP) or the Building Resilient Infrastructure in Communities (BRIC) program. Another potential source of funding for hazard mitigation projects is through the Community Development Block Grant (CDBG) program, administered by the Department of Housing and Urban Development (HUD). This program provides funding to local communities

for a variety of projects, including those related to hazard mitigation. The City can apply for CDBG funding to implement projects such as drainage improvements, erosion control, or wildfire fuel reduction.

The City of Montebello can also consider issuing bonds to fund hazard mitigation projects. These bonds would be repaid over time through property taxes or other revenue sources and would allow the City to implement projects such as retrofitting critical infrastructure, building fire breaks, or developing early warning systems. Finally, the City can partner with other organizations and agencies to fund hazard mitigation projects. For example, the City can work with local businesses or non-profits to fund projects such as emergency preparedness education or the development of community-wide evacuation plans.

5.3 Education/Outreach

The City of Montebello has developed a robust educational and public outreach program focused on hazard mitigation, primarily coordinated through its Fire Department and Community Risk Reduction Division (CRRD). The department places significant emphasis on educating the community about safety practices and identifying hazardous conditions that could pose risks to life, property, and the environment. This includes a variety of public education initiatives designed to raise awareness about fire safety, disaster preparedness, and general risk reduction strategies. Through these efforts, the city aims to reduce the incidence of emergencies and enhance the community's overall resilience to disasters.

A key component of Montebello's public outreach capabilities is the Community Emergency Response Team (CERT) program. This program provides residents with essential training on disaster response, including how to safely turn off utilities, provide first aid, and manage emergency supplies. The CERT program is designed to empower community members to protect themselves, their families, and their neighbors during emergencies, thus enhancing the city's overall disaster preparedness. The Fire Department also conducts regular inspections and public safety communications to ensure that residents and businesses are informed and prepared for potential hazards.

Montebello's Fire Community Services & Outreach Division (FCS&OD) further extends these efforts by focusing on vulnerable populations, such as seniors, the unhoused, and those with medical or behavioral health challenges. Programs like the Montebello Community Assistance Program (MCAP) offer field-based outreach and support to these groups, helping to reduce their reliance on emergency services for non-emergency issues and improving their quality of life.

5.4 Potential for Improvement

Section 6, Mitigation Strategy, includes not only a list of actions that could expand upon and improve the City's capabilities but also a discussion of how best to implement them.

5.4.1 Policy/Regulatory

Close coordination internally with the Planning & Community Development Department and cultivation of relationships with the City Council to introduce and pass new and updated policy and codes will be essential. Planning and zoning regulations largely shape the physical nature of a community, and as such present a tremendous opportunity in building resilience. Enhanced building codes deriving from the work of the Institute for Building and Home Safety among other organizations can also aid in steadily increasing the overall level of resilience.

The city's General Plan and Hazard Mitigation Plan provide a foundation, but more robust integration of hazard mitigation into land-use planning, zoning regulations, and building codes could further reduce risks. Additionally, the city could adopt stricter enforcement mechanisms for existing regulations, ensuring that new developments are resilient to these hazards.

5.4.2 Admin/Technical

From an administrative and technical perspective, Montebello could benefit from enhancing its internal capabilities related to hazard mitigation. This could include investing in advanced Geographic Information Systems (GIS) for better hazard mapping and risk assessment, which would allow the city to identify and prioritize vulnerable areas more effectively. Additionally, increasing staffing or providing specialized training for existing personnel in emergency management and urban planning would improve the city's ability to plan for and respond to disasters. Developing stronger inter-departmental coordination, particularly between planning, public works, and emergency services, would ensure that mitigation strategies are implemented efficiently and effectively across all city operations.

A major vulnerability of the City, and of virtually all organizations, public and private, is their increasing dependence on information technology. Cyberattacks often are first in mind, but just as important are the infrastructure networks such as electricity that enable the network to work. COVID-19 was in many ways a test case for larger disasters, but it was easier to deal with given that it had no direct physical impact except to human health. A large earthquake, a Carrington event or other natural event that reduced or eliminated power to large areas for extended periods of time would be far more devastating to IT networks.

Montebello can consult directly with business continuity and resilience specialist firms to identify best practices to maintain cybersecurity and IT network resilience. Maintaining access to

alternate internet and cloud storage providers that can serve as backups will be vital. The City can also maintain its own independent network with dedicated, independent power sources and dedicated access through VPN or other methods. These should also include localized data backups that do not rely on the cloud. Working with business continuity specialists may be helpful as individual business operations rely much more on IT networks than on the kinds of physical structures that cities do.

5.4.3 Education/Outreach

Montebello's current public outreach efforts could be expanded to further engage and educate the community on hazard mitigation. The city could develop targeted outreach programs that focus on specific hazards, such as earthquake preparedness, flood safety, and wildfire risk reduction. These programs could utilize various communication channels, including social media, community workshops, and school programs, to reach a broader audience. Furthermore, enhancing the Community Emergency Response Team (CERT) program by offering more frequent training sessions and expanding participation would empower residents to take an active role in disaster preparedness.

5.4.4 Financial

To improve its fiscal standing and support resilience and mitigation, the City of Montebello could take several strategic actions. Following the California State Auditor's recommendations would greatly assist in improving the City's financial capabilities. Increasing its reserve funds and reducing reliance on short-term borrowing would strengthen its financial position and provide a buffer against unexpected economic downturns or emergencies. Montebello should also focus on reducing its pension liabilities through negotiation of more fiscally-sustainable pension plans or by making additional contributions to reduce unfunded liabilities.

In terms of supporting resilience and mitigation, Montebello can prioritize investments in infrastructure projects that enhance the city's ability to withstand natural disasters, such as improving drainage systems to reduce flood risk or retrofitting buildings to better resist earthquakes. Establishing a dedicated hazard mitigation fund would be an excellent option to support these investments. By securing grants and partnerships for these projects, the city can minimize the financial burden on its budget while still achieving significant improvements in community safety and resilience. Additionally, adopting green infrastructure solutions and increasing energy efficiency across municipal operations can help the city reduce long-term operational costs and promote sustainability, aligning with broader climate adaptation goals.

Finally, rising insurance costs across the country pose a problem to local and state government. Finding new methods of insurance and other forms of risk pooling will become ever-more important as disasters increase in frequency and intensity.

SECTION 6 – MITIGATION STRATEGY

Element C: Mitigation Strategy Requirements
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iii)); (Requirement 44 CFR § 201.6(c)(3)(iv))

6.1 Introduction

The Mitigation Strategy serves as a comprehensive guide for the City of Montebello in its pursuit of enhancing disaster resilience by reducing vulnerability to identified hazards. Through the identification of specific Mitigation Goals and Objectives, strategies and initiatives are formulated to prevent, minimize, and alleviate the impacts of both natural and manmade disasters on the local population and property within the planning area.

Strengthening community resilience involves the implementation of building codes, zoning ordinances, and other regulatory measures. During the review or update of these planning mechanisms, there is an opportunity to assess the feasibility of integrating mitigation strategies into policy changes. These proactive efforts contribute significantly to ensuring the City's sustained resilience in the face of hazard events.

City Staff make recommendations to the Montebello City Council regarding prioritization and funding of the above and future projects, yet the decision lies ultimately with the Councilmembers. Capital Improvement Projects and other Mitigation Projects may receive public hearings as either part of the budgeting process or as individual staff items for City Council which allows for public input.

6.2 Mitigation Goals and Objectives

The Planning Team developed mitigation goals to avoid or reduce long-term vulnerabilities to hazards. These general principles clarify desired outcomes..

The goals are based on the risk assessment and Planning Team input, and represents a long-term vision for hazard reduction or enhanced mitigation capabilities. They are compatible with community needs and goals expressed in other planning documents prepared by the City.

Each goal is supported by mitigation action items. The Planning Team developed these action items through its knowledge of the local area, risk assessment, review of past efforts, identification of mitigation activities, and qualitative analysis.

The five mitigation goals and descriptions are listed below.

Goal 1: Protect Life and Property

- Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to losses from natural, human-caused, and technological hazards.
- Improve hazard assessment information to make recommendations for avoiding new development in high hazard areas and encouraging preventative measures for existing development in areas vulnerable to natural, human-caused, and technological hazards.

Goal 2: Enhance Public Awareness

- Develop and implement education and outreach programs to increase public awareness of the risks associated with natural, human-caused, and technological hazards.
- Provide information on tools; partnership opportunities, and funding resources to assist in implementing mitigation activities.

Goal 3: Preserve Natural Systems

- Support management and land use planning practices with hazard mitigation to protect life. Preserve, rehabilitate, and enhance natural systems to serve hazard mitigation functions.

Goal 4: Encourage Partnerships and Implementation

- Strengthen communication and coordinate participation with public agencies, citizens, non-profit organizations, business, and industry to support implementation.
- Encourage leadership within the City and public organizations to prioritize and implement local and regional hazard mitigation activities.

Goal 5: Strengthen Emergency Services

- Establish policy to ensure mitigation projects for critical facilities, services, and infrastructure.
- Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, business, and industry.
- Coordinate and integrate hazard mitigation activities where appropriate, with emergency operations plans and procedures.
- The Planning Team also developed hazard-specific mitigation goals, which appear in the Mitigation Strategies Section.

6.3 Mitigation Actions

The action items are a listing of activities in which City agencies and citizens can be engaged to reduce risk. Each action item includes an estimate of the timeline for implementation.

The action items are organized within the following Mitigation Actions Matrix, which lists all of the multi-hazard (actions that reduce risks for more than one specific hazard) and hazard-specific action items included in the mitigation plan. Data collection and research and the public participation process resulted in the development of these action items. The Matrix includes the following information for each action item:

Funding Source

The action items can be funded through a variety of sources, possibly including: operating budget/general fund, development fees, grants such as Community Development Block Grant (CDBG) and the Hazard Mitigation Grant Program (HMGP), private funding, Capital Improvement Plan, and other funding opportunities.

Coordinating Organization

The Mitigation Actions Matrix assigns primary responsibility for each of the action items. The hierarchies of the assignments vary – some are positions, others departments, and other committees.

Plan Goals Addressed

The plan goals addressed by each action item are included as a way to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins.

The plan goals are organized into the following five areas:

- Protect Life and Property
- Enhance Public Awareness
- Preserve Natural Systems
- Encourage Partnerships and Implementation
- Strengthen Emergency Services

Action	Description	Vulnerability	Goals	Coordinating Agency	Funding Source: AB-Annual Budget, GR-Grant, P-Private	Timeline	Priority: L-Low, M-Medium, H-High	In 2018 Plan ?
MULTIPLE HAZARDS								
Public Education Programs	Educate the general public on all-hazards mitigation & response (through phone directory, website and billing inserts) in English and Spanish. Encourage residents to prepare themselves by understanding their local hazards, stocking up with necessary items, and planning for how family members should respond if any of a number of possible emergency or disaster events strike.	Population	Public Awareness	Administration, Fire	AB	Ongoing	3	Yes
Promote business measures	Promote business mitigation awareness of hazards and opportunities for mitigation.	Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire, Police	AB	Ongoing	2	Yes
Site emergency management plans	Encourage development and testing of site emergency plans for schools, factories, office buildings, shopping malls, hospitals, correctional facilities, stadiums, recreation areas, and other similar facilities.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Emergency Services, Partnerships and Implementation	Fire, Police	AB	Ongoing	1	Yes
CERT Promotion	Encourage participation by community members in Community Emergency Response Team (CERT). CERT is a volunteer group of citizens who are trained and equipped to respond if emergency services are unable to meet all of the immediate needs of the community following a major disaster.	Population	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire, Police	AB	Ongoing	1	Yes
Montebello Hills street planning	Provide a circulation system for the Montebello Hills which services the various types of residential and commercial development but at the same time preserves the unique environmental and aesthetic qualities of the hill area.	Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Public Works, Planning	AB, GR	1-5 years	1	Yes

Cooling centers	Provide as cooling centers to protect vulnerable residents from the effects of extreme heat, and to host a Community Meeting on how insulate dwellings against extreme weather.	Population, Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire	AB	1-5 years	1	Yes
THIRA Preparation	Prepare a Threat & Hazard Identification and Risk Assessment (THIRA).	Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire	AB	1-5 years	1	Yes
Emergency Operations Plan	Continue to implement the Emergency Operations Plan, which functions as the City's manual for communication protocol in the events of disaster.	Critical Infrastructure	Emergency Services	Fire	AB	Annually	2	Yes
Issuing Special-Purpose Bonds	Issue resilience/green infrastructure bonds or other special-purpose financial instruments.	Critical Infrastructure, Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Partnerships and Implementation	Finance	AB, P	New; initial survey to take place within one year after approval.	2	No
Public-Private Partnerships	Pursue public-private partnerships for resilience funding, especially in industrial areas or with new development.	Critical Infrastructure, Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Partnerships and Implementation	Finance	AB, P	New and subsequently ongoing.	2	No
Back-up generators	Provide back-up generators for critical facilities and schools	Critical Infrastructure, Non-Critical Infrastructure	Emergency Services	Fire, Police	AB	Not started; completion within one year	1	No
City Employee Disaster Training	Provide training to all City employees on their roles and responsibilities in times of disasters and local emergencies. Training should include comprehensive and realistic disaster exercises, and cross-training for multiple potential roles should be considered.	Critical Infrastructure, Non-Critical Infrastructure	Emergency Services	Fire, Police	AB	Annually	3	No

Earthquake Preparedness Drills	Conduct emergency preparedness and response drills for mock major earthquake events-the natural hazards with the greatest potential for injury, life loss, property damage and service interruptions. Drills should test disaster response systems and communication protocols. When preparing the drills, consider the wide range of potential risks associated with critical facilities and vulnerabilities. Include City officials, utility providers, emergency response stakeholders and representatives of vulnerable facilities.	Critical Infrastructure, Non-Critical Infrastructure	Emergency Services	Fire, Police	AB	Annually	4	No
Mutual Aid Agreement Participation	Continue to participate in Statewide Master Mutual Aid Agreements and local automatic aid agreements related to emergency response.	Critical Infrastructure, Non-Critical Infrastructure	Emergency Services	Fire, Police	AB	Annually	2	No
Funding Options for Hazards Mitigation	Conduct survey of disaster risk reduction and adaptation funding options for the City. Options could include special taxing districts, private/philanthropic sources, and others.	Critical Infrastructure, Non-Critical Infrastructure	Partnerships and Implementation	Fire, Police, Planning & Community Development	AB	Initial survey and report within two years after approval.	1	No
Program Cycle Management and Data Collection for Disaster Risk Reduction	Collect data and develop program methodology to adaptively manage hazard mitigation through examination of hazard events.	Critical Infrastructure, Non-Critical Infrastructure	Partnerships and Implementation	Fire, Police	AB	Every 5 years; first review within two years of plan approval, subsequent reviews to precede LHMP updates.	1	No
Resilience Centers	Supply cooling centers with refrigerators for storing medicine, backup water supplies, and social services information in multiple languages. Establish locations to provide disaster planning assistance and backup supplies and power sources. Backup power and outlets for personal device charging.	Critical Infrastructure, Population	Public Awareness	Fire, Police	AB	Annually	1	No
Green Space Networks	Green space networks: Promote the development to a network of green spaces throughout the City, prioritizing areas with low park access.	Environment	Protect Life and Property	Planning & Community Development (Planning)	AB	Ongoing	2	No

Sponge City Infrastructure - Normalize Water Cycle Flows	Use "sponge city" concepts to increase water flow and reduce undesired retention (i.e., flooding) to work with water cycle and retain water where desired.	Environment, Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB, P	New; emphasis on water flow to be mainstreamed into city contract consideration.	3	No
Environmental and Open-space Grants	Pursue environmental and open-space grants on federal and state level for at-risk parcels to fire, flood, and other hazards.	Environment, Non-Critical Infrastructure	Protect Life and Property	Planning & Community Development	GR	Ongoing	2	No
Green Streets Program	Develop a green streets program to support a sustainable approach to stormwater, drainage, groundwater recharge, and landscaping and incorporate green streets standards and guidelines in all streetscape improvements.	Environment, Non-Critical Infrastructure	Partnerships and Implementation	Public Works	AB, GR	Within one year after approval.	2	Yes
Adoption of new City building codes	Adoption of new City building code approximately every three years: Includes updating seismic and structural requirements. Electrification efforts should include language on hardening grid and power systems as well as promoting resilience to disasters and distributed energy generation (solar, etc.).	Changes In Development Since Last Approved Plan	Partnerships and Implementation	Planning & Community Development	AB	Every 3 years.	2	Yes
Code Enforcement	Enforce all applicable and current building & land use codes and ordinances. Adopt and develop new codes and standards that provide protection beyond minimum standards. Develop partnerships with business community to develop and maintain businesses with emphasis on pre-mitigation practices. Continue efforts to ensure that Critical facilities meet minimum building code standards for seismic and critical events. The overall goal is to minimize deaths and injuries that could be caused by the impact from a disaster.	Changes In Development Since Last Approved Plan	Partnerships and Implementation	Planning & Community Development	AB	Ongoing	2	Yes
Community Insurance Promotion	Promote uptake of disaster insurance; consider community-embedded insurance or other new disaster insurance models.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Partnerships and Implementation	Finance	AB	Within one year after approval	2	No

Leverage Development for Resilience Investment	Require developers to implement resilience measures through impact fees, tax increment financing, or other mechanisms.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Partnerships and Implementation	Planning & Community Development	AB	Within one year after approval.	2	No
Emergency Response Vehicle Traffic Control	Develop the specifications and designs for an emergency response vehicle-operated traffic control system.	Non-Critical Infrastructure	Emergency Services	Fire, Police	AB	Within one year after approval	2	No
Evacuation Routes	Continue to study and monitor the conditions of existing evacuation routes with particular attention to traffic conditions to incorporate a range of emergency scenarios including differences in hazard types, locations, and timing. Consider collaboration with neighboring jurisdictions for hazard scenarios that may cause regional evacuation.	Non-Critical Infrastructure	Emergency Services	Fire, Police	AB	Within two years after approval.	2	No
Hazard Recovery Program Database	Develop a repository of resources or case studies on relevant hazard recovery programs that could allow for nimble emergency ordinances, facilitate speedy recovery, and increase resilience for vulnerable populations.	Non-Critical Infrastructure	Emergency Services	Fire, Police	AB	Within three months after approval	1	No
Update and Maintain Geographic Information System (GIS) Program Capability	Update and maintain City Geographic Information System (GIS) capacity and ensure coordination between planning, public safety, and emergency management.	Non-Critical Infrastructure	Emergency Services	Public Affairs & Information Technology	AB	Annually and ongoing as needed.	4	Yes
Public WiFi Power Backup	Ensure battery backup at critical city facilities, including parks.	Non-Critical Infrastructure	Partnerships and Implementation	Public Works	AB	Evaluation complete within one year of approval.	1	Yes
Road Repair and Enhancement	Repave roadways, fix broken and damaged sidewalks, upgrade traffic signal equipment, install ADA ramps at the corners of streets, add landscaped medians and storm drain catch basins at locations. When possible and deemed necessary, or during regular road maintenance, upgrade existing roads to meet minimum road widths, surface, grade, radius, and turnarounds to ensure emergency vehicle access is possible.	Non-Critical Infrastructure	Partnerships and Implementation	Public Works	AB	Ongoing as required.	2	Yes

Financial Resources Post-Disaster	Public awareness to have cash on hand in case of disaster; develop methods to deliver cash to survivors in a timely fashion.	Population	Partnerships and Implementation	Fire, Police, Public Affairs & Information Technology	AB	New; campaign within one year after approval and then ongoing.	4	No
Continuation of Public Education Campaign "Live, Work, Play, Be Safe"	Used to address community emergency preparedness.	Population	Public Awareness	Fire, Police	AB	Completed Creation of Materials, Outreach Ongoing	4	Yes
Disaster Kit Distribution	Work with local places of worship and local non-profits to create disaster kits for lower-income residents. This should include disaster supplies and guidance on how to collect and store important documents.	Population	Public Awareness	Fire, Police	AB	Annually	3	No
Encourage and Promote Community Networks and Groups	Support programs such as Neighborhood Watch Organizations to build and train teams of community residents, leaders, and stakeholders to assist with emergency response and first aid. Make use of existing community networks to enlist participants.	Population	Public Awareness	Fire, Police	AB	Ongoing; greater emphasis on extreme weather resilience with subsequent updates to program	3	No
Know Your Neighbor Program	Coordinate a Know Your Neighbor Program where community leaders and neighbors provide resources and check in on vulnerable populations during hazard events where people shelter at home.	Population	Public Awareness	Fire, Police	AB	Annually	3	No
Regular Needs Assessment	Regularly meet with community leaders that represent special needs populations to maintain continuous two-way communication. This should include surveys and other needs assessments to refine notification and response policies.	Population	Public Awareness	Fire, Police	AB	Varies but at least bi-annually	2	Yes
Vulnerable Population Registry	Develop a voluntary vulnerable population registry and subsequent priority list to help first responders better provide services and meet the needs of those most in need.	Population	Public Awareness	Fire, Police, Communications	AB	New; within one year after approval.	3	No

Resilience Hubs	Develop and support a network of resilience hubs to facilitate health, food, medical, and emergency services, especially to vulnerable populations during climate hazards such as extreme heat events, flooding, and poor air quality events.	Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Emergency Services, Partnerships and Implementation	Planning & Community Development, Fire	AB, GR	Within one year after approval	2	No
Climate Retrofitting of Critical Facilities	Evaluate critical facilities to assess the feasibility of retrofitting to increase long-term resilience to climate change haz- ards including extreme heat, extreme precipitation events, and wildfire.	Critical Infrastructure	Protect Life and Property	Planning & Community Development	AB, GR	Within one year after approval	2	No
Emergency Preparedness and Resilience Campaigns	Implement public education campaigns for residents and businesses about appropriate emergency preparedness measures and what to do in the event of a disaster. Develop special themes and topics to increase awareness of hazards.	Population, Non-Critical Infrastructure	Emergency Services	Fire, Police	AB	Annually	2	No
CYBERATTACK								
City-wide Cybersecurity Strategy	Update and implement citywide cyber-security strategy and operational plan to identify threats and vulnerabilities to all cyber systems (including , communications, signals, corporate data, security networks), and put operational plans in place to mitigate those threats and reduce vulnerabilities.	Critical Infrastructure	Protect Life and Property	Public Affairs & Information Technology	AB	New; within one year after approval.	1	No
Citywide Cybersecurity Awareness Program	Risk reduction through employee education via training and awareness initiatives including classroom, computer-based training courses, anti-phishing simulation testing and training, various media initiatives, and role-based training for users with privileged access.	Critical Infrastructure	Protect Life and Property	Public Affairs & Information Technology	AB	Ongoing as new employees are onboarded and annually for all existing employees.	2	No
IT Recovery Plan	Create, distribute, and implement a recovery plan to ensure continuity of IT operations in the event of a disaster.	Critical Infrastructure	Protect Life and Property	Public Affairs & Information Technology	AB	Plan to be revised annually.	1	No
Simulated Cyberattacks to Understand Vulnerability	Simulate cyberattacks including using "black-hat" intruders to understand and address cyber-vulnerabilities.	Critical Infrastructure	Protect Life and Property	Public Affairs & Information Technology	AB	Undetermined but at least annually	3	No

Update Authentication Methods for IT Access	Revise and update access to City networks.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property	Public Affairs & Information Technology	AB	Quarterly	2	Np
DROUGHT								
Incentives for Water-saving Appliances	Provide incentives for households and businesses to install water-saving appliances.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB, P	Ongoing; annual reevaluation for additional opportunities.	3	No
Incentives for Water-saving Landscaping and Xeriscaping	Provide incentives for households and businesses to install water-saving landscaping, including xeriscaping.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB, P	Ongoing; annual reevaluation for additional opportunities.	3	No
Encouraging Water-saving Measures	Encourage water saving measures by the City, residents, and businesses including installing low-flow water saving showerheads and toilets and washing of cars	Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Planning & Community Development	AB	Ongoing	1	Yes
Water Recycling for Non-Potable Uses	Use of greywater or recycled water for non-drinking water uses wherever possible.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	Ongoing; annual reevaluation for additional opportunities.	3	No
EARTHQUAKE								
Seismic Inspections	As projects are submitted, conduct seismic inspections for residential (and eventually commercial buildings) with pre-1960 foundations.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Public Awareness,	Planning & Community Development, Fire	AB	Ongoing	2	Yes
Retrofit City facilities	Evaluate City facilities that are subject to earthquake damage and design retrofit schedule to mitigate hazard.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Planning & Community Development, Fire	AB, GR	Ongoing	1	Yes

Public campaign to promote non-structural earthquake mitigation	Prepare a campaign for City facilities, residents, and businesses to utilize non-structural mitigation techniques. Many injuries in earthquakes are caused by non-structural hazards, such as attachments to buildings. These include lighting fixtures, windows (glass), pictures, tall bookcases, computers, ornamental decorations on the outside of the buildings (like parapets), gas lines, etc. Activities that can reduce the risk of injury and damage include: anchoring tall bookcases and file cabinets, installing latches on drawers and cabinet doors, restraining desktop computers and appliances, using flexible connections on gas and water lines, mounting framed pictures and mirrors securely, and anchoring and bracing propane tanks and gas cylinders.	Population	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire	AB, GR	1-5 years	1	Yes
Earthquake Insurance for All City Facilities	Secure earthquake insurance for all City facilities.	Critical Infrastructure, Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Finance	AB	Renew and reevaluate yearly.	1	Yes
Require Geotechnical Investigations for Relevant Projects	Require geotechnical investigations by certified engineering geologist or other qualified professionals for all grading and construction projects subject to geologic hazards, including fault rupture, severe ground shaking, liquefaction, landslides, and collapsible or expansive soils. Particular attention should be paid to areas within Alquist-Priolo Earthquake Fault Zones.	Critical Infrastructure, Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Planning & Community Development	AB, P	Ongoing	3	No
Earthquake Code Compliance	Require all construction to be in conformance with the Uniform Building Code (UBC) and the California Building Code (CBC), and to be consistent with the Municipal Code as it provides for earthquake resistant design, excavation, and grading.	Changes In Development Since Last Approved Plan	Protect Life and Property	Planning & Community Development	AB	Ongoing	3	No

Co-Seismic Hazard Management Zones	In the northern portion of the City above the projected location of the Puente Hills Blind Thrust Fault Zone, consider the development of potential Co-Seismic Hazard Management Zones (CSHMZs) for new construction and redevelop- ment to evaluate the potential impacts of surface movements such as uplift and ground tilting.	Non-Critical Infrastructure	Protect Life and Property	Planning & Community Development	AB	Within one year after approval	2	No
New Development Seismic Standards	Evaluate and update seismic standards for all new development based on best practices and needs.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Partnerships and Implementation	Planning & Community Development	AB	Every 3 years	2	No
EPIDEMIC/PANDEMIC								
Pandemic Planning and COVID-19 Response Report	Review pandemic response and history and proactively plan based on lessons learned for future pandemics. Develop report with successes and lessons learned,	Population	Protect Life and Property	Fire, Police	AB	New; within one year after approval.	3	No
Personal Protective Equipment (PPE) Storage and Maintenance	Maintain store of usable PPE in case of pandemic event.	Population	Protect Life and Property	Fire, Police	AB	Within six months of approval	3	No
EXTREME HEAT								
Street Tree Planting	Prioritize tree planting from approved street tree list based on the existing tree canopy and the population's vulnerability to extreme heat. Where possible, integrate shade trees with bike and pedestrian infrastructure.	Environment	Protect Life and Property	Planning & Community Development	AB	Ongoing as planting is necessary	3	No
Cool/Green/White Roofs	Explore the feasibility of incentivizing cool and/or green roofs for existing residential and existing/new commercial, industrial, institutional, and similar structures in the City. Develop user-friendly standards that clearly explain the process and requirements for incorporating cool roof systems in the City and train all relevant personnel in processes and requirements. Consider developing and implementing a white roof project, modeled after New York City's in the communities most highly burdened by heat island impacts.	Environment, Non-Critical Infrastructure	Protect Life and Property	Planning & Community Development	AB, P	New; within one year after approval.	2	No

Update Code to Require Air Conditioning	Require air conditioning in all rental units.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Partnerships and Implementation	Planning & Community Development	P	Subsequent to City Council action	2	No
Public Education Programs	Develop public education programs for what to do during extreme heat events and how to stay safe and hydrated.	Population	Protect Life and Property	Fire, Police	AB	New; within six months after approval.	2	No
Cooling Centers	Develop and expand designated network of cooling centers for use during extreme heat events. Cooling centers should remain open late into the evening when the temperature remains high.	Population, Non-Critical Infrastructure	Protect Life and Property	Fire, Police	AB	Ongoing; evaluation to be completed within one year after approval.	1	No
Generator Backup for Air Conditioning Systems in Cooling Centers and Backup City Facilities	Ensure generator backup for air conditioning systems exists for all cooling centers and City facilities that might be used as backup cooling centers.	Population, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	Complete within one year of approval.	1	No
FLOOD								
Flood Infrastructure and Drainage Projects In Conjunction with Road Construction / Expansion	For all future road or pavement expansion or construction, integrate flood control infrastructure and where possible nature-based solutions (swales, etc.)	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB, GR	Ongoing through projects as completed.	3	No
Promote Permeable Surfaces and Water Flow	Design new developments with water retention structures and permeable surfaces to minimize flooding of the surface drainage system by peak flows. Consider the potential for larger-scale capture via diversion to large-scale spreading grounds or other options on a site-by-site basis.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB, P	Ongoing; update to standards based on current best practices within two years after approval.	3	No
Sewer Root Control	Annually treat approximately 20% of the citywide sewer system with herbicide to retard tree root intrusion. This prevents sewer blockages and overflows which are a health and safety emergency.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	Annually each June, began in 1995.	4	Yes
Update Engineering Standards considering Climate Change and More Extreme Rainfall	Update engineering standards for water infrastructure to handle increased stress from extreme weather and climate events.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	New; within two years after approval.	3	No

Street Failure Event Analysis	Study urban flood areas and determine if failure of streets are soil or pavement related.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Natural Systems, Emergency Services	Public Works, Planning & Community Development	GR	1-5 years	1	Yes
NFIP Information Distribution	Distribute information on the National Flood Insurance Program to local businesses in or near flood areas.	Non-Critical Infrastructure	Protect Life and Property, Public Awareness	Fire, Finance, Planning & Community Development	AB	Ongoing	4	Yes
Annual Storm Drain Cleanup	Proactive annual clean out storm drains.	Non-Critical Infrastructure	Protect Life and Property, Natural Systems, Emergency Services	Public Works	AB, GR	Ongoing	1	Yes
Pump Stations for Floodprone Areas	Design and construct pump stations in areas subject to urban flooding.	Non-Critical Infrastructure	Protect Life and Property, Natural Systems, Emergency Services	Public Works	AB, GR	1-5 years	1	Yes
Stormwater Plan Development	Seek funding and develop Storm Drain Management Plan and Waste Water Management Plan.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Natural Systems, Emergency Services	Public Works	AB, GR	1-5 years	1	Yes
Elevation Data Retention	Ensure subdivision design standards require elevation data collection during the platting process. Lots may be required to have buildable space above the base flood elevation.	Non-Critical Infrastructure, Changes in Development Since Last Approved Plan	Protect Life and Property, Natural Systems, Emergency Services	Planning & Community Development	AB, GR	1-5 years	1	Yes
Floodplain Construction Requirements	Requirements for building design standards and enforcement for properties in the floodplain include the following: 1) that a residential structure be elevated; and 2) that a nonresidential structure be elevated or floodproofed.	Non-Critical Infrastructure, Changes in Development Since Last Approved Plan	Protect Life and Property, Natural Systems, Emergency Services	Planning & Community Development	AB, GR	1-5 years	1	Yes
Write a Floodplain Ordinance	Write a Floodplain Ordinance	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Planning & Community Development	GR	1-5 years	1	Yes
Drain Maintenance and Clearance	Maintain routine maintenance of down and bench drains in and around residential and commercial areas to avoid accumulation of debris which could lead to dangerous and destructive flooding.	Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	Ongoing; to continue through life of LHMP.	3	No

HAZARDOUS MATERIALS								
Spill Control Packages in City Vehicles	Allows for faster clean-up to protect the citizens and environment.	Environment, Population	Protect Life and Property	Public Works	AB	New; within six months after approval.	3	No
Hazardous Materials User Inventory	Identify hazardous material users and generators within the City using field surveys, inspection programs, and licensing requirements.	Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	New; within one year after approval.	2	No
STORMS								
Storm Drain Master Plan update & review	Review and update stormwater plans; communicate recommendations to planning and emergency management departments	Critical Infrastructure, Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public works	AB	Annually.	2	No
Windstorm Preparedness	Maintain local City and utility awareness of tree pruning and code sections relevant to wind-resistant utility operations.	Environment	Protect Life and Property	Public Works	AB	Ongoing; will continue annually.	4	No
Public Outreach on Windrpoofing Buildings	Hold a Community Meeting on how to "wind-proof" dwellings and residences through the use of landscaping design, structural "tie downs," storage of outdoor furniture and children's toys.	Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire	AB	1-5 years	1	Yes
Stormwater Infrastructure as part of capital improvement updates	Update stormwater infrastructure as identified in City's capital improvement program.	Critical Infrastructure, Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	Ongoing; continue to support implementation of stormwater program.	2	No
FIRE								
Public education on brush management	Educate the public on importance of the abatement of brush around their homes.		Protect Life and Property, Public Awareness, Emergency Services	Fire	AB	Ongoing	1	Yes

Public education on fire patternsn and structures	Inform the public that hillsides facing south or west are more vulnerable to increased dryness and heat from sun exposure. Structures should be set back from slopes outside of the "convection cone" of intense heat that is projected up the slope of a hill as a wildfire "climbs" it.	Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services	Fire	AB, GR	Ongoing	1	Yes
Water supply for firefighting support	Water supplies for emergency firefighting should be maintained in accordance with National Fire Protection Association (NFPA) standards. Residents should identify and maintain any number of outside water sources such as small ponds, cisterns, wells, swimming pools or hydrants. It is a good idea to have a garden hose that is long enough to reach any area of a home or other structures on a property.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services	Fire	AB, GR	Ongoing	1	Yes
Analysis of Smoke Impacts and Mitigation	Conduct analysis of smoke impacts, trajectory, and best mitigation methods.	Population, Changes in Development Since Last Approved Plan	Protect Life and Property	Fire	AB, GR	Within one year after approval	2	No
Emergency Egress for New Development	Ensure that all existing and new residential development located in the Wildland Urban Interface (WUI) and any other future designated wildfire hazard zones have at least two emergency evacuation routes as well as adequate evacua- tion access (ingress and egress).	Non-Critical Infrastructure, Changes in Development Since Last Approved Plan	Protect Life and Property	Planning & Community Development	AB	Within one year after approval	2	No
Brush Inspections	Continue annual brush inspections and enforce clearance requirements on public and private property within the Wildland Urban Interface and any other future designated wildfire hazard zones, as dictated by CAL FIRE, in ac- cordance with the Board of Forestry and Fire Protection Fire Safe Regulations, California Building Standards Code, and Montebello Municipal Code related to ongoing maintenance of vegetation clearance on public and private roads, roadside fuel reduction plan, and defensible space clearances.	Non-Critical Infrastructure, Changes in Development Since Last Approved Plan	Protect Life and Property	Planning & Community Development	AB, P	Within one year after approval	2	No

Enforce Water System Fire Flow Requirements	Require all new development to be served by a water system that meets applicable fire flow requirements.	Non-Critical Infrastructure, Changes in Development Since Last Approved Plan	Protect Life and Property	Planning & Community Development	AB, P	Within one year after approval	2	No
Public Facility Siting	Require development of new public facilities, when feasible, to be located outside of and any other future designated wildfire hazard zones to ensure critical infrastructure is fire resilient.	Critical Infrastructure, Non-Critical Infrastructure, Changes in Development Since Last Approved Plan	Protect Life and Property	Planning & Community Development	AB	Within one year after approval	2	No
Fire Safety Education and Partnership Programs	Develop new and expand existing public fire safety education programs and partnerships.	Population, Changes in Development Since Last Approved Plan	Public Awareness	Fire, Police	AB	Annually	3	No
Provide Air Filters to Low-Income Residents	Provide air filtration equipment to lower-income residents at low or no charge.	Population, Changes in Development Since Last Approved Plan, Impacts on Vulnerable Populations	Protect Life and Property	Fire, Police	AB	Within one year after approval; then ongoing.	1	No
DAM FAILURE								
Develop a Dam Inundation Evacuation Plan.	Develop a Dam Inundation Evacuation Plan.	Population, Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire	AB	1 year	2	Yes
Coordinate with LA County and Army Corps of Engineers on dam integrity	Work with LA County and Army Corps of Engineers to ensure integrity of dams and reservoirs. Although dams and levees may have been constructed properly, failure to maintain them can lead to significant loss of life and property if they are stressed and broken or breached during a flood event. An inspection, maintenance and enforcement program helps to ensure continued structural integrity. Dams or levees need to be kept in good repair.	Critical Infrastructure	Protect Life and Property, Natural Systems, Emergency Services	Planning & Community Development, Fire, Public Works	AB, GR	1-5 years	1	Yes

Outreach to At-risk Neighborhoods for Dam Failure	Educate the affected neighborhoods about their specific risks associated with dam failure.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire	GR	1-5 year	1	Yes
Dam Fallure Notification	Coordinate with LA County about notification system pertaining to the dams/reservoirs in the region.	Critical Infrastructure	Protect Life and Property, Public Awareness, Natural Systems, Emergency Services, Partnerships and Implementation	Fire, Police	AB	1 year	2	Yes
POWER OUTAGES								
Storm Hardening to Prevent Power Outages	Storm hardening for critical power and utility facilities	Critical Infrastructure	Protect Life and Property	Public Works	AB	New; to be completed within two years after approval	1	No
Microgrids and Redundancy Structuring	Isolate partial outages to smallest areas possible	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	New; outreach to utilities would begin shortly after approval.	2	No
Renewable Energy for Power Outages	Renewable energy for City infrastructure to reduce dependence on grid and susceptibility to broader power outages.	Critical Infrastructure, Non-Critical Infrastructure	Protect Life and Property	Public Works	AB	Formal program to be established within one year after approval.	3	No
Power Capacity Adjustment for High-Risk Heat Days	Explore capacity of adjusting power capacity and redundancy during extreme heat events to increase capacity of grid to run air conditioning.	Critical Infrastructure, Non-Critical Infrastructure, Population	Protect Life and Property	Public Works	AB	New; within one year after approval.	2	No
Encourage New Construction and Retrofit Consideration of Cooling Without Power	Encourage new construction to include porches, openable windows, and other structural methods to allow cooling without power. Explore a retrofit program to do the same for existing buildings.	Changes In Development Since Last Approved Plan, Non-Critical Infrastructure	Protect Life and Property	Planning & Community Development	AB, P	New	4	No
TERRORISM								
Emergency Planning for Events	Regularly update standard operating procedures for potential terrorist or active assailant events.	Impacts on Vulnerable Populations	Protect Life and Property	Fire, Police	AB, GR	Already existing; updates within six months of approval.	1	No

Improved Predictive Threat Methods	Software-based analysis to understand both potential events and potential perpetrators.	Impacts on Vulnerable Populations	Protect Life and Property	Fire, Police	AB	Unknown; requires evaluation of appropriate software and execution of contracts	2	No
Professional Mental Health Programs and Early Identification	Establish and promote mental health and anti-bullying programs to reduce chance of event by individuals suffering from mental illness.	Impacts on Vulnerable Populations	Protect Life and Property	Fire, Police	AB	Within one year after approval; then ongoing.	2	No
Socialize Lockdown Protocols	Socialize lockdown protocols for businesses in case of terrorist event to isolate extent of event.	Impacts on Vulnerable Populations	Protect Life and Property	Fire, Police	AB, GR	Within one year after approval; then ongoing.	1	No
Advertised First Aid Caches around City	Locate first aid caches around the City, especially at public gathering places, to reduce time immediate medical care could be given during an event	Non-Critical Infrastructure	Protect Life and Property	Fire, Police	AB	Within three months after approval	1	No

6.4 Status of Prior Mitigation Actions – alfredo estrada

Hazard	Mitigation Action Item	2017Timeline	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes	2024 Status
Multi-hazard	MH-1 Educate the general public on all-hazards mitigation & response (through phone directory, website and billing inserts) in English and Spanish.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-2 Develop and promote relationships and interagency partnership to identify deficiencies of early warning systems.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-4 Educate the public about the importance of implementing the hazard mitigation plan.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-6 Educate the public about how to prepare for natural hazards relevant to location.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-7 Educate public about evacuation procedures.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-8 Promote business mitigation awareness of hazards and opportunities for mitigation.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-10 Provide schools with seasonal disasterpreparedness literature for students to take home to their families.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-11 Design and post disaster preparedness and related links on Fire Department web site.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-13 Improve interagency response methods and procedures.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-14 Develop disaster response drill pre-plans and procedures improved annually.	Ongoing	Ongoing	XXXXX
Multi-hazard	MH-16 Increase training, personnel and equipment through alternative funding sources.	Ongoing	Utilized AFG Grants in the past	XXXXX
Multi-hazard	MH-19 Maximize financial reimbursement following disaster declaration by updating knowledge of Disaster Cost Recovery regulations.	Ongoing	Revised action item and moved from EQ	XXXXX
Multi-hazard	MH-20 Develop Continuity of Operations Plans (COOP) for each department. COOP planning ensures that the critical functions can continue to operate during and after an emergency incident which may prevent access to normally operating systems, such as physical plant, data or communication networks, or transportation.	1-5 years	New, Status – Transit and Finance COOPs completed in 2012	XXXXX

Multi-hazard	MH-21 Based on hazard information in the Mitigation Plan and General Plan Safety Element, update the Land Use Element to: - Guide development away from hazardous areas; - Reduce density in the hazardous areas; or - Encourage greater development restrictions on the property.	1-5 years	New	XXXXX
Multi-hazard	MH-22 Encourage development and testing of site emergency plans for schools, factories, office buildings, shopping malls, hospitals, correctional facilities, stadiums, recreation areas, and other similar facilities.	Ongoing	New	XXXXX
Multi-hazard	MH-23 Train emergency response personnel for various contingencies and response activities, such as evacuation, traffic control, search, and rescue.	Ongoing	New	XXXXX
Multi-hazard	MH-24 Encourage participation by community members in Community Emergency Response Team (CERT). CERT is a volunteer group of citizens who are trained and equipped to respond if emergency services are unable to meet all of the immediate needs of the community following a major disaster.	Ongoing	New	XXXXX
Multi-hazard	MH-25 Educate the public on how insurance should not be considered an alternative to reducing damages for any type of hazard. Instead, insurance does have the value of protecting oneself from financial devastation if damage were to occur.	Ongoing	New	XXXXX
Multi-hazard	MH-26 Encourage residents to prepare themselves by understanding their local hazards, stocking up with necessary items, and planning for how family members should respond if any of a number of possible emergency or disaster events strike.	Ongoing	New	XXXXX
Multi-hazard	MH-27 City to pursue funding to purchase back-up generators for pumping and lift stations in sanitary sewer systems, along with other measures (e.g., alarms, meters, remote controls, and switchgear upgrades).	1-5 years	New	XXXXX
Multi-hazard	MH-28 Utilize new Digital Billboards along Interstate 5 to broadcast emergency notices.	Ongoing	New	XXXXX
Multi-hazard	MH-29 Replace Police Dispatch consoles to be P25 compliant.	ASAP	New	XXXXX
Multi-hazard	MH-30 Seek funding and write a Grading Ordinance.	1 year	New	XXXXX
Multi-hazard	MH-31 Pursue funding and prepare Technical Background Report in time for next update to the General Plan Safety Element.			XXXXX
Multi-hazard	MH-31 Prepare a post-disaster recovery ordinance that regulates repair activity. It prepares a community to respond to a disaster event in an orderly fashion by requiring citizens to: 1) obtain permits for repairs, 2) refrain from making repairs, or 3) make repairs using standard methods.	1-5 years	New	XXXXX
Multi-hazard	MH-32 Maintain the update the Disaster Movement and Evacuation Route Map.	Ongoing	New	XXXXX
Multi-hazard	MH-33 Upgrade and improve Greenwood Avenue and Montebello Boulevard as the community's major north-south connector.	1-5 years	New. Drawn from General Plan Circulation Element	XXXXX
Multi-hazard	MH-34 Improvements to Greenwood Avenue and Montebello Boulevard should include widening, grade separation structures and signalization.	1-5 years	New. Drawn from General Plan Circulation Element	XXXXX
Multi-hazard	MH-35 City should seek to provide an adequate circulation system in the hills which services major regional traffic generators, yet preserves areas which are attractive for residential, open space, and recreational development.	1-5 years	New. Drawn from General Plan Circulation Element	XXXXX
Multi-hazard	MH-36 City of Montebello should not be bisected by a new freeway route.	1-5 years	New. Drawn from General Plan Circulation Element	XXXXX
Multi-hazard	MH-37 Improve north-south circulation in Montebello by providing at least one major street with a grade-separated railroad crossing.	1-5 years	New. Drawn from General Plan Circulation Element	XXXXX
Multi-hazard	MH-38 Provide a circulation system for the Montebello Hills which services the various types of residential and commercial development but at the same time preserves the unique environmental and aesthetic qualities of the hill area.	1-5 years	New. Drawn from General Plan Circulation Element	XXXXX
Multi-hazard	MH-39 Provide heating centers as well as cooling centers to protect vulnerable residents from the effects of frost/freezing as well as those of excessive heat, and to host a Community Meeting on how insulate dwellings against extreme weather	1-5 years	New	XXXXX
Multi-hazard	MH-40 Hold a Community Meeting on how to "wind-proof" dwellings and residences through the use of landscaping design, structural "tie downs," storage of outdoor furniture and children's toys.	1-5 years	New	XXXXX
Multi-hazard	MH-41 Prepare a Threat & Hazard Identification and Risk Assessment (THIRA).	1-5 years	New	XXXXX
Earthquake	EQ-1 Interdepartmental personnel training for earthquake seismic construction and retrofit.	2005	Completed	XXXXX
Earthquake	EQ-2 As projects are submitted, conduct seismic inspections for residential (and eventually commercial buildings) with pre-1960 foundations.	Ongoing	Revised action item	XXXXX
Earthquake	EQ-4 Adopt Municipal Code to enforce seismic upgrades for existing buildings receiving inspections or permits and to ensure seismic codes are implemented in the plans of new buildings & infrastructure.	Ongoing	Adopted 2008, 2010, 2013,	XXXXX
Earthquake	EQ-8 Evaluate City facilities that are subject to earthquake damage and design retrofit schedule to mitigate hazard.	Ongoing	New	XXXXX
Earthquake	EQ-9 Protect new residential structures built within urban wild land interface development area.	Ongoing	Status – fuel modification completed as part of Specific Plan Development	XXXXX

Earthquake	EQ-10 Information gained from seismic hazard mapping can be used to assess risk. The first step is collection of geologic information on seismic sources, soil conditions, and related potential hazards. The second step is to prepare a map showing the approximate locations of various sources, soil conditions, and related potential hazards. The second step is to prepare a map showing the approximate locations of various hazards.	Ongoing	New	XXXXX
Earthquake	EQ-11 FEMA's HAZUS is a computer-based tool used to quantitatively estimate losses from an earthquake and other hazards. HAZUS was used in the 2016 Mitigation Plan and should be included in the next update.	5 years	New	XXXXX
Earthquake	EQ-12 Prepare a campaign for City facilities, residents, and businesses to utilize non-structural mitigation techniques. Many injuries in earthquakes are caused by non-structural hazards, such as attachments to buildings. These include lighting fixtures, windows (glass), pictures, tall bookcases, computers, ornamental decorations on the outside of the buildings (like parapets), gas lines, etc. Activities that can reduce the risk of injury and damage include: anchoring tall bookcases and file cabinets, installing latches on drawers and cabinet doors, restraining desktop computers and appliances, using flexible connections on gas and water lines, mounting framed pictures and mirrors securely, and anchoring and bracing propane tanks and gas cylinders.	1-5 years	New	XXXXX
Wildfire	WF-3 Educate the public on importance of the abatement of brush around their homes.	Ongoing	Revised timeline	XXXXX
Wildfire	WF-5 Prevent fires/additional damage due to earthquakes	2004		XXXXX
Wildfire	WF-9 Educate the public on the fact that wildfires can be prevented by arson prevention clean-up activities in areas of abandoned or collapsed structures, accumulated junk or debris, and in areas with a history of storing flammable materials where spills or dumping may have occurred.	Ongoing	New	XXXXX
Wildfire	WF-10 Roads and driveways should be kept accessible to emergency vehicles and fire equipment. Driveways should be relatively straight and flat, with at least some open spaces to turn. Bridges should be strong enough to support emergency vehicles, with clearance wide and high enough for two-way traffic and emergency vehicle access. Addresses should be visible from the road, and keys to gates around property should be provided to the Fire Department.	Ongoing	New	XXXXX
Wildfire	WF-11 Inform the public that hillsides facing south or west are more vulnerable to increased dryness and heat from sun exposure. Structures should be set back from slopes outside of the "convection cone" of intense heat that is projected up the slope of a hill as a wildfire "climbs" it.	Ongoing	New	XXXXX
Wildfire	WF-12 Inform public that in wildfire prone areas, risk may be decreased by enclosing the foundations of homes and other buildings, rather than leaving them open where undersides can be exposed to blown embers or other materials.	Ongoing	New	XXXXX
Wildfire	WF-13 Inform public that wildfire risk can be alleviated by safely using and storing necessary flammable materials, including machine fuels. Approved safety cans should be used for storing gasoline, oily rags and other flammable materials. Firewood should be stacked at least 100 feet away and uphill from homes.	Ongoing	New	XXXXX
Wildfire	WF-14 Inform public to install and maintain smoke detectors and fire extinguishers on each floor of their homes or other buildings. This equipment should be tested and/or inspected regularly, and smoke detector batteries should be changed twice a year. Everyone in a household or building can be taught how to use a fire extinguisher. Other valuable fire mitigation systems include interior and exterior sprinkler systems.	Ongoing	New	XXXXX
Wildfire	WF-15 Water supplies for emergency firefighting should be maintained in accordance with National Fire Protection Association (NFPA) standards. Residents should identify and maintain any number of outside water sources such as small ponds, cisterns, wells, swimming pools or hydrants. It is a good idea to have a garden hose that is long enough to reach any area of a home or other structures on a property.	Ongoing	New	XXXXX
Wildfire	WF-16 Instruct residents on proper evacuation procedures, such as wearing protective clothing (e.g., sturdy shoes, cotton or woolen clothing, long pants, a long-sleeved shirt, gloves and a handkerchief to protect the face); taking a Disaster Supplies Kit; and choosing a route away from fire hazards	Ongoing	New	XXXXX
Wildfire	WF-17 Instruct residents on need to keep roads and driveways accessible to emergency vehicles and fire equipment. Driveways should be relatively straight and flat, with at least some open spaces to turn. Bridges should be strong enough to support emergency vehicles, with clearance wide and high enough for two-way traffic and emergency vehicle access. Addresses should be visible from the road, and keys to gates around property should be provided to the local fire department.	Ongoing	New	XXXXX

Wildfire	WF-18 Develop program to encourage residents to plan several escape routes away from their homes, by car and foot. It is a good idea to keep a set of hand tools that can be used as fire tools, such as a rake, axe, hand/chainsaw, bucket and shovel. When wildfire threatens, residents should be instructed to carry and listen to battery-operated radios for reports and evacuation information, and follow instructions from local officials. Cars should be backed into garages or parked in open space facing the direction of escape, with doors and windows closed and the key in the ignition. Garage windows and doors should be closed but left unlocked. If residents have time, they can take steps to protect their homes by closing windows, vent doors, venetian blinds and heavy drapes; removing lightweight curtains; shutting off natural gas at the meter; turning off pilot lights; closing fireplace screens; and moving flammable furniture into the center of the home away from windows and sliding-glass doors. Outside, residents can seal attic and ground vents with precut plywood or commercial seals; turn off propane tanks; place combustible patio furniture inside; connect garden hose to outside taps; set up a portable gasoline-powered pump; place lawn sprinklers on the roof and near aboveground fuel tanks; wet the roof, wet or remove shrubs within 15 feet of the home; and gather fire tools	Ongoing	New	XXXXX
Wildfire	WF-19 Continue to utilize Code Enforcement staff to monitor overgrown vegetation and Palm fronds.	Ongoing	New	XXXXX
Flood	FLD-1 Study urban flood areas and determine if failure of streets are soil or pavement related.	1-5 years	Status – history of street collapses	XXXXX
Flood	FLD-2 Distribute information on the National Flood Insurance Program to local businesses in or near flood areas.	Ongoing		XXXXX
Flood	FLD-3 Prevent urban flooding from contamination of city drainage channels.	2004		XXXXX
Flood	FLD-4 Maximize effectiveness of mitigating against flood hazards impacting private properties.	Ongoing		XXXXX
Flood	FLD-5 Proactive annual clean out storm drains.	Ongoing	New	XXXXX
Flood	FLD-6 Design and construct pump stations in areas subject to urban flooding.	1-5 years	New	XXXXX
Flood	FLD-7 Seek funding and develop Storm Drain Management Plan and Waste Water Management Plan.	1-5 years	New	XXXXX
Flood	FLD-8 Ensure subdivision design standards require elevation data collection during the platting process. Lots may be required to have buildable space above the base flood elevation.	1-5 years	New	XXXXX
Flood	FLD-9 Requirements for building design standards and enforcement for properties in the floodplain include the following: 1) that a residential structure be elevated; and 2) that a nonresidential structure be elevated or floodproofed.	1-5 years	New	XXXXX
Flood	FLD-10 Inform residents that purchasing flood insurance does not prevent a flood from occurring, but it does mitigate a property owner's financial exposure to loss from flood damage. National Flood Insurance Program (NFIP) policies are only available in communities that participate in the program, which is administered by FEMA.	1-5 years	New	XXXXX
Flood	FLD-11 Use caution in considering alternative uses of wetlands to mitigate flooding. With special soils and hydrology, wetlands serve as natural collection basins for floodwaters. Acting like sponges, wetlands collect water, filter it, and release it slowly into rivers and streams. Protecting and preserving wetlands can go a long way toward preventing flooding in other areas.	1-5 years	New	XXXXX
Flood	FLD-12 Work with LA County and Army Corps of Engineers to ensure integrity of dams and reservoirs. Although dams and levees may have been constructed properly, failure to maintain them can lead to significant loss of life and property if they are stressed and broken or breached during a flood event. An inspection, maintenance and enforcement program helps to ensure continued structural integrity. Dams or levees need to be kept in good repair. Unnecessary or old and structurally unsound dams should be removed. Planning for dam breaks can include constructing emergency access roads as well as automating pump and flood gate operation. And it never hurts to regulate development in a dam's hydraulic shadow, where flooding would occur if there were a severe dam failure	1-5 years	New	XXXXX
Flood	FLD-13 Ensure Zoning Ordinance prohibits containers of hazardous materials such as petroleum or chemicals to be located in a flood hazard area. If such a location is necessary, hazardous material containers need to be anchored, because the contents can contaminate water and multiply the damaging effects of flooding by causing fires or explosions, or by otherwise making structures unusable.	1-5 years	New	XXXXX
Flood	FLD-14 Write a Floodplain Ordinance	1-5 years	New	XXXXX
Flood	FLD-15 Educate the affected neighborhoods about their specific risks associated with dam failure.	1-5 year	New	XXXXX
Flood	FLD-16 City staff should continue to work with the Army Corps of Engineers on possible solutions to minimizing threat of dam failure.	Ongoing	New	XXXXX
Dam Failure	DAM-1 Develop a Dam Inundation Evacuation Plan.	1 year	New	XXXXX
Dam Failure	DAM-2 Coordinate with LA County about notification system pertaining to the dams/reservoirs in the region.	1 year	New	XXXXX
Drought	DR-1 Enforce Water Conservation Ordinance which prioritizing or controls water use.	Ongoing	Status – Ordinance effective in 2015	XXXXX

Drought	DR-2 Encourage water saving measures by the City, residents, and businesses including installing low-flow water saving showerheads and toilets and washing of cars	Ongoing	New	XXXXX
Drought	DR-3 Continue the current restrictions on outdoor water usage; encourage water conservation (consider incentives such as small rewards or recognitions for installing drought resistance landscaping); discourage water waste by issuing warnings to offenders; host a Water Conservation workshop; invest in water-related "freebies" such as shower timers to give away during City events; encourage proper use of rain barrels; inquire about the Central Basin Municipal Water District retrofit fit efforts; and encourage the use of recycled water where appropriate.	Ongoing	New	XXXXX

6.5 Actions Considered But Not Included

Mitigation Action Item	2017 Comments and Status - Completed, Revised, Deleted, New, Deferred, and Notes	Reason for Not Being Included
Develop and promote relationships and interagency partnership to identify deficiencies of early warning systems.		
Educate the public about how to prepare for natural hazards relevant to location.		
Educate public about evacuation procedures.		
Maximize financial reimbursement following disaster declaration by updating knowledge of Disaster Cost Recovery regulations.	Revised action item and moved from EQ	
Educate the public on how insurance should not be considered an alternative to reducing damages for any type of hazard. Instead, insurance does have the value of protecting oneself from financial devastation if damage were to occur.	New	
City should seek to provide an adequate circulation system in the hills which services major regional traffic generators, yet preserves areas which are attractive for residential, open space, and recreational development.	New. Drawn from General Plan Circulation Element	
City of Montebello should not be bisected by a new freeway route.	New. Drawn from General Plan Circulation Element	
Improve north-south circulation in Montebello by providing at least one major street with a grade-separated railroad crossing.	New. Drawn from General Plan Circulation Element	

Information gained from seismic hazard mapping can be used to assess risk. The first step is collection of geologic information on seismic sources, soil conditions, and related potential hazards. The second step is to prepare a map showing the approximate locations of various hazards.	New	
FEMA's HAZUS is a computer-based tool used to quantitatively estimate losses from an earthquake and other hazards. HAZUS was used in the 2016 Mitigation Plan and should be included in the next update.	New	
Prevent fires/additional damage due to earthquakes.		
Educate the public on the fact that wildfires can be prevented by arson prevention clean-up activities in areas of abandoned or collapsed structures, accumulated junk or debris, and in areas with a history of storing flammable materials where spills or dumping may have occurred.	New	
Inform public that in wildfire prone areas, risk may be decreased by enclosing the foundations of homes and other buildings, rather than leaving them open where undersides can be exposed to blown embers or other materials.	New	
Inform public that wildfire risk can be alleviated by safely using and storing necessary alleviated by safely using and storing necessary flammable materials, including machine fuels. Approved safety cans should be used for storing gasoline, oily rags and other flammable materials. Firewood should be stacked at least 100 feet away and uphill from homes.	New	
Inform public to install and maintain smoke detectors and fire extinguishers on each floor of their homes or other buildings. This equipment should be tested and/or inspected regularly, and smoke detector batteries should be changed twice a year. Everyone in a household or building can be taught how to use a fire extinguisher. Other valuable fire mitigation systems include interior and exterior sprinkler systems.	New	
Instruct residents on proper evacuation procedures, such as wearing protective clothing (e.g., sturdy shoes, cotton or woolen clothing, long pants, a long-sleeved shirt, gloves and a handkerchief to protect the face); taking a Disaster Supplies Kit; and choosing a route away from fire hazards.	New	

Instruct residents on need to keep roads and driveways accessible to emergency vehicles and fire equipment. Driveways should be relatively straight and flat, with at least some open spaces to turn. Bridges should be strong enough to support emergency vehicles, with clearance wide and high enough for two-way traffic and emergency vehicle access. Addresses should be visible from the road, and keys to gates around property should be provided to the local fire department.	New	
Develop program to encourage residents to plan several escape routes away from their homes, by car and foot. It is a good idea to keep a set of hand tools that can be used as fire tools, such as a rake, axe, hand/chainsaw, bucket and shovel. When wildfire threatens, residents should be instructed to carry and listen to battery- operated radios for reports and evacuation information, and follow instructions from local officials. Cars should be backed into garages or parked in open space facing the direction of escape, with doors and windows closed and the key in the ignition. Garage windows and doors should be closed but left unlocked. If residents have time, they can take steps to protect their homes by closing windows, vent doors, venetian blinds and heavy drapes; removing lightweight curtains; shutting off natural gas at the meter; turning off pilot lights; closing fireplace screens; and moving flammable furniture into the center of the home away from windows and sliding-glass doors. Outside, residents can seal attic and ground vents with precut plywood or commercial seals; turn off propane tanks; place combustible patio furniture inside; connect garden hose to outside taps; set up a portable gasoline-powered pump; place lawn sprinklers on the roof and near aboveground fuel tanks; wet the roof, wet or remove shrubs within 15 feet of the home; and gather fire tools	New	
Maximize effectiveness of mitigating against flood hazards impacting private properties.		
Inform residents that purchasing flood insurance does not prevent a flood from occurring, but it does mitigate a property owner's financial exposure to loss from flood damage. National Flood Insurance Program (NFIP) policies are only available in communities that participate in the program, which is administered by FEMA.	New	

Use caution in considering alternative uses of wetlands to mitigate flooding. With special soils and hydrology, wetlands serve as natural collection basins for floodwaters. Acting like sponges, wetlands collect water, filter it, and release it slowly into rivers and streams. Protecting and preserving wetlands can go a long way toward preventing flooding in other areas. Unnecessary or old and structurally unsound dams should be removed. Planning for dam breaks can include constructing emergency access roads as well as automating pump and flood gate operation. And it never hurts to regulate development in a dam's hydraulic shadow, where flooding would occur if there were a severe dam failure.	New	

The Planning Team considered a range of actions, and the City has chosen to put forward an extremely comprehensive and broad-based mitigation strategy that focuses on infrastructure but does not neglect the human needs of the City. Our view of resilience is that it cannot focus solely on the built environment or physical infrastructure. Human systems are as important to hazard mitigation, especially in light of increasing extreme weather events and other threats.

During the course of mitigation action development, several actions were identified that, while worthy of implementation, were felt more appropriate to other funding sources or governmental entities. These actions are listed above.

6.6 Mitigation Prioritization and Implementation

Mitigation actions were prioritized and ranked on a scale from 1-4, 1 being a priority for most immediate implementation and/or foundational for other actions and 4 being determined to have the least need for immediate implementation. Please note that this ranking is not a ranking of the overall worth of an action – merely of prioritization over time and actions that may serve as a foundation for other actions to build upon.

The following factors were considered when prioritizing mitigation projects:

Does the action:

- solve the problem?
- reduce the exposure or vulnerability to the highest priority hazard?
- address multiple hazards?
- benefits equal or exceed costs?
- implement a goal, policy, or project identified in the General Plan or Capital Improvement Plan?

Can the action:

- be implemented with existing funds?
- be implemented by existing state or federal grant programs?
- be completed within the 5-year life cycle of the LHMP?
- be implemented with currently available technologies?

Will the action:

- be accepted by the community?
- be supported by community leaders?
- adversely impact segments of the population or neighborhoods?
- require a change in local ordinances or zoning laws?
- positive or neutral impact on the environment?
- comply with all local, state and federal environmental laws and regulations?

Is there:

- sufficient staffing to undertake the project?
- existing authority to undertake the project?

As previously stated, although city staff make recommendations to the Montebello City Council regarding prioritization and funding of future projects, the decision lies ultimately with the Councilmembers to fund and implement each mitigation project, because City Council approves the budget. The public has the opportunity to speak about planned mitigation projects during public hearings, the budget approval process, or City Council meetings. Therefore, while these priority rankings are useful for planning, they may have little ultimate relation to what the City Council chooses to do.

Evaluating the proposed projects will be done by each responsible department by surveying City staff assigned and members of the public, reviewing citizen complaints and public safety records, and conducting a cost analysis. In leaner budget years, some projects may lack funding, but staff will continue to identify potential funding streams as well as to set priorities based on a needs assessment in addition to the costs and benefits.

The list of mitigation action discussed in this section is meant to be as comprehensive as possible, not only to guide City actions and priorities but to enable the City to apply for FEMA funding to carry out the broadest possible array of strategies to mitigate hazards and build resilience for the City.

It is, of course, the City's prerogative to determine its own priorities and processes. But from a hazard mitigation planning perspective, there are several strategic options that are worthy of consideration.

- Municipal codes and zoning are powerful tools to drive mitigation actions by the public and by business. These regulations determine the urban form of a city, and by adding elements to require conformance to mitigation and resilience best practices, much good hazard mitigation work can be accomplished. This should be a high priority.
- In terms of infrastructure, piggybacking mitigation actions through other infrastructure such as road repair and upgrades can be highly effective as well. Pavement covers a not-negligible percentage of any community and can be modified and enhanced to deliver a variety of benefits.
- Along those lines, actions that can deliver tangible climate adaptation benefits should be prioritized as well. Climate impacts are accelerating to the point that extreme weather is visible to most people. One textbook describes climate adaptation as "hazard mitigation ten years in the future". That view is a useful one to drive action.
- Finally, hazard mitigation can be expensive. A variety of funding sources, both public and private, should be pursued, and the City should take advantage of favorable financial conditions when available to fund efforts. Insurance is becoming an issue across California, and the City should proactively begin looking into new and innovative models of insurance to protect its citizens before the insurance companies, wary of the growing cost of climate-fueled events, forces it to act.

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SECTION 7 – PLANNING PROCESS

Element A Requirements
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))
A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))

7.1 Planning Process

This LHMP (Local Hazard Mitigation Plan) is designed to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000) and to ensure that the City is eligible for all appropriate benefits under state and federal law and practices. The LHMP planning process considers natural and human-caused hazards facing the City, making sure that all federal and state requirements are met and supporting HMP review. The LHMP planning team gathered information from a variety of sources, including participating municipal and county agencies, local organizations and utilities, federal and state agencies, and residents of the City. They solicited information from individuals with specific knowledge of natural hazards, historical events, planning and zoning codes, and recent planning decisions affecting hazard mitigation. The natural hazard mitigation strategies were developed through an extensive planning process involving City agencies/officials and City

Throughout the project, the City followed its traditional approach to developing policy documents which included preparation of a First Draft Plan for review by the City's Hazard Mitigation Planning Team who served as the primary stakeholders. Next, following necessary updates from the internal review, a Second Draft Plan was shared with the secondary stakeholders including: general public, external agencies (utilities, special districts, adjoining jurisdictions), and community meetings - all during the plan writing phase. Next, the comments gathered from the secondary stakeholders were incorporated into the Third Draft Plan and forwarded to Cal OES and FEMA for review and conditional approval. Mandated revisions were incorporated into the Final Plan, which was returned to CalOES and FEMA for final approval. After approval, the Plan was presented to City Council for adoption, and the adoption resolution was sent to FEMA for acknowledgement and final approval. before presentation to City Council.

PLANNING PHASES TIMELINE			
Plan Writing Phase (First & Second Draft Plan)	Plan Adoption Phase (Third Draft Plan & Fourth Draft Plan)	Plan Approval Phase (Fourth Draft & Final Draft Plan)	Plan Implementation Phase
· Planning Team input – research, meetings, writing, reading of First Draft Plan · Incorporate input into Second Draft Plan · Post Second Draft Plan and encourage input by the general public and external agencies · Post invitations and conduct two community meetings · Incorporate input gathered on Second Draft Plan into Third Draft Plan	· Post notice for City Council and conduct meeting · Incorporate results of Planning Commission and City Council meetings into Final Draft Plan	· Submit Final Draft Plan to FEMA · Incorporate any mandated revisions · Receive FEMA final approval. · Incorporate FEMA approval into Final Plan	· Conduct yearly Planning Team meetings · Integrate mitigation action items into budget, CIP and other funding and strategic documents

The planning area consists of the entire area within Montebello city limits.. The risk assessment for this hazard mitigation plan was performed for the entire planning area.

As listed on page 4 of this Plan, the Planning Team consisted of:

Fire Department

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Angelica Palmeros
Alfredo Estrada
Veronica Lara

Stakeholder Group

TO BE FILLED IN AFTER SECOND STAKEHOLDER MEETING

Jacob Green and Associates

Patrick Marchman, AICP, SCR, Project Manager

All members with the exception of Jacob Green and Associates are affiliated with the City of Montebello. Team members were in close contact throughout the process, with several dedicated meetings in addition to bi-weekly standing meetings to ensure continued coordination taking place.

The Planning Team compiled a comprehensive list of stakeholders from multiple sectors to invite to participate in the planning process. The team also reached out to neighboring communities after completion and review of the First Draft Plan

Hazard mitigation planning must include review and incorporation of existing plans, studies, reports and technical information (44 CFR Section 201.6.b(3)). Information from the following plans, studies, reports, and technical information is incorporated as appropriate into the mitigation plan.

The Planning Team reviewed several existing City documents and policies to gather Information for the plan.

Plan / Documents	Description
2017 Montebello Hazard Mitigation Plan	The 2017 Plan was reviewed for descriptions of hazards and mitigation actions as well as general context.
City of Montebello General Plan and Elements	The Community Profile sections includes City specific geography, environmental, population, housing and demographic information, and transportation information.
California State Hazard Mitigation Plan	The State Hazard Mitigation Plan was reviewed for recent updates on state-wide hazard events and hazard information.
Los Angeles Hazard Mitigation Plan	The Los Angeles Hazard Mitigation Plan was reviewed for planning consistency and augmented event history for hazards that extend beyond Montebello city limits, such as drought and severe weather.
California's Fourth Climate Change Assessment	The Assessment was reviewed for specific information on future hazards, with portions included verbatim in this Plan.

Other external resources utilized included maps, histories of California hazards, as well as other city and county hazard mitigation plans. The information gathered from these documents was incorporated into the introduction, the risk assessment, and the mitigation strategies sections of this plan.

A planning meeting was held in advance of the scheduled plan update. At this meeting, members of the planning team outlined and assigned all of the necessary tasks for updating the Hazard Mitigation Plan. Afterwards, individual follow-up meetings/phone calls were used to complete subsequent edits. Precise documentation of the initial planning team meeting is unavailable, but the process was similar to previous Hazard Mitigation Plan updates.

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7.2 Plan Update

Element E: Plan Update Requirements
E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))
E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))

The City of Montebello's first plan was in XXXX with updates in XXXX, and its most recent plan was updated in 2017. This update uses data from the U.S. Census Bureau and the recently-completed (as of 2024) Montebello General Plan to examine the impact of development changes on the residents of the City, with particular attention to renters and lower-income residents. Further information on development patterns can be found in Section 2.

This update to the City's LHMP is a more comprehensive update than previous versions. It expands the scope of the LHMP to reflect new FEMA guidance as of April 2023.

- This LHMP update incorporates climate impacts into every relevant hazard to add a new depth to descriptions as well as into mitigation action to encourage adaptation to climate change.
- This update also weaves equity throughout the plan, centering where appropriate vulnerable populations.

7.3 Stakeholder Involvement

Stakeholders were involved at multiple stages in the plan development process. As part of the initial research and analysis setting the foundation for the Plan, documents from not only the City of Montebello but also from neighboring jurisdictions were used to inform the Plan's context development.

Meetings of the core planning team were held biweekly and as otherwise required.

- **Local and regional agencies involved in hazard mitigation activities**
  - City of Montebello
    - XXXXXXXXXXX
- **Agencies that have the authority to regulate development**
  - City of Montebello Community Development
- **Neighboring communities**
  - Neighboring local governments were contacted at several stages during the process, and copies of the initial draft LHMP were sent for review and comment to the cities of:
    - TO BE COMPLETED AFTER FIRST DRAFT
- **Representatives of businesses, academia, and other private organizations**
  - Outreach took place by phone and by email to entities with both relevant knowledge and major local employers including
    - Southern California Edison
    - Montebello Chamber of Commerce
- **Representatives of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable populations, among others**
  - Attempts to solicit involvement and comment were made from the following organizations:
    - City of Montebello
      - Community Services
    - OTHER ORGANIZATIONS AFTER FIRST CITY DRAFT REVIEW

Upon completion of the initial draft, a copy of the Plan was made available for review on the City's website. Public comment was invited, as well as further comment from several communities that work closely with Montebello to enhance their common resilience from disasters.

7.4 Public Involvement

The City of Montebello provided members of the public several opportunities to participate in the planning, design, and review phases of the Hazard Mitigation Plan. Public input and discussion were possible during staff presentations and also during "public comment" at various City Council meetings. addition, members of the public, Commissioners, and Council members were given the opportunity to provide staff with recommendations both verbally and via e-mail.

Public outreach for input on the Plan took place in several ways.

- An advertisement in the July 2024 edition of the Montebello Reporter, a free mailed publication sent to over 11,500 households and businesses.
- Notification on the City's website and social media channels.
- A survey in English and Spanish was made available on the City's website through July 31, 2023, allowing residents to comment on their views of hazards impacting the City and actions to be taken to mitigate them.
- An in-person public meeting was held at Reggie Rodriguez Park on July 17, 2024.
- A virtual meeting was held on July 23, 2024, using the same format as the in-person meeting, and allowing residents to comment remotely.
- The Draft LHMP was published to the City's website on XXXXXX for a two-week public comment period.

Survey results summaries are included in the Appendices to the Plan as well as notices placed in print and social media as well as the City's website.

Public involvement was influential in the development and refining of mitigation actions as well as the characterization of several hazards, most notably in reference to extreme heat and wildfire. Frequent mention was also made of potential transportation bottlenecks and related issues, and resulted in the development of additional language throughout the LHMP as well as specific mitigation actions focused on mitigating those issues. Overall public feedback also provided greater context to community concerns over hazard impacts beyond the 5-year LHMP planning horizon, per FEMA guidance requiring communities to consider climate impacts which by their nature extend beyond that 5-year cycle.

Outreach to identified vulnerable communities took place through both outreach to local organizations and through relevant City departments as discussed in Section 7.3, Stakeholder Involvement, as well as through direct mailings as described above. For unhoused and populations with behavioral health issues, outreach to organizations working with those populations was the only feasible method to pursue a level of engagement and involvement.

Copies of the Plan will be catalogued and made available at City Hall and Montebello Public Library. The existence and location of these copies will be publicized on City websites and social media. A copy of the Plan and any proposed changes will be posted on the City's website. The website will also include an email address and phone number to which people can direct their comments, recommendations, and concerns.

The Hazard Mitigation Coordinator will work with stakeholders within City government to provide opportunities for the public to be involved throughout the five-year cycle, not just during the actual plan development phase. Opportunities may include piggybacking off existing public outreach meetings held by police or fire departments, booths at farmer's markets or other public events in the City, and periodic updates to City Council in public meetings.

Specific events that will be promoted as part of hazard mitigation planning public involvement will include:

- The Great California Shakeout
- National Fire Protection Association Fire Week
- City of Montebello Police Area Command Meeting

7.5 Plan Incorporation

The City of Montebello addresses statewide planning goals and legislative requirements through its General Plan, its Capital Improvement Plan, and City Building and Safety Codes. The Mitigation Plan provides a series of recommendations - many of which are closely related to the goals and objectives of existing planning programs. The City of Montebello will implement recommended mitigation action items through existing programs and procedures.

The City of Montebello Planning and Community Development Department is responsible for adhering to the State of California's Building and Safety Codes. In addition, the Planning Team will work with other agencies at the state level to review, develop and ensure Building and Safety Codes are adequate to mitigate or present damage by hazards. This is to ensure that life-safety criteria are met for new construction.

Some of the goals and action items in the Mitigation Plan will be achieved through activities recommended in the CIP. Various City departments develop the CIP and review it on an annual basis. Upon annual review of the CIP, the Planning Team will work with the City departments to identify areas that the Mitigation Plan action items are consistent with CIP goals and integrate them where appropriate.

Upon FEMA approval, the Planning Team will begin the process of incorporating existing planning mechanisms at the City level. The meetings of the Planning Team will provide an opportunity for Planning Team members to report back on the progress made.

7.6 Monitoring, Evaluating, and Updating the Plan

Element D: Plan Maintenance Requirements
D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))
D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating, and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))
D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))

Monitoring

Under the direction of the Local Mitigation Officer, the Planning Team will take responsibility for plan maintenance and implementation. The Local Mitigation Officer will facilitate the Planning Team meetings and will assign tasks such as updating and presenting the Plan to the members of the Planning Team. This person will make a record of necessary revisions yearly to ensure that the most accurate and up to date information is included in the Plan. The Local Mitigation Officer will also reach out to relevant City departments to integrate their tracking updates for those actions that overlap with the LHMP Plan implementation and evaluation will be a shared responsibility among all of the Planning Team members. The Local Mitigation Officer will coordinate with City leadership to ensure funding for 5-year updates to Plan as required by FEMA.

The Planning Team will be responsible for coordinating implementation of plan action items and undertaking the formal review process. The Local Mitigation Officer will be authorized to make changes in assignments to the current Planning Team.

	Year 1	Year 2	Year 3	Year 4	Year 5
Monitoring	X	X	X	X	X
Evaluating					X
Internal Planning Team Evaluation	X	X	X	X	X
Cal OES and FEMA Evaluation					X
Updating					X

The Planning Team will meet no less than yearly. Meeting dates will be scheduled once the final Planning Team has been established. These meetings will provide an opportunity to discuss the progress of the action items and maintain the partnerships that are essential for the sustainability of the mitigation plan.

Evaluating

The Mitigation Plan will be evaluated on an annual basis to determine the effectiveness of programs, and to reflect changes in land development or programs that may affect mitigation priorities. The evaluation process includes a firm schedule and timeline, and identifies the agencies and organizations participating in plan evaluation. The Local Mitigation Officer or designee will be responsible for contacting the Planning Team members and organizing the annual meeting. Planning Team members will be responsible for monitoring and evaluating the progress of the mitigation strategies in the Plan.

The Planning Team will review the goals and action items to determine their relevance to changing situations in the City, as well as changes in State or Federal policy, and to ensure they are addressing current and expected conditions. The Planning Team will also review the Risk Assessment portion of the Plan to determine if this information should be updated or modified, given any new available data. The coordinating organizations responsible for the various action items will report on the status of their projects, the success of various implementation processes, difficulties encountered, success of coordination efforts, and which strategies should be revised.

The Local Mitigation Officer will assign the duty of updating the Plan to one or more of the Planning Team members. The designated Planning Team members will have three months to

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LOCAL HAZARD MITIGATION PLAN 2024

make appropriate changes to the Plan before submitting it to the Planning Team members. The Planning Team will also notify all holders of the City plan when changes have been made. Every five years the updated plan will be submitted to the the California Office of Emergency Services and the Federal Emergency Management Agency for review.

At each of the yearly Planning Team meetings, each mitigation action will be reviewed to determine its continued relevance to changing situations and land developments in the City, as well as changes in State or Federal policy, and to ensure that each action is addressing current and expected conditions. The risk assessment portion of the Plan will also be reviewed to determine if this information should be updated or modified. Factors to be reported on will include:

- Any changes in the nature or magnitude of risks identified in the Plan.
- The status of these actions, and, where applicable, will report on which actions worked well.
- Whether difficulties have been encountered, and if so, what they are.
- How coordination efforts have been proceeding, and which actions should be revised.

The Hazard Mitigation Plan evaluation process will be led by the Local Mitigation Officer. The Local Mitigation Officer will meet with key stakeholders, such as neighborhood groups, fire and law enforcement agencies, community groups, social service agencies, transportation, and public works to gather updated hazard mitigation information.

Updating

After the initial review and key stakeholder meetings, Public Safety personnel will present the plan with any recommendations from the core planning team to the Public Safety Commission. During the Public Safety Commission's review, members of the public will be able to attend a public meeting and voice any concerns or ideas for revisions to the plan. The agenda for each Public Safety Commission and City Council meeting is posted inside and outside of City Hall, faxed/emailed to the posting locations, and posted on the City website. Links to the agenda will also be shared using social media. At that point, the core planning team will meet and make all changes necessary and present an updated document to the Public Safety Commission and the Montebello City Council. In addition, the Community Safety Department will informally involve members of the public as well through presentations at neighborhood meetings, key informant interviews, public meetings, and existing public safety programs.

Prior to these Commission and Council meetings, the Local Mitigation Office will lead the monitoring and evaluating efforts to ensure that there is adequate funding for the mitigation activities. After the City's budget is passed by City Council, the Local Mitigation Office will collaborate with the plan development team to apply for hazard mitigation grants that will help the City implement the mitigation activities that are not included in the City's budget. Starting at year four of the Plan, the Local Mitigation Officer will begin to go through a formal update to the Hazard Mitigation Plan. The formal five year update to the Hazard Mitigation Plan will be brought to the City Council for formal approval of the updated plan. These meetings will be widely advertised using social media and open to residents, property owners, business owners, and other stake holders. Copies of the Plan will be catalogued and kept in appropriate departments and public locations.

7.7 Plan Adoption

Element F: Plan Adoption
F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))
F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))

Adoption of the Mitigation Plan by the City's governing body is one of the prime requirements for approval of the plan. Once the plan is completed, the City Council will be responsible for adopting the Mitigation Plan. The governing body has the responsibility and authority to promote sound public policy regarding hazards. The City Council will have the authority to periodically update the plan as it is revised to meet changes in the hazard risks and exposures in the City. The approved Mitigation Plan will be significant in the future growth and development of the City.

On XXXXXXXXXXX, during the monthly city council meeting, the Montebello City Council formally adopted the Montebello Local Hazard Mitigation Plan. The resolution of adoption by the City Council is in the Appendix.

Primary Point of Contact

The Point of Contact for information regarding this plan is:

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LOCAL HAZARD MITIGATION PLAN 2024

XXXXXXXXX

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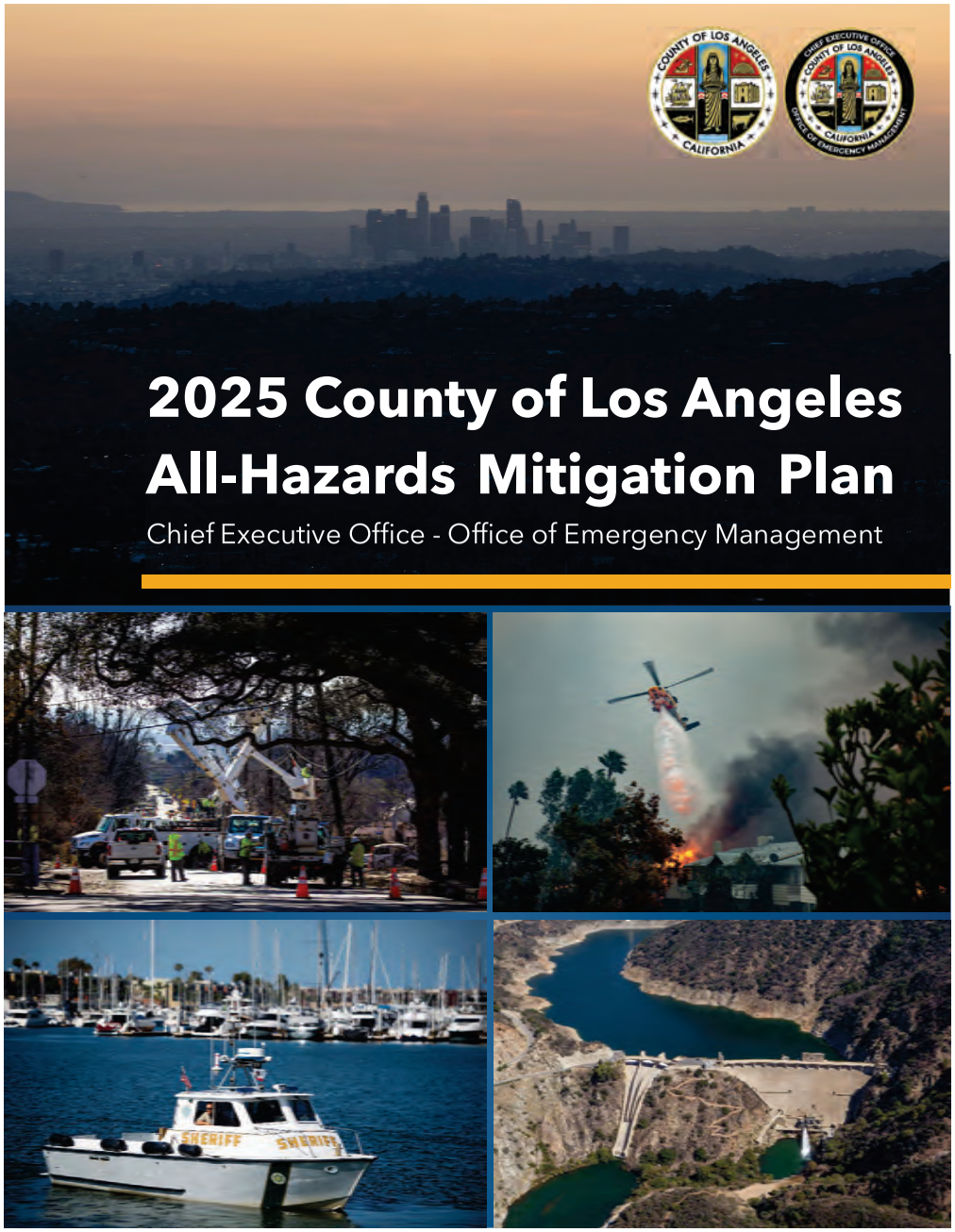
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2025 URBAN WATER MANAGEMENT PLAN

APPENDIX H

LOS ANGELES COUNTY ALL HAZARD MITIGATION PLAN



Acknowledgement

The Los Angeles County Board of Supervisors gratefully acknowledges the following agencies/jurisdictions who contributed to the development of this plan.

County Departments

Aging and Disabilities
Chief Executive Office
Chief Sustainability Office
Beaches and Harbors
Economic Opportunity
Health Services
Human Resources
Parks and Recreation
Public Health
Public Social Services
Public Works
Regional Planning
Fire (LACoFD)
Internal Services
Sheriff (LASD)

Disaster Management Area Coordinators

State of California

California Governor's Office of Emergency Services (Cal OES)
California State Council on Developmental Disabilities (SCCD)

External Partners

Access Services
Alzheimer's Association
Catholic Charities
City of Beverly Hills
City of Long Beach
Disability Community Resource Center
Eastern Los Angeles Regional Center
Emergency Network Los Angeles
Habitat for Humanity
Harbor Regional Center
Lanterman Regional Center
Los Angeles County Office of Education
Los Angeles County Sanitation Districts
Los Angeles County Metropolitan Transportation Authority
Los Angeles Regional Food Bank
Neighborhood Legal Services of Los Angeles County
Puente Hills Habitat Preservation Authority
South Central Los Angeles Regional Center
Westside Regional Center

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Letter of Promulgation

To: Residents, Officials, and Employees of Los Angeles County

Preservation of life and property is an inherent responsibility of local, state, and federal government. The County of Los Angeles produced this updated 2025 All-Hazard Mitigation Plan (AHMP) to delineate mitigation responsibilities of County departments and describe mitigation support to communities.

While no plan can guarantee prevention of death and destruction, a well-developed AHMP can guide mitigation efforts aimed at decreasing the amount of loss experienced after an emergency. The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires that local jurisdictions have an updated mitigation plan in order to be eligible for mitigation project activities. The intent of the 2025 AHMP also ensures that mitigation actions are based on sound planning processes that account for the risks and capabilities of communities within Los Angeles County of Mitigation plans are strategic and policy level documents, forming the foundation of a community's long-term strategy to reduce disaster losses.

The AHMP should be reviewed on an annual basis and approved every five years. The AHMP conforms to the requirements set forth the by the Federal Emergency Management Agency (FEMA) and the California Governor's Office of Emergency Services (Cal OES). The Los Angeles County Board of Supervisors gives its full support to the 2025 All-Hazards Mitigation Plan and urges all residents, officials, and employees to collectively share in our commitment to hazard mitigation.

This letter promulgates the 2025 All-Hazards Mitigation Plan which becomes effective upon approval by the Los Angeles County Board of Supervisors.

Kathryn Barger

Kathryn Barger, Chair
Los Angeles County Board of Supervisors

9/9/25
Date

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1 Introduction, Purpose, and Scope

1.1 Purpose

The 2025 All-Hazard Mitigation Plan (AHMP) was developed in collaboration with a wide range of stakeholders representing County Departments and other external stakeholders from cities, local utilities, non-governmental organizations, and state agencies. The purpose of this AHMP is to form the strategic-level foundation for hazard mitigation efforts undertaken by the County of Los Angeles. The 2025 AHMP is an update to the 2020 version of the plan and seeks to maintain the County's continuing commitment to hazard mitigation as a critical step in reducing hazard risks, making communities safer, and building countywide resilience.

1.2 Scope

Hazard mitigation is defined in the Code of Federal Regulations (CFR) as "any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards." This AHMP identifies and profiles hazards, analyzes the people and critical infrastructure at risk, and provides a series of mitigation strategies aimed at reducing hazard risk. The plan also describes actions to integrate vulnerable communities including people with Access and Functional Needs (AFN) into hazard mitigation planning and other efforts. The AHMP is intended to function as a strategic plan for hazard mitigation and, while not an emergency plan, complements the Los Angeles County Operational Area Emergency Operations Plan. This plan contains mitigation strategies for County-owned facilities or other areas under the jurisdiction of the County of Los Angeles. Hazard mitigation strategies for incorporated cities within Los Angeles County may be found in that city's hazard mitigation plan.

1.3 Legal Authority and Requirements

Historically local hazard mitigation planning has been driven by federal law. The Disaster Mitigation Act (DMA) of 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 with new requirements for hazard mitigation. The DMA of 2000 emphasized the need for state, tribal, and local entities to closely coordinate on hazard mitigation efforts and formed the legal basis for the Federal Emergency Management Agency's (FEMA) current mitigation plan requirements in order to utilize Hazard Mitigation Assistance grant programs. This plan was prepared

pursuant to the requirements set forth in the DMA of 2000 and other FEMA hazard mitigation policy guidance.

1.4 Plan Organization

The AHMP is organized into nine (9) sections, excluding the Appendices, including:

1. **Introduction:** Discusses the purpose, scope, and legal authority of the plan.
2. **Planning Process:** Describes the planning process that was undertaken by the Hazard Mitigation Planning Committee to create this updated 2025 AHMP.
3. **Community Profile:** Overviews the unique geographic, climatic, environmental, and socioeconomic factors that make up Los Angeles County and their implications for hazard mitigation planning.
4. **Climate Change:** Outlines the impacts of climate change in Los Angeles County and potential mitigation and adaptation measures.
5. **Integrating AFN into Hazard Mitigation:** Discusses strategies for integrating people with Access and Functional Needs (AFN) into prevention and hazard mitigation efforts.
6. **Hazard Identification and Risk Assessment:** Identifies and profiles nine (9) natural and four (4) human-caused hazards that may impact Los Angeles County including: wildfire, earthquake, extreme heat, drought, flooding, dam failure, land movement, tsunami, severe wind and tornado, mass violence, cybersecurity incidents, transportation incidents, and public health emergencies.
7. **Mitigation Strategy:** Delineates the overall strategy for the County's hazard mitigation efforts including goals and objectives, existing mitigation capabilities, and an analysis of mitigation actions.
8. **Plan Maintenance:** Outlines how the plan will be maintained annually ahead of the next full plan update in five years.
9. **Plan Adoption:** Discusses updates to the plan and implementation following plan adoption.

Following these sections, there are an additional six (6) appendices with supporting materials such as hazard maps, meeting minutes from planning meetings, and information about the public engagement efforts during the planning process.

2 Planning Process

2.1 Overview of the Planning Process

The 2025 Los Angeles County All-Hazard Mitigation Plan (AHMP) update builds upon the robust all-hazard planning framework established by the 2020 All-Hazards Mitigation Plan, while incorporating new methodologies, stakeholder engagement, and compliance requirements. The planning process for this update emphasized inclusivity, transparency, and the integration of emerging climate adaptation considerations.

This planning process followed a structured, phased approach aligned with FEMA's Local Mitigation Planning Policy Guide (2022), 44 CFR requirements, and guidance from the California Governor's Office of Emergency Services (Cal OES). This approach began with project initiation where the scope, timeline, and stakeholders were defined. Stakeholder and public engagement were prioritized to ensure representation from diverse groups, including historically underrepresented communities and climate-vulnerable populations.

Data collection and analysis leveraged updated hazard, climate, and vulnerability data from local, state, and federal sources, providing a foundation for enhanced risk and vulnerability assessments. Hazard profiles were updated to include climate projections and cascading impact scenarios. Mitigation strategies were revised and prioritized with a renewed focus on climate resilience and nature-based solutions. Strategies were also developed incorporating people with access and functional needs throughout each component of the AHMP. Finally, methods for monitoring and evaluation of mitigation efforts were defined in the plan maintenance and implementation strategy. Table 2-1 provides a timeline of the major plan update tasks and milestones over the planning process.

Table 2-1 AMHP Planning Timeline

Date	Tasks	People Involved
February 2025	Reviewed the 2020 AHMP and identified components that require update.	OEM AHMP Project Team
	Collected and reviewed existing documents, including the Threat and Hazard Identification and Risk Assessment (THIRA) along with resources for people with access and functional needs and people experiencing homelessness.	OEM AHMP Project Team

Date	Tasks	People Involved
February 2025	Met with state Hazard Mitigation Planning Team.	OEM AHMP Project Team, Cal OES Mitigation Division
	Identified the initial list of stakeholders and ensured organizations that work with and represent people with access and functional needs were engaged in the planning process. External stakeholders include neighboring communities, local and regional agencies, and others.	OEM AHMP Project Team
	Conducted 2025 AHMP Kickoff Meetings with internal stakeholders.	OEM AHMP Project Team, Internal County Stakeholder Group, Cal OES Mitigation Division
	Determined hazards to be profiled including both natural (i.e., wildland fire, earthquake, etc.) and human-caused (i.e., cybersecurity, terrorism, etc.).	OEM AHMP Project Team, Internal County Stakeholder Group, External Stakeholder Group
	Drafted initial sections of the 2025 AHMP.	OEM AHMP Project Team
	Shared drafts of initial sections with internal and external stakeholders for their review.	OEM AHMP Project Team, Internal County Stakeholder Group, External Stakeholder Group, Cal OES Mitigation Division
	Met with internal and external stakeholders to obtain feedback on draft plan elements.	OEM AHMP Project Team, Internal County Stakeholder Group, External Stakeholder Group, Cal OES Mitigation Division

Date	Tasks	People Involved
March 2025	Developed the Public Outreach Engagement Plan to collect feedback from the public on the public draft of the 2025 AHMP.	OEM AHMP Project Team, Cal OES Mitigation Division
	Drafted subsequent sections of the 2025 AHMP including updating existing mitigation actions and developing new mitigation actions as needed.	OEM AHMP Project Team
	Shared drafts of the subsequent sections with internal and external stakeholders for their review.	OEM AHMP Project Team, Internal County Stakeholder Group, External Stakeholder Group, Cal OES Mitigation Division
	Met with internal and external stakeholders to obtain feedback on subsequent draft plan elements.	OEM AHMP Project Team, Internal County Stakeholder Group, External Stakeholder Group, Cal OES Mitigation Division
April/May 2025	Drafted final sections of the 2025 AHMP and produced a Final Draft AHMP.	OEM AHMP Project Team
	Shared Final Draft of the AHMP with internal and external stakeholders for their review.	OEM AHMP Project Team, Internal County Stakeholder Group, External Stakeholder Group, Cal OES Mitigation Division
	Met with internal and external stakeholders to obtain feedback on subsequent Final Draft AHMP.	OEM AHMP Project Team, Internal County Stakeholder Group, External Stakeholder Group, Cal OES Mitigation Division
	Produced Final AHMP.	OEM AHMP Project Team

2.2 Stakeholder Engagement

Inclusive stakeholder involvement was essential to the planning process. The County ensured broad representation and participation, consistent with the "Whole Community Approach" outlined in the 2023 Operational Area Emergency Operations Plan (OAEOP). Key stakeholders that comprised the Hazard Mitigation Advisory Committee included:

- County departments such as, but not limited to, Public Works, Public Health, and Regional Planning.
- Cities within the operational area (OA) and neighboring communities through Disaster Management Area Coordinators (DMACs) and city representation.
- Non-governmental organizations (NGOs), including environmental and disability advocacy groups.
- Special District partners managing critical infrastructure.
- Representatives of academia and school districts.
- Community representatives from Access and Functional Needs (AFN) populations and historically underrepresented populations.

Regular meetings, workshops, and focus groups were held to gather input and refine mitigation strategies. Stakeholders were contacted and invited to participate in the 2025 AHMP planning process through email (please see email template in Appendix B-3). Stakeholder feedback was documented and incorporated into the plan, ensuring diverse perspectives informed the process. Tables 2-2 and 2-3 includes a list of representatives of each agency that contributed to the planning process.

Table 2-2 Hazard Mitigation Advisory Committee – Internal Stakeholder Group

Department/ Agency	Name	Title	Planning Contribution
Los Angeles County Office of Emergency Management (OEM AHMP Project Team)	Michael Morin	Emergency Management Coordinator	Functioned as lead planners, led planning meetings, drafted plan, reviewed mitigation actions submitted by departments.
	Matthew Topoozian	Emergency Management Coordinator	

Department/ Agency	Name	Title	Planning Contribution
	Karen Haro	Emergency Management Coordinator	
	Girma Wollela	Emergency Management Coordinator	
Los Angeles County Department of Aging and Disabilities	Mike Tsao	Administrative Deputy	Attended planning meetings, reviewed section drafts, and provided feedback.
	Henry Lopez	Program Manager	
	Carin Anderson	Administrative Services Manager	
	Keilah Kelso	Administrative Services Manager	
Los Angeles County Chief Executive Office – Anti-Racism, Diversity, and Inclusion Initiative	Cesar Sanchez	Senior Analyst	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Chief Executive Office – Homeless Initiative	Onnie Williams III	Principal Analyst	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Chief Sustainability Office	Matthew Gosner	Climate Resilience Officer	Attended planning meetings, reviewed section drafts, and provided feedback.

Department/ Agency	Name	Title	Planning Contribution
Los Angeles County Department of Beaches and Harbors	Katharine de la Cruz	Administrative Services Manager	Attended planning meetings, reviewed section drafts, and provided feedback.
	Vanessa Huerta	Safety Officer	
Los Angeles County Department of Economic Opportunity	Maritza Dubie	Human Services Administrator	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Department of Health Services	Elaine Forsyth	Senior Nursing Instructor	Attended planning meetings, reviewed section drafts, and provided feedback.
	Isabel Sanchez	Disaster Services Specialist	
Los Angeles County Department of Human Resources	Kevin Halbritter	Deputy Compliance Officer	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Department of Parks and Recreation	Ramon Bernal	Disaster Services Analyst	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Department of Public Health	Elizabeth Rubin	Epidemiologist	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Department of Public Social Services	Manuel Gutierrez	Disaster Services Analyst	Attended planning meetings, reviewed section drafts, and provided feedback.

Department/ Agency	Name	Title	Planning Contribution
Los Angeles County Department of Public Works	Joseph Marble	Disaster Services Analyst	Attended planning meetings, reviewed section drafts, and provided feedback.
	Loni Eazell	Disaster Services Specialist	
Los Angeles County Department of Regional Planning	Thuy Hua	Supervising Planner	Attended planning meetings, reviewed section drafts, and provided feedback.
	Edgar De La Torre	Principal Regional Planner	
Los Angeles County Fire Department	Nick Duvally	Deputy Fire Chief	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Internal Services Department	Juan-Raul Cardenas	GIS Analyst	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Sheriff's Department	Jordan Kennedy	Sergeant	Attended planning meetings, reviewed section drafts, and provided feedback.

Table 2-3 Hazard Mitigation Advisory Committee – External Stakeholder Group

Department/Agency	Planning Contribution
Access Services	Attended planning meetings, reviewed section drafts, and provided feedback.
Alzheimer's Association California	Attended planning meetings, reviewed section drafts, and provided feedback.
California Governor's Office of Emergency Services	Attended planning meetings, reviewed section drafts, and provided feedback.
Catholic Charities	Attended planning meetings, reviewed section drafts, and provided feedback.

Department/Agency	Planning Contribution
City of Beverly Hills Emergency Management Division	Attended planning meetings, reviewed section drafts, and provided feedback.
City of Long Beach Disaster Preparedness & Emergency Communications	Attended planning meetings, reviewed section drafts, and provided feedback.
City of Los Angeles Emergency Management Department	Attended planning meetings, reviewed section drafts, and provided feedback.
Disability Community Resource Center	Attended planning meetings, reviewed section drafts, and provided feedback.
Disaster Management Area Coordinator, Area A	Attended planning meetings, reviewed section drafts, and provided feedback.
Disaster Management Area Coordinator, Area B	Attended planning meetings, reviewed section drafts, and provided feedback.
Disaster Management Area Coordinator, Area C	Attended planning meetings, reviewed section drafts, and provided feedback.
Disaster Management Area Coordinator, Area D	Attended planning meetings, reviewed section drafts, and provided feedback.
Disaster Management Area Coordinator, Area E	Attended planning meetings, reviewed section drafts, and provided feedback.
Disaster Management Area Coordinator, Area F	Attended planning meetings, reviewed section drafts, and provided feedback.
Disaster Management Area Coordinator, Area G	Attended planning meetings, reviewed section drafts, and provided feedback.
Disaster Management Area Coordinator, Area H	Attended planning meetings, reviewed section drafts, and provided feedback.
Eastern Los Angeles Regional Center	Attended planning meetings, reviewed section drafts, and provided feedback.
Emergency Network Los Angeles	Attended planning meetings, reviewed section drafts, and provided feedback.
Habitat for Humanity	Attended planning meetings, reviewed section drafts, and provided feedback.

Department/Agency	Planning Contribution
Harbor Regional Center	Attended planning meetings, reviewed section drafts, and provided feedback.
Lanterman Regional Center	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Office of Education	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles County Sanitation Districts	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles Metropolitan Transportation Authority	Attended planning meetings, reviewed section drafts, and provided feedback.
Los Angeles Regional Food Bank	Attended planning meetings, reviewed section drafts, and provided feedback.
Neighborhood Legal Services of Los Angeles County	Attended planning meetings, reviewed section drafts, and provided feedback.
Puente Hills Habitat Preservation Authority	Attended planning meetings, reviewed section drafts, and provided feedback.
South Central Los Angeles Regional Center	Attended planning meetings, reviewed section drafts, and provided feedback.
Westside Regional Center	Attended planning meetings, reviewed section drafts, and provided feedback.

2.3 Public Involvement and Outreach

Public outreach efforts aimed to foster transparency, inclusivity, and fortify public trust. The County engaged the public during the planning process through multiple media formats to share information and collect feedback taking into account language and other access and functional needs. A rolling outreach strategy was used to ensure that as each section was drafted and reviewed by planning stakeholders, it was concurrently made available for public commentary. To accomplish this, each section was posted to the Los Angeles County Hazard Mitigation Program website as it was completed by the planning team. A survey designed to gauge community perceptions of hazard risks and mitigation priorities was used on the website (Appendix D). This approach ensured that the public was a key partner in every step of the planning process and had a voice as

each section was being developed by the planning team. A social media campaign using all LA County OEM social media channels was initiated to direct the public to the survey.

To address equity, targeted outreach efforts focused on engaging historically underrepresented communities and AFN populations, using multilingual and accessible materials and culturally appropriate techniques. Aside from public outreach, stakeholders that work with or represent people with access and functional needs, people experiencing homelessness, and a diverse array of cultural groups were targeted to participate in the Hazard Mitigation Advisory Committee. These measures ensured that the public had meaningful opportunities to participate in shaping the plan.

2.4 Review and Incorporation of Existing Plans and Reports

The planning process included a comprehensive review of existing documents and protocols to ensure consistency and alignment. The 2020 All-Hazards Mitigation Plan served as the foundational document for this update. Additionally, key concepts from the 2023 Operational Area Emergency Operations Plan (OAEOP), such as Emergency Support Functions (ESFs) and disaster management areas, were integrated. The Los Angeles County Climate Vulnerability Assessment provided valuable insights into climate risks and social sensitivity, while local Climate Action Plans ensured alignment with municipal climate adaptation initiatives. Furthermore, the 2021 UASI THIRA (Threat and Hazard Identification and Risk Assessment) provided critical data for identifying evolving threats and capability targets, enhancing the accuracy and relevance of the plan. The demographic data from the 2020 U.S. Census was utilized to ensure an accurate representation of Los Angeles County's population, now estimated at over 10 million residents. The demographic breakdown includes 48% Hispanic or Latino, 26% White, 15% Asian, 8% African American, and 3% other, with over 40% speaking a language other than English at home, emphasizing the need for multilingual and culturally appropriate outreach.

Table 2-4 Existing Plans, Maps, and Reports

Plan, Map, or Report	Information to be Incorporated into the 2025 Updated AHMP
Los Angeles County Operational Area Emergency Operations Plan (2023)	Used to inform Section 6: Hazard Identification and Risk Assessment and Section 7: Mitigation Strategy
Los Angeles County 2035 General Plan (2024)	Safety element mitigation policies used to inform Section 7 – Mitigation Strategy
Los Angeles County Comprehensive Floodplain Management Plan (2021)	Used to inform Section 6: Hazard Identification and Risk Assessment and Section 7: Mitigation Strategy for elements related to flood hazards
County of Los Angeles Floodplain Management Plan Progress Report from (2024)	Used to inform Section 6: Hazard Identification and Risk Assessment and Section 7: Mitigation Strategy for elements related to flood hazards
County of Los Angeles Repetitive Loss Area Analysis Progress Report (2021)	Used to inform Section 6: Hazard Identification and Risk Assessment and Section 7: Mitigation Strategy for elements related to flood hazards
Los Angeles County 2045 Climate Action Plan (2024)	Used to inform Section 6: Hazard Identification and Risk Assessment, Section 7: Mitigation Strategy, and Section 4: Climate Change for elements related to hazard risk posed by climate change
Los Angeles County Fire Department Fire Plan (2023)	Used to inform Section 6: Hazard Identification and Risk Assessment and Section 7: Mitigation Strategy for elements related to wildland fire hazards
Our County: Los Angeles Countywide Sustainability Plan (2019)	Used to inform Section 6: Hazard Identification and Risk Assessment, Section 7: Mitigation Strategy, and Section 4: Climate Change for elements related to hazard risk posed by climate change
Los Angeles County Homeless Initiative Strategy Plan (2022)	Used to inform vulnerable populations information across all sections of the plan.
Disability Among Adults in Los Angeles County (2019)	Used to inform vulnerable populations information across all sections of the plan.
Southern California Earthquake Data Center's Earthquake Catalogs (Current as of 2025)	Historical seismic information used in Section 6: Hazard Identification and Risk Assessment.

Plan, Map, or Report	Information to be Incorporated into the 2025 Updated AHMP
Maritime Tsunami Response Playbooks: Background Information and Guidance for Response and Hazard Mitigation Use (2016)	Historical tsunami information used in Section 6: Hazard Identification and Risk Assessment.
FEMA Flood Insurance Study, Los Angeles County, California (2020)	Historical flood information used in Section 6: Hazard Identification and Risk Assessment.
U.S. Geological Survey (USGS): Rainfall and Landslides in Southern California (2015)	Historical landslide information used in Section 6: Hazard Identification and Risk Assessment.
Burn Scar Information and Maps	Historical fire information used in Section 6: Hazard Identification and Risk Assessment.

3 Community Profile

3.1 Los Angeles County Overview



Los Angeles County is the most populous county in the United States, encompassing a diverse array of communities, landscapes, and infrastructure. According to the most recent census data, Los Angeles County has a population of approximately 10 million residents of which more than 1 million reside in unincorporated areas. The County's demographics, geographic features, and economic activities present both unique opportunities and significant challenges for hazard mitigation planning. This updated community profile integrates insights from the 2023 Operational Area Emergency Operations Plan (OAEOP) and reflects changes in population trends, infrastructure development, and climate risks.

The County Operational Area (OA) consists of all political subdivisions within the geographical boundaries of Los Angeles County. It encompasses five supervisorial districts, eight Disaster Management Areas (DMAs), 88 incorporated cities, 80 school districts, and approximately 142 special districts.

3.2 Geography and Land Use



Spanning over 4,000 square miles, Los Angeles County features diverse terrain, including coastal plains, valleys, mountains, islands, and deserts. The County's varied geography includes multiple microclimates that influence its exposure to natural hazards, such as earthquakes, tsunamis, wildfires, floods, and landslides. Urban areas, particularly the City of Los Angeles and its surrounding metropolitan region, are densely populated and heavily developed. In contrast, rural and unincorporated areas often face unique vulnerabilities due to limited infrastructure and resources. Rural areas include the Angeles and Los Padres National Forests, which have small communities, campgrounds, and day use areas. There are also two islands within the County, Santa Catalina and San Clemente. The County also includes a significant amount of Wildland Urban Interface (WUI) areas where residential and commercial development meets underdeveloped wildland with vegetative fuels. Land use within the County is equally diverse, with a mix of residential, commercial, industrial, agricultural, and open spaces. Recent urban development in densely populated areas has increased impervious surfaces like concrete and asphalt, which retain heat and create urban heat islands (UHI) that are much hotter than nearby rural areas. This phenomenon elevates temperatures, especially in low-income communities lacking green spaces for cooling. Additionally, urbanization affects stormwater management by reducing natural drainage and exacerbating flooding risks in low-lying areas.

These trends underscore the need for sustainable planning strategies, such as promoting green infrastructure, enhancing stormwater systems, and mitigating heat islands through tree planting and reflective materials. The County's diverse land use must be carefully managed to reduce vulnerabilities while supporting economic growth and environmental sustainability.

3.3 Social Vulnerability

Social vulnerability is a crucial component to Los Angeles County's hazard mitigation planning. The County is home to a diverse population with disparities in income, housing stability, and access to resources. The Los Angeles County Anti-Racism, Diversity, and Inclusion (ARDI) Initiative created a comprehensive Equity Explorer, which is a geospatial tool that explores multiple equity data points across Los Angeles County. The ARDI Equity Explorer includes various layers that visualize social equity, economic opportunity, housing and homelessness, health, justice, built environment, and disaster recovery data. The public can access this data at ceo.lacounty.gov/ardi/tools. Maps created using data from the ARDI Equity Explorer are in Appendix A-8.

The US Centers for Disease Control and Prevention (CDC) defines social vulnerability as a community's capacity to prepare for and respond to the stress of hazardous events ranging from natural disasters to human caused threats. The CDC's Social Vulnerability Index (Figure 3.1) is designed to identify and quantify communities experiencing social vulnerability.

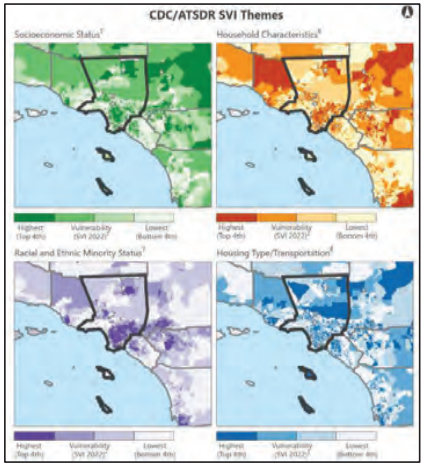


Figure 3.1 CDC Social Vulnerability Index (CDC 2022)

The most recent CDC Social Vulnerability Index score from 2022 for Los Angeles County indicated a high level of vulnerability across four themes: socioeconomic status, household characteristics, racial and ethnic minority status, and housing type/transportation.

Vulnerable populations identified for Los Angeles County that will be considered in the AHMP include:

- **Low-Income Residents**: Individuals living below or near the poverty line are often disproportionately affected by disasters due to limited financial resources for emergency preparedness, response, and recovery.

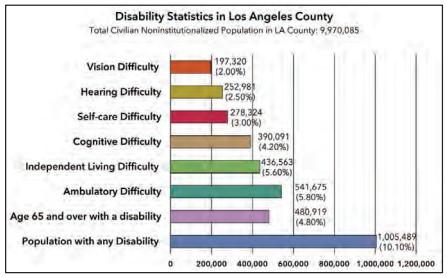


Figure 3.2 Disability Statistics in Los Angeles County (OAEOP 2023)

- **People with Access and Functional Needs (AFN)**: Individuals with Access and Functional needs have increased challenges in preparedness, evacuation, sheltering, accessing emergency services and recovery. Access and Functional Needs include but are not limited to people who have any combination in varying degree of: physical disabilities, intellectual disabilities, developmental disabilities, mental health-related issues, visual impairments, hearing impairments/deaf, mobility impairments, or chronic conditions. AFN also include older adults, infants and children, people living in institutionalized settings, people living below the poverty line or experiencing homelessness, people with limited English proficiency or are non-English speakers, or people who are transportation disadvantaged.



Figure 3. 3 Breakdown of Language at Home in Los Angeles County (OAEOP 2023)

- **People Experiencing Homelessness (PEH)**: With an estimated over 75,000 individuals experiencing homelessness, this population is particularly at risk during extreme weather events and other disasters.
- **Immigration Status**: Fear of engaging with government services based on immigration status can prevent residents from accessing critical resources.

- **Limited English Proficiency:** Over 40% of residents speak a language other than English at home, highlighting the need for multilingual and culturally appropriate outreach efforts. Language accessibility is critical to ensure all residents and visitors can obtain information and services during a disaster. See Figure 3.3 for a breakdown of languages spoken at home in Los Angeles County not including American Sign Language.

The figure below highlights certain variables in Los Angeles County that may increase vulnerability to emergencies and disasters. To address these vulnerabilities, the County's mitigation planning includes equitable strategies designed to reduce risk and enhance resilience among these populations. Targeted outreach, improved access to resources, preparedness education events, and collaboration with community organizations are integral to these efforts.

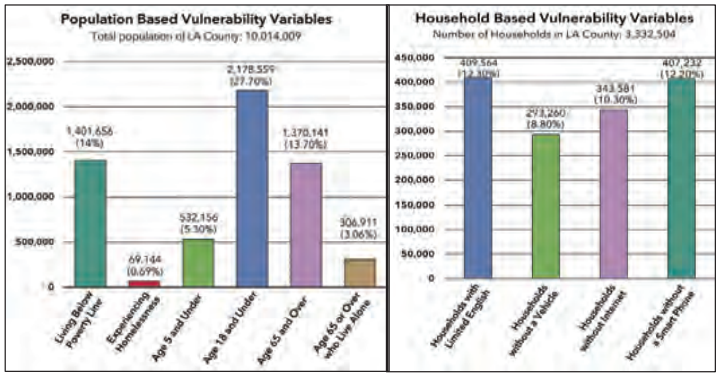


Figure 3.4 Los Angeles County Vulnerability Variables (OAEOP 2023)

The Federal Emergency Management Agency (FEMA) maintains the National Risk Index, a mapping tool that assesses 18 possible hazards a jurisdiction is susceptible to in combination with the amount of loss that could result from those hazards. Los Angeles County ranks as the community with the most risk in the United States according to the FEMA National Risk Index. According to the National Risk Index, hazards with the highest risk for Los Angeles County include earthquake, wildfires, extreme heat, flooding, high winds, and landslides.

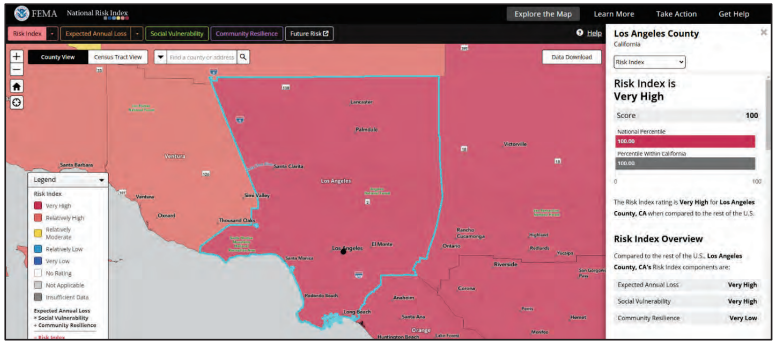


Figure 3.5 FEMA National Risk Index (2025)

3.4 Economy and Critical Infrastructure

Los Angeles County is a global economic hub, hosting industries such as entertainment, technology, manufacturing, and international trade. The Port of Los Angeles and the Port of Long Beach collectively form one of the world's busiest trade gateways, underscoring the importance of protecting critical infrastructure from hazards including those exacerbated by climate change. Critical facilities provide services and functions essential to a community, especially during and after a disaster. Common types of critical facilities include but are not limited to fire stations, police stations, hospitals, schools, and utilities. Critical facilities may also include places that can be used for sheltering, cooling centers, staging purposes, or other large public gathering spots such as community centers and libraries. Critical facilities include those operated by non-governmental and business partners vital for redevelopment or

economic security. When these are affected by a disaster, the County provides businesses and workers impacted by the disaster with vital information and resources. This allows them to maneuver effectively through disaster response toward recovery using its network of job centers and business hubs.

Other critical infrastructure includes the facilities and industries that enable all facets of society to function, including but not limited to the following community lifelines:

- **Safety and Security**: The myriad of local law enforcement, fire and rescue, emergency management, schools, and other government services that maintain public safety and security.
- **Communications:** The interconnected network of infrastructure owners and operators of communications systems such as internet, telephone, cellular and other communications towers, cable, satellite, and more.
- **Transportation Networks**: The County's extensive network of roadways, highways, railways, transit systems, and airports is essential for daily operations and disaster response.
- **Energy Systems**: Power generation facilities, energy distribution networks, and pipelines are vulnerable to multiple types of hazards and threats.
- **Water and Wastewater Systems**: Drought conditions and aging infrastructure at the over 220 different water agencies in Los Angeles County pose risks to water availability and quality.
- **Healthcare Facilities**: Over 100 hospitals and numerous clinics serve the County, requiring robust contingency plans to maintain operations during disasters.
- **Food and Shelter:** The vast system of food production (i.e., agriculture), distribution, and retail along with community housing or sheltering.

3.5 Climate and Environmental Conditions

Los Angeles County faces escalating risks from climate change, significantly impacting its environment, economy, and communities. These challenges include rising temperatures, prolonged droughts, more frequent and severe extreme weather events, and their cascading effects. These risks highlight the critical need for adaptive planning to protect vulnerable populations, infrastructure, and natural resources. Key climate-

related considerations referenced in the Los Angeles County Climate Action Plan that will be addressed in this AHMP include, but are not limited to:

- **Extreme Weather Events:** Extreme temperatures in the Los Angeles region are expected to increase. Both dry and wet extremes are projected to intensify, leading to longer dry periods than historically experienced. These dry periods are expected to be followed by significantly wetter conditions, including atmospheric rivers bringing more intense rainfall. This pattern may result in increased water scarcity, mudslides, and flooding.
- **Sea-Level Rise**: Coastal communities are at heightened risk of flooding and erosion, threatening homes, businesses, and critical infrastructure. Sea level rise can exacerbate the impacts of high tides, storm surges, and heavy precipitation, and can lead to increased coastal flooding and shoreline erosion.
- **Increasing Wildfire Risk**: Climate change has intensified wildfire seasons, particularly in the County's mountainous, wildland urban interface (WUI), and new and undeveloped regions. Wildfires are projected to increase in frequency and intensity including in some areas not historically impacted by wildfire.

In response, the County has prioritized integrating climate adaptation strategies into its hazard mitigation planning, as outlined in the Climate Vulnerability Assessment and the OAEOP.

3.6 Regional Collaboration and Planning Efforts

Los Angeles County's size and complexity necessitates collaboration with numerous jurisdictions, agencies, and community organizations. The County is designated as the Operational Area Coordinator and functions as an intermediate level in the State of California's Standardized Emergency Management System (SEMS). In accordance with SEMS, the County serves as the communications and coordination link between local governments within Los Angeles County and the state government. Partnerships with academic institutions, non-profits, and private sector stakeholders support data collection, public engagement, and innovative mitigation strategies. Additionally, the County has also adopted Emergency Support Functions (ESFs) as the primary emergency management coordination structure. ESFs group function-specific stakeholders who will coordinate throughout all phases of emergency management,

including function-specific mitigation activities. For more information on regional emergency management collaboration and planning, reference the OAEOP.

3.7 Implications for Hazard Mitigation Planning

Understanding the community is a critical aspect in hazard mitigation planning. This community profile will inform key considerations in subsequent sections of the AHMP including but not limited to the following:

- **Targeted Outreach:** Include vulnerable populations and the business community in the planning process through equitable public outreach.
- **Infrastructure Resilience:** Prioritize the protection of critical infrastructure, including ports and transportation networks, energy systems, and water and wastewater systems, among others.
- **Climate Adaptation:** Develop strategies to mitigate the impacts of climate change, focusing on urban heat islands, sea-level rise, and wildfire risks.
- **Regional Coordination:** Strengthen direct collaboration within the OA between the County, local jurisdictions, special districts, unified school districts, the business community and cross-sector non-governmental partners to enhance awareness, preparedness, and response capabilities.
- **Transparent & Open Communication:** Ensure communications are accessible, and clear to advance public trust and safety. Develop dashboards to demonstrate progress.

4 Climate Change

4.1 Climate Change Overview

Climate change refers to the changing effect of the Earth's climate system over time, including changes in temperature, precipitation, and wind patterns. Climate change had significant impacts on Los Angeles County, affecting various aspects of life, environment, infrastructure, and sustainable development, and presents increasing risks from amplified hazards and changing baselines (e.g., sea level) into the future. The rate of climate change has significantly accelerated over the last three decades and trends continues. This plan addresses the effects of climate change related to disasters within the County and strategies to mitigate risks, focusing on preparedness, resilience and equity.

Climate change contributes to more frequent and intense disasters, such as floods, wildfires, drought and excessive heat. Rising temperatures and changing weather patterns pose health risks, like heat-related illnesses, respiratory issues, and the spread of diseases. Hazard mitigation efforts aim to reduce the impacts and effects of greater hazards due to climate change. The economic impact of climate change has been substantial, affecting industries such as agriculture, tourism, and insurance with increasing risks due to accelerating climate changes.

Greenhouse Gas (GHG) emissions are the main driver of climate change, which causes increased frequency, duration, and severity of extreme weather and climate-related disasters. Climate change exacerbates air pollution, leading to poor air quality and health issues. GHG emissions from residential buildings, commercial and institutional facilities, manufacturing industries and construction, energy industries, oil and natural gas systems. transportation, fossil energy, wildfires and other sources contribute to increased particulate matter and other pollutants in the air.

4.2 Integrating Climate Change into Hazard Profiles

Integrating climate change into hazard profiles involves assessing the current and future impacts of climate change on various hazards and incorporating this information into planning and mitigation strategies. This section highlights how climate change relates to these hazards and how the county is addressing climate change through hazard mitigation efforts which help protect the county's residents and economies from the adverse effects of climate changes and climate-amplified events.

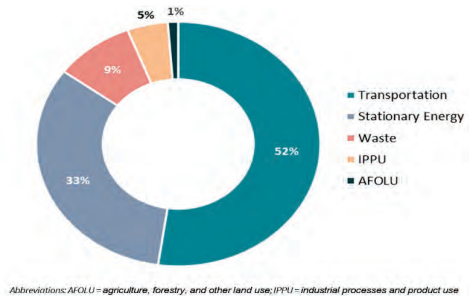


Figure 4.1 Sources of GHG Emissions from within Los Angeles County (LA County 2024; 2045 Climate Action Plan)

4.2.1 Extreme Heat

Increasing temperatures and high heat events is one of the most conspicuous results of and a direct correlation between GHG pollution and climate change. Excessive temperatures in the Los Angeles region are expected to increase significantly more very hot days and warm nights. In addition to increasing baseline temperatures and extreme heat due to climate change, heat islands exacerbate temperatures and high heat events. As development occurs and darker paved surfaces replace open land and vegetation, these areas become warmer forming an "island" of heat. Los Angeles County experiences more frequent and excessive heat due to climate change. This is currently a major risk and with unmitigated GHG emissions increasing heat will lead to even greater health issues, increased energy demand for cooling, and other strains on infrastructure.

4.2.2 Flooding

Flooding in Los Angeles County occurs due to extreme rainfall events causing flash floods, riverine flooding, and increased surface water. Coastal areas in Los Angeles County are vulnerable to sea- level rise (SLR), which exacerbates coastal hazards like floods, storm surges, and chronic erosion. Other related hazards include flooding near

the mouths of streams and channels, landslides, and seawater well intrusion. SLR exacerbates the impacts of high tides, storm surges, and heavy precipitation flooding, and continued SLR will lead to more life safety concerns and increased damage to property and infrastructure.

4.2.3 Drought

Prolonged droughts have become more common, affecting the water supply, agriculture, and ecosystems of Los Angeles County. Dry and wet extremes are projected to increase and are likely to cause drier periods than what the region has historically experienced.

Southern California projected to get drier, while Northern California will increase in temperature. This will result in loss of snowpack within the Sierra Nevada Mountain range, meaning less water for all Californians including farmers, residents, and utilities. The State Water Resource Control Board proclaimed several water conservation emergency regulations due to severe drought conditions that requires commercial, industrial, and residential conservation efforts. Proclamations include:

- **January 4, 2022:** State Water Board adopted the prohibited wasteful water uses emergency regulation
- **May 24, 2022:** the State Water Board adopted the emergency regulation to ban decorative grass watering like non-functional turf irrigation
- **December 7, 2022:** the State Water Board readopted the prohibited wasteful water uses emergency regulation,
- **May 26, 2023:** the State Water Board readopted the emergency regulation to ban decorative grass watering.

4.2.4 Wildfire

A wildfire is an unplanned and uncontrolled fire in an area of combustible vegetation. These fires can easily spread beyond the natural areas primarily involving and have a potential to cause damages outside of the perimeter. Wildfire probability depends on local weather conditions, outdoor activities and any preceding conditions (e.g., lots of rain leading to vegetation growth and then drying conditions), and a potential ignition (e.g., lightning strike, arson, debris burning, electrical equipment failure, car tailpipe, etc.). The frequency and intensity of wildfires has increased driven by higher

temperatures, lower precipitation, lower relative humidity, and prolonged droughts. These events have caused loss of life, destroy and/or damage to property, infrastructure, the environment and pose greater risks due to historical development patterns. The timeline of major wildfire events and acreage burned in Los Angeles County is listed at Section 6.2 of the plan.

4.3 Climate Mitigation Strategies

Los Angeles County is actively addressing climate change and implementing hazard mitigation strategies to reduce its impacts and build long-term resilience. The County faces increasing risks from excessive heat, wildfires, droughts, floods, and sea-level rise, all of which threaten communities, infrastructure, and natural resources.

To address many of these challenges, the County has developed comprehensive climate plans and strategies that integrate climate adaptation, sustainable land use, emergency preparedness, and environmental conservation. By enforcing building codes, investing in green infrastructure, and strengthening community preparedness, Los Angeles County aims to minimize risks and enhance disaster resilience. These efforts align with state and federal climate policies and are designed to protect both current and future generations while encouraging a more sustainable and livable environment for all.

4.3.1 Climate Resilience Plans and Actions

- **Los Angeles County 2045 Climate Action Plan (2045 CAP):** Establishes aggressive targets to reduce greenhouse gas emissions and achieve carbon neutrality by 2045.
- **Water Conservation & Drought Resilience Measures:** Implements mandatory water restrictions, promotes rainwater harvesting, and expands groundwater recharge and water recycling projects.
- **Wildfire Mitigation & Vegetation Management Programs:** Enforces Wildland Urban Interface (WUI) codes, increases forest management techniques, aligned with Traditional Ecological Knowledge (TEK) principles and practices of our native indigenous communities, and strengthens fire-resistant building and landscape requirements.

- **Green Infrastructure & Urban Cooling Initiatives:** Expands tree planting aligned with TEK principles and practices, investigates removing hard (paved) surfaces, and planting groundcover, utilizes and promotes public cooling centers and home heat preparedness, and encourages the use of reflective "cool" roofing and surfaces to mitigate the urban heat island (UHI) effect.
- **Heat Action Plan:** Develops strategies to reduce the adverse health impacts of excessive heat through public shade structures, cooling centers, building codes, and increased public awareness campaigns for all susceptible to extreme heat.

These strategic actions reflect Los Angeles County's commitment to tackling climate change. By integrating proactive policies, indigenous-informed practices, community-driven solutions, and resilient infrastructure, Los Angeles County, is not only mitigating current risks but also preparing for a future where communities can thrive in an ever-changing dynamic environment.

4.4 Climate Change Conclusion

Through proactive policies and community engagement, Los Angeles County strives to navigate the complexities of a changing climate and safeguard its people, environment, infrastructure and economies. This approach helps minimize the risks and impacts associated with climate-related hazards. Addressing climate change in hazard mitigation help enhance safer, healthier, and more sustainable communities.

5 Integrating Access and Functional Needs (AFN) into Hazard Mitigation

5.1 AFN Introduction

Modern hazard mitigation planning increasingly recognizes that resilient communities must address the needs of all residents –including those with access and functional needs (AFN). Historically, individuals with disabilities (i.e. including but not limited to, youth, those economically depressed, pregnant, etc.), chronic health conditions, language barriers, or transportation disadvantages have been underrepresented in emergency planning. As evidenced by the best practices for stakeholder inclusion and further supported by national preparedness frameworks, integrating AFN considerations leads to plans that are more inclusive and effective. By proactively engaging AFN populations and support agencies in every phase, from preparedness through recovery, a hazard mitigation plan can reduce losses, improve evacuation and sheltering outcomes, and build trust between emergency management agencies and the communities they serve.

5.2 Inclusion of AFN and Vulnerable Populations in Planning

A major component of effective mitigation planning is a "whole community" approach. Incorporating AFN voices into the planning process is crucial because these stakeholders offer real-world insights into the challenges they face during emergencies. Key steps to this process include, but are not limited to:

- **Stakeholder Engagement:** Ensure that representatives from disability advocacy groups, community-based organizations, and service providers (such as local health departments and transportation agencies) are engaged early in the planning process. Their firsthand experiences help identify practical barriers that might otherwise be overlooked.
- **Public Participation:** Incorporating public stakeholders through meetings, surveys, and other outreach to capture the diverse needs of AFN populations. This input is vital to overcoming historical marginalization and ensuring that mitigation actions are relevant and equitable to the entire population.
- **Ongoing Interagency Collaboration:** Develop a hazard mitigation planning advisory committee and interagency working groups that include AFN stakeholders. These groups can guide both the planning process and the review of existing plans, ensuring that AFN issues are fully integrated from the outset.

5.2.1 Integrating AFN into the Overall AHMP

Integrating AFN considerations is not a stand-alone task; it must be interlaced throughout the entire hazard mitigation planning process. This includes:

- **Risk Assessments:** Incorporate AFN data into all risk assessments to ensure that the specific vulnerabilities of these populations are reflected in hazard maps and vulnerability index data.
- **Mitigation Strategy Development:** Ensure that every mitigation action is examined for its impact on AFN populations. For example, when planning for flood control or wildfire prevention projects, review how these projects can be improved to meet the needs of people with access and functional needs.
- **Plan Review and Update:** Ensure planning processes include regular AFN review and updates. Includes but not limited to:
    - Surveys of community needs
    - Consultations with AFN advisory groups
    - Integration of new technological or infrastructural solutions
- **Funding and Resource Allocation:** Clearly identify funding streams and resource commitments for AFN-specific projects. This could involve targeted grants from federal programs (e.g., Hazard Mitigation Assistance), state funding dedicated to accessible infrastructure improvements, and local resources such as the Productivity Investment Fund that can be accessed to improve the effectiveness and efficiency of County operations.

5.3 Assessment of AFN Needs

Understanding the specific needs of AFN populations requires both quantitative and qualitative approaches:

- **Data Collection and Risk Assessment:** Use existing resources, community surveys, outreach and risk assessments to help identify the number and types of individuals with AFN at the local community level. Evaluate the regional geographic distribution, vulnerabilities, and specific requirements before and after emergencies.

- **Frameworks for Analysis:** Adopt structured methodologies such as C-MIST (Communication, Maintaining Health, Independence, Support, Safety, and Transportation) to assess/ document AFN requirements.



- **C-MIST Explanation**
    - **Communication**: Individuals with hearing, vision, cognitive, or speech limitations may require alternative communication methods to receive or express information during emergencies.
    - **Medical / Health Needs**: People with complex medical conditions rely on medications, medical equipment, or specialized care to maintain their health and prevent complications.
    - **Independence**: Those who use mobility devices, assistive technology, or service animals need uninterrupted access to maintain their independence and daily functions.
    - **Supervision & Safety**: Some individuals require continuous support for safety, comfort, or emotional well-being, including those with memory issues, psychiatric conditions, or intellectual disabilities.
    - **Transportation**: Individuals without personal transportation or with mobility limitations need accessible and reliable options, especially in emergencies and evacuations.
- **Integrating Vulnerability Assessments:** Leverage tools from local climate vulnerability assessments and hazard mitigation plan reviews to identify areas where AFN populations overlap with high-risk zones (e.g., flood plains,

wildfire-prone areas). This integration helps prioritize mitigation actions in regions where vulnerable populations are most exposed.

5.4 Coordination with AFN Support Agencies

Effective mitigation planning requires robust coordination with both governmental and nongovernmental agencies that serve AFN populations. Best practices include:

- **Formal Partnerships:** Establish relationships and partnerships with agencies such as public health departments, social services, transportation authorities, community-based organizations, and disability advocacy organizations. These partnerships ensure that there is clear, ongoing communication and that roles and responsibilities are delineated before, during, and after disasters.
- **Joint Training and Exercises:** Conduct regular joint meetings, and exercises that include AFN components and identify additional resources to support the needs of the AFN community. These actions will help prepare all stakeholders to work together during a crisis and help identify gaps in current plans.
- **Outreach and Information Dissemination:** Ensure that all information, both pre-incident preparedness messages, response measures and post-incident recovery plans are accessible to all audiences. This includes using multiple languages, various communication formats (e.g., large-print, audio, sign-language, and digital formats), and culturally appropriate messaging to reach all segments of the community.

5.5 AFN Conclusion

A hazard mitigation plan builds a foundation for a resilient, inclusive community. By ensuring that AFN and other vulnerable populations are included in every phase of planning, from initial stakeholder engagement to the development of tailored mitigation actions and coordinated response strategies, communities can minimize disaster impacts and foster long-term resilience. Drawing on best practices from national frameworks and local planning guides, and by implementing ADA-compliant shelter operations, emergency managers can create a plan that truly serves every member of the community. This inclusive approach not only saves lives and property during disasters but also strengthens community trust and the overall effectiveness of emergency management efforts.

6 Hazard Identification and Risk Assessment

6.1 Hazard Identification Overview

The hazard identification and risk assessment process provide a foundation for Los Angeles County's hazard mitigation planning efforts by identifying, profiling, and assessing the risks associated with natural, technological, and human-caused hazards. This section builds on the framework established in the 2020 Hazard Mitigation Plan, incorporating insights from the 2023 Operational Area Emergency Operations Plan (OAEOP), the 2024 Los Angeles Threat and Hazard Identification and Risk Assessment (THIRA), the Los Angeles County Climate Vulnerability Assessment, the State of California Hazard Mitigation Plan (SHMP), and the Federal Emergency Management Agency (FEMA) National Risk Index.

Based on these sources hazards were included and addressed in the 2025 AHMP according to their frequency, severity and impact to Los Angeles County, see below Table 6-1. Hazards that did not meet the threshold of moderate risk will not be prioritized within the plan. Additionally, three new natural hazards (Extreme Heat, Drought, and Severe Wind/Tornado) and four human-caused hazards (Mass Violence, Cyber Incidents, Transportation Incidents, and Public Health Emergencies) are included in the 2025 AHMP.

Table 6-1 Hazard Inclusion/ Omission

Hazard	Comment
Earthquake	Hazard is included in the plan due to its high frequency, severity, and impact to Los Angeles County.
Wildfire	Hazard is included in the plan due to its high frequency, severity, and impact to Los Angeles County.
Heat Wave	Hazard is included in the plan due to its high frequency, severity, and impact to Los Angeles County.
Tornado	Hazard is included in the plan due to its high frequency, severity, and impact to Los Angeles County. Tornado is incorporated with the Severe Wind/ Tornado hazard profile.
Land Movement	Hazard is included in the plan due to its high frequency, severity, and impact to Los Angeles County.

Hazard	Comment
Lightning	Hazard is included in the plan due to its high frequency, severity, and impact to Los Angeles County. Lightening is incorporated with the Wildfire and Flooding hazard profiles.
Flooding	Hazard is included in the plan due to its frequency, severity, and impact to Los Angeles County. The Flooding hazard profile incorporates both Riverine and Coastal Flooding.
Drought	Hazard is included in the plan due to its frequency, severity, and impact to Los Angeles County.
Strong Wind	Hazard is included in the plan due to its frequency, severity, and impact to Los Angeles County. Strong Wind is incorporated with the Severe Wind and Tornado hazard profile.
Tsunami	Hazard is included in the plan due to its frequency, severity, and impact to Los Angeles County.
Winter Weather	Hazard is omitted from the plan due to its minimal frequency, severity, and impact to Los Angeles County.
Hail	Hazard is omitted from the plan due to its minimal frequency, severity, and impact to Los Angeles County.
Avalanche	Hazard is omitted from the plan due to its minimal frequency, severity, and impact to Los Angeles County.
Cold Wave	Hazard is omitted from the plan due to its lack of frequency, severity, and impact to Los Angeles County.
Hurricane	Hazard is omitted from the plan due to its lack of frequency, severity, and impact to Los Angeles County.
Ice Storm	Hazard is omitted from the plan due to its lack of frequency, severity, and impact to Los Angeles County.
Volcanic Activity	Hazard is omitted from the plan due to its lack of frequency, severity, and impact to Los Angeles County.

Los Angeles County faces a wide range of hazards due to its geographic diversity, population density, and economic significance. The following hazards were identified and prioritized from the previously mentioned sources based on historical occurrences, potential impacts, and future risks:

1. Wildfire
2. Earthquake
3. Extreme Heat
4. Drought
5. Flooding
6. Dam Failure
7. Land Movement
8. Tsunami
9. Severe Wind and Tornado
10. Mass Violence
11. Cybersecurity Incidents
12. Transportation Incidents
13. Public Health Emergencies

Among these hazards, six were identified to be potentially exacerbated by climate change including wildfire, extreme heat, drought, flooding, land movement, and severe wind and tornadoes. Additional human-caused hazards were included based on the 2024 THIRA including mass violence, cybersecurity incidents, transportation incidents, and public health emergencies. The results of the public Personal Disaster Impact Survey validated that these hazards are of significant concern to county residents. A risk assessment table comparing hazards to critical infrastructure is in Appendix C.

Table 6-2 Changes in Development and Vulnerability

Hazard	Change (Increase/ Decrease)	Reason
Earthquake	No Change	While new construction adheres to modern seismic codes aging infrastructure in high seismic zones remain vulnerable. Continued population growth in older neighborhoods with limited

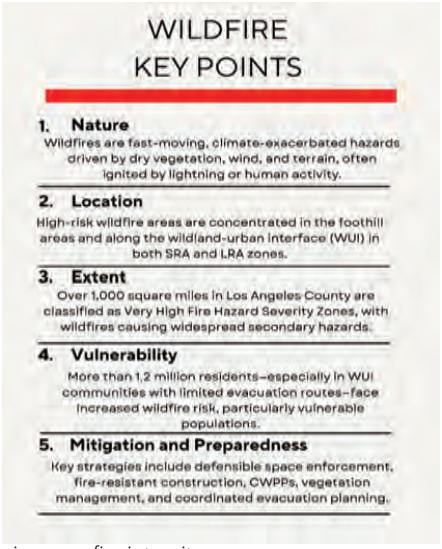
Hazard	Change (Increase/ Decrease)	Reason
		retrofitting increases overall exposure.
Wildfire (Lightning)	Increase in Vulnerability	Urban expansion into Wildland-Urban Interface (WUI) areas has increased the number of homes at risk. Post 2020 development in high fire severity zones has continued, though defensible space regulations and new fire-safe planning are improving resilience for new builds.
Extreme Heat	Increase in Vulnerability	Population density, urban heat islands, and development in inland valleys increases exposure. Older multi-family units without air conditioning remain a concern. More outdoor workers and people experiencing homelessness (PEH) add to vulnerable population.
Land Movement	Stable to Slight Increase	Most new development avoids known landslide-prone areas due to zoning and geotechnical review. However, climate-driven precipitation variability and wildfires continue to destabilize slopes in developed areas.
Flooding (Lightning)	Increase in Vulnerability	New impervious surfaces from development increase stormwater runoff. Older flood control infrastructure is strained under heavier, more frequent rain events.

Hazard	Change (Increase/ Decrease)	Reason
Drought	Increase in Vulnerability	Continued population growth and water demand in arid and semi-arid zones has outpaced gains in conservation. Agricultural vulnerability persists in high desert areas.
Severe Wind and Tornado	Increase in Vulnerability	Los Angeles County is experiencing more frequent and intense wind events, including tornadoes. As urban development expands, tree canopies and overhead utilities in densely developed areas continue to contribute to cascading hazards. In response, efforts are underway to underground utility lines in high-risk areas.
Tsunami	Stable	Revised tsunami inundation maps have refined the at-risk zones. New developments in coastal areas are largely outside the updated hazard areas or comply with stricter coastal building codes.
Dam Failure	Stable/ Slight Increase	While no new major dams have been constructed in recent years, downstream development continues to increase population and critical infrastructure exposure within inundation zones.



6.2 Wildfire

6.2.1 Nature



Wildfires are fast-moving, uncontrolled fires that consume vegetation and rapidly spread, often threatening lives, structures, and infrastructure. These fires can be ignited by natural causes, such as lightning, or human activities, including unattended campfires, downed power lines, and arson. The increasing frequency, duration, and intensity of wildfires in Los Angeles County are possibly linked to the changing climate, with hotter temperatures, prolonged droughts, and reduced humidity levels making the region highly susceptible to fires.

Factors Influencing Wildfire Behavior

- **Topography**: Fires spread more rapidly on steep slopes and are often driven by the Santa Ana winds.
- **Fuel Load**: Dense, dry vegetation and high tree mortality increase fire intensity.
- **Weather Conditions**: High temperatures, strong winds, and low humidity elevate fire risk, with the changing climate contributing to a lengthened fire season.

Wildfires also create secondary hazards such as poor air quality, landslides, flooding, and debris flows–especially in areas with recent burn scars where vegetation loss increases soil instability.

6.2.2 Location

Los Angeles County is one of the most wildfire-prone regions in the United States. Based on the Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone (FHSZ) maps, significant wildfire risk exists in the Santa Monica Mountains, San Gabriel Mountains, Palos Verdes Hills, and Puente Hills. The 2024 THIRA and Los Angeles County Climate Vulnerability Assessment identify an increasing risk to communities located in or near these high-risk areas.

Los Angeles County has three primary wildfire management zones:

- **Federal Responsibility Areas (FRAs):** Lands administered or controlled by the federal government where federal agencies have administrative and protection responsibility for wildfires.
- **State Responsibility Areas (SRAs):** Wildland areas where CAL FIRE is responsible for suppression efforts.
- **Local Responsibility Areas (LRAs):** Developed regions where local agencies, such as Los Angeles County Fire Department (LACoFD), provide fire protection.

For a better visual representation of this Wildfire Hazard within the LA County planning area, please reference Appendix A. Included in Appendix A are several Fire Hazard Severity Zone maps for reference.

6.2.3 Extent

According to CAL FIRE's Fire Hazard Severity Zone (FHSZ) maps, Los Angeles County contains:

- 386.06 square miles (8.11%) classified as Very High Fire Hazard Severity Zone (FHSZ) in Local Responsibility Areas, LRAs.
- 625.01 square miles (13.13%) classified as Very High (FHSZ) in State Responsibility Areas, SRAs.

Wildfires pose a significant threat not only through the immediate damage they cause to lives, property, and natural resources, but also through the secondary hazards that continue after the flames are extinguished.

In the aftermath of a fire, communities often face increased risks of flash floods, debris flows, and degraded air quality. These post-fire impacts can compound the initial destruction, placing additional strain on infrastructure, health systems, and recovery efforts.

6.2.4 History

Los Angeles County has experienced numerous devastating wildfires in recent decades, including:

- **Canyon Fire (1968) –** Burned 22,000 acres, destroyed 147 homes, and led to mass evacuations.
- **Old Topanga Fire (1993) –** Consumed 16,516 acres, destroying 388 structures and causing three fatalities.
- **Sayre Fire (2008) –** Destroyed 489 structures, including over 600 mobile homes.
- **Station Fire (2009) –** The largest fire in Los Angeles County history, burning 160,577 acres, destroying 209 structures, and causing two firefighter fatalities.
- **Woolsey Fire (2018) –** Burned 96,949 acres, destroyed 1,643 structures, and resulted in three fatalities.
- **Bobcat Fire (2020) –** Scorched 115,796 acres, destroying 171 structures and damaging numerous infrastructures in the Angeles National Forest.
- **Palisades Fire (2025) –** Resulted in significant destruction and loss of life, burning 23,707 acres, destroyed approximately 6,833 structures, and causing 12 civilian fatalities.
- **Eaton Fire (2025) –** Resulted in significant destruction and loss of life, burning 14,021 acres, destroying approximately 9,418 structures, and causing 17 civilian fatalities.

These fires highlight the increasing frequency and intensity of wildfires, emphasizing the urgent need for stronger mitigation and preparedness efforts.

The Los Angeles County area has experienced federally declared wildfires and are shown in the table below. There have been no state proclamations for wildfires in the last five years.

Federally Declared Wildfire/Fire Management Assistance Declaration in Los Angeles County from 1/1/2020 to 3/28/2025

Date	Incident Name	No.	Category
1/8/2025	California Wildfires and Winds	4856	Federal Declaration
1/8/2025	California Eaton Fire	5550	Fire Management Assistance Declaration
1/8/2025	California Hurst Fire	5551	Fire Management Assistance Declaration
1/7/2025	California Palisades Fire	5549	Fire Management Assistance Declaration
12/10/2024	California Franklin Fire	5548	Fire Management Assistance Declaration
9/11/2024	California Bridge Fire	5537	Fire Management Assistance Declaration
10/16/2020	California Wildfires	4569	Federal Declaration
9/13/2020	California Bobcat Fire	5374	Fire Management Assistance Declaration

6.2.5 Probability

With several guaranteed wildfires each year, the probability of wildfire ignition in Los Angeles County is gradually increasing, driven largely by climate change. There is a 100% chance of a fire occurring each year within the geographic planning area. Historically, wildfires occurred between June and November, but recent years have shown a year-round fire season due to hotter, drier conditions and more intense weather variability.

Longer dry periods, reduced humidity, and increased temperatures, coupled with historic drought and vegetation die-off, have created critically dry fuel beds. These events make even small ignition sources capable of generating major wildfires.

Santa Ana winds continue to serve as a major accelerant, contributing to rapid fire spread and severe fire behavior. When combined with urban encroachment into fire-prone areas, these conditions elevate both the frequency and destructiveness of wildfires.

Projections from the 2024 THIRA and the LA County Climate Vulnerability Assessment confirm that wildfire probability will continue to rise unless significant fuel reduction, land use planning, and climate adaptation strategies are implemented across all jurisdictions.

The 2024 THIRA estimates that:

- Over 1.2 million residents live in high-risk wildfire zones.
- Communities near the Wildland-Urban Interface (WUI) are at the greatest risk, especially those with limited evacuation routes, and the Access and Functional Needs community.
- Vulnerable populations, including seniors, low-income households, and people with disabilities, face heightened challenges during evacuations.

6.2.6 Vulnerability

Los Angeles County faces high wildfire vulnerability due to its extensive Wildland-Urban Interface (WUI), with over 1.2 million residents that live in Very High Fire Hazard Severity Zones (FHSZs). These communities are particularly susceptible because many homes lack defensible space, fire-resistant construction, or adequate emergency access.

Vulnerable populations including (but not limited to): seniors, individuals with disabilities, low-income households, and those dependent on electrical medical equipment, face significant evacuation and health risks during wildfire events, especially in WUI communities with limited ingress/egress and high fuel loads.

SUPERVISORIAL DISTRICT BREAKDOWN		
Supervisorial District	**Population in High-Risk Wildfire Zones**	**Percentage of District Population**
District 1	**150,000**	**12%**
District 2	**75,000**	**6%**
District 3	**425,000**	**30%**
District 4	**250,000**	**20%**
District 5	**500,000**	**32%**

Contextual Overview

Very High FHSZ in LRA jurisdiction includes dense hillside residential areas under local fire authority responsibility. These are some of the most vulnerable communities due to terrain, vegetation, and constrained emergency access.

Critical infrastructure is also at risk, with wildfire exposure threatening fire stations, law enforcement facilities, hospitals, utilities, transportation corridors, and emergency communication systems. Disruption to these essential services during wildfire events can compound vulnerabilities and delay response and recovery. For a better understanding of critical infrastructure at risk please see Appendix C.

Total Facilities Affected:

- **Very High LRA**: 120
- **High SRA**: 8
- **Very High SRA**: 76

With the continued expansion of developments into fire-prone areas has significantly increased wildfire risk. Many homes in the WUI lack proper defensible space and fire-resistant building materials, making them particularly vulnerable. Additionally, limited evacuation routes in some WUI communities create challenges for emergency response and evacuations. Stricter zoning laws, building regulations, and vegetation management policies are the best practices to reduce risk.

Department/ Agency	Very High FHSZ (LRA)	High FHSZ (SRA)	Very High FHSZ (SRA)
Animal Care and Control	1	0	1
Fire Department	39	1	14
Health Services	1	0	0
Library	7	1	2
LACMA / NHM	1	0	0
Office of Education	3	0	3
Other County Offices	0	0	0
Parks & Recreation	13	1	12
Public Health	52	4	41
Public Works	0	0	0
Sheriff's Department	3	1	3

Wildfires threaten essential infrastructure, including:

- **Transportation**: Damage to roads and bridges affects evacuation and emergency response.
- **Utilities**: Power lines, gas pipelines, and water infrastructure, including dams, are vulnerable to fire damage.
- **Emergency Services**: Public safety and healthcare facilities near wildfire-prone areas face operational disruptions.
- **Public Services**: Parks, libraries, schools, and other public areas could be lost or damaged.

New emerging patterns suggest that climate change may be influencing wildfire risks in Los Angeles County through:

- **Extending fire seasons:** Historically, peak fire season occurred from June to November, but fires are now starting and burning year-round.
- **Increasing fuel dryness:** Higher temperatures and prolonged droughts reduce vegetation moisture levels, making fires more intense.
- **Raising fire frequency:** Hotter, drier conditions contribute to more frequent ignitions, particularly in WUI areas.

Extent of Exposure

- **Total Area Exposed**: 243.72 sq mi
- **Supervisorial Districts (SD) Impacted**:
    - **SD3**: 117.95 sq mi (27.29%)
    - **SD5**: 95.61 sq mi (3.36%)
    - **SD1**: 16.23 sq mi (4.60%)
    - **SD4**: 9.10 sq mi (4.27%)
    - **SD2**: 4.83 sq mi (1.33%)

For a better visual representation of this Wildfire Hazard within the LA County planning area, please reference Appendix A for several Fire Hazard Severity Zone maps.

6.2.7 Impacts

Impacts for past fires vary depending on scope and severity, including the January 2025 fires, including the Palisades and Eaton Fires, resulted in widespread destruction across Los Angeles County, burning over 37,000 acres and destroying more than 16,000 structures combined, with nearly 30 civilian fatalities. These events caused cascading impacts such as prolonged power outages, degraded water pressure affecting firefighting and residential supply, and overwhelmed emergency services. Transportation routes and communications infrastructure were disrupted. Communities, especially in the Wildland-Urban Interface (WUI), experienced major economic losses due to the destruction of homes, businesses, and public facilities. Post-fire hazards like debris flows and landslides further compounded recovery challenges, with water infrastructure contamination and sedimentation requiring emergency remediation. The scope and severity of these fires underscore the increasing vulnerability of critical infrastructure and the urgent need for enhanced mitigation strategies across high-risk zones.

Problem Statement

Many hillside communities within LRA Very High FHSZ zones face critical access and water supply issues during fires. These areas often include aging structures and narrow roads, complicating firefighting and evacuation. Investments in defensible space, local code enforcement, and community wildfire protection planning are vital to saving lives and minimizing losses.

6.2.8 Mitigation and Preparedness

Los Angeles County is implementing a multi-agency approach to mitigate wildfire risks.

Key strategies include:

- **Community Wildfire Protection Plans (CWPPs):** Strengthening fire prevention measures in high-risk areas.
- **Community Preparedness:** Educating residents on wildfire readiness through outreach campaigns, emergency alert systems, and neighborhood preparedness programs.
- **Defensible Space Requirements:** Enforcing brush clearance around structures.
- **Enhanced Building Codes:** Promoting fire-resistant materials for new developments.
- **Vegetation Management:** Reducing fuel loads through prescribed burns and hazardous tree removal.
- **Evacuation Planning:** Improving coordination between OEM, LASD, LACoFD, and other jurisdictions to ensure clear evacuation policies and procedures.

Additional details on the County's proactive and ongoing efforts to reduce wildfire risk, including long-term planning, infrastructure hardening, and community-based initiatives, is located in the dedicated section titled "Mitigation Strategies."

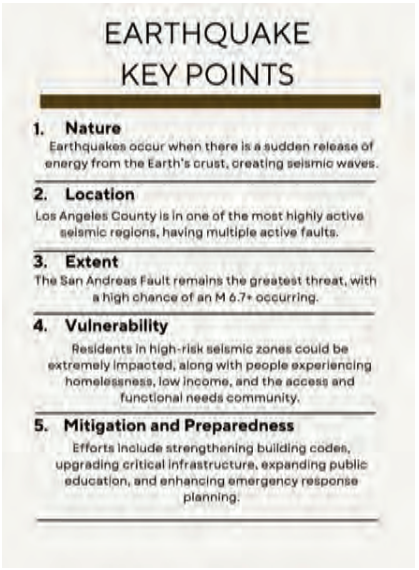
6.2.9 Summary

Wildfires remain one of the most significant hazards in Los Angeles County, posing risks to life, property, and critical infrastructure. The expansion of development into WUI areas, increasing fire severity due to climate change, and ongoing challenges with evacuation and mitigation require proactive, coordinated efforts across agencies. Strengthening fire prevention policies, improving emergency response coordination, and integrating climate adaptation measures are essential to enhancing wildfire resilience for Los Angeles County.



6.3 Earthquake

6.3.1 Nature



Earthquakes occur due to the sudden release of energy in the Earth's crust, generating seismic waves that cause ground shaking. These events, often triggered by movement along fault lines, vary in intensity depending on factors such as magnitude, depth, and proximity to populated areas. In addition to the initial shaking, secondary hazards such as surface faulting, liquefaction, landslides, tsunamis, and aftershocks can worsen the damage. Los Angeles County, located in a highly active seismic region, faces significant risks from these natural events, necessitating extensive mitigation efforts and preparedness planning.

- The most common effects of earthquakes include violent shaking, structural damage, and disruptions to infrastructure.
- Secondary effects can include, but are not limited to, utilities outages, traffic congestion and transportation systems being impassable, and an increase of fire risks, from broken gas and water lines.

- Earthquakes occur with little to no warning, making preparedness essential for minimizing loss of life and property.

6.3.2 Location

Los Angeles County is one of the most seismically active regions in the United States, with multiple active fault systems capable of generating destructive earthquakes.

Major faults include:

- San Andreas Fault – Capable of M 8.0+
- Newport-Inglewood Fault – M 7.4
- Malibu Coast Fault System – M 6.7
- San Fernando Fault – M 6.6
- Santa Monica Fault – M 7.0
- Whittier Fault – M 7.2
- Sierra Madre Fault – M 6.0-7.0

For a better visual representation of this Earthquake Hazard within LA County planning area, please reference Appendix A for earthquake fault maps.

6.3.3 Extent

According to US Geological Survey, there are two types of earthquake measurements, magnitude (Mw) and intensity (i). Magnitude is a measure of the energy released at the source of the earthquake. Intensity scale help measure impact on people and structures.

Earthquake impact is based on magnitude scale is as follows:

- Great–Mw > 8,
- Major–Mw = 7.0 – 7.9
- Strong–Mw = 6.0 – 6.9
- Moderate–Mw = 5.0 – 5.9
- Light–Mw = 4.0 – 4.9
- Minor–Mw = 3.0 – 3.9
- Micro–Mw < 3

Modified Mercalli Intensity Scale is from I to XII, which refers I, as not felt and XII as extreme.

Figure 6.3.1 Modified Mercalli Intensity Scale

CIIM Intensity	People's Reaction	Furnishings	Built Environment	Natural Environment
I	Not felt			Changes in level and clarity of well water are occasionally associated with great earthquakes at distances beyond which the earthquakes felt by people.
II	Felt by a few.	Delicately suspended objects may swing.		
III	Felt by several; vibration like passing of truck.	Hanging objects may swing appreciably.		
IV	Felt by many; sensation like heavy body striking building.	Dishes rattle.	Walls creak; window rattle.	
V	Felt by nearly all; frightens a few.	Pictures swing out of place; small objects move; a few objects fall from shelves within the community.	A few instances of cracked plaster and cracked windows with the community.	Trees and bushes shaken noticeably.
VI	Frightens many; people move unsteadily.	Many objects fall from shelves.	A few instances of fallen plaster, broken windows, and damaged chimneys within the community.	Some fall of tree limbs and tops, isolated rockfalls and landslides, and isolated liquefaction.
VII	Frightens most; some lose balance.	Heavy furniture overturned.	Damage negligible in buildings of good design and construction, but considerable in some poorly built or badly designed structures; weak chimneys broken at roof line, fall of unbraced parapets.	Tree damage, rockfalls, landslides, and liquefaction are more severe and widespread wiht increasing intensity.
VIII	Many find it difficult to stand.	Very heavy furniture moves conspicuously.	Damage slight in buildings designed to be earthquake resistant, but severe in some poorly built structures. Widespread fall of chimneys and monuments.	
IX	Some forcibly thrown to the ground.		Damage considerable in some buildings designed to be earthquake resistant; buildings shift off foundations if not bolted to them.	
X			Most ordinary masonry structures collapse; damage moderate to severe in many buildings designed to be earthquake resistant.	

Over 75% of unincorporated Los Angeles County is at risk for severe to extreme shaking in a future earthquake.

The region's dense urban environment, combined with aging infrastructure, increases the likelihood of extensive damage and prolonged recovery times.

Faults running beneath critical infrastructure corridors, including freeways and power grids, pose a significant threat to public safety and economic stability of the planning area.

6.3.4 History

Los Angeles County has a long history of destructive earthquakes, with some of the earliest recorded events dating back to the early 19th century. The San Juan Capistrano Earthquake of 1812 (M 7.5) was among the first to be documented, causing the collapse of Mission San Juan Capistrano and resulting in 40 fatalities. Over the years, the county has experienced numerous significant quakes, including the devastating 1857 Fort Tejon Earthquake (M 7.9), the 1971 San Fernando Earthquake (M 6.6), and the infamous 1994 Northridge Earthquake (M 6.7), which caused billions in damages and led to widespread infrastructure failures. There have been no federal declarations or state proclamations for earthquakes in the last five years.

Major Earthquakes in Los Angeles County (1812 – Present)

Date	Magnitude	Name / Location	Notable Impact
December 8, 1812	7.5	San Juan Capistrano Earthquake	Destroyed Mission San Juan Capistrano, killed 40 people.
December 21, 1812	7.1	West Ventura Earthquake	Caused significant shaking in Southern California.
January 9, 1857	7.9	Fort Tejon Earthquake	Largest earthquake on the San Andreas Fault; ruptured 225 miles.
July 21, 1952	7.5	Kern County Earthquake	Strong shaking felt in Los Angeles; major damage to Bakersfield.
February 9, 1971	6.6	San Fernando Earthquake	65 deaths, $553 million in damages, collapse of Veterans Hospital.
October 1, 1987	5.9	Whittier Narrows Earthquake	8 deaths, 200 injuries, $358 million in damages.
February 28, 1990	5.7	Upland Earthquake	30 injuries, $12.7 million in damages.

June 28, 1991	5.6	Sierra Madre Earthquake	1 death, 100+ injuries, $40 million in damages.
January 17, 1994	6.7	Northridge Earthquake	57 deaths, 8,700 injuries, $40 billion in damages, freeways collapsed.
July 29, 2008	5.5	Chino Hills Earthquake	8 injuries, minor structural damage.
March 28, 2014	5.1	La Habra Earthquake	Few injuries, $10 million in damages.
July 6, 2019	7.1	Ridgecrest Earthquake	Widespread damage in Southern California, infrastructure impacts.

6.3.5 Probability

Trends in Seismic Activity

Over 163 earthquakes of M 5.0 or greater have been recorded in Southern California since 1812.

The San Andreas Fault remains the greatest seismic hazard, with a 59% chance of an M 6.7+ event in the next 30 years.

Future Earthquake Occurrence

The U.S. Geological Survey (USGS) estimates the following probabilities for a major earthquake in Los Angeles County in the next 30 years:

- 60% chance of an M 6.7+ earthquake
- 46% chance of an M 7.0+ earthquake
- 31% chance of an M 7.5+ earthquake

6.3.6 Vulnerability

The county's vulnerability to earthquakes extends beyond physical infrastructure, affecting its residents and essential services. Older buildings, particularly unreinforced masonry and soft-story structures, are at high risk of collapse, posing significant

dangers to residents and businesses. Seismic retrofitting, early warning systems, and stricter building codes have improved resilience, but vulnerabilities remain in older structures and critical infrastructure.

Critical Infrastructure at Risk

- **Highways, bridges, and transportation routes:** A major earthquake could severely disrupt mobility, shipment of goods and services while also delaying emergency response and evacuations. Major highways such as, but not limited to the I-5, I-10, US-101, CA-60, CA-14, I-405, I-710, and I-105 could be impacted.
- **Energy grids and water system:** Disruptions could leave millions without power and clean water.
- **Hospitals and emergency services:** 325 hospitals and 1,299 fire stations in the Los Angeles County could suffer functional impairments.
- **Unreinforced masonry and soft-story buildings:** Many older structures are highly susceptible to collapse during strong ground shaking.

County Specific Critical Facilities Affected:

- Fire Department: 314 facilities (93.18%)
- Public Works: 201 facilities (87.39%)
- Health Services: 56 facilities (85.71%)
- Public Health: 37 facilities (92.50%)
- Libraries: 78 branches (89.66%)
- Parks: 179 (97.79%)
- Education: 70 (85.37%)

Los Angeles County lies at the intersection of multiple major fault lines, including the San Andreas Fault. According to the hazard matrix, the risk of violent ground shaking is prevalent countywide, particularly in urban centers and regions with critical infrastructure. The potential consequences of violent seismic shaking include widespread structural damage, disruption of services, economic losses, and human casualties.

Populations at Risk

- The THIRA estimates over 2 million residents could be significantly impacted in a major seismic event, particularly those in high-risk seismic zones.

- People Experiencing Homelessness (PEH) populations: 75,000+ unhoused individuals in Los Angeles County live in areas at risk of violent shaking.
- Low-income and individuals with access and functional needs (AFN): For more details on impacted population please see Section 5.

Extent of Exposure

- **Total Area Exposed**: 3,041.91 sq mi
- **Supervisorial Districts (SD) Impacted**:
  - **SD5**: 1,950.78 sq mi (69.50%)
  - **SD3**: 379.41 sq mi (87.99%)
  - **SD1**: 349.17 sq mi (98.95%)
  - **SD2**: 362.95 sq mi (99.99%)
  - **SD4**: 210.92 sq mi (99.10%)

6.3.7 Impacts

Los Angeles County has a long history of experiencing damaging earthquakes due to its location along multiple active fault systems, including the San Andreas, Newport-Inglewood, and Whittier faults. Historic earthquakes such as the 1971 San Fernando (M6.6) and 1994 Northridge (M6.7) events caused catastrophic losses. The San Fernando earthquake resulted in 65 deaths, the collapse of hospital structures, and over $550 million in damages, while the Northridge earthquake caused 57 deaths, more than 8,700 injuries, and an estimated $40 billion in economic losses, including widespread infrastructure failures such as collapsed freeways and damaged utility systems.

Impacts from future major seismic events are projected to be even more severe due to population density, aging infrastructure, and increasing development in seismically vulnerable areas. Over 75% of unincorporated Los Angeles County is at risk of severe to extreme ground shaking. Current estimates suggest that a large-magnitude earthquake could displace up to 2.2 million people, injure or kill thousands, and result in over $200 billion in combined economic losses, including $113 billion in property damage and $68 billion in business interruptions.

The County's critical systems; power, water, transportation, healthcare, and communications, are especially vulnerable. A major earthquake could impair up to 325 hospitals and 1,299 fire stations and disrupt critical infrastructure for millions. Populations with heightened vulnerability include the 75,000+ people experiencing homelessness, those with access and functional needs, and residents of older, unreinforced masonry and soft-story structures.

Without sufficient mitigation, a future earthquake could result in cascading failures across multiple sectors and prolong the County's recovery for years. These risks highlight the urgency for continued investment in seismic retrofitting, stricter enforcement of building codes, expanding statewide early warning systems, and equitable preparedness programs targeting at-risk vulnerable populations.

- **Casualties and injuries:** Depending on the time of day and location, thousands could be injured or killed in a severe earthquake.
- **Economic disruption:** A significant earthquake could halt business operations, damage supply chains, and force thousands into unemployment.
- **Housing displacement:** An estimated 2.2 million residents could be displaced, with tens of thousands requiring emergency sheltering.

Economic Impact

A major earthquake in Los Angeles County could result in over $200 billion in economic losses, with a total of $118 trillion-dollar exposure. Losses can include:

- $68 billion in business interruptions
- $51 billion in lost economic activity
- $113 billion in property damages

Problem Statement

The pervasive exposure of Los Angeles County to violent earthquake shaking presents a systemic threat to public safety, economic stability, and essential services. Nearly all major departments and infrastructure elements are located within high-shaking hazard zones. The extensive reach across all five Supervisorial Districts (SD) amplifies the challenge, highlighting the urgent need for retrofitting, public education, preparedness programs, and resilient design policies. Failure to address this hazard could lead to catastrophic loss of life and functionality in the event of a major seismic event.

6.3.8 Mitigation and Preparedness

Efforts to reduce earthquake risks in Los Angeles County include strengthening building codes, enhancing emergency preparedness, and retrofitting vulnerable structures.

Key efforts to mitigate earthquake risks include:

- Strengthening building codes and enforcing retrofitting laws
- Upgrading critical infrastructure
- Expanding public education and early warning systems
- Enhancing emergency response planning

By proactively implementing these measures, Los Angeles County aims to reduce casualties, infrastructure damage, and economic losses in future seismic events.

Seismic Retrofitting Programs

- **Soft story retrofit program**: Mandates seismic upgrades for older apartment buildings.
- **Non-ductile concrete building retrofits**: Strengthens older commercial and residential structures.
- **Hospitals and emergency facilities retrofitting**: Ensures critical services remain operational post-earthquake.

Policy and Regulatory Measures

- Assembly Bill (AB) 1857: Strengthens building standards for multi-story structures.
- AB 2681: Requires cities and counties to inventory vulnerable buildings.
- Updated California Building Code (CBC): Enforces stricter seismic design criteria for new construction.
- Public Education: Teaching to Drop, Cover and Hold On; the household preparedness checklist, educate residents on emergency response, retrofitting, and disaster preparedness.
- Early Warning/ ShakeAlert System: Provides real-time earthquake early warnings to residents via mobile alerts and public messaging.
- Public earthquake drills: Annual Great California ShakeOut encourages preparedness.

6.3.9 Summary

Los Angeles County remains at high risk for devastating earthquakes, with scientific projections indicating a strong likelihood of a significant seismic event in the coming decades. The region has experienced numerous historic earthquakes, and the potential for future large-scale disasters remains ever-present. While advances in engineering, emergency preparedness, and mitigation efforts have improved resilience, challenges persist, particularly regarding aging infrastructure and vulnerable communities. Continued investments in retrofitting, public education, and early warning systems will be critical in minimizing casualties, economic losses, and recovery challenges in future earthquakes.



6.4 Extreme Heat

6.4.1 Nature

Extreme heat refers to prolonged periods of high temperatures, often accompanied by high humidity, posing significant health risks such as heat exhaustion and heat stroke. The urban heat island (UHI) effect, prevalent in densely built areas like Los Angeles County, intensifies these conditions by absorbing and retaining heat. The changing climate conditions through time in the region exacerbate for the rising of daily temperature and for the increasing of extreme heat days in the County. This leads to health issues, increase energy demand, and strain on infrastructure.



6.4.2 Location

Los Angeles County is particularly susceptible to extreme heat due to its diverse geography and urban density. All of Los Angeles County may experience extreme heat, nonetheless inland regions, including the valleys and high desert areas experience

higher temperatures compared to coastal areas. The urban heat island (UHI) effect can increase temperatures in cities and developed areas than the less developed areas. Urban centers with extensive concrete and asphalt surfaces further amplify heat retention, contributing to elevated temperatures and increased UHI effect in the county.

6.4.3 Extent

The severity of heat events in Los Angeles County has been increasing. Projections indicate a significant rise in the frequency and intensity of heat waves, with inland areas potentially experiencing temperatures exceeding 110°F. The urban heat island effect can cause urban areas to be several degrees warmer than their rural counterparts, exacerbating the impact of heat waves. The chart below shows the levels of heat wave impacts used to measure heatwave severity. HeatRisk, an experimental measure developed by the NWS in collaboration with the CDC, classifies heat events by their impact on human health. It ranges from Green (0) which is little or no risk to Magenta (4), which means extreme heat with no overnight relief.

Category	Figure 6.4.1 Risk of Heat-Related Impacts
Green 0	Little to no risk from expected heat.
Yellow 1	Minor - This level of heat affects primarily those individuals extremely sensitive to heat, especially when outdoors without effective cooling and/or adequate hydration.
Orange 2	Moderate - This level of heat affects most individuals sensitive to heat, especially those without effective cooling and/or adequate hydration. Impacts possible in some health systems and in heat-sensitive industries.
Red 3	Major - This level of heat affects anyone without effective cooling and/or adequate hydration. Impacts likely in some health systems, heat-sensitive industries and infrastructure.
Magenta 4	Extreme - This level of rare and/or long-duration extreme heat with little to no overnight relief affects anyone without effective cooling and/or adequate hydration. Impacts likely in most health systems, heat-sensitive industries and infrastructure.

National Weather Service (NWS), 2024

August, being the hottest month of the year that the planning area experiences the Figure 6.4.2 below shows, the average high temperature for August 2024 in Los Angeles County. As shown, the temperature varies by location but remains higher than average monthly temperature.



Figure 6.4.2, Mean Max Temperature for August 2024, National Weather Service

6.4.4 History

Because of the changing climate conditions and the geographical location, Los Angeles County has been experiencing extreme heat waves in the past years. It has a history of extreme heat events, with temperatures frequently reaching 100 degrees or more, especially during the summer months. In some cases, these extreme heat events are record-breaking heat waves surpassing their all-time highs.

Extreme Heat events include:

- **August 2020:** A severe heatwave led to widespread power outages, affecting nearly 500,000 residents.

- **September 2020:** The San Fernando Valley recorded a record high temperature of 121°F.
- **August 2022:** A record-breaking heatwave in late summer exceeded 100°F
- **September 2024:** A severe September heatwave pushed temperatures 10-20°F above normal, hitting 109°F in Long Beach

The History of Extreme heat events highlight the increasing trend of extreme heat occurrences in the region. There have been no federal declarations or state proclamations for extreme heat in the last five years. Even though there were no declared extreme heat emergencies, the county has issued several heat alerts and taken measures to protect residents from the impacts of heat waves during these periods.

6.4.5 Probability

Extreme heat events are an annual occurrence in Los Angeles County, though severity of such events vary per year based on other conditions, such as El Niño. Climate models project a substantial increase in the likelihood of extreme heat events in Los Angeles County. By mid-century, the county could experience more than five major heat waves annually, with some models suggesting up to tenfold increases in frequency. This heightened probability necessitates proactive mitigation and adaptation strategies.



Figure 6.4.3, Average Temperature 1900-2025, NOAA, NCEI, 2025.

6.4.6 Vulnerability

Extreme heat poses a significant and growing threat to Los Angeles County, where rising temperatures, urban heat islands, and widespread social vulnerability intersect. Those most at risk include the elderly, low-income households lacking air conditioning,

people experiencing homelessness (PEH), individuals with access and functional needs (AFN), and the County's large population of outdoor and non-air-conditioned indoor workers. Infrastructure is also strained; electricity demand spikes during heatwaves, often overwhelming the power grid and triggering outages. Water systems experience increased demand and evaporation losses, while roadways and rail lines are subject to buckling or operational delays. In recent years, Los Angeles County has experienced severe consequences from prolonged heat events, reinforcing the urgent need for heat resilience strategies targeting both people and critical services.

Los Angeles County-Specific Impacts and Data

- 491,600 residents experienced power outages during the August 2020 heatwave.
- 96% of the County's 1,000 miles of high-voltage transmission lines are exposed to moderate to high extreme heat risk.
- 1.7 million residents are considered highly vulnerable due to age, income, disability, or chronic health conditions.
- Over 300,000 outdoor workers are at elevated risk for heat-related illness and injury.
- Thousands of heat-related emergency visits occurred during multi-day heat events in 2020 and 2022; especially in neighborhoods with limited shade and high surface temperatures.
- 50+ cooling centers have been activated across the County during recent heatwaves to support at-risk populations.
- High heat contributes to worsened air quality, increased wildfire smoke exposure, and economic losses due to infrastructure damage, productivity decline, and rising healthcare costs.

6.4.7 Impacts

Los Angeles County has faced significant and growing impacts from extreme heatwaves over the past two decades. In August 2020, a prolonged heatwave caused rolling blackouts affecting nearly 500,000 customers, overwhelmed the state's electrical grid, and forced the activation of emergency conservation protocols. That same summer, the San Fernando Valley hit 121°F, leading to widespread strain on

HVAC systems and increased emergency room visits for heat-related illnesses. The 2022 and 2024 heatwaves brought similar conditions—temperatures over 100°F across the region led to localized transformer failures, asphalt buckling, and strain on water delivery systems due to elevated demand. During these events, outdoor workers, the elderly, and low-income residents without access to cooling systems were among the most affected. Economic activity was disrupted, with reports of business closures, service delays, and increased healthcare costs. In 2024, Long Beach reached a record 109°F, causing a spike in electricity demand and triggering emergency energy alerts across Southern California. Heat-related deaths and hospitalizations have also trended upward, particularly in neighborhoods with low tree canopy and high impervious surfaces. These impacts underscore the need for resilient infrastructure and targeted adaptation strategies to safeguard health and essential services.

6.4.8 Mitigation and Preparedness

The most effective way to reduce the negative impacts of an extreme heat event is to develop a comprehensive heat response plan that has individual strategies to effectively manage heat waves during peak seasons of the year. The plan might include forecasting and monitoring, education and awareness, and heat wave response.

To address extreme heat, Los Angeles County has implemented several measures:

- **Cooling Centers:** Establishment of air-conditioned public spaces where residents can seek relief during heatwaves. These centers are facilities such as libraries, community centers, and senior centers. Residents can locate the nearest cooling center using resources provided by the county. *Additional resources can be found at https://ready.lacounty.gov/heat/*
- **Urban Greening Initiatives:** Programs aimed at increasing green spaces, planting trees, and creating parks to provide shade and reduce ambient temperatures. These efforts help mitigate the urban heat island effect.
- **Public Awareness Campaigns:** Educational initiatives to inform residents about heat risks, prevention strategies, and resources available during extreme heat events. These campaigns emphasize the importance of hydration, recognizing heat-related illness symptoms, and utilizing cooling centers.
- **Building Codes and Regulations:** Incorporation of heat-mitigating designs and materials in new constructions and retrofits, such as cool roofs and reflective

pavements, to reduce heat absorption. These measures aim to lower indoor temperatures and decrease reliance on air conditioning.

These strategies are designed to reduce heat exposure, protect vulnerable populations, and enhance community resilience against extreme heat events.

6.4.9 Summary

Extreme heat poses a growing threat to Los Angeles County, with increasing frequency and intensity of heat waves exacerbated by urban heat island (UHI) effects. Understanding these impacts of extreme heat and taking appropriate precautions, residents of Los Angeles County can protect themselves and their communities from this growing climate hazard. The county has undertaken various mitigation efforts, including the establishment of cooling centers, urban greening projects, public education campaigns, and the implementation of heat-conscious building practices. Ongoing adaptation and proactive planning are essential to safeguard public health, infrastructure, and the environment from the adverse effects of extreme heat.

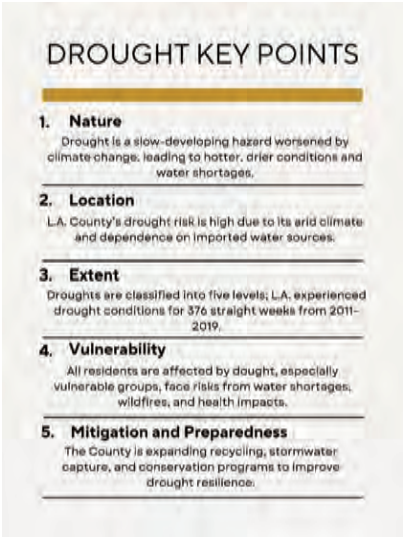


6.5 Drought

6.5.1 Nature

Drought is a prolonged period of below-average precipitation that leads to water shortages, impacting agriculture, ecosystems, and urban water supplies. Unlike other natural disasters, drought develops gradually, making it difficult to predict and mitigate. In Los Angeles County, droughts are a recurring issue due to the region's arid climate and dependence on imported water supplies.

Drought severity is determined by its duration, intensity, geographic extent, and water demand. Climate change is exacerbating these factors, leading to hotter temperatures, reduced precipitation, and increased evaporation rates. Wildfires are also projected to increase in frequency and intensity during drought season.



There are four common classifications of drought:

- **Meteorological Drought**: A prolonged period of below-normal precipitation.

- **Hydrological Drought**: A reduction in surface and groundwater levels due to prolonged precipitation deficits.
- **Agricultural Drought:** A lack of soil moisture that affects crop growth and livestock sustainability.
- **Socioeconomic Drought:** When water shortages impact drinking water supplies, sanitation, public services, and economic activities.

6.5.2 Location

Drought is regional in nature and typically affects the entire Los Angeles County planning area. Given the county's reliance on imported water from the Sierra Nevada snowpack and the Colorado River, reduced availability of these sources significantly increases vulnerability.

6.5.3 Extent

Drought is a recurring natural hazard that can severely impact agriculture, water supply, ecosystems, and communities. To monitor and communicate drought conditions across the United States, the National Drought Mitigation Center (NDMC), in partnership with the U.S. Department of Agriculture (USDA) and the National Oceanic and Atmospheric Administration (NOAA), produces weekly U.S. Drought Monitor maps. These maps categorize drought conditions into five levels based on intensity, duration, and impact on various sectors, including agriculture, water resources, and public health.

Each drought category reflects a different level of severity, from short-term dry conditions that may slow crop growth, to long-term, widespread water shortages that require emergency response. These classifications help decision-makers, farmers, and water managers respond appropriately to emerging or ongoing drought conditions. See Figure 6.5.1 below for more information.

Drought Categories and Associated Impacts:

CATEGORY	DESCRIPTION	POSSIBLE IMPACTS
D4	EXCEPTIONAL DROUGHT	• Exceptional and widespread crop/pasture losses • Critical shortages of water in reservoirs, streams, and wells • Water emergencies and possible mandatory rationing • Severe impacts on ecosystems and wildlife habitats
D3	EXTREME DROUGHT	• Major agricultural losses and pasture failure • Widespread water shortages • Water use restrictions likely enforced • Increased risk of wildfires and heat-related stress
D2	SEVERE DROUGHT	• Crop and pasture losses becoming likely • Water shortages becoming common • Local governments may implement water restrictions • Hydropower generation and irrigation potentially impacted
D1	MODERATE DROUGHT	• Noticeable damage to crops and pastures • Water levels in streams and reservoirs begin to decline • Voluntary water-use restrictions may be requested • Some stress on fish and wildlife populations
D0	ABNORMALLY DRY	• Early signs of drought, with short-term dryness slowing planting and crop growth • If improving lingering water deficits as area recovers from drought • Pastures or vegetation may show signs of delayed recovery

Figure 6.5.1 Drought Categories and Associated Impacts

These classifications not only help guide resources and planning but also raise awareness about the broader consequences of prolonged dryness. Understanding the extent and severity of drought helps ensure timely response and mitigation efforts at local, state, and federal levels.

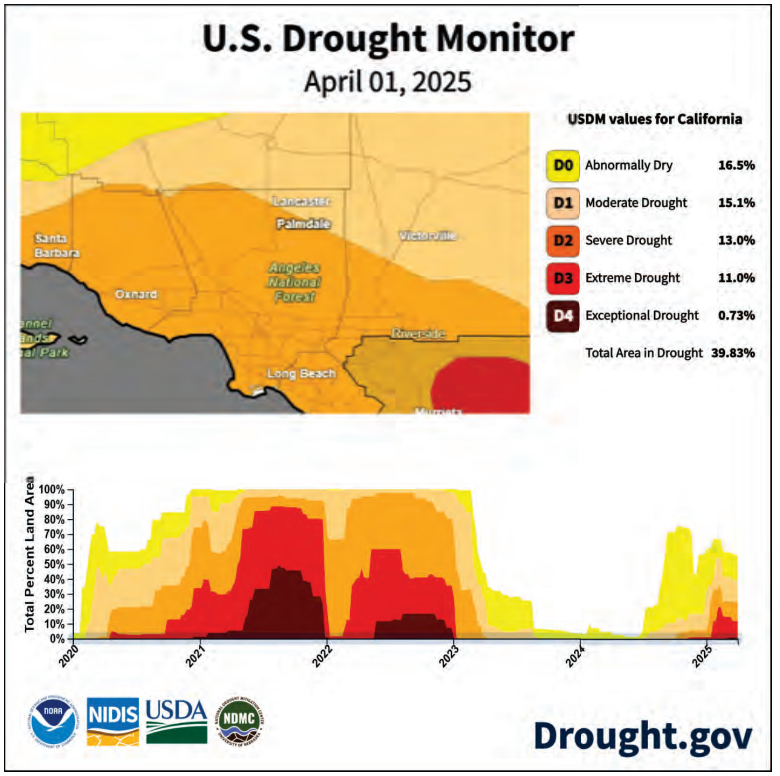


Figure 6.5.2, U.S. Drought Monitor, 2025

6.5.4 History

Los Angeles County has experienced multiple significant droughts, with some lasting several years. There have been no federal declarations or state proclamations for drought in the last five years.

Notable historical drought periods include:

1. 1917-1921 – A widespread drought affecting most of California.
2. 1976-1977 – One of the driest two-year periods in recorded history.
3. 1987-1992 – A six-year drought that severely impacted water supplies and agriculture.
4. 2007-2009 – A prolonged drought leading to state-imposed water restrictions.
5. 2011-2017 – The most severe drought in modern history, resulting in groundwater depletion and mandatory conservation measures.
6. 2020-2022 – California experienced a significant drought, with Los Angeles County experiencing "abnormally dry" conditions.
7. 2024-2025 – Los Angeles County is continuing to experience abnormally dry conditions, with lower average rainfalls and arid conditions.

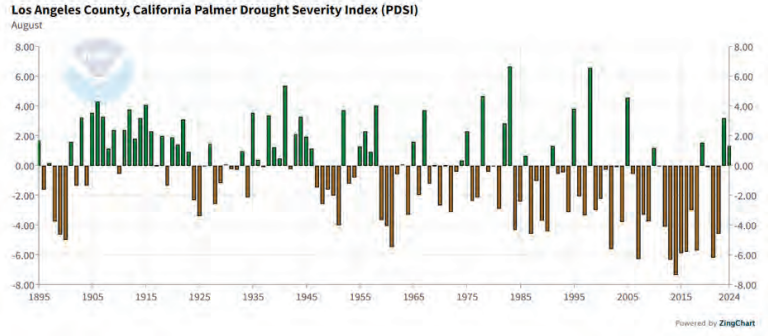


Figure 6.5.3, NOAA Drought Severity Index, 2024

The chart above, the Palmer Drought Severity Index, shows how drought conditions have been changing since 1895. The Palmer Drought Severity Index measures how dry or wet an area is by comparing rainfall and temperature to long-term averages. It gives a number (positive or negative) showing drought severity or excess moisture.

Los Angeles County was in some form of drought for 376 consecutive weeks from December 20, 2011, until March 14, 2019. The State and the County passed several resolutions and regulations at different times to mitigate drought impacts like water

conservation regulations. There were no federally declared drought disasters in the area in the past five years in the planning area.

6.5.5 Probability

Climate scientists predict that Los Angeles County and the rest of Southern California will get drier, while Northern California will get hotter. Rising temperatures contribute to higher evaporation rates and declining snowpack in the Sierra Nevada, a critical source of water for Southern California. The frequency of extreme droughts is expected to increase, reducing available water resources and heightening competition between urban, agricultural, and environmental needs. Long-term droughts have a 100% of occurring every ten-years, with potential for longer and more destructive drought events due to climate change.

6.5.6 Vulnerability

Los Angeles County's 10 million residents face growing vulnerabilities during prolonged droughts, with over 75% of community water systems exhibiting at least one drought-related risk, such as reliance on a single source or aging infrastructure. The County's dependence on imported water—serving over 60% of residents—increases exposure to supply disruptions from reduced Sierra Nevada snowpack and Colorado River allocations. All residents, and visitors of Los Angeles County are affected by water shortages during a prolonged drought conditions.

Vulnerabilities include:

- **Low-income households**, often lacking water-efficient appliances and cooling systems.
- **Agricultural industry** with over 140,000 acres of irrigated farmland in the County is at risk of reduced water allocation and drying pastures for livestock.
- **Wildland-urban interface (WUI) communities**, where over 1 million residents face heightened wildfire risk due to dry vegetation and limited firefighting water supply.
- **Critical infrastructure** operations may be impacted by a range of factors from reduced hydropower availability when reservoir levels decrease to power station cooling challenges.

These vulnerabilities illustrate the far-reaching, cross-sector impacts of drought on the County's economy, environment, and most at-risk communities.

6.5.7 Impacts

Over the past five years, Los Angeles County has experienced intensifying drought conditions marked by rising temperatures, reduced snowpack, and persistent water shortages. By 2022, 75% of the County's community water systems showed at least one drought vulnerability, including reliance on a single water source or aging infrastructure. Public health impacts have also emerged, with 1,113 cases of Valley fever reported in 2020, linked to dry soil and dust exposure. Hydropower reductions during drought periods increased reliance on natural gas, contributing to elevated energy costs for residents. These compounding impacts have strained water supply, health systems, and infrastructure, reinforcing drought as a major and growing hazard for Los Angeles County.

6.5.8 Mitigation and Preparedness

To combat increasing drought risks, Los Angeles County has implemented water conservation policies, infrastructure investments, and emergency response measures. Key strategies include:

Water Management and Conservation

- Expanding water recycling and desalination programs to reduce reliance on imported water.
- Implementing drought-tolerant landscaping initiatives to lower residential and commercial water use.
- Enforcing water efficiency regulations for new developments and upgrading older properties with water-saving strategies.

Infrastructure Improvements

- Enhancing groundwater recharge projects to increase local water storage.
- Upgrading stormwater capture systems to maximize water retention during rainy seasons.
- Developing new water storage facilities to provide additional supply resilience.

Community Preparedness and Public Awareness

- Launching county-wide conservation campaigns to encourage sustainable water use.
- Increasing financial incentives for water-efficient appliances and irrigation systems.
- Strengthening emergency drought response plans to ensure equitable water distribution during crises.

6.5.9 Summary

Drought remains a persistent and growing threat to Los Angeles County's water security and economic stability. Climate change projections indicate more frequent and severe droughts, placing greater strain on water supply systems, public health, and agriculture. By implementing proactive water management strategies, investing in infrastructure resilience, and promoting community awareness, the County can mitigate the long-term impacts of drought and ensure sustainable water resources for future generations.



6.6 Flooding

6.6.1 Nature



Flooding is a persistent and increasingly severe hazard in Los Angeles County, driven by heavy rainfall, storm surge, stormwater drainage, and rising sea levels. The county's complex hydrology, which includes rivers, creeks, and an extensive urban flood control system, is highly susceptible to overflow events when precipitation exceeds drainage capacity. The effects of climate change are exacerbating flood risks by intensifying storms, altering precipitation patterns, and increasing sea levels, leading to greater coastal inundation and inland flash floods.

Unlike other regions that experience seasonal flooding due to snowmelt, flooding in Los Angeles County primarily occurs during winter storms and atmospheric river events, which bring intense rainfall and lightning over short periods.

- The region's high degree of urbanization contributes to flash flooding, as paved surfaces prevent natural absorption of water, leading to rapid runoff and street flooding.

- Burn scars from recent wildfires further compound flood risks by reducing vegetation cover, destabilizing hillsides, and increasing the likelihood of land movement.

Flooding also creates secondary hazards, including erosion, infrastructure damage, water contamination, and transportation disruptions. Stormwater runoff can overwhelm wastewater treatment facilities, leading to hazardous spills. Landslides and mudflows in post-wildfire areas pose additional risks to homes, roads, and critical infrastructure. These compounding threats highlight the urgent need for comprehensive flood mitigation efforts to protect communities, infrastructure, and the environment.

6.6.2 Location

Flood hazards are geographically widespread, with more than 240 square miles of land located within the 100- and 500-year floodplains. Historically significant events, such as the 1938 and 1969 floods, as well as more recent storms in 2023 and 2024, have caused substantial damage to infrastructure, triggered evacuations, and challenged long-term recovery efforts. Socially vulnerable populations, including older adults, individuals with access and functional needs, and low-income households, face disproportionate impacts due to limited financial resources, inadequate insurance coverage, and reduced access to services. The County's flood control system includes concrete river channels, levees, storm drains, debris basins and reservoirs; has helped mitigate some flood risks but remains vulnerable to high-intensity storms that exceed design capacities.

Major Flood-Prone Areas:

- Los Angeles River, San Gabriel River, and Santa Clara River: These major waterways are prone to overflow during extreme storm events, particularly during El Niño years.
- Ballona Creek and Malibu Creek: These urban watersheds experience rapid runoff and flash flooding, especially in developed areas.
- Foothills, Valleys, and Recent Burn Scar Areas: Post-wildfire regions face heightened risk of flash floods and debris flows following storms.
- Antelope Valley: In desert regions, stormwater pools into temporary lakes, causing flooded roadways and infrastructure damage.

- Coastal Communities: Rising sea levels and storm surges threaten beachfront properties, harbors, and businesses.

Urban areas are particularly vulnerable due to impervious surfaces and outdated drainage systems. During intense storms, neighborhoods in Downtown Los Angeles, South LA, and the San Fernando Valley frequently experience street flooding and traffic disruptions, demonstrating the limitations of existing infrastructure in handling modern storm events.

For a better visual representation of this Flooding Hazard within the LA County planning area, please reference Appendix A for flood and inundation maps.

6.6.3 Extent

Los Angeles County faces a significant and evolving flood risk, with impacts ranging from localized urban inundation to widespread riverine flooding and destructive debris flows. Although the County has invested heavily in flood control infrastructure; including an extensive network of dams and debris basins; these systems are increasingly strained and cannot fully eliminate the threat. A growing number of residents are exposed to dangerous flooding each year, a situation made worse by the limitations of aging infrastructure and the complexities of urban hydrology. Intense rainfall events, especially those associated with atmospheric rivers, are occurring more frequently and with greater severity, often overwhelming drainage systems and resulting in severe flooding of streets and neighborhoods. Compounding this risk are burn scars from recent wildfires, which heighten the likelihood of mudslides and debris flows that threaten both life and property. As climate patterns shift and extreme weather events become more common, the flood vulnerability of Los Angeles County continues to deepen across its diverse geography.

Flood severity is typically measured using the 100-year and 500-year flood recurrence intervals, which indicate a 1% and 0.2% annual probability of flooding, respectively. These designations guide floodplain management and mitigation efforts.

Key Flood Hazard Statistics in Los Angeles County:

- 243.32 square miles (5.11%) of land have a 0.2% annual flood probability.
- 4.19 square miles (0.09%) have a 1% annual flood probability.

Key Flood Hazard Statistics for Unincorporated Los Angeles County:

- 64.77 square miles (2.13%) have a 0.2% flood probability.
- 1.23 square miles (0.04%) have a 1% flood probability.

As climate change accelerates sea-level rise and extreme rainfall events, these flood-prone areas may expand, affecting more residents, infrastructure, and businesses.

FLOOD IMPACT ON LAND AREA		
Area	**0.2% Annual Flood Probability**	**1% Annual Flood Probability**
Los Angeles County	243.32 sq. mi. (5.11%)	4.19 sq. mi. (0.09%)
Unincorporated LA County	64.77 sq. mi. (2.13%)	1.23 sq. mi. (0.04%)

6.6.4 History

Los Angeles County has experienced numerous severe flood events, many of which have caused catastrophic damage to infrastructure, property, and human life. Over the decades, climate variability, rapid urbanization, and an aging flood control system have led to repeated flooding disasters. There have been no federal declarations or state proclamations for earthquakes in the last five years.

Below are some of the most significant historical and recent flood events affecting the region.

Notable Flood and Lightning Events in Los Angeles County:

- **1938 Los Angeles Floods**: One of the deadliest floods in county history, caused by weeks of torrential rainfall, resulting in over 100 deaths, the destruction of thousands of homes, and widespread infrastructure damage, particularly to bridges and roadways.
- **1969 Winter Storms**: Heavy rains led to massive debris flows in the San Gabriel Mountains, severe urban flooding across Los Angeles, and multiple dam breaches, prompting major evacuations.
- **1992-1993 El Niño Floods**: A series of storms triggered landslides, flash flooding, and major coastal erosion, with significant damage to Pacific Coast Highway and residential areas.
- **2017 Winter Storms (DR-4305)**: Record-breaking rainfall led to significant urban flooding, road closures, and mudslides, with severe impacts across multiple communities.

- **October 2021**: Los Angeles County experienced a rare and intense thunderstorm with a significant amount of lightning.
- **September 2022 Hurricane Kay**: A pacific hurricane that caused significant rainfall along with risk of mudflows, coastal flooding, and coastal erosion.
- **January 2023 Atmospheric River Event (DR-4683)**: Heavy rainfall overwhelmed storm drains, causing significant flooding in Hollywood, Baldwin Hills, and low-lying inland areas, leading to evacuations and infrastructure damage.
- **February 2023 Los Angeles Floods (DR-4699)**: A series of intense storms caused widespread flash flooding, freeway closures, and landslides, demonstrating the increasing vulnerability of the county's urban areas to extreme precipitation events.
- **August 2023 Tropical Storm Hilary (DR-4750)**: Several locations in the mountains of Southern California received over 10 inches of rainfall which set daily and/or monthly rainfall records, in many locations in Southern California, including within Los Angeles County. It also created significant threat of flash and riverine flooding prompted the evacuation of numerous vulnerable communities near burn scars in the region.
- **December 2023 Pacific Storm**: Storm surges and extreme coastal flooding led to significant erosion along the coastline, particularly impacting Marina del Rey, Long Beach, and Venice Beach.
- **February - March 2024 Atmospheric River Storm (DR-4769)**: One of the most intense rainfall events in recent history, resulting in severe flash floods, mudslides, and power outages, with many homes and businesses sustaining flood damage.

6.6.5 Probability

Flood recurrence in Los Angeles County is influenced by both natural climate variability and the increasing effects of climate change. Historically, severe flooding is most likely during strong El Niño events, which occur approximately every 2 to 7 years and can persist for several months to multiple years. These events bring elevated precipitation levels and increase the likelihood of both inland and coastal flooding.

As climate change accelerates, the frequency and intensity of flood-generating events are expected to increase, altering traditional recurrence intervals and expanding the areas at risk. There is a 95% chance of a flooding event occurring each year withing Los Angeles County.

Key climate-related drivers include:

- **Sea-Level Rise**: Projected to rise by 6 inches to over 2 feet by 2050, increasing the risk of tidal and storm surge flooding in coastal communities.
- **Atmospheric River Events**: According to the 2024 THIRA, these events are becoming more frequent and intense, leading to elevated flash flood and debris flow risks.
- **El Niño Cycles**: Still expected every 2 to 7 years, but with increased variability and storm intensity that can overwhelm local drainage and flood control systems.

These evolving conditions challenge existing floodplain maps and design assumptions, highlighting the need for adaptive planning, updated risk models, and continued investment in resilient infrastructure and flood mitigation strategies.

6.6.6 Vulnerability

Los Angeles County faces widespread and layered vulnerabilities to flooding, shaped by a combination of environmental exposure and complex social factors. Physical vulnerability is pronounced in areas located within FEMA-designated Special Flood Hazard Areas (SFHAs), post-wildfire burn scars, and low-lying urban drainage basins that are prone to flooding. However, the degree of risk is significantly heightened for certain populations who may lack the resources or capacity to prepare for, respond to, and recover from flood events. Socially vulnerable groups, including older adults, individuals with disabilities or access and functional needs (AFN), mobile home residents, people experiencing homelessness, and low-income households; are more likely to reside in structurally vulnerable housing.

According to the 2021 Los Angeles County Comprehensive Floodplain Management Plan, more than a quarter of residents living within the 100-year floodplain earn less than $20,000 annually, underscoring the disproportionate economic burden faced by those least able to absorb the costs of recovery. Climate vulnerability data further demonstrates that marginalized communities in flood-exposed areas face elevated risks due to flooding events. The vulnerability landscape is further complicated by a shortage of affordable flood-resilient structures, and an increasing number of residents living in areas newly exposed due to climate-driven changes in precipitation and runoff patterns.

6.6.7 Impacts

Flooding in Los Angeles County leads to a broad range of direct and cascading impacts on people, infrastructure, environment, and the economy. The County's extensive network of critical facilities, including hospitals, fire stations, wastewater treatment plants, schools, and power substations. These areas face recurring exposure within both 100- and 500-year floodplains. Damage to these facilities not only compromises their physical integrity but also threatens their functionality during emergency response operations.

Flooding often disrupts lifeline services such as electricity, potable water, sanitation, and transportation, with rural and unincorporated areas facing the greatest challenges to rapid restoration. Mobile homes, frequently concentrated in low-lying or under-drained neighborhoods, are especially susceptible to flood damage due to construction limitations and inadequate protective measures. Previous flood events have resulted in significant debris flows, road closures, train stoppages, and damage to public and private structures.

Primary Vulnerabilities & Impacts:

- Over 1,470 structures are estimated to be damaged in a 100-year flood event, with total damages exceeding $769.7 million in property losses in unincorporated Los Angeles County.
- Additionally, more than 180 critical facilities are exposed in the 500-year floodplain, while 70 are within the 100-year floodplain, including transportation assets, utilities, emergency services, and hazardous materials facilities.
- A 100-year flood event could displace over a thousand people with many requiring sheltering, support and recovery efforts.
- Approximately 19,563 tons of building-related debris could be generated by a 100-year flood event, with clean-up requiring more than 780 truckloads, posing logistical, environmental, and public health challenges.
- 28.6% of households in the 100-year floodplain are economically disadvantaged, earning under $20,000 per year, limiting their ability to evacuate, recover, or pay for mitigation improvements.
- A large share of flood-prone properties are either uninsured or underinsured. The average flood insurance claim payout is $7,298, which is only about 1% of the 2019

average replacement cost of structures in the floodplain—indicating significant gaps in financial resilience.

- Wildfire burn scars and post-fire hydrophobic soils significantly increase flood and debris flow risks, particularly in foothill and canyon communities. This hazard continues to grow in severity with climate-driven fire seasons.

Estimated Damage to Critical Facilities in Unincorporated Areas from 100-Year Flood

Sector	Number of Facilities Affected	Average % of Total Value Damaged	
		Structure	Content
Safety & Security	1	7.56	10.24
Food, Water & Sheltering	9	6.72	18.73
Health & Medical	0	N/A	N/A
Energy	1	23.90	47.79
Communications	0	N/A	N/A
Transportation	59	1.41	8.86
Hazardous Materials	0	N/A	N/A
Total/Average	**70**	**9.90**	**21.40**

Estimated Damage to Critical Facilities in Unincorporated Areas from 500-Year Flood

Sector	Number of Facilities Affected	Average % of Total Value Damaged	
		Structure	Content
Safety & Security	4	28.39	37.56
Food, Water & Sheltering	41	7.73	27.01
Health & Medical	0	N/A	N/A
Energy	1	23.90	47.79
Communications	2	5.00	16.00
Transportation	107	3.38	19.74
Hazardous Materials	30	10.00	15.00
Total/Average	**185**	**13.07**	**27.18**

Charts Source: LA County Public Works; 2021 County Comprehensive Flood Plan

6.6.8 Mitigation and Preparedness

Los Angeles County's flood mitigation strategy reduces hazard exposure, enhances community resilience, and supports long-term climate adaptation. Grounded in FEMA's National Mitigation Framework, CalOES planning guidance, and local policy, the County implements both structural and non-structural measures to address current and future flood risks. Core actions include regular maintenance and targeted upgrades to

stormwater infrastructure, restoration of floodplains, and integration of flood hazard data into land use planning. The County also prioritizes the protection of critical facilities and vulnerable housing through site retrofits, property acquisition, and elevation programs. Public outreach is conducted through a bilingual, ADA-accessible Program for Public Information, which promotes flood safety awareness, emergency preparedness, and participation in the National Flood Insurance Program (NFIP).

To ensure that mitigation is both data-driven and community-centered, the County utilizes climate projections and FEMA's HAZUS modeling to inform investments, while coordinating with regional partners to align local actions with broader watershed strategies. Key components of the approach include:

- Upgrading culverts, debris basins, and drainage systems to manage increased runoff
- Promoting low-impact development (LID) and incorporating green infrastructure in urban design
- Updating ordinances and the General Plan to discourage development in high-risk areas
- Maintaining inventories of repetitive loss areas and prioritizing resources for the most vulnerable populations

This comprehensive strategy ensures Los Angeles County not only meets federal and state standards but advances flood risk reduction in a way that safeguards people, property, and natural systems for the future.

6.6.9 Summary

Flooding is one of the most persistent and complex natural hazards in Los Angeles County, intensified by climate change, urbanization, and aging infrastructure. The Los Angeles County region experiences a range of flood types, including stormwater runoff, flash flooding, coastal inundation, and post-wildfire debris flows. These events are most common during winter storms and atmospheric river systems. High-density development, extensive paved surfaces, and fire-damaged hillsides contribute to rapid runoff and increased overall flood vulnerability. Areas along (but not limited to) the Los Angeles, San Gabriel, and Santa Clara Rivers, as well as coastal communities and foothill regions, are particularly at risk.

Los Angeles County's mitigation strategy is proactive and multifaceted. It includes infrastructure upgrades, nature-based solutions, land use policy updates, and public education. Core priorities focus on protecting critical facilities, reducing exposure in high-risk housing, and promoting community resilience. Planning efforts are supported by FEMA's HAZUS risk modeling and local climate projections. Despite progress, more than 750,000 residents remain at risk from major flood events, reinforcing the need for continued investment in comprehensive, flood risk reduction across the county.

6.6.10 National Flood Insurance Program (NFIP) Repetitive Loss (RL)

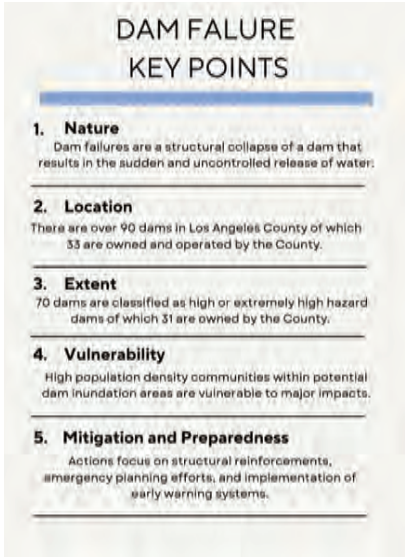
According to the Los Angeles County Public Works, there are 55 Repetitive Loss (RL) properties in 28 RL areas of Unincorporated Los Angeles County as of 2025, and 8 Severe Repetitive Loss Properties (SRLP). A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than $1,000 were paid by the National Flood Insurance Program (NFIP) in any rolling 10-year period since 1978. Updated location information about RL properties in Unincorporated Los Angeles County were not available during the drafting of this plan, but is being finalized and will be included in subsequent hazard mitigation efforts. Data from 2011 showed that 24 RL properties were located in the SFHA. At the time, the Los Angeles County Public Works stated, "the majority of the repetitive losses are associated with localized urban drainage flood problems, even for properties within a FEMA-designated flood zone." The Los Angeles County Public Works oversees RL mitigation projects.



6.7 Dam Failure

6.7.1 Nature

Dam failure refers to the structural collapse of a dam that results in the sudden and uncontrolled release of stored water. Such failures can occur due to age-related deterioration, inadequate spillway capacity, structural damage from seismic activity or flooding, and poor maintenance. The catastrophic release of water from a dam failure has the potential to cause human casualties, significant economic loss, and environmental destruction. This type of disaster is particularly dangerous because it can occur suddenly, leaving little time for evacuation or emergency response efforts.



The magnitude of flooding from dam failure often exceeds the capacity of downstream channels, causing rapid inundation of surrounding areas. This flooding can lead to extensive property damage, erosion, infrastructure destruction, and contamination of water supplies. Additionally, secondary hazards such as landslides and debris flows can be triggered, compounding the disaster's impact. The structural stress on dams may rise as dams age, and climate variability increases the frequency of extreme precipitation events. Planning efforts include both dams and debris basins. To simplify language of the plan both reservoir dams and storm water debris basins will be referred to as dams.

6.7.2 Location

Los Angeles County has over 90 dams regulated by the California Department of Water Resources' Division of Safety of Dams (DSOD). Fifteen (15) of these dams and eighteen (18) debris basins are owned and operated by the Los Angeles County Public Works (PW). In 2017, the California Legislature mandated that all state-jurisdictional dams (excluding those classified as Low Hazard) develop dam breach inundation maps and Emergency Action Plans (EAPs) approved by DSOD and Cal OES.

Many of these dams are located near highly populated areas, increasing the potential for human and economic impacts during a failure event. Seventy (70) dams are classified as High or Extremely High hazard potential dams, meaning their failure could result in significant loss of life and widespread property damage.

The Whittier Narrows Dam, reclassified as the U.S. Army Corps of Engineers' (USACE) highest-priority dam safety concern, poses one of the greatest risks due to its potential to flood highly populated areas from Pico Rivera to Long Beach. USACE has determined that an extreme storm event has a 1 in 900 (0.1%) chance of causing catastrophic failure annually. Mitigation actions related to County-owned dams are prioritized based on their hazard level and potential to impact populated areas.

For a better visual representation of this Dam Failure Hazard within the LA County planning area, please reference Appendix A for all the County owned dams and debris basins maps.

6.7.3 Extent

The Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures (FEMA P-946, 2013) categorizes dam hazards into four classifications:

- **Low Hazard**: Minimal damage expected, no loss of life.
- **Significant Hazard**: Potential for property damage and economic disruption.
- **High Hazard**: Likely to result in loss of life and significant damage to critical infrastructure.
- **Extremely High Hazard (DSOD Classification)**: Could cause large-scale fatalities and inundate areas with over 1,000 residents.

Given the population density of Los Angeles County, a dam failure classified as High or Extremely High Hazard would likely cause substantial human casualties, displace entire communities, and inflict severe economic and environmental damage. Table 6-3 and 6-4 below shows a list of dams and debris basins owned by PW along with their hazard classifications. Potential mitigation actions described in this AHMP are only applicable to the dams and debris basins owned by PW and implementation of these actions are the responsibility of the PW Stormwater Engineering Division – Dams Section.

Table 6-3: Los Angeles County PW Dam Hazard Status

Dam Name	Hazard Status	Location
Big Dalton	Extremely High	Glendora, CA
Big Santa Anita	Extremely High	Monrovia, CA
Big Tujunga No. 1	Extremely High	Tujunga, CA
Cogswell	Extremely High	Azusa, CA
Devils Gate	Extremely High	LA Canada Flintridge, CA
Live Oak	Extremely High	La Verne, CA
Morris	Extremely High	Azusa, CA
Pacoima	Extremely High	Pacoima, CA
Puddingstone	Extremely High	San Dimas, CA
Puddingstone Diversion	High	La Verne, CA
San Dimas	Extremely High	La Verne, CA
San Gabriel No. 1	Extremely High	Azusa, CA
Sawpit	Extremely High	Monrovia, CA
Sierra Madre	High	Sierra Madre, CA
Thompson Creek	Extremely High	Claremont, CA

Table 6-4: Los Angeles County PW Debris Basin Hazard Status

Debris Basin Name	Hazard Status	Location
Bailey Debris Basin	High	Sierra Madre, CA
Big Dalton Debris Basin	High	Glendora, CA
Blanchard Debris Basin	High	Tujunga, CA
Brand Debris Basin	High	Glendale, CA
Eaton Wash Debris Basin	Extremely High	Pasadena, CA
La Tuna Debris Basin	Extremely High	Sun Valley, CA
Laguna Regulating Basin	Significant	Alhambra, CA
Little Dalton Debris Basin	Extremely High	Glendora, CA
Lower Sunset Debris Basin	High	Burbank, CA
Morgan Debris Basin	High	Glendora, CA
Rubio Debris Basin	High	Altadena, CA
Santa Anita Debris Basin	Low	Arcadia, CA
Sawpit Debris Basin	Extremely High	Monrovia, CA

Debris Basin Name	Hazard Status	Location
Schoolhouse Debris Basin	High	Los Angeles, CA
Sierra Madre Villa	Extremely High	Sierra Madre, CA
Stevenson Ranch	High	Stevenson Ranch, CA
Stough Debris Basin	Extremely High	Burbank, CA
Wilson Debris Basin	High	Los Angeles, CA

6.7.4 History

Los Angeles County has experienced one of the deadliest dam failures in U.S. history:

- St. Francis Dam Failure (March 12-13, 1928):
  - Released 12.4 billion gallons of water
  - At least 411 fatalities
  - Devastated towns from San Francisquito Canyon to Ventura County
  - Resulted in sweeping changes to California dam safety regulations and the creation of state oversight for civil engineers

While no major dam failures have occurred in recent decades, concerns over aging dam infrastructure, seismic risks, and increasing climate variability have raised alarms about future risks. Studies indicate that many California dams, including those in Los Angeles County, require structural updates to withstand modern hydrological conditions and potential seismic activity. There have been no federal declarations or state proclamations for dam failure in the last five years.

6.7.5 Dam Coordination

Los Angeles County Public Works coordinates with local, state, and federal agencies to mitigate flood risk hazards to downstream communities from its dams. At the local level, PW works with cities and public agencies during development of Emergency Action Plans (EAP). This provides local stakeholders with the opportunity to review the EAP, provide feedback, and confirm responsibilities and roles during an EAP activation. At request from local jurisdictions, PW may provide tours of its dam facilities, where information on dam safety and the potential hazards associated with dam failures are shared.

At the state level, PW works with the DSOD to meet compliance with state dam safety standards and flood management at all of PW's dams. This includes annual dam

inspections, review, approval, and oversight of dam construction projects, review of dam safety monitoring, and oversight of other dam safety regulatory activities. PW also coordinates with various state agencies, including DSOD, Cal OES, and Caltrans during development of EAPs.

At the federal level, PW works with the Federal Energy Regulatory Commission (FERC) to meet compliance with state dam federal standards and flood management at PW's San Gabriel Dam, which is under FERC jurisdiction. This includes annual dam inspections, review, approval, and oversight of dam construction projects, review of dam safety monitoring, EAP coordination, and oversight of other dam safety regulatory activities. PW also coordinates with the United States Army Corps of Engineers (USACE) on operations of interconnected dam facilities and emergency response planning for USACE facilities that may be in the pathway of dam failure impacts.

Information Sharing

PW provides critical information to relevant local, state, and federal stakeholders to address hazard mitigation related to dam safety. This includes:

- **Emergency Action Plans (EAPs):** EAPs outline the roles, responsibilities, and procedures to follow in the event of a dam emergency. The EAPs include inundation maps, which show areas that would be affected by a dam failure, helping to identify populations at risk. These plans are shared with stakeholders to ensure a coordinated response. Due to the sensitive nature of information contained within the EAPs, they are confidential and not released to the general public.
- **Inundation Maps:** Inundation maps are critical tools for identifying areas and populations at risk in the event of a dam failure. They also indicate potential impacts on critical infrastructure facilities such as hospitals, schools, and transportation networks. These maps are shared with relevant stakeholders recognized in the EAP and are available to the general public through the DSOD Dam Breach Inundation Map Web Publisher.

6.7.6 Probability

Los Angeles County contains over 90 state-jurisdictional dams, with approximately 70 classified as High or Extremely High Hazard by the California Division of Safety of Dams (DSOD), meaning their failure could result in loss of life and significant property damage.

Although comprehensive failure probabilities are not published for each dam, FEMA and DSOD guidance suggest that the general annual probability of failure for High Hazard dams nationwide ranges from 0.01% to 0.1% (or 1 in 10,000 to 1 in 1,000) depending on maintenance, age, seismic vulnerability, and other site-specific factors.

Applying this range to Los Angeles County:

- The aggregate annual probability of a significant dam failure event in the county—across one or more of the 70 high-risk dams—is estimated at between 0.1% and 0.5% annually, factoring cumulative exposure and different hazard classifications. (Such as earthquake or flood related)
- Climate change, aging infrastructure, and seismic activity in Los Angeles County increase systemic risk across multiple structures simultaneously.

In summary, while the individual likelihood of failure for any one dam is very low, the overall countywide probability of at least one major dam failure event is low but still warrants continued vigilance, maintenance, and emergency planning.

6.7.7 Vulnerability

A catastrophic dam failure in Los Angeles County could have severe consequences for hundreds of thousands of residents. The densely populated nature of the county, combined with the location of several large dams near residential and commercial areas, increases the potential for widespread displacement, loss of life, and economic damage. The 2024 THIRA identifies multiple high-risk zones where dam failure could result in extensive flooding and mass evacuations.

- High-risk dams, among others, pose a significant threat to densely populated communities. A breach in any of these dams could inundate entire neighborhoods, affecting more than 500,000 residents in low-lying areas and floodplains.
- Socially vulnerable populations, including elderly individuals, the AFN community, people experiencing homelessness, low-income communities, and non-English-speaking residents face heightened risks during evacuations and recovery due to limited mobility, financial constraints, and access to resources.
- Educational and healthcare institutions are at risk, with several schools, hospitals, and long-term care facilities located in flood-prone areas. A major dam failure could result in school closures, displacement of students, and disruption of healthcare services.

- Evacuation and emergency sheltering demands would be substantial, requiring the rapid mobilization of resources to support displaced residents. Temporary shelters, emergency medical services, and logistical support would need to be activated to accommodate evacuees.

Los Angeles County relies heavily on dams and reservoirs for water storage, flood control, and supply regulation. Catastrophic dam failure poses an acute threat to life and property, especially in low-lying, highly populated downstream areas.

Extent of Exposure

- **Total Area Exposed**: 490.64 sq mi
- **Supervisorial Districts (SD) Impacted**:
  - **SD5**: 223.88 sq mi (7.97%)
  - **SD1**: 162.25 sq mi (45.98%)
  - **SD2**: 66.57 sq mi (18.32%)
  - **SD3**: 25.76 sq mi (5.97%)
  - **SD4**: 12.17 sq mi (5.72%)
- **Critical Facilities Affected**:
  - Fire Department: 112 (33.22%)
  - Public Works: 92 (40.00%)
  - Health Services: 29 (44.62%)
  - Public Health: 17 (42.50%)
  - Libraries: 30 (34.48%)
  - Parks: 65 (35.50%)
  - Education: 34 (41.46%)

Problem Statement

Dam failure, while rare, can have catastrophic consequences in densely populated downstream areas. With significant portions of critical infrastructure exposed—particularly in SD1 and SD5—planning for emergency evacuations, early warning systems, infrastructure hardening, and downstream development regulation is critical to saving lives and reducing loss.

A failure or breach of a High Hazard Potential Dam (HHPD) in Los Angeles County would result in catastrophic consequences for downstream communities, with the greatest vulnerabilities concentrated in densely populated urban areas. Rapid and massive flooding would likely inundate residential neighborhoods, commercial districts, and industrial zones within minutes to hours, depending on proximity and topography. Critical infrastructure—including hospitals, fire and police stations, schools, and major transportation corridors—would be severely impacted, disrupting emergency services and evacuation routes. Thousands of people, including vulnerable populations such as those with Access and Functional Needs (AFN), elderly residents, and low-income households, would face immediate life-threatening conditions, displacement, and limited access to medical care or shelter. Economic losses would be compounded by damage to utilities, including power substations and water systems, potentially leaving large swaths of the region without essential services. The sheer scale of devastation from a dam failure, especially at facilities such as Whittier Narrows or Castaic Dam, underscores the critical importance of continued risk reduction, early warning systems, and dam rehabilitation efforts.

6.7.8 Data Limitations

A limitation of this AHMP is that planning efforts only covered PW-owned dams in Los Angeles County. Future mitigation planning should include other dam owners and operators in Los Angeles County such as the US Army Corps of Engineers. The data on high-hazard dams reviewed during the 2025 AHMP planning process was generally suitable for the analysis required. Future opportunities for obtaining additional data to be considered in the next update to the plan should:

- Incorporate more current information as it becomes available.
- Assess any new or updated EAPs for dams owned by Los Angeles County.
- Identify and review more current structural or condition assessment data to inform future risk assessments.
- Involve other dam owners within Los Angeles County in future planning efforts.

6.7.9 Impacts

A dam failure in Los Angeles County would have catastrophic and immediate consequences for life, property, and critical infrastructure, particularly in the densely populated downstream areas. The sudden release of impounded water from a High or Extremely High Hazard dam could inundate neighborhoods within minutes, allowing little to no time for evacuation. More than 500,000 residents live within identified dam inundation zones, many of whom are in socially vulnerable populations—including

individuals with limited mobility, low-income households, and people experiencing homelessness—making rapid evacuation and sheltering especially challenging. County-owned high hazard potential dams and their locations are listed in Table 6-3. Inundation maps for County-owned high hazard potential dams are listed in Appendix A-7.

Critical infrastructure is also at significant risk. Hospitals, fire stations, law enforcement facilities, emergency operations centers, schools, and wastewater treatment plants located in downstream zones may be damaged or rendered inoperable, severely disrupting emergency response and life-sustaining services. Major transportation routes such as interstates, rail lines, and arterial roads could be submerged or washed out, impeding rescue and recovery efforts. Additionally, power substations, water distribution networks, and telecommunications infrastructure could suffer cascading failures, contributing to widespread outages and prolonged recovery periods.

The economic consequences of dam failure would be immense. Beyond property damage, business operations in inundated areas would halt, leading to loss of employment, tax revenue, and economic activity. Industrial zones (especially those near major flood control reservoirs or channels) could potentially release hazardous materials if overwhelmed, posing secondary environmental and public health hazards. Debris accumulation, sedimentation, and contamination could severely impact ecosystems, water quality, and flood control infrastructure downstream, complicating both emergency cleanup and long-term environmental recovery.

Given the scale of potential impacts, dam failure is considered a stable low-probability but high-consequence hazard in Los Angeles County, requiring continued investment in structural mitigation, emergency preparedness, and public awareness to reduce the severity of its effects.

6.7.10 High Hazard Potential Dams Goals

Goal 1: Enhance resilience across dam/debris basin infrastructure, including high-hazard potential dams, and other critical facilities within dam inundation zones.

Goal 2: Encourage structural reinforcement or retrofits for aging and vulnerable dams.

Goal 3: Ensure all dams/ debris basins have updated Emergency Action Plans (where applicable) and updated dam inundation mapping consistent with state standards.

6.7.11 Mitigation and Preparedness

Los Angeles County and state agencies have implemented various mitigation efforts to reduce the risks associated with dam failures:

- **Structural Reinforcements:** Upgrading spillways, strengthening earthen dams, and implementing seismic retrofitting measures.
- **Emergency Action Plans (EAPs):** Mandated by DSOD for all High and Extremely High hazard dams to guide evacuation and response efforts.
- **Early Warning Systems:** Improved flood monitoring and automated alert systems to notify at-risk communities in real-time.

6.7.12 High Hazard Potential Dam Prioritization

The risk assessment within the 2025 AHMP considers the county planning area's vulnerability and potential impacts related to HHPDs. Mitigation actions and planning efforts that are related to mitigating long-term vulnerabilities to County-owned HHPDs will automatically be given a HIGH priority as described in the overall mitigation action prioritization criteria in Section 7.6. The County Departments responsible for implementing the associated mitigation actions, along with the priority, potential funding source, and expected time frame are listed in Section 7.8.

6.7.13 Summary

Los Angeles County has 90 state-jurisdictional dams, with 70 classified as High or Extremely High hazard, meaning their failure could result in widespread loss of life and economic devastation. While regulatory oversight has improved dam safety, aging infrastructure, seismic threats, and increased storm intensity remain challenges. Continued investment in retrofits, early warning systems, and emergency planning is essential to mitigating the risk of catastrophic dam failures.



6.8 Land Movement

6.8.1 Nature

Land movement refers to the downward movement of rock, soil, or debris along a slope due to gravity. This process can occur suddenly or gradually over time, depending on contributing factors such as soil composition, slope stability, and external triggers. Land movement encompass a variety of movement types including mudflows, rockfalls, debris flows, land slumps, land subsidence, and soil movement. In Los Angeles County, the diverse topography and geological formations make certain areas more prone to land movement, particularly during periods of intense precipitation, seismic activity, or human land-use modifications.



Climate change exacerbates land movement by increasing the frequency and intensity of extreme weather events, such as heavy rainfall and flooding, which can lead to accelerated erosion and heightened landslide risks.

Land movement often occur in conjunction with other natural hazards, exacerbating their impact. Some of the primary contributing factors include:

- **Seismic Activity**: Earthquakes can destabilize slopes, leading to land movement and rockfalls. The force of seismic shaking can cause sudden failures, particularly in areas with pre-existing instability.
- **Heavy Rainfall and Flooding**: The likelihood of land movement increases after successive storms. Prolonged or intense rainfall saturates soil, reducing its cohesion and triggering slope failures.
- **Coastal Erosion**: Waves and storm surge erode coastal cliffs, leading to instability and eventual collapse, particularly in areas such as County beaches and coastal communities, many of which have previously experienced significant erosion.
- **Wildfires**: Loss of vegetation due to fires reduces the soil's ability to retain moisture, making slopes more susceptible to erosion and land movement during subsequent rain events.
- **Burn Scars**: Wildfire burn scars significantly elevate the risk of land movement by stripping the land of stabilizing vegetation. Areas affected by major fires such as the Woolsey Fire (2018), Bobcat Fire (2020), Bridge Fire (2024), Eaton Fire (2025), and Palisades Fire (2025) have shown increased susceptibility to land movement due to reduced soil stability and rapid runoff during rainstorms.

6.8.2 Location

Los Angeles County is home to multiple regions susceptible to land movement due to steep slopes, unstable geology, and weather patterns. The California Geological Survey (CGS) Landslide Susceptibility Map highlights high-risk areas. For a better visual representation of the Land Movement Hazard within the LA County planning area, please reference Appendix A for maps that show areas that are susceptible to land movement and recent burn scars.

Potential land movement areas include (but are not limited to):

- Santa Monica Mountains
- San Gabriel Mountains
- Sierra Pelona Mountains
- Baldwin Hills
- Puente Hills
- Palos Verdes Hills

These areas are particularly vulnerable due to their steep terrains, weak rock formations, and history of slope movement. Additionally, human activities such as grading, excavation, and construction in these regions can further destabilize the ground, increasing the likelihood of land movement. Areas impacted by past wildfires, known as burn scars, are also highly susceptible to land movement, as the loss of vegetation reduces soil stability and increases erosion risks during heavy rains. This is particularly concerning in wildfire-prone areas such as the Santa Monica Mountains and the foothills of the San Gabriel Mountains, where post-fire land movement have historically caused significant damage.

6.8.3 Extent

The extent of land movement in Los Angeles is significant and varied, influenced by its unique geological setting. According to the 2011 CGS Landslide Susceptibility Map, approximately 750 square miles (15.75%) of Los Angeles County fall within high-risk landslide zones. The highest concentrations of deep-seated landslide susceptibility are distributed as follows:

Table 6-5 Landslide Susceptibility Map

Area	High-Risk Landslide Zones (sq. miles)	Percentage of Total Land Area
Los Angeles County	750.02	15.75%
Unincorporated Areas	577.63	18.99%
Supervisorial District 1	17.29	7.02%
Supervisorial District 2	2.73	1.68%
Supervisorial District 3	114.61	26.58%
Supervisorial District 4	105.12	23.89%
Supervisorial District 5	509.31	18.14%

6.8.4 History

Land movement have historically caused significant damage in Los Angeles County, often resulting in property destruction, infrastructure damage, and road closures. There have been no federal declarations or state proclamations for dam failure in the last five years. Some of the most notable events include:

- **1956 – Portuguese Bend Landslide**: A massive landslide on the Palos Verdes Peninsula began in 1956 and remains active today. The movement of land has displaced homes and infrastructure, highlighting the region's ongoing geologic instability.
- **1994 – Northridge Earthquake-Induced Land movement**: The earthquake triggered more than 11,000 moving events, primarily in the Santa Susana Mountains and San Gabriel Mountains, causing extensive road and structural damage.
- **March 1995 – Pacific Palisades Landslide**: Heavy rains weakened the coastal bluffs, leading to a 300-foot-wide collapse that buried part of the Pacific Coast Highway under 30 feet of debris.
- **March 2005 – Sunset Mesa Landslide**: A slope failure near Malibu caused over 20,000 cubic yards of debris to block roadways and damage property.
- **July 2023 – Peartree Lane Land Movement (Rolling Hills Estates)**: A sudden slope failure resulted in the displacement of 12 homes, which were red-tagged due to structural instability.
- **September 2024 – Accelerated Land Movement in Rancho Palos Verdes**: A significant increase in land movement, with certain areas shifting up to four inches per week toward the ocean, threatening roads and over 250 residential properties.

6.8.5 Types of Land Movement

Debris Flow/ Mudflow/ Soil Movement

Debris flow involves the rapid movement of a dense mixture of water, soil, rock, and organic material down a slope. This process can have significant impacts on landscapes, ecosystems, and human infrastructure.

Debris flows are characterized by their fluid-like behavior and ability to transport large objects, such as boulders and trees. They can travel at high speeds making them highly destructive. The composition of a debris flow can vary, but it typically includes:

- **Water**: A crucial component that facilitates movement.
- **Soil and Rock**: These provide the bulk of the material in a debris flow.
- **Organic Material**: Includes vegetation and other natural debris that get caught in the flow.

Mudflows are rapid movements of water-saturated earth materials that can cause significant damage to both natural environments and human settlements. Mudflows are characterized by their fluid-like motion, which occurs when soil, rocks, and debris become saturated with water. This saturation reduces the friction between particles, allowing the mass to move downhill under the influence of gravity. Key characteristics include:

- **Speed and Volume:** Mud flows can travel at speeds up to 35 miles per hour and can carry large volumes of material, including rocks, trees, and even vehicles.
- **Consistency:** The consistency of a mud flow can vary from a thick, viscous slurry to a watery flow. This depends on the proportion of water to solid materials.
- **Path:** Mud flows typically follow existing drainage patterns, such as river channels and valleys, but can also carve new paths, leading to unpredictable and widespread damage.

Soil movement is a natural process that significantly impacts the environment and human activities. It involves the displacement of soil particles due to various natural and human caused factors. Key characteristics include:

- **Landslides:** Often occurring in hilly areas, landslides involve the downward movement of rock and soil. They can be sudden and fast-moving, making them particularly dangerous.
- **Soil Creep:** This is a slow and gradual movement of soil down a slope, often unnoticed until significant damage occurs.
- **Soil Liquefaction:** During an earthquake, saturated soil can temporarily lose its strength and behave like a liquid, causing structures to sink or tilt.

Causes

In Los Angeles County, several factors contribute to the occurrence of debris flows/mudflows/ soil movement:

- **Heavy Rainfall and Storm Events:** Intense and prolonged rainfall, often associated with storms, can saturate the soil, reducing its stability and triggering debris flows.

The region's Mediterranean climate, with wet winters and dry summers, creates conditions conducive to such events.

- **Wildfires:** Los Angeles County frequently experiences wildfires, which can burn and destabilize vegetation that normally helps hold soil in place. The loss of vegetation increases the risk of soil erosion and, consequently, debris flows during subsequent rainfalls.
- **Steep Terrain:** The county's mountainous terrain, including areas like County mountainous areas, is particularly prone to debris flow. The steep slopes facilitate the rapid movement of debris downhill.
- **Soil Composition:** Certain soil types, such as clay-rich soils, can become highly unstable when saturated with water, making them more susceptible to debris flow.
- **Human Activity:** Urban development, road construction, and deforestation can alter natural landscapes and exacerbate conditions that lead to debris flow.
- **Seismic Activity:** Los Angeles County is situated in a highly active seismic zone, making it prone to earthquakes. Seismic activity can lead to soil liquefaction, landslides, and ground shaking, all contributing to soil displacement.

Land Subsidence

Land subsidence is a gradual settling or sudden sinking of the Earth's surface due to various natural and human-induced factors. This hazard can have significant impacts on the environment, infrastructure, and communities.

A reduction in land elevation is one of the most noticeable features of land subsidence, leading to significant changes in the landscape. This phenomenon can occur due to natural processes, such as the dissolution of limestone, as well as human activities like the excessive extraction of groundwater, oil, or natural gas. Furthermore, land subsidence increases the risk of flooding because the lower elevation can lead to poor drainage and water accumulation. As the ground sinks, it often results in the formation of depressions, fissures, and sinkholes, which can dramatically alter the geography and infrastructure of the area.

- **Depressions:** Are sunken or low-lying areas on the Earth’s surface, often formed by natural or man-made processes.
- **Fissures:** Are a long, narrow crack or linear opening in the Earth’s crust.
- **Sinkholes:** Are holes in the ground causes by the collapse or sinking of surface material into an underlying void.

Causes

- **Groundwater Extraction:** One of the primary causes of land subsidence in Los Angeles County is the excessive extraction of groundwater. As water is pumped out of underground aquifers, the ground above can sink or settle, leading to subsidence.
- **Oil and Gas Extraction:** The removal of oil and natural gas from beneath the earth's surface also contributes to land subsidence. This extraction can create voids and reduce pressure in subterranean layers, causing the ground to sink.
- **Natural Soil Compaction:** Over time, natural processes such as soil compaction can lead to gradual subsidence. In areas with loose or unconsolidated soils, the weight of overlying materials compacts the ground, resulting in a lowering of the land surface.

Rock Falls

Rock falls are a natural geological phenomenon where rock fragments break free from a steep slope or cliff and tumble downward. These events can range from small pebbles dislodging to massive boulders crashing down with significant force and impact.

Rock falls are characterized by:

- **Speed and Suddenness:** Rock falls occur quickly and without much warning, making them particularly dangerous.
- **Varied Sizes:** The size of the falling material can range from small pebbles to large boulders, impacting the severity of the event.
- **Path Predictability:** While the initial trigger point is often identifiable, the path of descent can be unpredictable due to varying terrain and obstacles.

Causes

The primary causes of rock falls include:

- **Weathering and Erosion:** Over time, weathering processes such as freeze-thaw cycles, chemical weathering, and the action of water can weaken rock structures. Erosion can undermine the base of slopes, making rocks more susceptible to falling.
- **Seismic Activity:** Los Angeles County is located in a seismically active region. Earthquakes can dislodge rocks from cliffs and steep slopes, triggering rock falls.

- **Heavy Rainfall:** Intense or prolonged rainfall can saturate the ground, increasing the weight and pressure on rock faces. This saturation can lead to the loosening and collapse of rocks.
- **Human Activity:** Construction, mining, and other human activities can destabilize rock formations. The vibrations from heavy machinery and blasting can initiate rock falls.

6.8.6 Probability

Landslides and other land movement events happen in Los Angeles County fairly often, especially after heavy rain or in areas that recently had wildfires or are prone to sliding.

- Small landslides (like debris flows) are most likely during years with heavy rain, especially El Niño years. These happen every 2 to 7 years; there is 14% to 50% chance each year during those cycles.
- In high-risk zones (like steep mountain slopes with a history of movement), probability is 1–2% chance per year, especially following multi-year wet periods or major wildfires.
- Some areas of the County have been experiencing continuous sliding.

6.8.7 Vulnerability

Land movement pose risks to life, property, and essential infrastructure. The 2024 THIRA projects that approximately 1.2 million residents in Los Angeles County could be directly or indirectly affected by land movement. The most at-risk populations include:

- Residents of hillside and canyon communities such as Malibu, Topanga, and the Palos Verdes Peninsula.
- Homeowners in coastal bluff areas that are facing erosion-driven slope failures.
- Communities in wildfire burn scar areas, where the loss of vegetation increases landslide probability during heavy rains.
- The Access and Functional Needs (AFN) community who may face challenges in evacuating or leaving landslide-prone areas.

Contextual Overview

Los Angeles County's diverse topography includes many hillside communities susceptible to deep-seated landslides, especially after wildfire or heavy rain. These hazards can isolate communities, damage property, and disrupt lifelines.

Extent of Exposure

- **Total Area Exposed**: 284.57 sq mi
- **Supervisorial Districts (SD) Impacted**:
  - **SD5**: 151.96 sq mi (5.41%)
  - **SD3**: 90.23 sq mi (20.93%)
  - **SD4**: 25.94 sq mi (12.20%)
  - **SD1**: 13.77 sq mi (3.90%)
  - **SD2**: 2.68 sq mi (0.74%)
- **Critical Facilities Affected**:
  - Fire Department: 41 (12.17%)
  - Public Works: 32 (13.91%)
  - Health Services: 12 (18.46%)
  - Public Health: 4 (10.00%)
  - Libraries: 9 (10.34%)
  - Parks: 27 (14.92%)
  - Education: 8 (9.76%)

Problem Statement

Landslides pose a serious risk to hillside communities and access routes, especially in areas recovering from wildfire. Current development and road infrastructure may not be resilient against slope failure. Mitigation actions should include slope stabilization, targeted buyouts or relocations, and early warning systems.

6.8.8 Impacts

Los Angeles County's diverse landscape and dense population make it highly susceptible to the effects of land movement, affecting critical infrastructure and raising significant economic, social, and safety concerns.

Transportation Networks

Los Angeles County's extensive transportation network is vital for daily commutes, goods transport, and emergency services. Land movement can severely impact these systems:

- **Road Damage**: Causes closures, hazardous driving conditions and costly repairs, as seen annually on Pacific Coast Highway (PCH), and many other local roads.
- **Bridge Compromise**: Affects structural integrity, necessitating closures and expensive reconstructions.
- **Public Transit Disruptions**: Impacts train tracks and bus routes, leading to delays and service interruptions.
- **Rail Systems:** Track misalignment can cause delays and potential derailments, affecting both passenger and freight lines.

Water Supply Systems

The county's water delivery system is complex and vulnerable to land movement:

- **Compromised Pipelines**: Leads to ruptures or leaks, disrupting supply and requiring major repairs.
- **Reservoir Impact**: Landslides can affect water quality and storage capacity.

Energy Infrastructure

Land movement poses risks to Los Angeles County's energy infrastructure, including:

- **Electrical Grid Vulnerabilities:** Land movement can damage power lines and substations, causing outages.
- **Gas Pipeline Risks:** Soil shifts can result in gas leaks or explosions, endangering safety.

Communication Systems

Reliable communication is critical, and land movement can disrupt:

- **Telecommunication Towers:** Structural damage can impair cellular and internet services.
- **Underground Cables:** Earth shifts can damage cables, affecting connectivity.

Emergency Services Facilities

- **Hospitals and Fire Stations:** Essential for emergency response, but structural damage could impede operations, underscoring the need for resilient construction and strategic planning.

Economic Impacts

- **Infrastructure Damage:** Leads to costly repairs and maintenance of roads, bridges, and buildings.
- **Property Loss:** Homeowners face financial losses due to property damage or devaluation.

Environmental Impacts

- **Ecosystem Disruption:** Soil movement can lead to habitat loss and affect local flora and fauna.
- **Increased Pollution:** Erosion can result in sediment runoff, degrading water quality in rivers and oceans.

For a better visual representation of the Land Movement Hazard within the LA County planning area, please reference Appendix A for maps that show areas that are susceptible to land movement and recent burn scars.

6.8.9 Mitigation Strategies

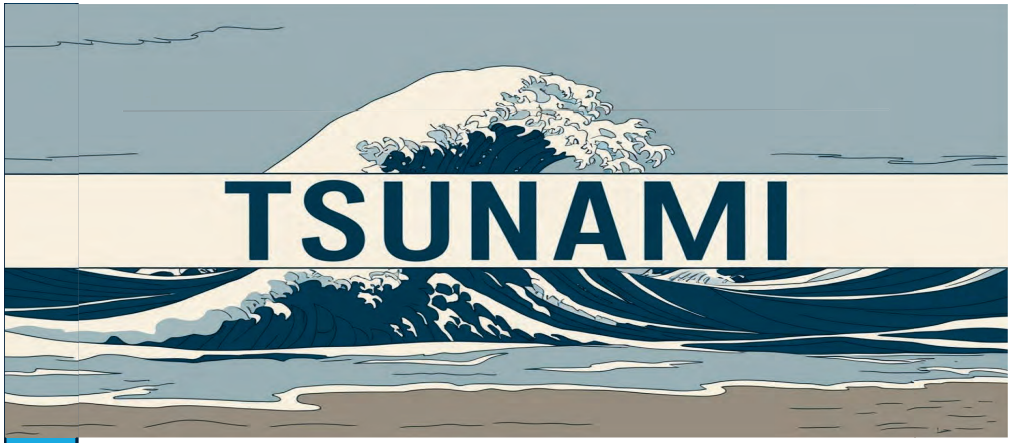
To reduce the impact of land movement, Los Angeles County has implemented several mitigation and preparedness strategies, including:

- **Land Use and Development Regulations:** Restricting development in high-risk landslide zones to prevent new structures from being built on unstable terrain.
- **Infrastructure Resilience:** Reinforcing existing infrastructure through slope stabilization projects, retaining walls, and improved drainage systems.

- **Stabilization Regulations:** Implementing stricter grading and excavation regulations to minimize the destabilization of slopes.
- **Public Awareness Campaigns:** Enhancing landslide early notifications by monitoring potential movement areas and precipitation thresholds.
- **Evacuation Planning:** Developing evacuation plans for at-risk communities, ensuring residents receive timely alerts and clear guidance.
- **Public Education:** Conducting public education campaigns to inform residents about recognizing landslide warning signs and preparedness measures.
- **Operational Area Coordination**: Increasing coordination across state, federal, and Office of Emergency Management officials with local jurisdictions to improve forecasting and response efforts.

6.8.10 Summary

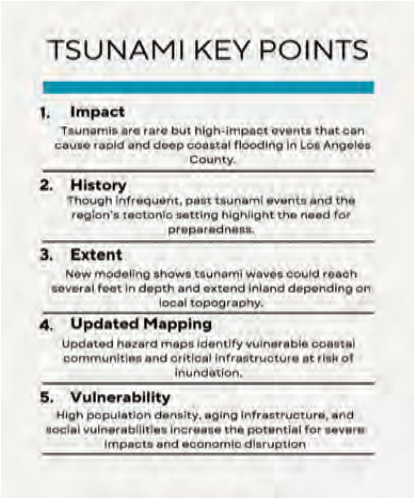
Land movement remains a significant hazard in Los Angeles County, particularly in steep and coastal regions. The Palos Verdes Peninsula, Santa Monica Mountains, and San Gabriel Mountains are among the most vulnerable areas, with climate change and human activities exacerbating risks. By implementing land-use regulations, infrastructure reinforcements, and emergency response improvements, the County can enhance resilience and reduce losses in the future. Local governments and communities must actively monitor and manage contributing factors to effectively mitigate the impacts of land subsidence.



6.9 Tsunami

6.9.1 Nature

This section characterizes tsunamis as high-energy, long-wavelength ocean waves generated primarily by significant offshore seismic events (such as subduction zone earthquakes), submarine landslides, or volcanic eruptions. In the context of Los Angeles County, tsunamis represent a relatively infrequent but potentially high-impact hazard that could produce rapid coastal inundation and surge impacts.



Characteristics:

- Triggered mainly by distant, large-magnitude seismic events.
- Features long wavelengths and prolonged arrival times.
- Capable of producing rapid, deep inundation along low-lying coastal areas.
- In summary, tsunamis are dynamic natural phenomena with the potential to cause sudden coastal flooding and damage if a triggering event occurs.

6.9.2 Location

The updated tsunami hazard profile focuses on the coastal areas of Los Angeles County. The new zone map–developed using enhanced modeling techniques and updated coastal geomorphology data–highlights areas along the Pacific shoreline that are at risk. These include regions adjacent to the Los Angeles Basin, parts of Long Beach, Santa Monica Bay, and other low-elevation coastal zones.

For a better visual representation of Tsunami Inundation zones within the LA County planning area, please reference Appendix A for a "Tsunami Inundation Area" map.

Important Details:

- Coastal segments from the western margins of the Los Angeles Basin extending to the border with Orange County.

Overall, the coastal areas of Los Angeles County, containing our communities and infrastructure, face heightened exposure.

6.9.3 Extent

Using the latest hydrodynamic and inundation modeling, the updated tsunami inundation (zone) map provides a refined view of the extent of potential flooding. The map illustrates how tsunami waves could propagate inland, showing revised boundaries that account for current sea-level conditions and future sea-level rise projections.

Highlights:

- Inundation depths and reach have been recalculated, with some areas potentially experiencing water levels up to several feet in depth.
- The inland reach of flooding varies by local topography, with flat, low-lying areas showing the greatest potential for impacts. Impacted areas include, but are not limited to, Long Beach, The ports of Long Beach and Los Angeles, Marina del Rey, Venice and Santa Monica.
- Critical infrastructure within the updated zones has been identified to prioritize mitigation and evacuation routes for planning.

In essence, the extent of tsunami impacts is now mapped more precisely, offering local decision-makers a clearer view of potential flooding depths and distances inland.

6.9.4 History

Historically, significant tsunami events in the Los Angeles region are rare, though distant seismic events (for example: the 1960 Chilean tsunami, or the most recent 2022 Tonga tsunami) have been known to produce measurable impacts. Historical records combined with geological studies indicate that while tsunamis have occurred in the past, their frequency is low compared to other hazards. However, the region's proximity to major tectonic boundaries necessitates ongoing vigilance.

Historical Context:

- Past events have been sporadic but can serve as valuable lessons for preparedness.
- Historical inundation records and sediment studies confirm that tsunamis have reached the Los Angeles coast in prehistory.
- Lessons learned from past minor events underscore the importance of maintaining updated hazard maps.

Thus, while historical tsunami events are infrequent, they provide a critical context for understanding future risks and guiding preparedness measures. There have been no federal declarations or state proclamations for tsunami in the last five years.

6.9.5 Probability

The probability of a tsunami affecting Los Angeles County is generally low when compared to more frequent hazards like earthquakes or floods. Nevertheless, the potential for a distance source tsunami generated by a distant, large seismic event remains a realistic risk. Updated probabilistic assessments—incorporating recent seismic data and tsunami modeling indicate that while the overall likelihood is low, the consequences in the event of a tsunami can be severe.

Probability Considerations:

- Low annual probability but high consequence if an event occurs; Los Angeles County has about a 2% annual chance.
- Distance source events from subduction zones across the ocean contribute most to the risk.
- Continuous monitoring and updated modeling are essential to reassess the risk over time.
- In summary, the probability of a tsunami remains low, but due to the potential for high-impact outcomes, it warrants continuous study and preparedness.

6.9.6 Vulnerability

Coastal vulnerability in Los Angeles County is significantly influenced by factors such as urban density, low-elevation terrain, aging infrastructure, and socio-economic conditions. The updated tsunami zone map now better delineates areas where these vulnerabilities are most pronounced, highlighting communities that may have limited evacuation routes and fewer resources to recover from rapid inundation. About 75,000 people live in parts of Los Angeles County that could be flooded by a tsunami. Many people also work in these coastal areas, and around 660 unhoused individuals live there, making them especially at risk because they may not have easy access to shelter or transportation.

Tourism adds even more people to these areas, especially during busy weekends or holidays. Places like Santa Monica can see up to 300,000 visitors a day during peak times. This makes evacuating harder if a tsunami warning is issued. Roads near the coast can quickly become crowded, and visitors may not know the best way to leave. Traffic could slow down emergency plans, so it's important to have clear signs, early warnings, and good traffic control to help people get to safety quickly.

Factors:

- High population density in low-lying coastal areas.
- Critical infrastructure (e.g., hospitals, utilities, ports and shipping, transportation networks) located within the inundation zones.
- Socio-economic and language barriers that may hinder effective emergency response.
- Limited natural barriers in some coastal segments.
- Vulnerable communities include those with high population densities and critical infrastructure near the coast.

Ultimately, the vulnerability of the region is compounded by both physical exposures and social factors, underscoring the need for targeted mitigation efforts.

Contextual Overview

Coastal communities in Los Angeles County, including ports and tourist zones, are at risk from tsunamis. These rare but highly destructive events can inundate coastal infrastructure with little warning.

Extent of Exposure

- **Total Area Exposed**: 32.89 sq mi
- **Supervisorial Districts (SD) Impacted**:
  - **SD4**: 15.83 sq mi (7.43%)
  - **SD3**: 12.59 sq mi (2.92%)
  - **SD2**: 2.03 sq mi (0.56%)
- **Critical Facilities Affected**:
  - Fire Department: 16 (4.75%)
  - Public Works: 9 (3.91%)
  - Health Services: 3 (4.62%)
  - Public Health: 1 (2.50%)
  - Libraries: 5 (5.75%)
  - Parks: 13 (7.26%)
  - Education: 3 (3.66%)

Problem Statement

Tsunamis can cause rapid and catastrophic coastal flooding. With critical coastal infrastructure and residential areas exposed, especially in SD4 and SD3, there is a need for robust evacuation planning, vertical evacuation shelters, and community outreach to enhance preparedness and reduce vulnerability.

6.9.7 Impacts

Should a tsunami occur, the potential impacts on Los Angeles County could be extensive. Parts of Los Angeles County that could be impacted by a Tsunami are Marina Del Rey, Port of Los Angeles, Port of Long Beach, and other beach communities in low lying areas. The updated impact assessments reflect possible scenarios ranging from significant property damage to loss of life and long-term economic disruption. The new zone map aids in quantifying these impacts by providing detailed inundation depths and spatial extents, thereby allowing for better risk communication and planning.

Potential Impacts:

- Severe flooding of coastal infrastructure and residential areas.
- Disruption of transportation, utility services, and emergency response operations.
- Economic losses in key sectors such as tourism, shipping, and local commerce.
- Social impacts including displacement, loss of livelihoods, and challenges in emergency sheltering.

In short, the potential impacts of a tsunami are far-reaching, necessitating robust mitigation, evacuation, and recovery planning to minimize harm.

For a better visual representation of Tsunami Inundation zones within the LA County planning area, please reference Appendix A for a "Tsunami Inundation Area" map.

6.9.8 Summary

The updated tsunami section for the 2025 AHMP incorporates the latest scientific findings and mapping techniques to provide a more precise understanding of tsunami risks in Los Angeles County. By integrating an updated inundation zone map, the revision clarifies the spatial extent of potential flooding and highlights the vulnerabilities in coastal communities. This comprehensive update is designed to guide decision-makers in enhancing preparedness, targeting mitigation strategies, and strengthening community resilience.

Key Takeaways:

- **Nature:** Tsunamis are infrequent but high-energy events capable of rapid coastal inundation.
- **Location & Extent:** The updated zone map identifies vulnerable coastal areas with revised inland flood extents.
- **History & Probability:** Historical events are rare; however, distance events remain a realistic risk.
- **Vulnerability & Impacts:** High population density and critical infrastructure in coastal zones amplify risk, with potential for severe economic and social disruption.

This updated section is intended to serve as a critical tool for policymakers, emergency managers, and community stakeholders as they work together to reduce the long-term risks associated with tsunamis and enhance overall regional resilience.



6.10 Severe Wind and Tornado

6.10.1 Nature

Severe wind and tornadoes pose significant threats to life, property, and infrastructure, though they differ in frequency and intensity within Los Angeles County. Severe wind events, particularly Santa Ana winds, are a recurring natural hazard that can cause widespread damage, including downed power lines, tree falls, and structural damage. These winds originate from high-pressure systems over the Great Basin, funneling dry and warm air through mountain passes into the coastal and valley regions at high speeds. Additionally, storm-driven winds, microbursts, straight-line winds and gust fronts associated with severe weather can create hazardous conditions, often leading to transportation disruptions, fire hazards, and prolonged power outages.



Tornadoes, while relatively rare in the region, have been recorded and can cause localized but intense damage. These violent windstorms form when unstable atmospheric conditions produce rotating updrafts, resulting in a funnel cloud that contacts the ground.

6.10.2 Location

Severe wind events affect the entire Los Angeles County planning area, with the strongest occurrences in canyon passes, valleys, and coastal regions. The Santa Ana winds are most intense in the fall and winter months, particularly impacting areas in the Valley, and foothill communities of the County. Storm-driven winds, on the other hand, can impact any part of the county and vary in intensity based on weather patterns. These winds can reach speeds of 60 to 80 mph, sometimes exceeding those thresholds, leading to significant damage.

Tornadoes are more sporadic in occurrence and can develop in various parts of the county, particularly in lowland areas where severe thunderstorms have the potential to form rotating systems.

6.10.3 Extent

Winds and breezes are common occurrences in LA County. As wind speeds increase so does the potential for a catastrophic event. Hot dry winds can reach high speeds as they descend from the inland desert regions, creating not only critical wind events but also extremely dangerous fire conditions and contributing to the spread of wildfires. The winds are classified in the Beaufort Wind Scale, see Figure 6.10.1 below. Beaufort wind scale is an empirical scale that relates wind speed to observed conditions at sea or land. It uses numerical scale from 1-12 to describe wind force based on visual observations of the effects of the wind and gives quantitative measures of the wind. For example, o is described as 'calm' a sea like a mirror while 12 described as hurricane force with devastating conditions.

Tornadoes are classified using the Enhanced Fujita (EF) Scale Figure 6.10.2. The Enhanced Fujita (EF) Scale is specifically used to rate the intensity of tornados based on the damage they cause (damage indicators) such as building types, and trees. It ranges from EF-0 to EF-5, with increasing numbers indicate stronger tornados and more severe damage. While tornadoes in the region typically do not exceed EF-1

intensity, they can still produce damaging winds above 100 mph, capable of tearing roofs off buildings, uprooting trees, and overturning vehicles.

Beaufort Wind Scale:

Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
0	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 ft taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	Sea heaps up, waves 13-19 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind

8	34-40	Gale	Moderately high (18-25 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Twigs breaking off trees, generally impedes progress
9	41-47	Strong Gale	High waves (23-32 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Very high waves (29-41 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	Violent Storm	Exceptionally high (37-52 ft) waves, foam patches cover sea, visibility more reduced	
12	64+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	

Figure 6.10.1 Beaufort Wind Scale

Enhanced Fujita Scale:

THE ENHANCED FUJITA SCALE (EF SCALE)		
EF RATING	**3 Second Gust (MPH)**	**DAMAGE**
EF 0	65-85 MPH	Light: Branches broken, minor roof damage
EF 1	86-110 MPH	Moderate: Roofs damaged; trees uprooted
EF 2	111-135 MPH	Considerable: Roofs torn off, large trees down
EF 3	136-165 MPH	Severe: Homes destroyed; cars lifted
EF 4	166-200 MPH	Devastating: Houses leveled; debris airborne
EF 5	Over 200 MPH	Incredible: Homes swept away; total destruction

Figure 6.10.2 Enhanced Fujita Scale

6.10.4 History

Los Angeles County has experienced multiple severe wind events and occasional tornadoes in recent history which caused destructions, and wildfires. There have been no federal declarations or state proclamations for Severe Wind & Tornadoes in the last five years. Some notable incidents include:

- **November-December 2011:** A wind event caused more than $35 million in damages and severely impacted several foothill communities and unincorporated areas.
- **December 2019:** An EF-0 tornado touched down in South Los Angeles, causing minor roof damage and downing power lines.
- **January 2021:** A severe windstorm impacted the region, leading to damage across multiple communities and emergency response efforts to clear roadways.
- **September 2021:** An EF-0 tornado developed near the community Lake of Los Angeles; %no damage was reported.

- **April 2023:** An EF-0 tornado recorded in Cerritos causing tree damage.
- **March 2023 (DR# 4699):** An EF-1 tornado struck Montebello, one of the strongest tornadoes recorded in the area, causing significant damage to commercial structures and vehicles.
- **May 2023:** An EF-0 tornado occurred near the communities of Carson and Compton damaging buildings and vehicles.
- **August 2023 (DR# 4750):** Tropical Storm Hillary impacting Los Angeles County.
- **February 2024**: Strong winds impacting across Eastern Santa Monica Mountain and Santa Clarita Valley.
- **March 2024**: Strong winds impacting areas around San Gabriel Valley.
- **January 2025 (DR# 4856):** A severe windstorm impacted the region, leading to a Potentially Dangerous Situation (PDS), red flag conditions. Several fires broke out in the area, which exhibited extreme fire behavior, causing widespread destruction.
- **March 2025 (DR# 4856):** As part of a storm event, an EF-0 tornado struck Pico Rivera, California, at 3:15am, with wind speeds reaching up to 85 mph.

6.10.5 Probability

Severe wind events are a regular occurrence in Los Angeles County, with a high probability, 99% chance recurring annually. Santa Ana winds are particularly common during the cooler months, and climate patterns suggest that extreme wind events may become more frequent due to changing weather dynamics. Because wind events and tornados are localized in nature, probability vary from one area to another and is difficult to determine percentage of happening in one area. Tornadoes remain a low-probability hazard, 10% chance, in the planning area; however, given past occurrences, they cannot be ruled out entirely. Atmospheric conditions capable of producing tornadoes may arise during severe thunderstorms, particularly in winter storm systems that generate strong wind shear. While the likelihood of an EF-2 or stronger tornado is minimal, the potential for localized damage remains. The Santa Ana winds occur ten to twenty-five times annually and can last for several days, posing a recurring threat of damage and disruption in Los Angeles County.

6.10.6 Vulnerability

Severe wind and tornadoes can be extensive, affecting both infrastructure and public safety. High-wind events pose a risk to critical infrastructure, particularly power lines, communication systems, and transportation networks. Buildings, especially older structures and mobile homes, are vulnerable to wind-related damage, including roof failures, window breakage, and structural collapse.

In addition to physical damage, severe wind events can cause significant economic disruptions. Prolonged power outages impact businesses, healthcare facilities, and emergency response services. Road closures and debris blockages hinder mobility and commerce, while wind-driven wildfires, a secondary hazard of Santa Ana winds, can lead to devastating losses.

Public safety is also a major concern, with risks of flying debris, vehicle accidents, overturned vehicles, and respiratory issues caused by airborne dust and pollutants stirred up by high winds.

Severe wind and tornado events disproportionately impact certain populations and infrastructure in Los Angeles County due to both geographic exposure and socioeconomic vulnerabilities. These hazards can disrupt critical services, exacerbate existing inequalities, and significantly damage structures not built to withstand extreme wind conditions.

Vulnerable Populations

Out of the county's estimated 10.2 million residents, the following populations are considered especially vulnerable:

- Older Adults (65+): Approx. 1.6 million residents (15.5%)—more likely to suffer injury or health complications during wind-related power outages and evacuation events.
- Access and Functional Needs (AFN) Populations: Estimated 1.7 million individuals (17%) including those with disabilities, limited mobility, or communication barriers.
- Low-Income Households: Over 13% of households fall below the poverty line and may lack the resources for structural mitigation or relocation during prolonged outages.

- People Experiencing Homelessness (PEH): Over 75,000 individuals (2024 LAHSA count), at direct risk from falling debris and lack of shelter during windstorms.
- Mobile Home Residents: Approximately 98,000 units countywide, concentrated in inland valleys and foothill communities that are highly exposed to Santa Ana winds.
- Children Under Age 5: Around 600,000 countywide, vulnerable to respiratory complications from airborne particulates and debris stirred by strong winds.
- Economic Impact: Business disruptions, increased insurance claims, and the costs of emergency response and recovery add financial burdens to local communities.

Critical Infrastructure at Risk

Severe wind and tornado events can cause widespread cascading failures in vital systems, including:

- Power Infrastructure: Los Angeles County contains over 20,000 miles of overhead power lines vulnerable to high-wind damage and fire ignition.
- Medical Facilities: Over 350 licensed hospitals and health clinics, many reliant on uninterrupted power and access for vulnerable patient populations.
- Transportation Corridors: Major highways (I-5, I-10, US-101) and over 3,100 bridges, particularly in canyon and foothill areas, are susceptible to obstruction by fallen trees and debris.
- Communication Towers: Over 800 critical telecom sites serve the county's emergency communications and can be disrupted by high wind gusts.
- Schools: Approximately 2,300 public K–12 schools and 100+ college campuses face operational disruptions from power outages or infrastructure damage during events.

6.10.7 Impacts

Severe wind and tornado events pose significant threats to critical infrastructure, public safety, and community operations in Los Angeles County. High winds, such as those during Santa Ana events, regularly damage power lines, uproot trees, and disable

transportation corridors. A notable example occurred in January 2025, when widespread windstorms caused power outages for more than 200,000 customers, including approximately 127,000 Los Angeles Department of Water and Power (LADWP) customers and over 52,000 Southern California Edison (SCE) customers. During this same period, wildfires exacerbated by the strong winds impacted several medical facilities, disrupting critical health services and requiring the emergency relocation of patients.

Tornadoes, while rare, have also demonstrated destructive capacity in localized areas. In March 2025, an EF-0 tornado touched down in Pico Rivera, downing power lines and trees and obstructing roadways, highlighting the potential for tornadic activity to impact urban communities. These hazards not only endanger life and property but also threaten economic continuity and the functioning of emergency services, particularly in vulnerable neighborhoods and areas with aging infrastructure.

6.10.8 Mitigation and Preparedness

Efforts to mitigate the effects of severe wind and tornadoes should focus on improving structural resilience, enhancing early warnings and alerts, and increasing public awareness of such events.

Severe Wind and Tornado Mitigation

- Strengthening building codes to require wind-resistant design features. Promoting the use of wind-resistant materials and construction techniques in new developments.
- Conducting regular tree-trimming and vegetation management to reduce infrastructure damage risks.
- Retrofitting and reinforcing critical infrastructure, such as power lines and utility systems, to withstand high-wind conditions.
- Implementing public education campaigns on windstorm preparedness and safety measures.
- Leveraging early warning alerting and preparedness messaging, as well as integrating emergency messaging with local broadcast and mobile networks.

6.10.9 Summary

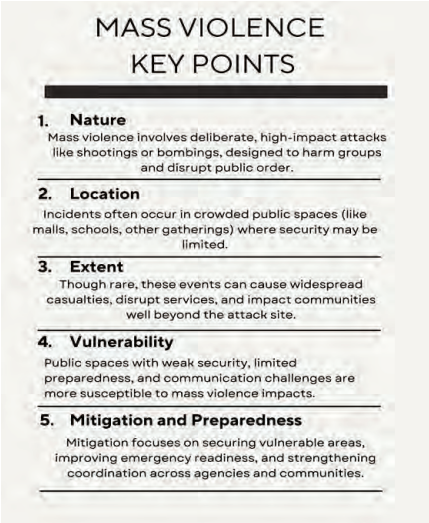
Severe wind and tornadoes, though differing in frequency, remain potential hazards for Los Angeles County. Santa Ana winds and storm-driven gusts regularly impact the region, causing damage to infrastructure and increasing wildfire risks. While tornadoes are rare, their occasional occurrence necessitates preparedness and mitigation efforts. By implementing stronger building codes, reinforcing critical infrastructure, and enhancing preparedness and public awareness, the county can reduce its vulnerability to these hazards, helps to better protect its residents from potential hazards of severe winds and tornado and improve community resilience.



6.11 Mass Violence

6.11.1 Nature

This section outlines the defining characteristics of mass violence, which includes intentional, high-impact incidents such as terrorism, active shooter events, vehicle-rammings, and other coordinated attacks. Understanding the nature of these events is critical for developing effective mitigation strategies.



- Mass violence includes both targeted attacks (e.g., ideologically motivated terrorism) and opportunistic acts (e.g., active shooters or violent assaults in public spaces).
- These incidents are characterized by their low warning time, high lethality, and potential to incite widespread fear and panic.

- Acts of mass violence may be perpetrated by individuals, small groups, or well-organized networks, and can involve firearms, explosives, vehicles, or biological agents.
- These attacks often aim to disrupt societal functions, damage infrastructure, or exploit vulnerabilities in soft targets such as schools, places of worship, or entertainment venues.

In summary, the nature of mass violence lies in its deliberate intent to inflict harm on groups and disrupt public order, making strong mitigation measures essential for protecting life and property of Los Angeles County.

6.11.2 Extent

The potential extent of mass violence is characterized by its ability to cause widespread disruption and significant loss of life and property.



- Events can result in many casualties and severe physical and psychological impacts.
- Mass violence can disrupt essential services, strain emergency response systems, and create cascading socioeconomic effects.
- The overall disruption may extend far beyond the immediate scene, affecting broader community resilience.

In essence, while these events may be rare, their extensive impacts necessitate comprehensive planning and resilient infrastructure.

6.11.3 History

Historical data illustrates that mass violence has evolved over time, with earlier events shaping current mitigation strategies and more recent incidents underscoring emerging vulnerabilities. Previous mitigation and other plans referenced events such as large-scale terrorist attacks and active shooter incidents.

- Recent events in the last five years include high-profile active shooter incidents at schools, public transportation hubs, and commercial centers, as well as vehicle-ramming attacks in urban areas.

Overall, the historical trend shows that while frequency remains low, the severity of mass violence incidents has escalated, necessitating continual updates to mitigation strategies.

6.11.4 Location

Mass violence incidents tend to occur in areas where people naturally congregate, including urban centers, transportation hubs, educational and religious institutions, shopping centers, and public events and venues.

- Public spaces such as transit stations, stadiums, malls and other locations where large number of people assemble, are considered higher-risk areas.
- Critical infrastructure location, like government buildings and commercial center, are often targeted.
- Certain events may also occur in areas lacking adequate physical security or surveillance.

Thus, identifying and securing high-density locations is a key focus for mitigating the effects of mass violence.

6.11.5 Probability

The probability of mass violence incidents is difficult to predict precisely; however, the potential for occurrence is recognized as a persistent low-frequency, high-impact risk that requires constant vigilance.

- Such incidents are statistically rare yet present a disproportionate risk due to their catastrophic consequences.
- Threat assessments and intelligence reports indicate that evolving tactics may increase probability over time.
- Continuous monitoring and updated threat analyses (e.g., via THIRA processes) are essential in quantifying risk levels.

In summary, while mass violence events are not common, their inherent unpredictability and high severity demand that communities prepare as if an incident could occur at any time.

6.11.6 Vulnerability

Mass violence depends on a variety of factors, including physical infrastructure design, public awareness, security preparedness, and interagency coordination.

- Critical vulnerabilities include open public spaces with minimal physical barriers or limited or ineffective safety / security protocols in place.
- Gaps in training and preparedness among first responders can exacerbate the situation during an active incident.
- Social vulnerabilities—such as communication gaps or lack of multilingual emergency information—may hinder rapid response and community resilience.

Thus, reducing vulnerability involves investing in infrastructure hardening, robust security measures, regular training exercises, and effective public communication strategies.

6.11.7 Impacts

The impacts of mass violence events are multifaceted, life safety, community stability, and the local economy.

- Immediate impacts include fatalities, injuries, and trauma among affected populations.
- Secondary impacts may encompass prolonged disruption of local services, economic downturns, and lasting psychological effects on communities.
- Long-term consequences can involve extensive resource allocation for recovery and mitigation, further straining public systems.

Mass violence inflicts immediate harm and often triggers a chain of secondary impacts that complicate community recovery and strain long-term resilience efforts.

6.11.8 Summary

In conclusion, mitigating the hazards of mass violence requires an integrated, multi-layered approach that spans prevention, preparedness, response and recovery. Communities must implement measures to secure high-risk locations, upgrade physical and digital security, enhance interagency coordination, and continuously update training and threat assessments.

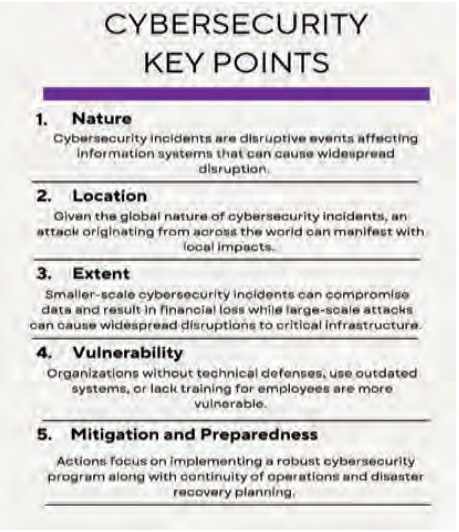
- Mitigation strategies include physical security enhancements (e.g., barriers and surveillance), regular active shooter drills, improved emergency communication systems, and coordinated law enforcement and public health responses.
- Investment in resilience-building measures and community outreach helps to ensure that, in the event of an incident, communities can recover quickly and effectively.

This section underscores that while mass violence events are rare, their potential for high impact demands rigorous preparedness and adaptive mitigation strategies to safeguard lives and maintain community functionality.



6.12 Cybersecurity Incidents

6.12.1 Nature



Cybersecurity incidents refer to disruptive events affecting digital networks and systems. These events involve the unauthorized electronic or physical access of information systems that jeopardizes or disrupts the integrity, confidentiality, or availability of information. Cyber incidents can range from minor targeted data breaches to large-scale ransomware attacks and distributed denial-of-service (DDoS) events that compromise critical infrastructure. Common types of cybersecurity incidents include, but are not limited to:

- **Data Breaches:** The compromise, unauthorized disclosure, or unauthorized acquisition of information.

- **Malware:** Malicious hardware, firmware, or software that is intentionally included or inserted in a system for a harmful purpose.
- **Ransomware:** A type of malicious software designed to lock access to a system until a ransom payment is received. Note that ransom payment is not a guarantee that system access will be restored by the threat actor.
- **Denial of Service (DoS):** An attack meant to shut down a machine or network, rendering it inaccessible to its intended users.
- **Distributed Denial of Service (DDos):** A DoS attack that uses numerous hosts to perform the attack.
- **Insider Threats:** When an insider (e.g., an employee or vendor) uses their authorized access, wittingly or unwittingly, to do harm to an organization.
- **Phishing Attacks:** The fraudulent practice of sending emails purporting to be from reputable senders in order to induce individuals to reveal information or download malware by clicking on a link.

Key characteristics of a cybersecurity incident include:

Rapid Onset: Impacts to operations can occur suddenly and evolve quickly.

- **Sophistication:** Can be highly sophisticated with state or non-state actors involved.
- **Hybrid Attacks:** May involve both cyber and physical components due to interdependencies.
- **Non-Malicious Incidents:** Technological failures that cause similar impacts to cybersecurity incidents may also occur due to non-malicious reasons such as a software or hardware issue.

Understanding the inherent digital nature and complex characteristics of these incidents is critical to developing effective prevention and mitigation strategies.

6.12.2 Location

Unlike traditional hazards that have a physical geographic footprint, cybersecurity incidents are inherently transboundary. However, their effects manifest locally through the disruption of critical services and systems and necessitate regionally coordinated preparedness and response efforts.

Jurisdictional Relevance:

- Impact local government networks and county infrastructure.
- Affect public and private sector systems within Los Angeles County.
- Disrupt critical infrastructure such as utilities and cause cascading impacts.
- Involve cyber nodes that, while globally distributed, converge on regional networks.

Critical Sectors Impacted:

- Hospitals and healthcare facilities.
- Financial, banking, or payroll systems.
- Transportation providers and systems.
- Utilities such as electricity, gas, and water.
- Emergency response and public safety agencies.

6.12.3 Extent

The extent of cybersecurity incidents is measured not only by the volume of compromised data or financial loss but also by the potential disruption to essential services and critical infrastructure.

Scope of Impacts:

- Rapid spread across interconnected digital systems.
- Potential for cascading failures that disrupt multiple sectors.
- Economic losses that may run into millions of dollars.

Measurable Factors:

- Number of systems compromised.
- Downtime of critical infrastructure and services.
- Financial costs from remediation and lost productivity.

The extensive reach of cybersecurity incidents–both in terms of economic impact and service disruption–highlights the need for robust digital defenses, continuity of operations planning, backup systems and redundancies, disaster recovery strategies, and regional cyber response coordination.

6.12.4 History

Historically, cybersecurity incidents have evolved from isolated breaches to coordinated attacks that leverage global networks. Early cybersecurity incidents focused on data theft and vandalism. More recent attacks have grown increasingly sophisticated and targeted critical infrastructure or use complex ransomware. Cyber threat actors include state-sponsored groups along with non-state groups such as criminal enterprises and terrorist organizations. Recent years have seen cybersecurity incidents affecting large corporations, public entities including local governments, and critical infrastructure sectors. Previous major cybersecurity incidents have included:

- **2024 Los Angeles County Superior Court Ransomware Attack:** Resulted in the shutdown of nearly every court system, a multi-day closure of the court, and cascading impacts to operations.
- **2024 Hospital Group Attack:** A major hospital company experienced an attack that caused IT and phone system outages and disrupted patient care at several Los Angeles County hospitals.
- **2024 Telecommunication Industry Attacks**: A series of attacks against telecommunications providers in the United States resulted in compromised customer data.
- **2023 City Attack:** A cybersecurity incident at a city within Los Angeles County caused city IT systems to be taken offline.
- **2022 Aviation Industry Attacks:** A series of cybersecurity incidents targeting the airports and airlines caused transportation system disruptions.

The historical progression from rudimentary attacks to highly coordinated cybersecurity incidents underscores the growing importance of proactive risk management in the digital realm.

6.12.5 Probability

The probability of cybersecurity incidents occurring is increasing as digital interconnectivity expands and as attackers continue to innovate their methods.

Risk Trends:

- Rapid expansion of the Internet of Things (IoT), the network of internet-connected devices ranging from smart refrigerators to autonomous vehicles, has added new attack vectors to the threat landscape.
- Increasing sophistication of cybercriminal methods including zero-day exploits, a previously unknown cybersecurity vulnerability.
- Growing frequency of reported incidents nationally and globally.

Contributing Factors:

- Inadequate cybersecurity measures in legacy systems still being used by organizations.
- Underinvestment in cyber defense infrastructure or cybersecurity expertise.
- Greater digital reliance in everyday operations without proper continuity of operations planning.

Given current trends and technological developments, the likelihood of cybersecurity incidents remains high, necessitating ongoing vigilance and enhanced preparedness measures. As cybersecurity incidents continue to increase in frequency, the potential for an incident to cause cascading and widespread impacts to critical infrastructure increases as well.

6.12.6 Vulnerability

Vulnerability in the context of cybersecurity refers to the susceptibility of digital systems to attack. This is influenced by both technological and organizational factors including, but not limited to: outdated software or use of legacy systems, insufficient patch management, inadequate segmentation and defense-in-depth strategies, and lack of cybersecurity training among personnel. Organizational challenges also contribute to cybersecurity vulnerability including, but not limited to: budget constraints, gaps in coordination, and rapid technology adoption without corresponding security protocols.

According to the 2024 Threat and Hazard Identification and Risk Assessment (THIRA), over 616,000 people may be affected by a large-scale cybersecurity incident with cascading impacts to utilities. Over 123,000 of those impacted in the THIRA scenario are estimated to have access and functional needs and over 77,000 people are

estimated to have limited English proficiency. Depending on the utilities affected by the incident, a widespread amount of the population could be without utility service for an extended period. Addressing these vulnerabilities is essential to reduce the risk and potential disruption of cybersecurity incidents, calling for both technical upgrades and improved interagency coordination.

6.12.7 Impacts

The impacts of cybersecurity incidents are multifaceted, affecting economic stability, public safety, and critical infrastructure operations.

Direct Impacts:

- Disruption of critical services (e.g., healthcare, emergency response, transportation, etc.).
- Extended duration Continuity of Government or Continuity of Operations event.
- Financial losses due to ransom payments, remediation costs, and potential legal fees.
- Loss, compromise, or unauthorized release of sensitive data.

Indirect impacts:

- Erosion of public trust in digital services and affected institutions.
- Cascading effects on physical infrastructure (e.g., power grid, water systems, wastewater, etc.).
- Long-term economic repercussions from reduced competitiveness.
- The significant impacts—both direct and cascading—of cybersecurity incidents necessitate comprehensive mitigation and recovery strategies that address both technical and socioeconomic dimensions.

6.12.8 Summary

In summary, cybersecurity incidents represent an evolving and critical threat that intersects with multiple aspects of community resilience and safety.

Key Takeaways:

- Cyber incidents are dynamic, sophisticated, and far-reaching in impact
- They affect local systems despite their global nature

- Historical trends and increasing digital dependency heighten both probability and vulnerability
- Impacts extend beyond financial loss to include service disruption and cascading infrastructure failures

Cybersecurity incidents demand a proactive, coordinated response that integrates robust technical defenses with cross-sector planning and recovery efforts. By understanding the nature, scope, and potential consequences of these incidents, communities can build more resilient digital and physical infrastructures to safeguard against this growing threat.



6.13 Transportation Incidents

6.13.1 Nature

This section describes the inherent characteristics of transportation incidents that can disrupt the continuous flow of people, goods, and emergency services across Los Angeles County. Transportation incidents can be triggered by a variety of factors including natural events, human error, and deliberate acts. Other characteristics include:

- **Affected Modes of Transportation:** Incidents can involve any mode of transportation such as multi-vehicle collisions, hazardous material spills, rail derailments, aviation incidents, and maritime disruptions.
- **Cascading Impacts:** Disruptions to the transportation system often have the potential to trigger cascading failures due to the interconnected design of highways, rail networks, airports, and seaports.
- **Contributing Factors:** Incidents may be influenced by both predictable factors (e.g., rush-hour congestion) and unpredictable occurrences (e.g., extreme weather or infrastructure failure).

6.13.2 Location

The county's network encompasses highways, rail, airports, ports, and local roads that are critical to regional mobility and commerce.

- **Freeways:** Los Angeles County boasts an extensive freeway system with over 1,200 miles of high-capacity roads including corridors such as I-5, I-405, I-10, I-710, and I-210.
- **Major Transportation Hubs:** The County is home to three commercial airports including Los Angeles International Airport (LAX), Long Beach Municipal Airport (LGB), and the Hollywood Burbank Airport (BUR) along with several general aviation airports. The County owns and operates Brackett Field Airport, Compton/Woodley Airport, San Gabriel Valley Airport, General William J. Fox Airfield, and Whiteman Airport. The Ports of Los Angeles and Long Beach, which are two of the busiest ports in the United States and vital for national and international trade, are also in Los Angeles County. Additionally, Los Angeles Union Station serves as the largest passenger rail station on the west coast.
- **Other Transportation Networks:** The county includes robust passenger rail, bus, and paratransit systems, along with freight rail systems, emerging mobility options such as taxis and rideshare services, and enhanced bicycle networks. This comprehensive network is the backbone for daily commuting, freight movement, and emergency response across the region.

6.13.3 Extent

The scope of transportation incidents spans multiple modes of travel and can have widespread consequences across the county's integrated infrastructure. Road incidents may include multi-vehicle collisions, hazardous material spills, and roadway fires impacting multiple vehicles with potential delays in emergency responses.

- Rail disruptions can impede commuter and freight services, impacting both local transit and regional connectivity.
- Air and maritime incidents—such as delays at major airports or disruptions at port facilities—can significantly affect commerce, supply chains, and public safety.
- Cascading effects across interconnected transportation modes may exacerbate congestion and strain additional infrastructure systems such as power, water, and emergency communications.

The extensive and interdependent nature of these networks means that an incident in one area can quickly influence multiple transportation systems.

6.13.4 History

Los Angeles County has a long record of transportation-related incidents that have disrupted mobility and commerce.

- **2024 Vincent Thomas Bridge Fire:** A semi-truck carrying lithium-ion batteries overturned and caught fire, causing the bridge to be closed for several days.
- **2023 I-10 Freeway Fire:** A fire in a pallet yard below the I-10 freeway in Downtown Los Angeles caused an eight-day closure for repairs and major cascading disruptions.
- **2020 Delta Air Lines Flight 89 Fuel Drop:** Shortly after takeoff from LAX, a Boeing 777 encountered engine problems and conducted a fuel dump over populated areas, injuring over 50 people on the ground.
- **2008 Chatsworth Metrolink Derailment:** A Metrolink passenger train collided with a Union Pacific freight train injuring over 130 people and causing 25 deaths.
- **2007 Newhall Pass Tunnel Fire:** A multi-vehicle collision involving over 30 vehicles caused a fire within the tunnel injuring 10 people and causing 3 deaths.

The historical record reinforces the need to learn from previous events to enhance future preparedness and resilience.

6.13.5 Probability

The likelihood of transportation incidents in Los Angeles County remains elevated due to several converging factors including, but not limited to:

- High daily traffic volumes on freeways and arterials increase the risk of multi-vehicle accidents and congestion-related incidents.
- Aging infrastructure—including bridges, road surfaces, and rail systems—creates a persistent risk of failure, particularly under extreme weather conditions and during peak usage periods.
- The county's role as a major hub for freight and commuter traffic means that even minor incidents can escalate rapidly into larger disruptions.
- The frequent movement of hazardous materials and the increasing reliance on just-in-time delivery systems further elevate the risk of incidents with potentially severe consequences.

Together, these factors contribute to a consistently high probability of transportation incidents impacting the region.

6.13.6 Vulnerability

The vulnerability of Los Angeles County's transportation system is compounded by its interdependent design and its critical role in the regional economy.

- Limited redundancy in key corridors means that a disruption on one freeway or rail line can quickly overload alternate routes.
- Aging and overburdened infrastructure is less resilient to extreme events, leading to longer recovery times after incidents.
- The county's economic dependence on uninterrupted transportation for daily commuting and commercial freight increases exposure to significant losses during disruptions.
- Complex interdependencies between transportation systems, emergency services, and other critical sectors make the network highly sensitive to cascading failures.

This systemic vulnerability calls for coordinated, multi-agency efforts to bolster resilience and implement proactive mitigation measures.

6.13.7 Impacts

Transportation incidents can produce both immediate and long-lasting effects on public safety, commerce, and overall quality of life.

1. **Traffic and Mobility:** Disruptions can lead to severe congestion affecting hundreds of thousands of commuters and freight vehicles, delaying emergency services and disrupting daily operations.
2. **Economic Loss:** Interruptions in the movement of goods and people can result in substantial financial losses, impacting local businesses and the broader regional economy.
3. **Public Safety:** Extended delays in emergency response and Emergency Medical Services (EMS) transport times.
4. **Cascading Disruptions:** An incident in one mode (e.g., a major highway closure) can ripple through the transportation network, affecting rail, air, and maritime operations simultaneously and complicating recovery efforts.

These impacts highlight the critical need for robust mitigation strategies to manage both direct and indirect consequences of transportation incidents.

6.13.8 Summary

Los Angeles County's transportation network is among the most extensive and complex in the nation, serving millions of residents and underpinning a vital economic ecosystem. The diverse transportation modes, while facilitating mobility and commerce, also create vulnerabilities due to overlapping infrastructure and high traffic volumes.

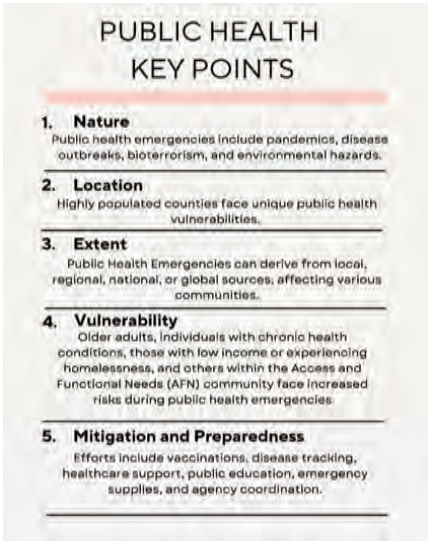
- Aging infrastructure, coupled with the continuous movement of hazardous materials and the increasing pressures of daily usage, contributes to a high probability of incidents.
- Historical data demonstrate that even localized incidents can have far-reaching impacts, including prolonged traffic congestion, economic disruptions, and public safety challenges.

In conclusion, mitigating transportation incident risks in Los Angeles County requires an integrated, countywide approach that combines infrastructure upgrades, enhanced emergency response, and proactive maintenance strategies. Addressing these challenges is essential to safeguard public safety, ensure economic stability, and maintain the region's critical mobility infrastructure.



6.14 Public Health Emergencies

6.14.1 Nature



Public health emergencies in Los Angeles County encompass a broad spectrum of potential hazards, including infectious disease outbreaks, environmental health hazards, and Chemical, Biological, Radiological, Nuclear, Explosives (CBRNE) hazards. Given the county's diverse population, urban density, and economic significance, public health hazards require a coordinated response among government agencies, healthcare institutions, and community partners.

Public health emergencies refer to incidents that pose a significant threat to the health of a population. These include, but are not limited to:

- Pandemics (e.g., COVID-19, Influenza)
- Bioterrorism (e.g., Anthrax, Smallpox, botulism)

- Vector-borne diseases (e.g., West Nile Virus, Zika)
- Foodborne and waterborne illnesses
- Chemical and radiological exposure
- Climate-related health threats (e.g., extreme heat, poor air quality, wildfires)

The County of Los Angeles Department of Public Health (DPH) and the Emergency Medical Services Agency (EMS) collaborate to monitor threats, prevent outbreaks, and mitigate impacts when emergencies arise.

6.14.2 Location and Extent

Los Angeles County, home to over 9.7 million residents, is the most populous county in the United States. Its diverse geography (i.e., urban, coastal, mountainous, and rural) and demography lead to a range of public health vulnerabilities.

Public health emergencies can originate from local, regional, national, or global sources, impacting specific neighborhoods or the entire county. The extent of public health threats varies based on:

- The nature of the threat, such as transmission dynamics or availability of medical countermeasures.
- Population density (higher risks in urban centers for communicable diseases)
- Access to healthcare infrastructure
- Environmental conditions (air pollution, extreme heat events)

6.14.3 History

Public health emergencies in Los Angeles County have included:

- 2022 Monkeypox Outbreak
  - Approximately 2,500 cases were reported in Los Angeles County.
- COVID-19 Pandemic (2020–Present)
  - Over 3 million cases, 450,000 hospitalizations, and 45,000 deaths reported in the county alone.
- 2018 Hepatitis A Outbreak
  - Primarily affecting unhoused populations, requiring mass vaccination efforts.
- 2016-2017 West Nile Virus Outbreaks
  - Multiple cases of mosquito-borne infections leading to severe illness and fatalities.

- 2015-2016 Zika Virus Outbreak
  - No cases of local mosquito-borne transmission, but there were 122 cases reported in the County, with 121 being travel-related.
- 2015 Meningococcal Disease Cluster
  - An outbreak among men who have sex with men (MSM) led to a targeted vaccination campaign.
- 2009 H1N1 Influenza Pandemic
  - Thousands of hospitalizations; schools and businesses affected.

6.14.4 Probability and Emerging Risks

The 2024 Threat and Hazard Identification and Risk Assessment (THIRA) identifies that pandemics and bioterrorism remain high-probability threats. Future public health risks also include:

- Emergence of infectious diseases driven by global travel and climate change.
- Increased incidence of heat-related illnesses amid rising temperatures.
- Increased prevalence of respiratory diseases due to declining air quality.
- Rise of antimicrobial-resistant infections due to overuse of antibiotics.

The County of Los Angeles DPH continually assesses health threats and updates preparedness plans to address evolving concerns.

6.14.5 Vulnerability and Systemic Impacts

Certain populations in Los Angeles County may be disproportionately affected by public health emergencies:

- At-risk populations may be different for different hazards before, during, and after an emergency. It is important to assess each hazard in turn to identify those who may be disproportionately affected to improve preparedness and response efforts.

Public health emergencies strain the healthcare system, disrupt economic activity, and create mental health burdens. The 2024 THIRA report noted that:

- Healthcare infrastructure overload is a major concern during pandemics.
- Potential economic loss from business closures during a prolonged public health crisis could exceed billions of dollars.

6.14.6 Mitigation Strategies and Preparedness Efforts

Los Angeles County employs several mitigation and preparedness strategies:

- Mass Vaccination Campaigns
  - Annual flu shots, COVID-19 vaccinations, and outbreak-specific immunization efforts.
- Points-of-Dispensing (POD) sites
  - Disease Surveillance & Early Warning Systems
- Syndromic surveillance for emerging threats.
  - Targeted sampling surveillance.
- Healthcare Infrastructure Strengthening
  - Expanding hospital capacity for medical surge, and emergency medical resources.
- Community Outreach & Public Health Education
  - Disseminating critical information in multiple languages.
- Emergency Stockpiles (Strategic National Stockpile(SNS))
  - Deployment of antibiotics, antivirals, and personal protective equipment (PPE) in crisis situations.
- Coordination with Federal & State Agencies
  - Collaboration with FEMA, CDC, and the California Department of Public Health to enhance response capabilities.
- Anthrax Threat Simulations
  - The County of Los Angeles Metro system assessed as a high-risk area for bioterrorism response.

6.14.7 Summary

Public health emergencies pose significant challenges to Los Angeles County, impacting healthcare systems, vulnerable populations, and economic stability. While the COVID-19 pandemic provided a major stress test for response efforts, ongoing preparedness, surveillance, and mitigation strategies aim to protect residents from future threats.

Key Takeaways:

- Los Angeles County faces diverse health threats, including pandemics, bioterrorism, and climate-related illnesses.

- Vulnerable populations may suffer disproportionate impacts during public health crises.
- Preparedness efforts focus on surveillance, vaccination, emergency response, and coordination with federal and state partners.
- Future threats include emerging infectious diseases, heat-related illnesses, and antimicrobial resistance.

By continuing investments in public health preparedness, Los Angeles County aims to reduce risks and strengthen resilience against future health emergencies.

7 Mitigation Strategy

7.1 Mitigation Strategy Overview

The Mitigation Strategy section of the All-Hazard Mitigation Plan (AHMP) presents Los Angeles County's strategic blueprint for reducing risks and vulnerabilities posed over the long term associated with the hazards identified in the Hazard Identification and Risk Assessment section. The strategies identified in this section drive mitigation activities based on existing capabilities while also identifying areas of potential future investment to build resilience across communities, critical facilities, and other infrastructure within Los Angeles County.

7.2 Mitigation Goals and Objectives

Mitigation goals are the long-term vision that the County hopes to achieve by implementing the various mitigation strategies described in this AHMP, as well as the broad guidelines that have shaped mitigation strategy development.

- **Goal 1: Protect life, property, infrastructure, the environment, and the economy through equitable mitigation strategies aimed at reducing risks of natural and human-caused hazards.**
    - Objective 1-1: Integrate vulnerable populations, including people with Access and Functional Needs (AFN), into the implementation of any potential mitigation actions.
    - Objective 1-2: Implement mitigation strategies that enhance resilience to disaster impacts across residential areas, commercial areas, infrastructure, high-hazard potential dams, and other critical facilities.
    - Objective 1-3: Inform strategic investments in climate adaptation, development, and redevelopment that are centered in equity and resilience.
- **Goal 2: Enhance community-wide partnerships in hazard mitigation across all levels of government, the private sector, and the public.**
    - Objective 2-1: Build a culture of disaster resilience and awareness of local hazards through public engagement, education, and outreach.
    - Objective 2-2: Strengthen direct coordination among Los Angeles County Operational Area partners to unify efforts for mitigation activities.
    - Objective 2-3: Utilize a whole community approach to address disparities in outcomes posed by the hazards identified in this AHMP.
- **Goal 3: Enhance planning, response, and recovery through hazard identification, assessment, mitigation, and resilience activities.**

  - Objective 3-1: Establish and maintain coordination between hazard mitigation activities and other emergency management functions.
  - Objective 3-2: Integrate hazard mitigation activities into preparedness for future large-scale planned events within Los Angeles County.
- **Goal 4: Ensure eligibility for FEMA grant funding to maximize equitable investment in hazard mitigation actions.**
  - Objective 4-1: Continue to meet all requirements for existing hazard mitigation grant programs used by the County.
  - Objective 4-2: Expand the County's ability to participate in grant programs not currently utilized by the County.

7.2.1 Changes in Mitigation Goals

The AHMP Advisory Committee reviewed the 2020 AHMP goals and updated them to reflect the most current County concerns and priorities. Therefore, the 2025 AHMP has introduced new goals and objectives to build a more resilient community. Table 7-1 (below) compares the 2025 AHMP goals with previous 2020 AHMP goals; all other goals above are new goals and objectives developed by the AHMP Advisory Committee.

Mitigation priorities change through time depending on the type of disaster impacting Los Angeles County, vulnerability, the strategies implemented, as well as other needs of the community. Priorities are also made based on current countywide Threat and Hazard Identification and Risk Assessment (THIRA) studies, National Risk Index Assessment, State Hazard Mitigation Plan (SHMP) and other local plans and guides. The previous 2020 AHMP integrated hazard data into several operational plans including but not limited to the General Plan, Operational Area Emergency Operations Plan (OAEOP), amongst others. Addressing these changes will help to address Los Angeles County hazard priorities and to have mitigation strategies focused on the hazards that impact the region at most. The plan also added additional hazards and addressed a larger vulnerable population.

Table 7-1 Mitigation Goal Updates

Goals Addressed in 2020 AHMP	Goals for 2025-2030 Planning Period	Changes
Build a culture and practice disaster resilience	Goal 2 (see above).	Goal expanded; previous goal integrated as an objective under Goal 2 in the current AHMP.
Better plan for, respond to, and recover from, hazards and disasters including climate change, drought, earthquake, dam failure, flood, landslide, tsunami, and wildfire that affect Los Angeles County.	Goal 3 (see above).	Previous goal replaced with new goal.
More successfully adapt to hazards and disasters including climate change, drought, earthquake, dam failure, flood, landslide, tsunami, and wildfire that affect Los Angeles County.	Goal 1 (see above).	Previous goal replaced with new goal.

7.3 Existing Mitigation Capabilities

The mitigation strategies developed as part of this AHMP seek to maximize existing mitigation capabilities identified as currently available within the Los Angeles County Operational Area. These existing capabilities have been updated to reflect changes in human, technical, financial, legal, regulatory, education, and outreach resources since the 2020 AHMP.

7.3.1 Authorities, Policies, and Legal/Regulatory Resources

There are several existing authorities, policies, and other legal or regulatory resources applicable to hazard mitigation efforts in Los Angeles County. From the County Code of Ordinances to completed plans, these form the cornerstone of hazard mitigation activities by providing a foundation rooted in data, research, planning, Technical Ecological Knowledge (TEK) provided by our state and locally recognized indigenous communities, and elected officials' authority. The County aims to expand and improve upon these identified capabilities by adopting this AHMP, once approved, into the Safety Element of the Los Angeles County General Plan. This action will contribute to the County's ability to be considered for an additional cost-share on Public Assistance projects through the California Disaster Assistance Act. Table 7-2 provides an overview of existing capabilities related to authorities, policies, and legal/regulatory resources.

Table 7-2 Authorities, Policies, and Legal/Regulatory Resources

Authority, Policy, or Resource	Description	Hazards Addressed	Potential to Affect Development
Los Angeles County Operational Area Emergency Operations Plan (2023)	Establishes the coordinated emergency management system within the Los Angeles County Operational Area to prepare for, respond to, and recover from the effects of large-scale emergencies regardless of cause, location, or complexity.	All-Hazard	No
Los Angeles County General Plan (2024)	Provides the policy framework for how and where the unincorporated County will grow through the year 2035.	All-Hazard	Yes
Los Angeles County Comprehensive Floodplain	Reviews existing floodplain management programs in the County and recommends enhancements to them through 35	Flood Land Movement	Yes

Authority, Policy, or Resource	Description	Hazards Addressed	Potential to Affect Development
Management Plan (2021)	mitigation actions. This plan is currently being reviewed and updated with completion targeted for early 2026.		
Los Angeles County Comprehensive Floodplain Management Plan Repetitive Loss Area Analysis (2021)	Analyzes Repetitive Los Areas within Los Angeles County and fulfills Community Rating System requirements.	Flood Land Movement	Yes
County of Los Angeles Floodplain Management Plan Progress Report (2024)	Provides an annual update on the implementation of the action plan identified in the Comprehensive Floodplain Management Plan and on the implementation and evaluation of outreach projects.	Flood Land Movement	Yes
County of Los Angeles Repetitive Loss Area Analysis Progress Report (2023)	Provide an annual update on the implementation of the action plan identified in the Repetitive Loss Area Analysis to ensure there is a continuing and responsive planning process.	Flood	Yes
Los Angeles County Fire Plan (2023)	Describes the wildfire environment, history, and pre-fire management strategies to enhance the protection of lives, property, and natural resources from wildland fire.	Wildfire	Yes

Authority, Policy, or Resource	Description	Hazards Addressed	Potential to Affect Development
Los Angeles County 2045 Climate Action Plan (2024)	Delineates the County's path toward meeting the goals of the Paris Agreement and achieving carbon neutrality for unincorporated Los Angeles County.	Wildfire Extreme Heat Drought Flooding	Yes
Our County: Los Angeles Countywide Sustainability Plan (2019)	Outlines how local governments and stakeholders can enhance the well-being of all County communities while adapting to climate change and reducing damage to the natural environment, particularly focusing on communities disproportionately burdened by pollution.	Wildfire Extreme Heat Drought Flooding	Yes
Los Angeles County Floodplain Management Ordinance	Aims to minimize public and private losses resulting from flood conditions via uniformly applied regulations in flood prone, mudflow, or flood related erosion areas.	Flood Land Movement	Yes
Los Angeles County Code – Title 32: Fire Code	To build a new structure (or an addition equal to or greater than 50% of existing square footage), the Los Angeles County Fire Code requires review of its location, type of construction, topography, slope, amount and arrangement of vegetation, and overall site	Wildfire	Yes

Authority, Policy, or Resource	Description	Hazards Addressed	Potential to Affect Development
	settings—in order to create defensible space necessary for effective fire protection of homes in High Fire Severity Zones.		
Los Angeles County Code – Title 22: Planning and Zoning	Establishes the regulations governing land use and development and defines zoning for unincorporated Los Angeles County. Includes the Hillside Management Area Ordinance (Chapter 22.104), the Residential Design Standards Ordinance, and the Hillside Design Guidelines. These include requirements for development in Hillside Management Areas, which are defined as areas with 25% or greater natural slopes. The guidelines include specific and measurable design techniques that can be applied to residential, commercial, industrial, and other types of projects.	Wildfire Earthquake Land Movement	Yes
Los Angeles County Code – Title 31: Green Building Standards Code	Enhances the design and construction of buildings via building concepts with positive (or reduced negative) environmental impacts, and encourages sustainable construction practices	Extreme Heat Drought	Yes

Authority, Policy, or Resource	Description	Hazards Addressed	Potential to Affect Development
	across planning and design, energy efficiency, water conservation, material and resource efficiency, and environmental air quality.		
Los Angeles County Brush Clearance Program	Legally declares both improved and unimproved properties a public nuisance, and where necessary, requires the clearance of hazardous vegetation thereby creating defensible space for effective fire protection of property, life, and the environment. The Brush Clearance Program is a joint effort between the County of Los Angeles Fire Department and the County of Los Angeles Department of Agricultural Commissioner/Weights and Measures, Weed Hazard, and Pest Abatement Bureau (Weed Abatement Division).	Wildfire	Yes
Los Angeles County Code – Title 26: Building Code	Provides minimum standards to regulate the design, construction, installation, quality of materials, use, occupancy, location, and maintenance of all buildings, structures, grading, and certain equipment. Regulates construction	Earthquake Wildfire	Yes

Authority, Policy, or Resource	Description	Hazards Addressed	Potential to Affect Development
	near a known active earthquake fault (Chapter 1, Section 113), the materials and construction methods for construction in a Wildland-Urban Interface (WUI) Fire Area (Chapter 7A), structural design as it relates to earthquake hazards (Chapter 16, Section 1613), repair of certain buildings in High Earthquake Damage Areas (Chapter 94), earthquake hazard reduction for concrete tilt-up buildings (Chapter 95) and unreinforced masonry buildings (Chapter 96), among others. The Building Code also includes provisions for emergency housing during a proclaimed emergency.		

7.3.2 Human and Technical Resources

Existing human and technical resources across County Departments enable the County to plan, manage, conduct, and execute its wide range of hazard mitigation activities. The resources below represent a high degree of expertise in all facets of hazard mitigation available to support mitigation activities. The County aims to expand and improve upon these identified capabilities by expanding potential hazard training opportunities available to the Los Angeles County Operational Area. Additionally, as various special events are scheduled in Los Angeles County over the next five years, the County should seek to expand coordination and technical resources related to mass violence, cyber, and other special event-related hazards.

Table 7-3 provides an overview of existing capabilities related to human and technical resources.

Table 7-3 Human and Technical Resources

Resource	Department/Agency	Principal Activities Related to Hazard Mitigation
Emergency Management Coordinator(s)	Los Angeles County Office of Emergency Management	• Maintains and updates the Los Angeles County Operational Area Emergency Operations Plan and Los Angeles County All-Hazard Mitigation Plan. • Coordinates local response and recovery activities in the Emergency Operation Center and in the field. • Works closely with local, state, and federal partners to support planning, training, exercise, public information, and resource coordination.
Engineer(s), Building Inspector(s), Code Enforcement Officer(s), Fire Marshalls, and Other Technical Staff	Los Angeles County Public Works and Fire Department	• Oversees the effective, efficient, fair, and safe enforcement of County of Los Angeles Building and Fire Codes.
Engineer(s), Construction Project Managers, and Other Technical Staff	Los Angeles County Public Works	• Provides direct (or contract) civil, structural, and mechanical engineering services, including contract, project, and construction management.
Engineer(s), Project	Los Angeles County Public Works	• Maintains and operates a wide range of local equipment and facilities and assists members of the public by

Resource	Department/Agency	Principal Activities Related to Hazard Mitigation
Manager(s), Equipment Operators, Maintenance and Construction Staff, and Other Technical Staff		providing sufficient clean fresh water, reliable sewer services, street maintenance, storm drainage systems, street cleaning, streetlights, and traffic signals.
Floodplain Administrator	Los Angeles County Public Works	• Enforces the floodplain management ordinance ensuring that development proposals do not increase flood risk and that new developments are not located below the 100-year flood level. In addition, the floodplain administrator is responsible for planning and managing flood risk reduction projects throughout Los Angeles County.
Planner(s), Engineer(s), and Technical Staff	Los Angeles County Department of Regional Planning	• Develops and maintains the Los Angeles County General Plan, including the Safety Element. • Develops area plans based on the Los Angeles County General Plan to provide more specific guidance for the development of more specific areas. • Reviews proposed development, capital improvements, and other physical projects involving property for consistency and conformity with the Los Angeles County General Plan. • Anticipates and acts on the need for applicable new plans, policies, and code changes.

Resource	Department/Agency	Principal Activities Related to Hazard Mitigation
		• Applies the approved plans, policies, code provisions, and other regulations to proposed land uses.
Procurement Services Manager	Los Angeles County Internal Services Department	• Provides a full range of municipal financial services and administers several licensing measures.
Comptroller Personnel	Los Angeles County Auditor – Controller	• Provides financial and grant services.
County Counsel Personnel	Los Angeles County Counsel	• Provides legal services for the County.
Fire Department Personnel	Los Angeles County Fire Department	• Provides fire protection services including response, fire prevention, and mitigation activities for the County.
Sheriff's Department Personnel	Los Angeles County Sheriff's Department	• Provides law enforcement services in the County.

7.3.3 Financial Resources and Programs

There are many existing financial resources, grant programs, and other funding mechanisms that enable current and future hazard mitigation activities. Sources for these resources and programs vary widely from local funding out of the County's General Fund to state and federal programs that aim to help local jurisdictions accomplish their hazard mitigation goals. The amount of funding available is variable and project-specific for many of these programs. Similarly, grant awards are based on the specific projects that are identified as the basis for the grant application. Table 7-4 provides an overview of existing capabilities related to financial resources and programs.

Table 7-4 Financial Resources and Programs

Resource or Program	Administrator	Purpose
General Fund	Chief Executive Office	Program operations and specific projects.
General Obligation Bonds	Auditor - Controller	General obligation bonds are appropriately used for the construction and/or acquisition of improvements to real property broadly available to residents and visitors. Such facilities include but are not limited to: libraries, hospitals, parks, public safety facilities, and cultural and educational facilities.
Special Tax and Revenue Bonds	Controller	Revenue bonds are used to finance capital projects that: 1. Have an identified budgetary stream for repayment (e.g., specified fees, tax receipts); 2. Generate project revenue but rely on a broader pledge of general fund revenues to reduce borrowing costs; or 3. Finance the acquisition and installation of equipment for the local jurisdiction's general governmental purposes.
Vegetation Management Program	Cal FIRE	Cost-sharing program between Cal FIRE and private landowners, which focuses on the use of prescribed fire and/or mechanical means, for addressing wildland fire fuel hazards and other resource management issues on State Responsibility Area (SRA) lands.
Wildfire Emergency and Mitigation Funds	Cal FIRE	Administers funding from FEMA, Bureau of Land Management, and U.S. Forest Service for

Resource or Program	Administrator	Purpose
		certain types of wildfire emergency and mitigation funding.
California Residential Mitigation Program	California Earthquake Authority	Created by the California Earthquake Authority and the Governor's Office of Emergency Services, "Earthquake Brace + Bolt: Funds to Strengthen Your Foundation" is the first incentive program offered by the California Residential Mitigation Program.
Public Health Emergency Preparedness Cooperative Agreement	Center for Disease Control and Prevention	Funds are intended to upgrade state and local public health jurisdictions' preparedness and response to bioterrorism, outbreaks of infectious diseases, and other public health threats and emergencies.
Hazard Mitigation Grant Program (HMGP)	FEMA	Administered by the California Governor's Office of Emergency Services (Cal OES), HMGP supports pre- and post-disaster mitigation plans and projects available to California communities after a presidentially declared disaster has occurred in California.
Pre-Disaster Mitigation (PDM) Grant Program	FEMA	Available annually as a nationally competitive Cal OES grant, the PDM Grant Program supports pre-disaster mitigation plans and projects.
Flood Mitigation Assistance (FMA) Grant Program	FEMA	Available annually as a nationally competitive Cal OES grant, the PDM Grant Program supports pre-disaster mitigation plans and projects.
Homeland Security	FEMA	Builds and sustains preparedness technical assistance activities in support of the four

Resource or Program	Administrator	Purpose
Preparedness Technical Assistance Program		homeland security mission areas (i.e., prevention, protection, response, recovery) and homeland security program management.
Assistance to Firefighters Grant Program	FEMA/U.S. Fire Administration	Provides equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public and emergency personnel from fire and related hazards. Available to fire departments and nonaffiliated emergency medical services providers.
Land and Water Conservation Funds	U.S. Department of the Interior	Supports the protection of federal public lands and waters and voluntary conservation on private land.
Community Action for a Renewed Environment	U.S. Environmental Protection Agency (EPA)	Offers means by which communities may organize/take action to reduce toxic pollution (e.g., in stormwater, etc.) through financial and technical assistance. Communities create partnerships that implement solutions to reduce releases of toxic pollutants and that minimize toxic exposures.
Clean Water State Revolving Fund	EPA	A loan program that provides low-cost financing to eligible entities on state and tribal lands for water quality projects, including all types of non-point source, watershed protection or restoration, estuary management projects, and more traditional municipal wastewater treatment projects.

Resource or Program	Administrator	Purpose
Community Block Grant Program Entitlement Communities Grants	U.S. Department of Housing and Urban Development	Acquisition of real property, relocation and demolition, rehabilitation of residential and non-residential structures, construction of public facilities and improvements (e.g., water/sewer facilities, streets, neighborhood centers, etc.), and the conversion of school buildings for eligible purposes.
High Hazard Potential Dams (HHPD) Grant Program	FEMA	Provides technical, planning, design, and construction assistance in the form of grants for the rehabilitation of eligible high hazard potential dams.
State and Local Cybersecurity Grant Program	FEMA	Provides funding to eligible entities to address cybersecurity risks and threats to information systems owned or operated by, or on behalf of, state, local, or tribal governments.

7.3.4 Education and Outreach Resources

Engagement with the communities of Los Angeles County is an important component of mitigation efforts. The County of Los Angeles has multiple methods, formats, and venues to conduct outreach with community members and provide education on the hazard landscape in Los Angeles County. These activities ensure mitigation efforts align with community goals and include community input. Table 7-5 shows a list of existing resources for education and outreach.

Table 7-5 Education and Outreach Resources

Resource or Program	Agencies Potentially Involved	Purpose
Preparedness Fairs	Office of Emergency Management, Fire Department, Sheriff's Department, Public Works, Board of Supervisors	Engage with community members to provide education on hazards found in Los Angeles County and emergency preparedness for homes and businesses.
Personal Disaster Impact Surveys	Office of Emergency Management	Receive input and feedback on the hazard landscape from community members in Los Angeles County to inform the 2025 AHMP.
AHMP Draft Review Surveys	Office of Emergency Management	Receive input and feedback on sections of the AHMP from community members in Los Angeles County.
Homeless Outreach Services Team (HOST)	Sheriff's Department, Homelessness Services Organizations	Conduct outreach to People Experiencing Homelessness in areas prone to wildfires or flooding based on weather conditions.
Community Emergency Response Teams (CERT)	Fire Department	Educate community members about disaster preparedness and response in their communities.
Explorer Programs	Fire Department, Sheriff's Department	Educate youth about disaster preparedness and response in their communities.
Youth Climate Commission	Chief Sustainability Office	Educate and obtain input from youth on climate change impacts and mitigation efforts.

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7.3.5 National Flood Insurance Program Participation

The National Flood Insurance Program (NFIP) is administered by FEMA and provides affordable flood insurance to participating communities through a network of insurance providers. NFIP regulations must be enforced in Special Flood Hazard Areas (SFHAs). Flood insurance is required for structures in SFHAs with federally backed loans (e.g., most mortgages, Small Business Administration (SBA) loans) and FEMA grants along with any structures with SBA loans, regardless of flood zone. Flood insurance is required to be maintained for the life of the federally backed loan and in perpetuity, regardless of change in ownership, in the case of FEMA grants.

The Los Angeles County Board of Supervisors adopted the County Floodway Ordinance (Los Angeles County Code Title 11, Chapter 11.60) in March 1980. This ordinance included the first County Floodway Maps and paved the way for the County to begin participation in NFIP on behalf of unincorporated residents. The County's participation means that residents (owners and renters) in the unincorporated communities within Los Angeles County are eligible for NFIP flood insurance and Federal flood disaster assistance. The first FEMA Flood Insurance Rate Maps (FIRMs) became effective on December 2, 1980. Since 1980, the County has continued robust participation in NFIP. The FEMA FIRMs were digitized in September 2008 and have been revised over the years by numerous Letters of Map Change and by large-scale Physical Map Revisions for the Ballona Creek watershed and several watersheds in the Santa Monica Mountains (Triunfo Creek, Topanga Canyon and others) in December 2018, the Los Angeles County coastline in April 2021, and the Santa Clara River watershed in June 2021. These maps are available to the public on the Los Angeles County Public Works (PW) website at dpw.lacounty.gov/floodzone.

Los Angeles County also participates in the NFIP's Community Rating System (CRS) program. The CRS program is a voluntary program for communities that engage in community floodplain management activities, which exceed the minimum NFIP standards. CRS communities benefit from a discount on flood insurance rates and improved floodplain management programs. CRS uses a class rating system between 1 and 9 to determine flood insurance premium reductions for residents. As of April 1, 2022, Los Angeles County is a Class 6 CRS community; therefore homeowners and

renters who live in a SFHA can receive up to a 20% discount on their flood insurance policies.

The County's implementation and enforcement of local floodplain management regulations for development in SFHAs are covered in Los Angeles County Building Codes with the most recent update completed in 2023. Title 26, Chapter 1, includes requirements for development within flood hazard areas. Other relevant ordinances include other chapters in Title 26 (Building Code) along with Titles 27 (Electrical Code), Title 28 (Plumbing Code), Title 29 (Mechanical Code), Title 30 (Residential Code), and Title 33 (Existing Building Code). Implementation and enforcement are also covered in the Los Angeles County Subdivision Code (Title 21) and Planning and Zoning Code (Title 22). The NFIP for unincorporated communities is administered by the Department of Public Works (LACPW) Stormwater Engineering Division, which serves as the County's floodplain manager, coordinates with LACPW's Building and Safety and Land Development Divisions and with the Los Angeles County Department of Regional Planning in their enforcement of the County's floodplain management regulations, and participates in FEMA's Community Assisted Visits, which typically occur on a 5-year cycle.

LACPW continues to enforce NFIP regulations for building permit applications determined by Building and Safety officials to be substantial improvement or repair of substantial damage. Los Angeles County also requires all residential buildings undertaking substantial improvement to have their lowest floor elevated 1 foot above the 100-year flood elevation. Additionally, Los Angeles County conducted a Repetitive Loss Area Analysis in 2020, which serves as a specific plan for reducing damage from flooding in repetitive loss areas.

After an event, Public Works staff assess the unincorporated area buildings within the extent of the event. The assessment will identify the buildings that appear to have damages affecting 50 percent or greater of the building. If such a building is in flood-prone areas identified by FEMA's Flood Insurance Rate Maps, County maps (Floodway Maps or Assessor's Maps), or identified by Public Works to be in a Repetitive Loss Area, will undergo further evaluation by Public Works staff on whether the building meets FEMA's definition of substantial improvement/substantial damage (SI/SD). A building that meets FEMA's SI/SD definition will be required to have the entire building upgraded to meet National Flood Insurance Program (NFIP) standards (Title 44, Code

of Federal Regulations, Section 60.3). Los Angeles County Code Title 26, Section 110.1 requires the County to enforce as a minimum the current Federal Flood Plain Management Regulations defined in Title 44, Code of Federal Regulations, Section 60.3, for buildings, structures, and grading located in whole or in part in flood hazard areas. (Ord. 2013-0048 § 2, 2013; Ord. 2010-0053 § 2, 2010; Ord. 95-0065 § 3 (part), 1995.)

7.4 Identification and Analysis of Mitigation Strategies

Potential mitigation actions were identified for each hazard identified in Section 6 in an effort to ensure as comprehensive a mitigation strategy as possible. Multiple mitigation options were then analyzed against the goals and objectives delineated in this section with a focus on new and existing buildings. A combination of new and ongoing mitigation actions aimed at reducing the effects of the identified hazards were compiled into the list of mitigation actions in the following subsection. This list includes a wide range of potential types of mitigation actions, including:

- Local Plans and Regulations.
- Structure and Infrastructure Projects.
- Natural Systems Protection.
- Education and Awareness Programs.

A notable update to the 2025 AHMP was the integration of human-caused threats and corresponding potential mitigation actions. The AHMP Planning Team also reviewed FEMA's Mitigation Ideas document to incorporate national best practices in the list of potential mitigation actions.

7.4.1 Mitigation Strategies

01	*Title:* **Support and Expand Countywide Vegetation Management and Fire Prevention Efforts**
Source: Los Angeles County Fire Department	
Type: Natural Systems Protection	
Description: Conduct passive protection measures such as creating defensible space buffers around residential and non-residential structures through the removal of flammable vegetation, managing and/or reducing hazardous fuels, creating firebreaks, fire-resistive landscaping and construction, and clearing dead vegetation, among others. Engage indigenous communities to inform vegetation management and fire prevention practices aligned with Traditional Ecological Knowledge (TEK).	*Hazard:* **Wildfire** *Hazard:* ***Severe Wind/Tornado***

02	*Title:* **Enhance Community Engagement in Wildfire Protection and Prevention**
Source: Los Angeles County Department of Regional Planning	
Type: Education and Awareness Programs	
Description: Engage residents and businesses in high fire risk communities to educate them on community-focused mitigation and risk reduction strategies, emergency preparedness and evacuation readiness, and opportunities to get involved in fire safety-related community initiatives. Engage indigenous communities to inform protection and prevention practices aligned with Traditional Ecological Knowledge (TEK).	*Hazard:* **Wildfire** *Hazard:* ***Severe Wind/Tornado***

03	*Title:* **Perform Post-Fire Flooding, Debris Flow, and Mud Flow Risk Assessments and Mitigation Activities**
Source: Los Angeles County Department of Public Works	
Type: Structure and Infrastructure Projects	
Description: Following a wildfire, assess burn scar for significant mud and debris flow risks to produce mud and debris flow phase maps for first responding agencies to prepare for potential evacuations. Recommend mitigation strategies to prevent mud and debris flow impacts.	*Hazard:* **Wildfire** *Hazard:* ***Flooding***

04	*Title:* **Strengthen Operational Continuity Capabilities for Critical Facilities**
Source: Los Angeles County Department Public Health, among others.	
Type: Structure and Infrastructure Projects	
Description: Conduct robust continuity planning to ensure the continued performance of essential functions in the event critical facilities are impacted by various hazards. Build capabilities that support operational continuity such as alternate or uninterrupted power supply, workforce development and cross-training, emergency communications, and data backup or failover hardware.	*Hazard:* **Wildfire** *Hazard:* ***Extreme Heat*** *Hazard:* ***Severe Wind/Tornado*** *Hazard:* **Cyber Incidents**

05	*Title:* **Incorporate Hazards in Local Planning, Land Use, and Development Codes**
Source: Los Angeles County Department of Public Works and Regional Planning	
Type: Local Planning and Regulations	
Description: Develop, maintain, and leverage opportunities to strengthen relevant ordinances that govern land use, building codes, and development in high-risk hazard areas. Incorporate mitigation actions in community planning such as Community Wildfire Plans, Flood Management Plans, and the County General Plan, among many others.	*Hazard:* **Wildfire** *Hazard:* **Earthquake** *Hazard:* ***Land Movement*** *Hazard:* ***Severe Wind/Tornado*** *Hazard:* ***Flooding***

06	*Title:* **Increase Public Awareness of Climate Change Effects on Local Hazards**
Source: Los Angeles County Chief Sustainability Office	
Type: Education and Awareness Programs	
Description: Engage with communities on ways climate change impacts various natural hazards along with mitigation actions and available resources for climate adaptation and resilience. Efforts should focus on how communities can take action or support existing County programs including funding available to the public. Public engagement efforts should be accessible, ensure people with Access and Functional Needs are included in outreach, and use materials with multiple language options.	*Hazard:* **Wildfire** *Hazard:* **Extreme Heat** *Hazard:* **Drought** *Hazard:* ***Land Movement*** *Hazard:* ***Severe Wind/Tornado*** *Hazard:* **Flooding**

07	*Title:* **Expand Stormwater Management, Drainage, and Outlet Planning**	
Source: Los Angeles County Department of Public Works		
Type: Local Planning and Regulations		
Description: Continue robust stormwater management programs. Conduct studies to inform measures to improve outlet and drainage planning and prevent flood damage to communities in high-risk areas. These efforts should also prevent flood damage to County-maintained roadways, including evacuation egress and emergency services ingress, while supporting potential groundwater recharge.		*Hazard:* **Flooding** *Hazard:* **Drought** *Hazard:* **Transportation Incident**

08	*Title:* **Construct and Maintain Localized Flood Control Improvements**	
Source: Los Angeles County Department of Public Works		
Type: Structural and Infrastructure Projects		
Description: Maintain existing flood control mechanisms by drainage system maintenance, sediment and debris clearance, and other actions. Leverage opportunities to construct flood control improvements.		*Hazard:* **Flooding**

09	*Title:* **Preserve Floodplains as Public Use Open Spaces**	
Source: Los Angeles County Department of Public Works, among others.		
Type: Natural Systems Protections		
Description: Preserve and expand public use open spaces that capture stormwater with the aim of reducing localized flooding while also providing green space and recreational opportunities to communities. Prioritize floodplains and watersheds in County-owned public use open spaces near flood risk areas. Use stormwater best management practices in projects involving open spaces to support natural water collection and conservation. Incorporate floodplain preservation into future park improvements.		*Hazard:* **Flooding**

10	*Title:* **Harden Critical Facilities and Infrastructure from Seismic Damage**	
Source: Los Angeles County Department of Public Works		
Type: Structure and Infrastructure Projects		
Description: Conduct seismic assessments to prioritize retrofitting and other seismic mitigation actions such as bracing or seismic shutoff valves. Efforts should focus on critical facilities for community lifelines such as hospitals, public safety facilities, utility sites, high-hazard potential dams, and transportation assets (i.e., bridges, roadways, airports, and others).		*Hazard:* **Earthquake** *Hazard:* ***Land Movement*** *Hazard:* **Dam Failure**

11	*Title:* **Prevent Impacts to the Transportation System**
Source: Los Angeles County Department of Public Works	
Type: Structure and Infrastructure Projects	
Description: Hazard impacts to the transportation system in Los Angeles County have far-reaching potential for cascading effects across multiple lifelines. Mitigation activities for multiple hazards should focus on preventing or lessening impacts to transportation. Activities may include stabilization efforts along County-maintained roads, reinforcing transportation assets, or other seismic mitigation actions.	*Hazard:* **Earthquake** *Hazard:* ***Land Movement*** *Hazard:* **Transportation Incident**

12	*Title:* **Continue Efforts to Enhance Dam Safety and Reduce Long-Term Vulnerabilities with High Hazard Potential Dams**
Source: Los Angeles County Department of Public Works	
Type: Structure and Infrastructure Projects	
Description: Upgrade infrastructure to ensure the long-term integrity and safe operation of County-owned dam facilities. Potential actions could include strengthening of dams, sediment management activities, regular inspections, continuous maintenance, integrating advanced technologies, and emergency preparedness efforts.	*Hazard:* **Earthquake** *Hazard:* **Dam Failure**

13	*Title:* **Assess Water Resilience in Los Angeles County**
Source: Los Angeles County Department of Public Works	
Type: Local Planning and Regulations	
Description: Conduct assessments and studies to monitor the water supply and develop recommendations for other water systems. Identify potential secondary water sources or other contingency measures for ensuring water system resilience during drought conditions.	*Hazard:* **Drought**

14	*Title:* **Expand Drought-Tolerant Landscaping and Design**
Source: Los Angeles County Chief Sustainability Office and Department of Regional Planning	
Type: Natural Systems Protection	
Description: Integrate drought mitigation into landscaping and design measures undertaken by the County. Prioritize native and drought-tolerant plants when selecting landscaping designs. Use permeable materials for pavers, driveways, walkways, and roadways to reduce runoff and promote groundwater recharge that incorporate indigenous- informed practices aligned with Traditional Ecological Knowledge (TEK).	*Hazard:* **Drought**

15	*Title:* **Address Urban Heat Islands by Investing in Green Infrastructure and Cooling Strategies**
Source: Los Angeles County Chief Sustainability Office, Department of Regional Planning, Department of Economic Opportunity, Department of Public Health, and Department of Public Works, among others.	
Type: Local Planning and Regulations	
Description: Increase shade cover provided by vegetation such as planting native and drought-tolerant trees along with smaller plants such as shrubs, grasses, and groundcover. Increase the tree canopy in County parks and open concrete or asphalt spaces in the public right of way or County-owned parking lots. Conduct assessments to identify communities considered urban heat islands that are at highest need for an increase in tree canopy or other heat mitigation activities. Advance cooling strategies such as constructing shade structures, installing splash pads, operating cooling centers, modernizing air conditioning systems, and expanding the availability of cool roofing infrastructure that reflects heat away from buildings. Ensure mitigation actions address heat impacts faced by people with Access and Functional Needs. Many of these actions have a secondary benefit mitigating the effects of climate change by promoting carbon sequestration, the capture and storage of CO2 from the atmosphere. Additionally, increasing green space and shade cover in urban areas can advance environmental justice.	*Hazard:* ***Extreme* Heat**

16	*Title:* **Increase Coastal Resilience, Prevent Erosion, and Protect Shorelines**
Source: Los Angeles County Chief Sustainability Office and Department of Beaches and Harbors	
Type: Natural Systems Protection	
Description: Conduct activities to replace sediment lost due to erosion or coastal storms. Assess the need for other sediment protection measures such as planting certain types of vegetation. Consider activities that prevent wind from blowing sand off beaches and impacts from storm surge in high-risk areas. These actions help protect coastal roadways and other infrastructure along with ensuring recreation opportunities remain for residents and visitors.	*Hazard:* **Flooding** *Hazard:* **Tsunami**

17	*Title:* **Conduct Multi-Discipline Training and Exercise Programs**
Source: Los Angeles County Sheriff's Department and Office of Emergency Management	
Type: Education and Awareness Programs	
Description: Identify opportunities for joint training and exercises for mass violence and cyber incident response across disciplines of law enforcement, fire and emergency medical services, medical examiner, private sector, and others. Each training and exercise should include mass violence rescue and evacuation techniques for AFN populations.	*Hazard:* **Mass Violence** *Hazard:* **Cyber Incidents**

18	*Title:* **Strengthen Partnerships and Coordination Among Local Agencies**	
Source: Los Angeles County Sheriff's Department and Office of Emergency Management		
Type: Education and Awareness Programs		
Description: Expand collaborative agreements with other agencies to share resources during large-scale emergencies. Strengthen partnerships with local agencies for resource sharing. Enhance response capabilities during major incidents.		*Hazard:* **Mass Violence** *Hazard:* **Cyber Incidents**

19	*Title:* **Incorporate Mass Violence Prevention and Mitigation Efforts into Special Event Planning**	
Source: Los Angeles County Sheriff's Department and Office of Emergency Management		
Type: Education and Awareness Programs		
Description: Use physical security measures such as bollards, water-filled barricades, vehicle barriers, and others. Identify mitigation measures for upcoming special events such as the World Cup, Super Bowl, and Olympics. Conduct special event training on topics such as crowd management, sporting event safety, and stadium evacuation. Incorporate Family Assistance Center readiness into special event planning.		*Hazard:* **Mass Violence**

20	*Title:* **Extreme Heat Risk Education and Safety Outreach for Residents and Vulnerable Workers**	
Source: Los Angeles County Chief Sustainability Office, Department of Economic Opportunity, Department of Public Health, and Department of Public Works		
Type: Education and Awareness Programs		
Description: Implement outreach and education to workers in low-wage and high hazard industries in LA County that are disproportionately impacted by extreme heat. Partner with organizations providing services to people with Access and Functional Needs on heat response strategies. Expand awareness of cooling centers and other heat respite options for unhoused populations. Increase workforce development opportunities to expand the availability of green infrastructure.		*Hazard:* ***Extreme* Heat**

21	*Title:* **Increase Field Response and Coordination Capabilities**	
Source: Los Angeles County Sheriff's Department and Office of Emergency Management		
Type: Education and Awareness Programs		
Description: Enhance field coordination capabilities at large-scale planned events and no-notice incidents such as wildfires, mass violence, and others. Potential actions could include investments in new redundant communications systems, response vehicles, alert and warning capabilities, and other field operations equipment.		*Hazard:* **Wildfire** *Hazard:* **Mass Violence**

22	*Title:* **Strengthen Public Health Prevention and Preparedness Measures**
Source: Los Angeles County Office of Emergency Management, Department of Public Health, Department of Health Services, and Fire Department	
Type: Education and Awareness Programs	
Description: Continue and expand mass vaccination and immunization efforts. Coordinate healthcare surge preparedness and response efforts. Conduct disease surveillance, monitor early warning systems, and coordinate outbreak response. Educate communities and businesses about health implications related to wildfire recovery and hazardous materials. Liaise with health system partners to understand hospital surge capacity within the County. Maintain and deploy emergency stockpiles. Incorporate potential climate change-related infectious disease implications into public health preparedness planning.	*Hazard:* **Public Health Emergencies**

7.5 Status of Previous Mitigation Efforts

Table 7-6 below shows the status of mitigation strategies described in the 2020 AHMP. Departments have made significant progress on some of these mitigation strategies, partially but not fully completing some of these efforts. As such, each strategy from the 2020 AHMP have been rolled into the mitigation strategies described in this section.

Table 7-6 Status of Mitigation Efforts

2020 AHMP Strategy	Status	2025 AHMP Strategy
Red Flag Warning Public Outreach	Not Completed/ Ongoing	Enhance Community Engagement in Wildfire Protection and Prevention

2020 AHMP Strategy	Status	2025 AHMP Strategy
Vegetation Management Program	Not Completed/ Ongoing	Support and Expand Countywide Vegetation Management and Fire Prevention Efforts
Fireproof Coating of Critical Facilities	Not Completed/ Ongoing	Enhance Community Engagement in Wildfire Protection and Prevention
Auxiliary Power for Critical Facilities	Not Completed/ Ongoing	Strengthen Operational Continuity Capabilities for Critical Facilities
Earthquake-Resistant Ductile Iron Pipes Replacement	Not Completed/ Ongoing	Harden Critical Facilities and Infrastructure from Seismic Damage
Watershed Ecosystem Restoration	Not Completed/ Ongoing	Preserve Floodplains as Public Use Open Spaces
Green Streets / Living Streets	Not Completed/ Ongoing	Expand Drought-Tolerant Landscaping and Design
Coordinated Data Collection and Database Systems	Not Completed/ Ongoing	Strengthen Partnerships and Resource Coordination Among Local Agencies
Brush Clearance Program	Not Completed/ Ongoing	Support and Expand Countywide Vegetation Management and Fire Prevention Efforts
Wildland Urban-Interface Ordinance	Not Completed/ Ongoing	Incorporate Hazards in Local Planning, Land Use, and Development Codes
Urban Forest Management Plan	Not Completed/ Ongoing	Address Urban Heat Islands by Investing in Green Infrastructure and Cooling Strategies

2020 AHMP Strategy	Status	2025 AHMP Strategy
Community Wildfire Protection Plans	Not Completed/ Ongoing	Incorporate Hazards in Local Planning, Land Use, and Development Codes
Pre-Disaster Professional Support	Not Completed/ Ongoing	Strengthen Operational Continuity Capabilities for Critical Facilities
Fuel Trailer Project	Not Completed/ Ongoing	Strengthen Operational Continuity Capabilities for Critical Facilities

7.6 Prioritization and Implementation of Mitigation Actions

Potential mitigation actions were prioritized using the FEMA National Risk Index (NRI) score and information from the 2024 Los Angeles Threat and Hazard Identification and Risk Assessment (THIRA), which both address hazards by frequency, severity, and impact. Both the NRI and THIRA follow established processes and use a standardized risk assessment methodology. The NRI incorporates multiple variables including physical impacts posed by hazards in addition to social vulnerability data that communicates risks specific to a certain community. Table 7-7 provides an overview of the NRI results for Los Angeles County across 18 hazards. Hazards rated as Relatively Low, Not Applicable, or No Rating were not included in this AHMP as they are uncommon in frequency in Los Angeles County; all other hazards are covered in this plan.

Table 7-7 FEMA National Risk Index Hazards

Hazard	NRI Score (out of 100.0)	Score Description	Covered in Plan?
Earthquake	100.0	Very High	Yes | Section 6.3
Wildfire	99.9	Very High	Yes | Section 6.2
Extreme Heat	98.4	Relatively High	Yes | Section 6.4
Tornado	97.6	Relatively High	Yes | Section 6.10

Hazard	NRI Score (out of 100.0)	Score Description	Covered in Plan?
Landslide	96.3	Relatively High	Yes | Section 6.8
Lightning	95.0	Relatively High	Yes | Section 6.2/ 6.6
Riverine Flooding	90.8	Relatively Moderate	Yes | Section 6.6
Drought	73.8	Relatively Moderate	Yes | Section 6.5
Strong Wind	73.5	Relatively Moderate	Yes | Section 6.10
Tsunami	63.5	Relatively Moderate	Yes | Section 6.10
Winter Weather	48.6	Relatively Low	Not Prioritized
Hail	48.1	Relatively Low	Not Prioritized
Coastal Flooding	43.3	Very Low	Not Prioritized
Avalanche	33.7	Very Low	Not Prioritized
Cold Wave	0.0	No Rating	Not Prioritized
Hurricane	N/A	Not Applicable	Not Prioritized
Ice Storm	N/A	Not Applicable	Not Prioritized
Volcanic Activity	N/A	Not Applicable	Not Prioritized

The THIRA is a process that communities undertake to assess risk and set capability targets to focus their preparedness efforts and strengthen response and recovery capabilities. There are three primary focuses of the THIRA: threat and hazard identification, impacts analyses that include the specific demographics of the community, and a description of existing response and recovery capabilities. The 2024 Los Angeles/Long Beach THIRA was reviewed as part of this hazard mitigation planning effort and all threats and hazards identified were included as part of this AHMP. Additionally, the THIRA's identification of several human-caused threats with potential to impact Los Angeles County influenced the decision to include such threats in this AHMP. Table 7-8 shows a crosswalk of the hazards and threats identified in the THIRA and their corresponding sections in this AHMP.

Table 7-8 2024 THIRA and 2025 AHMP Crosswalk

2024 THIRA Hazard/Threat Name	2025 AHMP Hazard/Threat Name	Covered in Plan?
Biological Attack	Public Health Emergencies	Yes | Section 6.14
Complex Coordinated Terrorist Attack	Mass Violence	Yes | Section 6.11
Cyber Attack	Cyber Incident	Yes | Section 6.12
Earthquake	Earthquake	Yes | Section 6.3
Flood	Flooding	Yes | Section 6.6
Pandemic – Human	Public Health Emergencies	Yes | Section 6.14
Radiological Attack	Public Health Emergencies	Yes | Section 6.14
Transportation Accident	Transportation Incident	Yes | Section 6.13
Wildfire	Wildfire	Yes | Section 6.2

Additional criteria used to prioritize potential mitigation actions also included the following components:

- Actions that prioritize equity and integrate vulnerable populations, including people with AFN.
- Potential benefits of the action to prevent a major hazard.
- Actions that have social support to build a culture and practice of resilience.
- Cost of the action versus the potential benefit to prevent a major hazard.
- Availability of funding and actions that support grant requirements.
- Political support to remedy or prevent a major health or safety hazard.
- Actions that are technically, legally, environmentally, and economically feasible.
- Actions that the County has the administrative capabilities to implement.
- Actions that are related to mitigating long-term vulnerabilities to County-owned High Hazard Potential Dams will automatically be given a HIGH priority.

7.6.1 Priority Levels

- **High-Priority Mitigation Actions:** are essential and require immediate attention to address critical risks and safeguard life, property, or essential systems.

- **Medium-Priority Mitigation Actions:** are important but less urgent, supporting overall risk reduction and resilience goals while allowing for planned implementation.
- **Low-Priority Mitigation Actions:** address lower-risk concerns or long-term objectives and can be deferred without immediate impact to safety or core functions.

7.6.2 Changes in Criteria

The 2014 Los Angeles County AHMP's Mitigation Action Matrix was prioritized using the Social, Technical, Administrative, Political, Legal, Environmental, and Economic (STAPLEE) method, which FEMA had recommended as a prioritization procedure in the early to mid-2000s. The 2020 AHMP replaced the use of STAPLEE with a more streamlined prioritization process that included the following:

- To remedy or prevent a major health/safety hazard, a mitigation project must have political support.
- To build a culture and practice of disaster resilience, a mitigation project must have social support.
- To meet FEMA HMA grant criteria, a mitigation project must be technically, legally, environmentally, and economically feasible and the jurisdiction must have the administrative capabilities to implement it.

This prioritization method used in the 2020 AHMP has been adapted and incorporated into the prioritization criteria described previously in Section 7.6.

7.7 Integration with Other Plans

The County of Los Angeles ensures that mitigation is a countywide effort with multiple departments contributing to critical activities that reduce hazard risks. These actions are captured in other discipline-specific plans in addition to the AHMP, including those listed in Table 7-9.

Table 7-9 AHMP Integration with Other Plans

Plan	Authored By	Hazard(s)	Covered in Plan?
Comprehensive Floodplain Management Plan	Los Angeles County Department of Public Works	Flood	Yes
Repetitive Loss Area Analysis Report	Los Angeles County Department of Public Works	Flood	Yes
Climate Action Plan	Los Angeles County Department of Regional Planning	Wildfire Extreme Heat Flooding Drought	Yes
Sustainability Plan	Los Angeles County Chief Sustainability Office	Wildfire Extreme Heat Flooding Drought	Yes
County Fire Plan	Los Angeles County Fire Department	Wildfire	Yes

7.8 Mitigation Action Plan

Table 7-10 represents a Mitigation Action Plan to reduce risks of the hazards identified in this AHMP. Notably, many County departments include discipline-specific mitigation actions within other related plans mentioned in the above section. Some actions that mitigate risk of natural hazards that are covered elsewhere may not be explicitly listed or may be referred to in general terms while specific details are available in other related plans.

Table 7-10 Mitigation Action Plan

Action No.	Priority	Hazard	Action Name	Potential Funding Source	Expected Time Frame	Lead Agencies
01	HIGH	**Wildfire** ***Severe Wind/Tornado***	Support and Expand Countywide Vegetation Management and Fire Prevention Efforts	HMGP	Annual	LACoFD, PW
02	HIGH	**Wildfire** ***Severe Wind/Tornado***	Enhance Community Engagement in Wildfire Protection and Prevention	HMGP	Quarterly	LACoFD, DRP, OEM, LASD
03	HIGH	**Wildfire** ***Flooding***	Perform Post-Fire Flooding, Debris Flow, and Mud Flow Risk Assessments and Mitigation Activities	HMGP, FMA	Annual	PW, LACoFD, OEM
04	HIGH	**Wildfire** ***Extreme Heat***		UASI, SHSP	Annual	OEM, PW, DPH,

Action No.	Priority	Hazard	Action Name	Potential Funding Source	Expected Time Frame	Lead Agencies
		Severe Wind/Tornado	Strengthen Operational Continuity Capabilities for Critical Facilities			LACoFD, LASD, ISD
		Cyber Incidents				
05	HIGH	**Wildfire**	Incorporate Hazards in Local Planning, Land Use, and Development Codes	HMGP, FMA	1-3 Years	DRP, PW
		Earthquake				
		Land Movement				
		Severe Wind/Tornado				
		Flooding				
06	MEDIUM	**Wildfire**	Increase Public Awareness of Climate Change Effects on Local Hazards	FMA, Prop 4	Annual	DRP, CSO, CEO
		Extreme Heat				
		Drought				
		Land Movement				
		Severe Wind/Tornado				
		Flooding				

Action No.	Priority	Hazard	Action Name	Potential Funding Source	Expected Time Frame	Lead Agencies
07	HIGH	**Flooding**	Expand Stormwater Management, Drainage, and Outlet Planning	FMA	1-5 Years	PW
		Drought				
		Transportation Incident				
08	HIGH	***Flooding***	Construct and Maintain Localized Flood Control Improvements	FMA	1-5 Years	PW
09	MEDIUM	***Flooding***	Preserve Floodplains as Public Use Open Spaces	FMA, Prop 4	1-5 Years	PW, DRP, DPR
10	HIGH	**Earthquake**	Harden Critical Facilities and Infrastructure from Seismic Damage	HMGP	1-5 Years	PW, ISD
		Land Movement				
		Dam Failure				
11	MEDIUM	**Earthquake**	Prevent Impacts to the Transportation System	HMGP	1-5 Years	PW, LASD
		Land Movement				
		Transportation Incident				

Action No.	Priority	Hazard	Action Name	Potential Funding Source	Expected Time Frame	Lead Agencies
12	HIGH	Earthquake Dam Failure	Conduct Seismic Strengthening at County-Owned Dams	FMA, HHPD	1-5 Years	PW
13	MEDIUM	Drought	Assess Water Resilience in Los Angeles County	Prop 4	1-5 Years	PW, DRP
14	MEDIUM	Drought	Expand Drought-Tolerant Landscaping and Design	Prop 4	1-5 Years	DPR, DRP, PW, CSO
15	HIGH	Extreme Heat	Address Urban Heat Islands by Investing in Green Infrastructure and Cooling Strategies	Prop 4	1-5 Years	CSO, DRP, DEO, DPH, PW, DPR
16	HIGH	Flooding Tsunami	Increase Coastal Resilience, Prevent Erosion, and Protect Shorelines	FMA, Prop 4	1-5 Years	CSO, DBH, PW
17	HIGH	Mass Violence Cyber Incidents	Conduct Multi-Discipline Training and Exercise Programs	UASI, SHSP	1-5 Years	LASD, OEM, LACoFD
18	MEDIUM	Mass Violence Cyber Incidents	Strengthen Partnerships and Resource Coordination Among Local Agencies	UASI, SHSP	1-5 Years	LASD, OEM, LACoFD

Action No.	Priority	Hazard	Action Name	Potential Funding Source	Expected Time Frame	Lead Agencies
19	MEDIUM	Mass Violence	Incorporate Mass Violence Prevention and Mitigation Efforts into Special Event Planning	UASI, SHSP	1-5 Years	LASD, OEM, LACoFD
20	HIGH	Extreme Heat	Extreme Heat Risk Education and Safety Outreach for Residents and Vulnerable Workers	Prop 4	1-5 Years	CSO, DEO, DPH, PW, DAD
21	HIGH	Public Health Emergencies	Strengthen Robust Public Health Prevention and Preparedness Measures	UASI, SHSP, PHEP, HPP	1-5 Years	DPH, OEM, DHS, LACoFD
22	MEDIUM	Wildfire Mass Violence	Increase Field Response and Coordination Capabilities	UASI, SHSP	1-5 Years	LASD, OEM, LACoFD

Agency Key:
CEO = Los Angeles County Chief Executive Office
CSO = Los Angeles County Chief Sustainability Office
DAD=Los Angeles Department of Aging and Disabilities
DBH = Los Angeles County Department of Beaches and Harbors
DEO = Los Angeles County Department of Economic Opportunity
DHS = Los Angeles County Department of Health Services
DPH = Los Angeles County Department of Public Health
DPR = Los Angeles County Department of Parks and Recreation
PW = Los Angeles County Public Works
DRP = Los Angeles County Department of Regional Planning
ISD = Los Angeles County Internal Services Department
LACoFD = Los Angeles County Fire Department.
LASD = Los Angeles County Sheriff's Department
OEM = Los Angeles County Chief Executive Office - Office of Emergency Management

Grant Program Key:
FMA = Flood Mitigation Assistance
HMGP = Hazard Mitigation Grant Program
HPP = Hospital Preparedness Program
PHEP = Public Health Emergency Preparedness
SHSP = State Homeland Security Program
UASI = Urban Area Security Initiative

8 Plan Maintenance

8.1 Community Participation in Plan Maintenance

The Hazard Mitigation Plan will be reviewed regularly, acknowledging the dynamic nature of hazard landscapes and the evolving understanding of risks. Stakeholders' engagement will be prioritized throughout the development and monitoring process, fostering transparency and accountability.

To maintain transparency and community involvement, the County has outlined several measures for continued public participation:

- **Public Access to Hazard Mitigation Documents:** A copy of the 2025 AHMP will be maintained on the Los Angeles County Hazard Mitigation Program website along with contact information. Los Angeles County OEM will notify the public of any changes or updates, including mitigation projects identified in the plan as they are implemented, via social media, and traditional local media channels.
- **Annual Public Engagement Opportunities:** Los Angeles County OEM will endeavor to hold multiple in-person public engagement opportunities for hazard mitigation to keep the public informed of progress on hazard mitigation projects, obtain ongoing public feedback, and educate the public about the County's hazard mitigation efforts.
- **Online Portal:** A Los Angeles County Hazard Mitigation Program website will be established to provide the public with more information on hazard mitigation and project updates. This portal will serve as a mechanism to obtain continuous public feedback as projects are implemented and offers access to mitigation resources.
- **Standing Advisory Committee:** The Hazard Mitigation Advisory Committee will be expanded to a standing status and will meet at least once per year or more often as determined necessary to support hazard mitigation projects. The standing Hazard Mitigation Advisory Committee will be comprised of representatives from diverse community groups to provide ongoing input and oversight of hazard mitigation efforts. The standing Hazard Mitigation Advisory Committee will also serve as an important forum for future updates of the AHMP.

These activities ensure that the community remains informed and actively engaged in the plan's implementation and maintenance.

8.2 Monitoring, Evaluation, and Maintenance

To ensure the continued effectiveness of this All-Hazard Mitigation Plan (AHMP), effective monitoring and evaluation will be conducted throughout the plan implementation period. Regular assessments will monitor progress and evaluate the achievements of the intended outcomes. Performance metrics will be developed to quantify the impact of each mitigation action, allowing for data driven adjustments and refinements.

The plan will be reviewed annually to assess progress on mitigation actions. Annual review will include the following elements:

- **Annual Review Worksheets:** Every year, LA County OEM will email each member of the Hazard Mitigation Advisory Committee an Annual Review Worksheet to complete. As shown in Appendix E, the Annual Review Worksheet reflects the FEMA Local Hazard Mitigation Plan Review Tool and includes the following sections: planning process, hazard profile, risk assessment, and mitigation strategy. Each member of the Hazard Mitigation Advisory Committee will email completed worksheets back to LA County OEM to review. LA County OEM will summarize these findings and email them out to the committee. Additionally, the findings from the review worksheets will be presented to the full Hazard Mitigation Advisory Committee at its next regular meeting.
- **Mitigation Progress Project Reports:** Mitigation actions will be monitored and updated using the Mitigation Project Progress Report. During each annual review, each department or agency currently administering a mitigation project will submit a progress report to LA County OEM. For projects that are being funded by a FEMA mitigation grant, FEMA quarterly reports may be used as the preferred reporting tool. As shown in Appendix E, the progress report will discuss the current status of the mitigation project, including any changes made to the project, identify implementation problems, and describe appropriate strategies to overcome them.
- **Post-Incident Mitigation Review:** Following a major disaster event impacting Los Angeles County, a post-disaster review will be initiated by LA County OEM to evaluate the need to update the AHMP based on the circumstances of the disaster and incorporate any specific mitigation actions required due to the incident. If LA County OEM finds that an update to the AHMP is needed, the Hazard Mitigation Advisory Committee will be convened to begin drafting the update.

8.3 Criteria for Updating the Hazard Mitigation Plan

The All-Hazards Mitigation Plan (AHMP) is required to be updated every five years in compliance with the Disaster Mitigation Act of 2000 (DMA 2000) and FEMA guidance (44 CFR § 201.6). The update process is not merely an administrative requirement but a critical mechanism to evaluate the plan's effectiveness in reducing risk and guiding mitigation strategies.

1. Review of Past Actions and Effectiveness

The update process begins with a thorough review of the mitigation actions outlined in the previous plan. This includes:

- Evaluating the implementation status of each action (completed, in progress, not started).
- Assessing the impact and effectiveness of completed actions in reducing hazard risk.
- Determining if the objectives are still relevant or require modification based on new data or circumstances.

2. Integration of New Data and Changing Conditions

- Hazard profiles and risk assessments are updated with new hazard event data, climate science, and changes in development or land use.
- Demographic shifts and infrastructure changes are reviewed to reassess vulnerability.
- Technological advancements or improved modeling tools (e.g., Hazus, National Risk Index) are incorporated to refine risk analysis.

3. Community and Stakeholder Input

The update process must actively include community participation to maintain transparency and ensure the plan reflects local priorities. This includes:

- Public workshops and surveys.
- Targeted outreach to vulnerable populations including those with Access and Functional Needs (AFN).
- Feedback from County departments, cities, NGOs, and regional partners.

4. Performance Evaluation and Metrics

To ensure effectiveness, the plan maintenance strategy includes:

- Annual progress reports that monitor implementation progress and identify barriers.
- Metrics to evaluate the reduction of risk or exposure over time.
- Documentation of lessons learned from real events and exercises to inform changes.

5. Revision of Goals, Objectives, and Actions

Based on the evaluation findings, the plan's goals and mitigation actions are revised to improve alignment with current capabilities, risk levels, and funding opportunities. Each updated action includes:

- Clear responsibilities.
- Realistic timelines.
- Evaluation metrics to measure future success.

8.4 Plan Update

The 2025 LHMP includes an updated methodology for future revisions, ensuring compliance with federal and state guidelines. A full plan update will occur every five years.

- **2030 AHMP Update Kickoff:** LA County OEM will convene the Hazard Mitigation Advisory Committee for a meeting to review the worksheet findings and endeavor to begin the process of updating the AHMP in approximately November 2028. The planning process should begin a minimum of 18 months prior to the plan's expiration. LA County OEM, in consultation with the Hazard Mitigation Advisory Committee, will develop a work plan for the update, conduct

research and review relevant documentation, determine hazards to be included in the 2030 AHMP, and begin the process to draft an updated AHMP.

- **Plan Submission and Adoption:** Once updated, the plan is submitted to Cal OES and FEMA for review. Upon conditional approval, it must be adopted by the Los Angeles County Board of Supervisors and participating jurisdictions to maintain eligibility for FEMA Hazard Mitigation Assistance (HMA) grants.

8.5 Integration with Other Plans

Los Angeles County is committed to ensuring that hazard mitigation planning is not a standalone effort, but a fully integrated component of broader County planning initiatives. By strategically weaving the goals, objectives, and actions of the All-Hazards Mitigation Plan (AHMP) into a variety of local and regional plans such as the General Plan, Capital Improvement Plans, Climate Action and Adaptation Plans, and departmental strategic plans; the County promotes a more cohesive and effective approach to building long-term resilience. This integration is achieved through ongoing collaboration with County departments, cities, and regional agencies to align land use, infrastructure development, and emergency preparedness efforts with identified hazard risks. Embedding hazard mitigation principles into existing policies and planning mechanisms ensures that they become an inherent part of decision-making processes, project funding prioritization, and long-term investment strategies ultimately reducing vulnerabilities and enhancing the resilience of communities across Los Angeles County.

The Los Angeles County AHMP will be shared across all jurisdictions within the operational area. Those jurisdictions will have the opportunity to incorporate the 2025 AHMP into their established planning process. The Hazard Mitigation Advisory Committee will assess the plan at a yearly basis, acknowledging the dynamic nature of hazard landscapes and the evolving understanding of risks. The OEM Hazard Mitigation Program will make the AHMP available for all county departments to incorporate into departmental planning efforts, and other relevant documents produced by Los Angeles County departments.

9 Plan Adoption

9.1 Plan Adoption Overview

Plan Adoption addressed Element F of the Local Mitigation Plan Regulation Checklist under single jurisdiction plan requirement.

The Los Angeles County Board of Supervisors officially adopted the 2025 All Hazard Mitigation Plan (AHMP) through a formal resolution on September 9, 2025. A scanned copy of the resolution is included in Appendix F. The Los Angeles County Office of Emergency Management (OEM) will retain the resolution for its records, while copies will be submitted to both Cal OES and FEMA.

This Plan adoption completes the mitigation planning process and department agencies, stakeholders, and community's commitment to the goals and actions. It also recognizes the current planning process and acknowledges changes from the past five years and validates the priorities for hazard mitigation actions. It makes the community eligible for certain FEMA assistance that can fund some mitigation actions.

After being adopted by the Los Angeles County Board of Supervisors, the 2025 AHMP transitions into the implementation phase. The success of the plan hinges on the integrating its mitigation strategies and actions into the local plans and policies. The mitigation action items collectively establish a robust framework to guide the County's hazard mitigation strategies over the next five years. To ensure these strategies are effective, actionable and well aligned with the county's long term resilience goals, the Planning Advisory Committee has set clear objectives. Their prioritized approach focuses on seamlessly blending mitigation actions with current policies, plans, and emphasizing collaboration and coherence throughout.

Appendices

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX I

WATER RATES

Dear Water Customer:

The escalating costs of maintaining the Company's aging water system, planning multi-year improvements to ensure fire suppression supply, PFAS water treatment, encouraging conservation, combined with rising water costs and operating expenses, have made it necessary for the Company to increase its water usage rates.

Effective with the September 1, 2025 Billing, the Company's meter charges and water usage rates (not including applicable surcharges) will be as follows:

SINGLE FAMILY & GOVERNMENT:

Water usage.....$2.51/ccf < 18 ccf
$2.88/ccf 19-35 ccf
$4.13/ccf > 36 ccf

MULTI-FAMILY, COMMERCIAL & INDUSTRIAL:

All water usage..... $3.03 /ccf

In the Booster Area an additional... $0.17 /ccf

WRD Surcharge..... $1.05 /ccf

TWO-MONTH METER CHARGE:

5/8" & 3/4" Meters.....	$44.09	Plus Stock Assessment
1" Meters.....	$64.01	Plus Stock Assessment
1 1/2" Meters.....	$201.01	Plus Stock Assessment
2" Meters.....	$303.84	Plus Stock Assessment
3" Meters.....	$438.24	Plus Stock Assessment
4" Meters.....	$768.41	Plus Stock Assessment
6" Meters.....	$1,307.41	Plus Stock Assessment

TWO-MONTH FIRE PROTECTION METER CHARGE:

4" Det. Check.....	$331.80 Plus Stock Assessment
6" Det. Check.....	$426.65 Plus Stock Assessment
8" Det. Check.....	$491.94 Plus Stock Assessment
10" Det. Check	$572.00 Plus Stock Assessment

One-Month Unit charge.....$12.66 per unit.

BOARD OF DIRECTORS
MONTEBELLO LAND & WATER COMPANY

MONTEBELLO LAND AND WATER COMPANY

2025 URBAN WATER MANAGEMENT PLAN

APPENDIX J

RESOLUTION ADOPTING 2025 PLAN AND WSCP

MONTEBELLO LAND AND WATER COMPANY

CERTIFICATE OF BOARD RESOLUTIONS RE APPROVAL OF 2025 URBAN WATER MANAGEMENT PLAN AND 2025 WATER SHORTAGE CONTINGENCY PLAN

The undersigned Corporate Secretary of Montebello Land and Water Company, a California corporation (the "Company"), does hereby certify that the following are true and correct copies of Resolutions unanimously adopted at regular meetings of the Board of Directors at regular meetings of the Company held in the City of Montebello, in Los Angeles County, State of California on June 9, 2026 and that these Resolutions have not been revoked by any subsequent action of the Board of Directors or Shareholders of the Company, but are still in full force and effect:

RESOLVED: The Board finds that the 2025 Urban Water Management Plan (1) satisfies all applicable requirements, and (2) that a duly noticed public hearing has been conducted. The Company General Manager is directed to submit the 2025 Urban Water Management Plan to the California Department of Water Resources.

RESOLVED: The Board finds that the 2025 Water Shortage Contingency Plan (1) satisfies all applicable requirements, and (2) that a duly noticed public hearing has been conducted. The Company General Manager is directed to submit the 2025 Water Shortage Contingency Plan to the California Department of Water Resources.

Dated: June 9, 2026

MONTEBELLO LAND AND WATER COMPANY

Norman Akashi
Secretary