Retail (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
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	Part 2 Chapter 2 Part 1 Chapter 3
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	Part 2 Chapter 2 Executive Summary
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	Part 2 Chapter 2
x	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	Part 2 Chapter 2 Section 2.1
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	Part 2 Chapter 2
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	Part 2 Chapter 2
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	Part 2 Chapter 2 Section 9 Part 4 Appendix B-2
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	Part 4 Appendix B-2
x	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	Part 1 Chapter 5
n/a	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	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	Part 2 Chapter 2 Section 1.1
x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	Part 2 Chapter 2 Section 1.1
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	Part 2 Chapter 2 Section 1.1
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	Part 2 Chapter 2 Section 1.1
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	Part 2 Chapter 2 Section 1.1
x	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	Part 2 Chapter 2 Section 2
x	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	Part 2 Chapter 2 Section 2.1.3
x	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	Part 2 Chapter 2 Section 2.1.3
x	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	Part 2 Chapter 2 Section 2.3
x	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	Part 2 Chapter 2 Section 2.2

Retail (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	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	Part 2 Chapter 2 Section 2.2
x	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	Part 2 Chapter 2 Section 2
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	Part 2 Chapter 2 Section 2.4 Part 1 Chapter 5
n/a	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	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	Part 2 Chapter 2 Section 3
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	Part 2 Chapter 2 Section 4 Part 1 Chapter 3
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	Part 2 Chapter 2 Section 4 Part 2 Chapter 2 Section 5.3 Part 1 Chapter 5 Section 2
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	Part 2 Chapter 2 Section 4.2
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	Part 2 Chapter 2 Section 4.2 Part 1 Chapter 3
x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	Part 2 Chapter 2 Section 4.2 Part 1 Chapter 3
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	Part 2 Chapter 2 Section 4.2 Part 1 Chapter 3
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	Part 2 Chapter 2 Section 4.2 Part 1 Chapter 3
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	Part 2 Chapter 2 Section 4.2 Part 1 Chapter 3

Retail (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
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	Part 2 Chapter 2 Section 4.2
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	Part 2 Chapter 2 Section 4.8
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	Part 2 Chapter 2 Section 4.8 Part 1 Chapter 3 Part 1 Chapter 5
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	Part 2 Chapter 2 Section 4.6
x	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	Part 2 Chapter 2 Section 4.5
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	Part 2 Chapter 2 Section 4.5
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	Part 2 Chapter 2 Section 4.5.1
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	Part 2 Chapter 2 Section 4.5 Part 1 Chapter 3 Section 5
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	Part 2 Chapter 2 Section 4.5 Part 1 Chapter 3 Section 5
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	Part 1 Chapter 3 Section 5
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	Part 1 Chapter Section 5
x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	Part 1 Chapter 3 Section 8
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	Part 2 Chapter 1 Section 4.7 Part 1 Chapter 3 Section 9
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	Part 2 Chapter 2 Section 4.9
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	Part 2 Chapter 2 Section 5 Part 1 Chapter 3
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	Part 2 Chapter 2 Section 5.3 Part 1 Chapter 5 Section 2
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	Part 1 Chapter 3

Retail (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
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	Part 2 Chapter 2 Section 2.4 Part 1 Chapter 5
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	Part 2 Chapter 2 Section 6 Part 1 Chapter 5
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	Part 2 Chapter 8 Section 6 Part 1 Chapter 5
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	Part 2 Chapter 2 Section 6 Part 1 Chapter 5
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	Part 2 Chapter 2 Section 5.1 Part 1 Chapter 5
x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
x	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	Part 4 Appendix B-7

Retail (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
x	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	Part 4 Appendix B-7
x	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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
x	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	Part 4 Appendix B-7
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	Part 4 Appendix B-7
x	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	Part 2 Chapter 2 Section 8
n/a	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	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	Part 2 Chapter 2 Section 9
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	Part 2 Chapter 2 Section 9 Part 4 Appendix B-2
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	Part 2 Chapter 2 Section 9
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	Part 4 Appendix B-3
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	Part 4 Appendix B-3
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	Part 4 Appendix B-3

Retail (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
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	Part 2 Chapter 2 Section 9
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	Part 2 Chapter 2 Section 9
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	Part 2 Chapter 2 Section 9
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	Part 2 Chapter 2 Section 9
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	Part 2 Chapter 2 Section 9
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	Part 2 Chapter 2 Section 9
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	Part 2 Chapter 2 Section 9

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Josie Sun
Suburban Water Systems
1325 N. Grand Avenue, Suite 100
Covina, CA 91724-4044
josie.sun@nexuswq.com

DELIVERED VIA EMAIL AND MAIL

SUBURBAN WATER SYSTEMS – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Ms. Sun,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

Water Code section 10621(b) requires an urban water supplier updating its UWMP and WSCP to notify cities and counties within its service area of the update at least sixty (60) days prior to holding a public hearing, thereby encouraging public involvement and agency coordination. This letter serves as City of Glendora's notice that it is preparing and updating its 2025 UWMP, WSCP, and amending its 2020 UWMP.

If you would like more information, please contact Paul Zampiello, via email at pzampiello@cityofglendora.gov or by phone at (626) 852-4838.

Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

David Michalko
Covina Irrigation Company (Covina Valley Water Company)
3009 E. Virginia Avenue
West Covina, CA 91791
dmichalko@covinavalleywater.org

DELIVERED VIA EMAIL AND MAIL

COVINA IRRIGATION (COVINA VALLEY WATER COMPANY) – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Mr. Michalko,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

Water Code section 10621(b) requires an urban water supplier updating its UWMP and WSCP to notify cities and counties within its service area of the update at least sixty (60) days prior to holding a public hearing, thereby encouraging public involvement and agency coordination. This letter serves as City of Glendora's notice that it is preparing and updating its 2025 UWMP, WSCP, and amending its 2020 UWMP.

If you would like more information, please contact Paul Zampiello, via email at pzampiello@cityofglendora.gov or by phone at (626) 852-4838.

Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Chris Marcarello
City of Covina
125 E. College Street
Covina, CA 91723
cmarcarello@covinaca.gov

DELIVERED VIA EMAIL AND MAIL

CITY OF COVINA – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Mr. Marcarello,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

Water Code section 10621(b) requires an urban water supplier updating its UWMP and WSCP to notify cities and counties within its service area of the update at least sixty (60) days prior to holding a public hearing, thereby encouraging public involvement and agency coordination. This letter serves as City of Glendora's notice that it is preparing and updating its 2025 UWMP, WSCP, and amending its 2020 UWMP.

If you would like more information, please contact Paul Zampiello, via email at pzampiello@cityofglendora.gov or by phone at (626) 852-4838.

Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Tikan Singh
City of Azusa
729 N. Azusa Avenue
Azusa, CA 91702
tsingh@azusa.gov

DELIVERED VIA EMAIL AND MAIL

CITY OF AZUSA – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Mr. Singh,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

Water Code section 10621(b) requires an urban water supplier updating its UWMP and WSCP to notify cities and counties within its service area of the update at least sixty (60) days prior to holding a public hearing, thereby encouraging public involvement and agency coordination. This letter serves as City of Glendora's notice that it is preparing and updating its 2025 UWMP, WSCP, and amending its 2020 UWMP.

If you would like more information, please contact Paul Zampiello, via email at pzampiello@cityofglendora.gov or by phone at (626) 852-4838.

Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Nabil Saba
Golden State Water Company
401 San Dimas Canyon Drive
San Dimas, CA 91773
nabil.saba@gswater.com

DELIVERED VIA EMAIL AND MAIL

GOLDEN STATE WATER COMPANY – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Mr. Saba,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

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Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Tom Love
Upper San Gabriel Valley Municipal Water District
248 E. Foothill Blvd., Suite 200
Monrovia, CA 91016
tom@usgvmwd.org

DELIVERED VIA EMAIL AND MAIL

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Mr. Love,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

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Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Matthew Litchfield
Three Valleys Municipal Water District
1021 E. Miramar Avenue
Claremont, CA 91711
mlitchfield@tvwmd.com

Delivered via Email and Mail

THREE VALLEYS MUNICIPAL WATER DISTRICT – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Mr. Litchfield,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

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Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Kelly Gardner
Main San Gabriel Basin Watermaster
725 N. Azusa Avenue
Azusa, CA 91702
kelly@watermaster.org

Delivered via Email and Mail

MAIN SAN GABRIEL BASIN WATERMASTER – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Ms. Gardner,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

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Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Jeff Kugel
City of Glendora, Department of Community Development
116 E. Foothill Blvd.
Glendora, CA 91741
jkugel@cityofglendora.gov

DELIVERED VIA EMAIL AND MAIL

CITY OF GLENDORA – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Mr. Kugel,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

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Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

City of Glendora | Public Works
116 E. Foothill Blvd.
Glendora, CA 91741

March 11, 2026

Registrar Recorder/County Clerk
County of Los Angeles
12400 Imperial Highway
Norwalk, CA 90650

DELIVERED VIA EMAIL AND MAIL

REGISTRAR RECORDER/COUNTY CLERK – NOTICE OF PREPARATION OF THE 2025 URBAN WATER MANAGEMENT PLAN AND SHORTAGE CONTINGENCY PLAN

Dear Registrar Recorder/County Clerk,

City of Glendora is in the process of preparing and updating its 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act. An update of the City of Glendora's UWMP is required every five (5) years.

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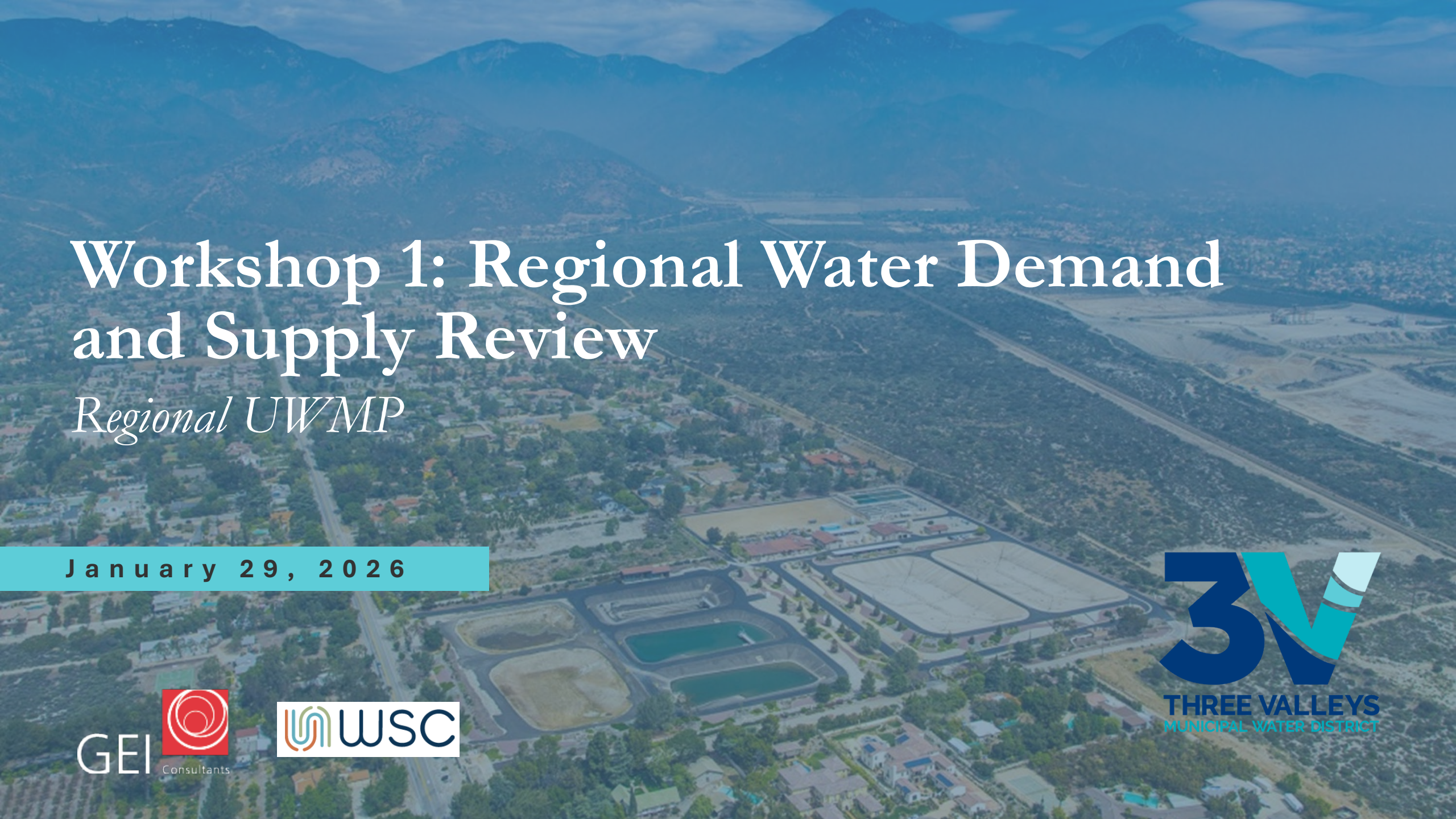
Sincerely,

Paul Zampiello
Assistant Public Works Director - Water Division
City of Glendora

Regional Workshop #1 Materials



Workshop 1: Regional Water Demand and Supply Review

Regional UWMP

January 29, 2026

GEI Consultants

WSC

THREE VALLEYS MUNICIPAL WATER DISTRICT

Workshop Introduction

Three Valleys Municipal Water District

RUWMP-Participating Agencies:

- City of Glendora
- City of La Verne
- City of Pomona
- GSWC – Claremont
- GSWC – San Dimas
- Rowland Water District
- Three Valleys Municipal Water District
- Walnut Valley Water District

Other Member Agencies:

- Boy Scouts of America - Firestone Reservation
- California Polytechnic University, Pomona
- City of Covina
- Mt. San Antonio College
- Suburban Water Systems
- Valencia Heights Water Company

Workshop Objectives

I. **Refresh on RUWMP**

II. **Touch base on progress**

III. **Plan ahead to complete the effort on time**

IV. **Answer your questions**

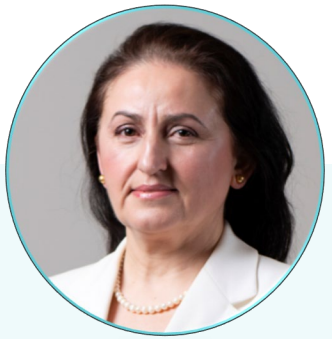
Workshop Agenda

5 min	Welcome & Introductions
15 min	Overview of the 2025 Regional UWMP Structure
40 min	Supply & Demand Projections
15 min	Drought Risk Assessment
5 min	WSCP Update
30 min	Q&A
10 min	Schedule and Next Steps

Presenters and GEI/WSC Project Team

Matthew Bachman
Water Supply & DRA
(Presenter)

Peter Kavounas, PE
Senior Civil Engineer
(Presenter)



Sevim Onsoy
Project Manager

Fatima Segoviano
UWMP Development
(Presenter)

Roger Putty, PE, PMP
Principal-in-Charge

Kwabena Asante, PhD, PE
Technical Lead, Water Supply Reliability

Laine Carlson
Technical Advisor

Spencer Waterman
Technical Lead, Demands

Overview of the 2025 Regional UWMP Structure

Regional UWMP Structure

PART 1

Regional Context

Part 1 Contains the information needed to meet the requirements of the UWMP Act for the local agencies who are using this Plan to meet their 2025 UWMP Requirements.

1. Introductions
2. Region Description
3. Regional Water Sources and Management
4. Comparison of Regional Supplies and Demands
5. Water Management Goals, Objectives, and Strategies
6. Projects
7. Implementation, Performance, and Adaptive Management

PART 2

Local Agency UWMPs

Part 2 Provides supplemental information for the eight local agencies who are using this Plan to meet their 2025 UWMP requirements.

1. Three Valleys Municipal Water District
2. City of Glendora
3. City of La Verne
4. City of Pomona
5. Golden State Water Co. (Claremont)
6. Golden State Water Co. (San Dimas)
7. Rowland Water District
8. Walnut Valley Water District

PART 3

Regional Supporting Information

Part 3 Includes all of the supporting documentation referenced in Part 1 that is applicable to the region as well as the regulatory compliance guide that DWR will use to verify that Part 1 meets the UWMP requirements.

PART 4

UWMP Agency Supporting Information

Part 4 Includes a set of supporting documentation for each UWMP agency corresponding to their respective chapters in Part 2. Documents will include a compliance guide that DWR will use to verify the agency met the UWMP Act requirements, the Agency's WSCP Plan and other documents specific to each agency.

Three Valleys

- Part 1
- Part 2, Chapter 1
- Part 3
- Part 4, Appendix 1

Participating Agency (e.g., City of Glendora)

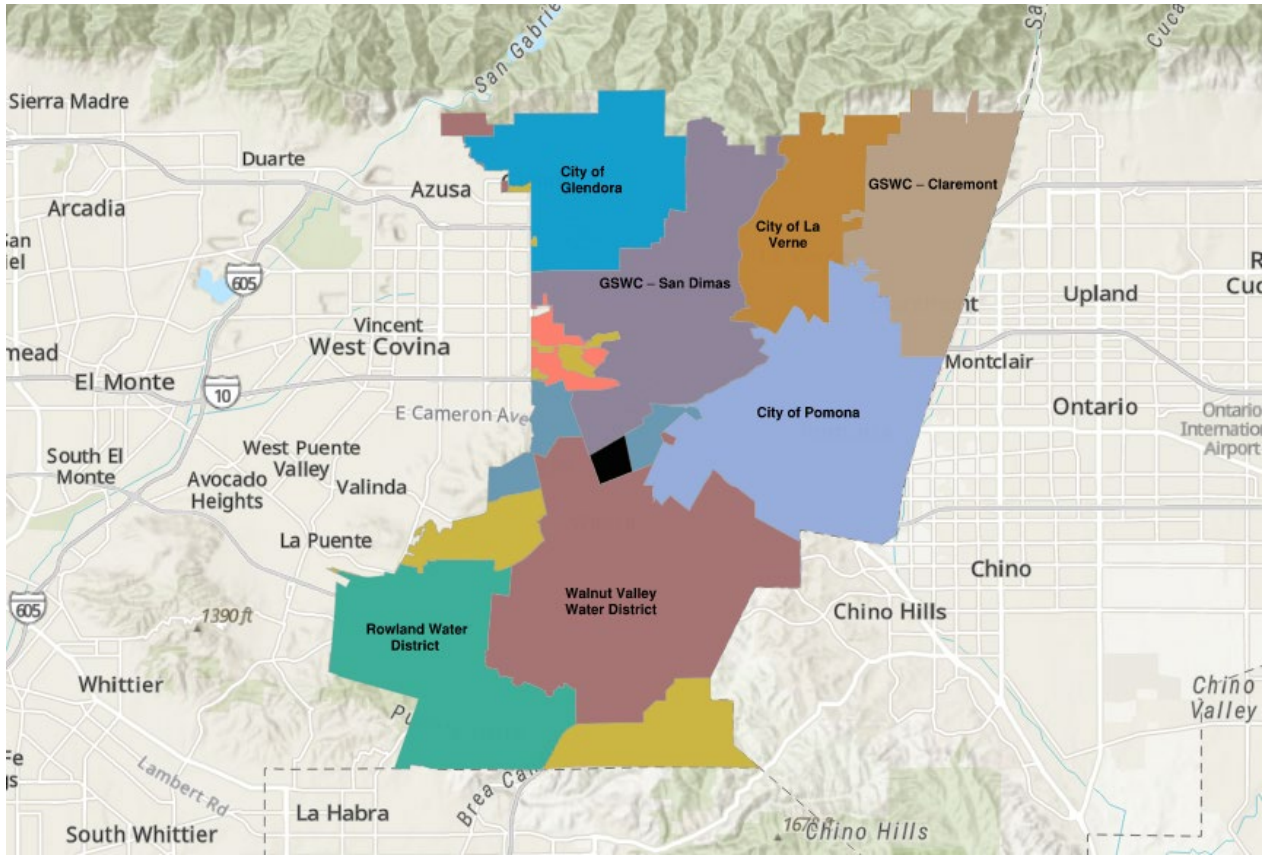
- Part 1
- Part 2, Chapter 2
- Part 3
- Part 4, Appendix 2

Supply & Demand Projections

Regional Portfolio | Data Collection & Background

- **Comprehensive Data Gathering:** Collected historical production, consumption, and water loss data (2021-2025) to establish a “baseline” water use.
- **Agency Collaboration:** Conducted individual meetings with 7 participating agencies to ground-truth demand drivers, supply constraints, and future development plans.
- **Regional Integration:** Incorporated available data for the 6 other TVMWD agencies to build a complete regional picture of the Three Valleys service area.

This dataset serves as the backbone for the RUWMP, ensuring regional infrastructure and supply reliability projects are based on accurate local realities.



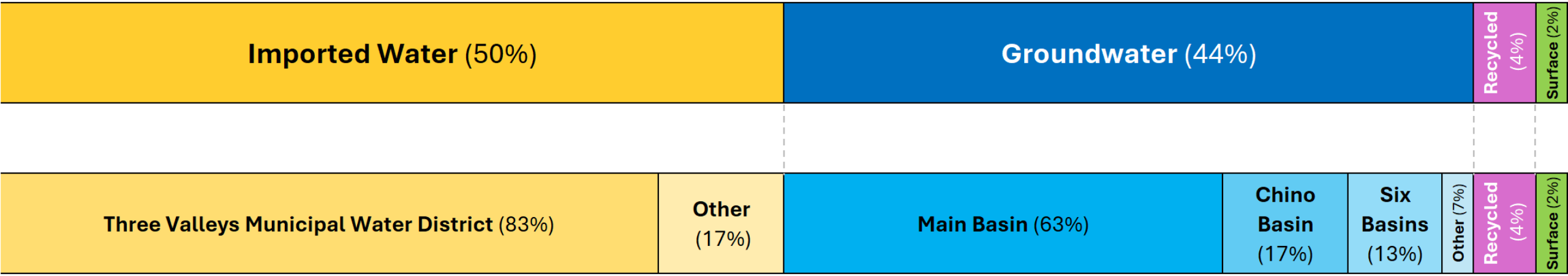
Existing | Regional Water Use Baseline (2021-2025)

Regional Water Use =

RUWMP Participants

+ Other TVMWD Agencies

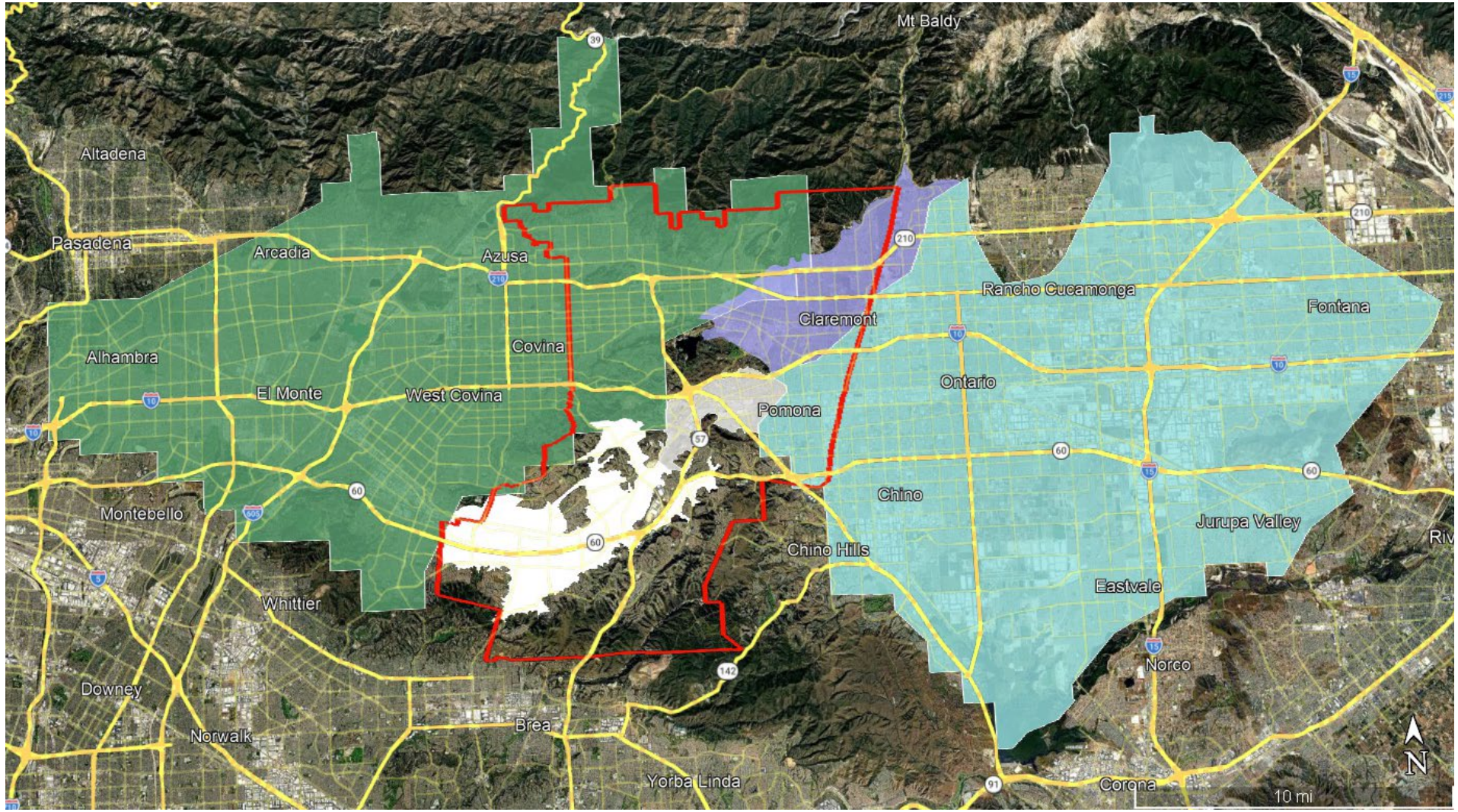
Agency Type	Water Use Data Source
RUWMP Participants (7)	Provided by agencies
Other TVMWD Agencies (6)	Estimated from publicly available documentation and data provided to TVMWD for other planning efforts



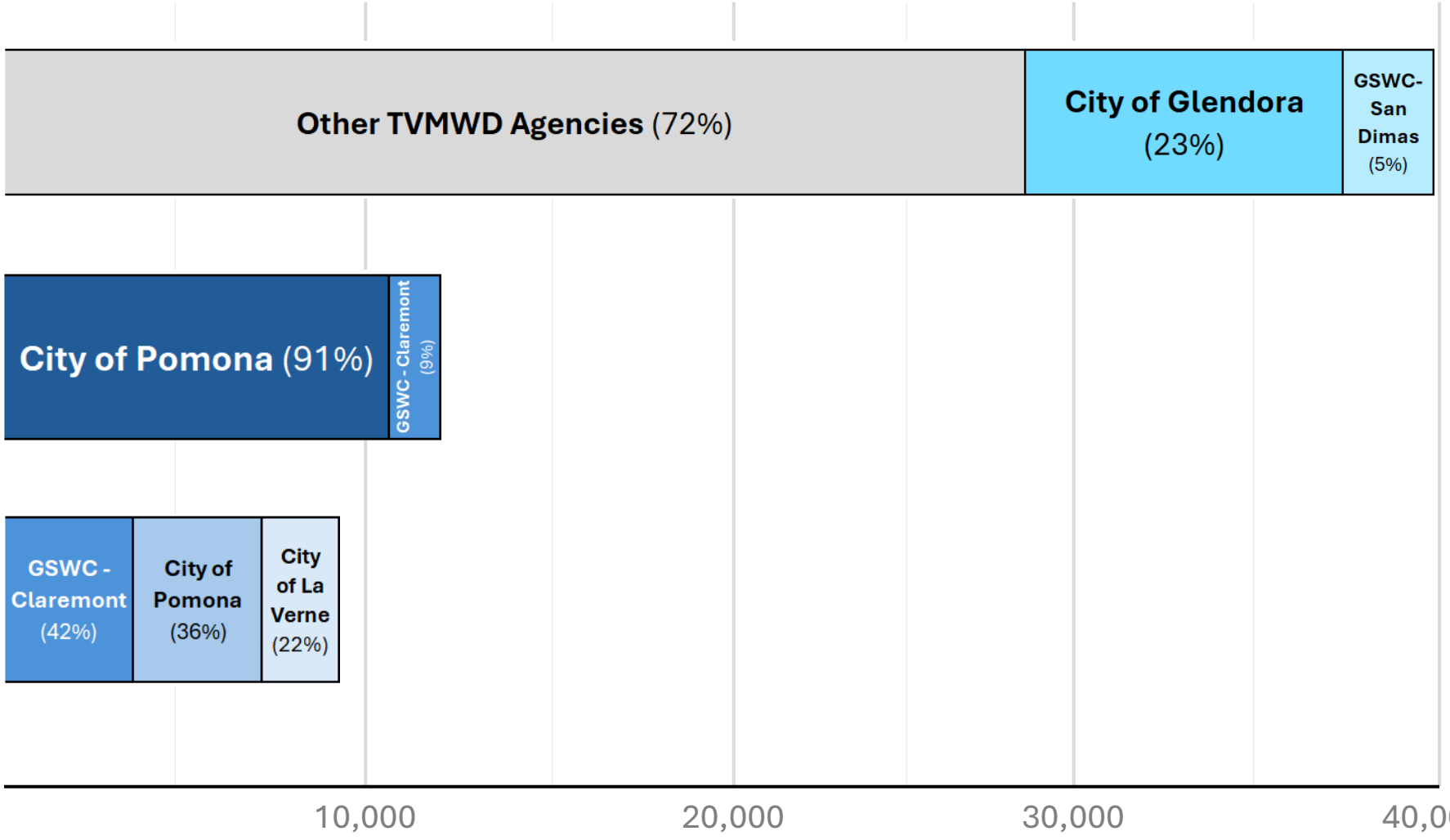
Existing | Regional Groundwater Portfolio

Legend

- Main San Gabriel Basin
- Puente Basin
- Chino Basin
- Six Basins
- Spadra Basin
- Three Valleys



Existing | Regional Groundwater Portfolio (2021-2025)

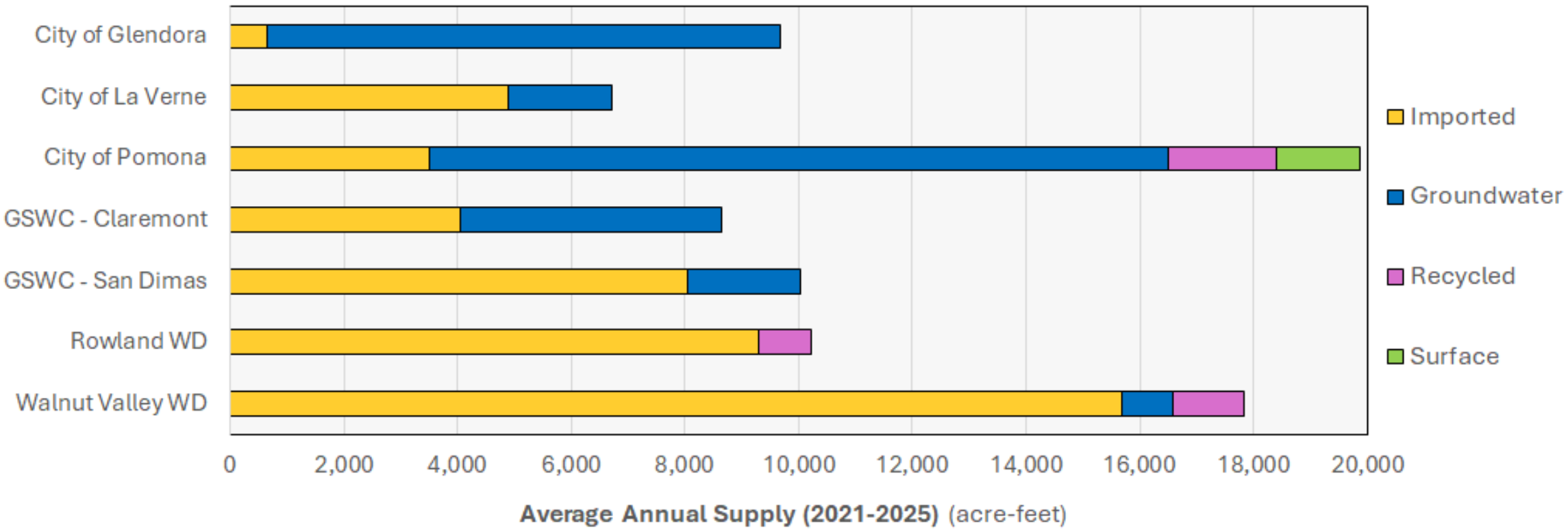


Main Basin

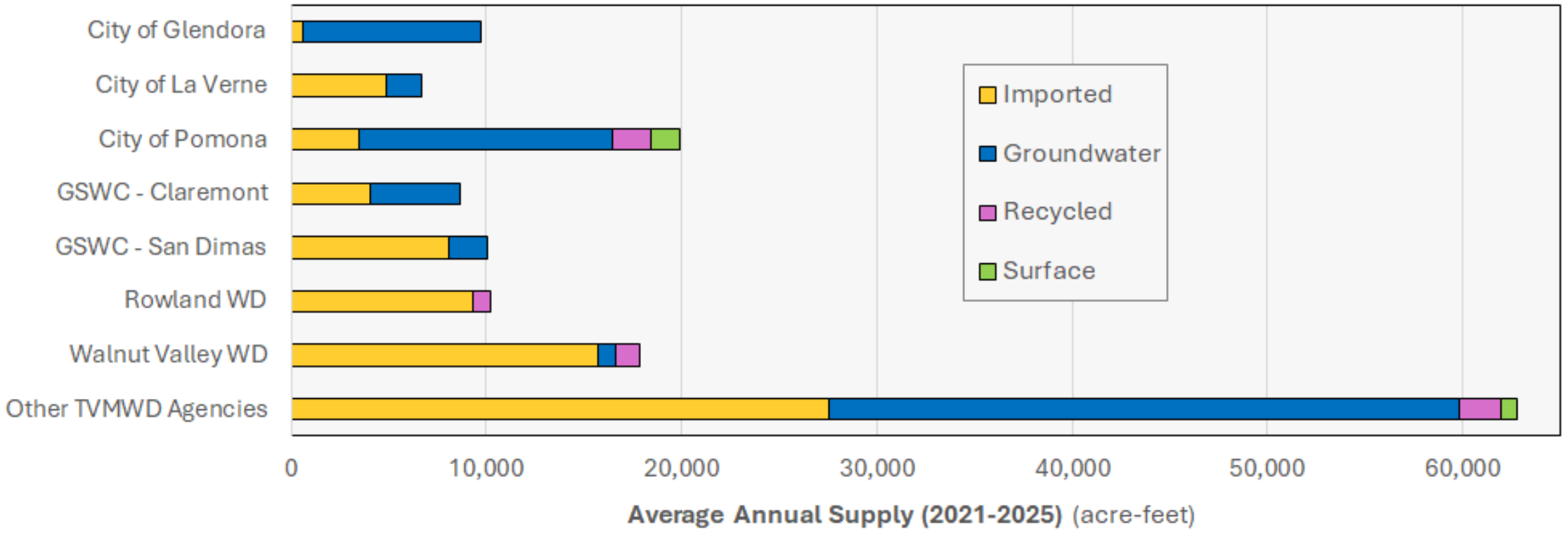
Chino Basin

Six Basins

Existing | RUWMP Agency Water-Use Baselines (2021-2025)



Existing | Regional Water-Use Baselines (2021-2025)



Projected | Demand Projections Methodology

- **Multi-Scenario Analysis:** Developed and presented up to five distinct demand projection methodologies to each participating agency, ranging from "Status Quo" trends to aggressive "CWOL Compliance" scenarios.

- **Agency Collaboration:** Participating agencies worked one-on-one with GEI and WSC to review these scenarios and identify the specific methodology most representative of their local service area.

- **Regional Integration:** The finalized regional demand reflects a "bottom-up" aggregation of these agency-verified selections, ensuring the plan is grounded in local operational reality.

Step 1: Connections Growth Selection

Growth Option 1- Connections Increase at Selected Methods per Use Type	Residential Indoor	Residential Outdoor	CII	Landscape	Other
If Option 1 Selected: Select specified growth method for each use type to the right:	*Population Annual Growth Rate*	*Households Annual Growth Rate*	*Employees Annual Growth Rate*	*Employees Annual Growth Rate*	*Historic Connection Change Rate*

	2025-35	2035-2050
Population Annual Growth Rate	0.15%	0.03%
Households Annual Growth Rate	0.53%	0.12%
Employees Annual Growth Rate	0.16%	0.05%
Historic Connection Change Rate- SFR	-0.24%	-0.24%
Historic Connection Change Rate- MFR	0.00%	0.00%
Historic Connection Change Rate- Commercial	2.40%	2.40%
Historic Connection Change Rate- Landscape	20.34%	20.34%

Step 2: Baseline & Future Demand Factors Selection

	Residential Indoor	Residential Outdoor	CII	Landscape	Other
Baseline Year(s)	2025	2025	2025	2025	2025
Existing Connections: Factor % Change by 2030 *A positive % is a reduction applied to the baseline demand factors.*	0%	0%	0%	0%	0%
Existing Connections: Factor % Change by 2035 onward	1.0%	1.0%	1%	1%	1%
Total Baseline Factor % Change by 2040	2.0%	2.0%	2.0%	2.0%	2.0%
UWUO-Based Reduction Reference for 2040	*45.7%*	*34.6%*	*0%*	*44%*	*N/A*
New Connections: Factor % Change by 2030	10%	10%	10%	10%	10%
New Connections: Factor % Change by 2035 Onward	5%	5%	5%	5%	5%
Total Baseline Factor % Change by 2040	20.0%	20.0%	20.0%	20.0%	20.0%
UWUO-Based Reduction Reference for 2040	*45.7%*	*47.3%*	*0.0%*	*43.9%*	*N/A*
Indoor/ Outdoor Water Usage Percentages	51%	49%			
Indoor Water Usage Percentages			100%	0%	100%
Outdoor Water Usage Percentages			0%	100%	0%

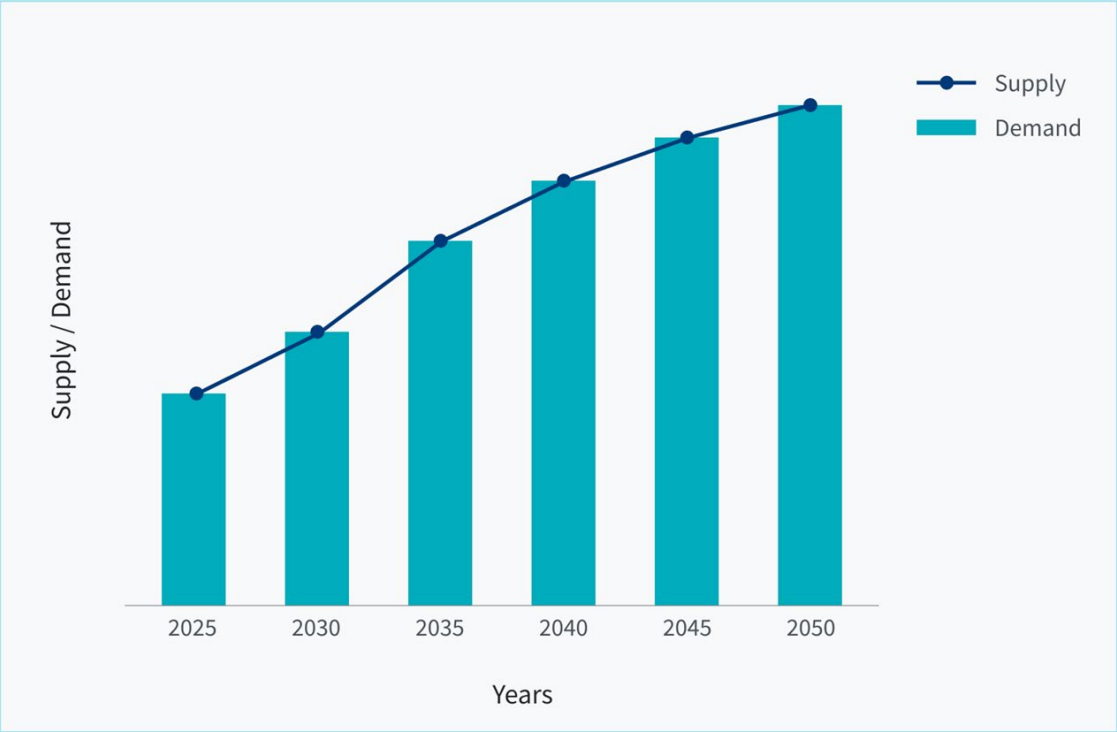
Projected | Supply Projections Methodology

Methodology Option 1

"Real Water" Approach

Baseline local agency supplies = 2021-2025 Average

1. Apply climate change factors from TVMWD Climate Vulnerability Analysis to baseline local agency supplies through 2050[1].
2. Compare agency local supply projections to 2025 UWMP demand projections through 2050.
3. Any projected unmet demand is assumed to be met by imported water supply[1].



[1] Also considers any operating restrictions (e.g., OSY), anticipated availability of supply, legal rights, etc.

Projected | Supply Projections Methodology

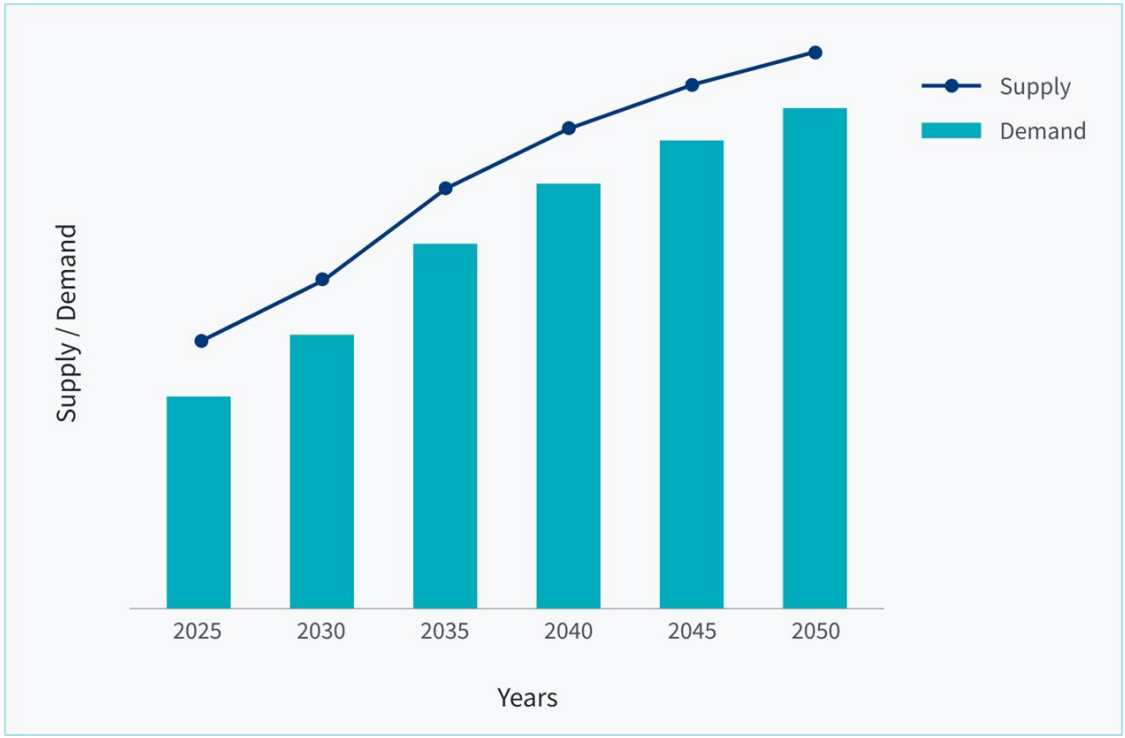
Methodology Option 2

"Paper Water" Approach

Baseline local agency supplies = 2021-2025 Average

1. Apply climate change factors from TVMWD Climate Vulnerability Analysis to baseline local agency supplies through 2050[1].

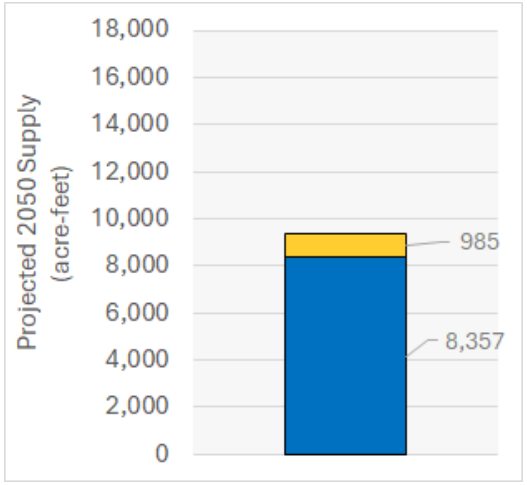
2. Projected imported water supply is determined with the agency based on historical supply, anticipated availability, legal rights, etc., through 2050.



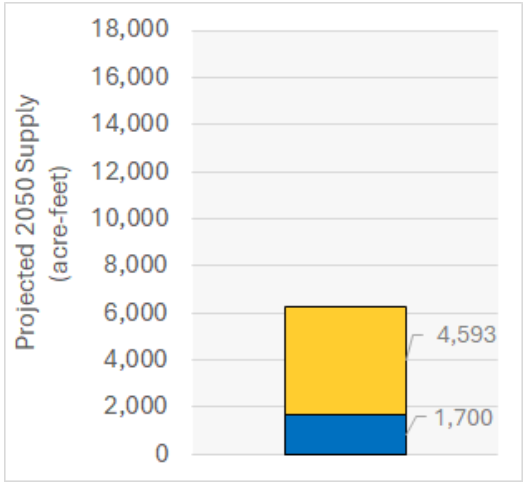
[1] Also considers any operating restrictions (e.g., OSY), anticipated availability of supply, legal rights, etc.

Projected | RUWMP Agency Water-Use Portfolios (2050)*

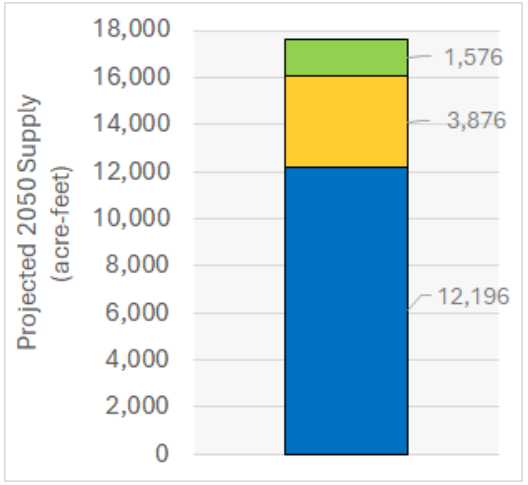
City of Glendora



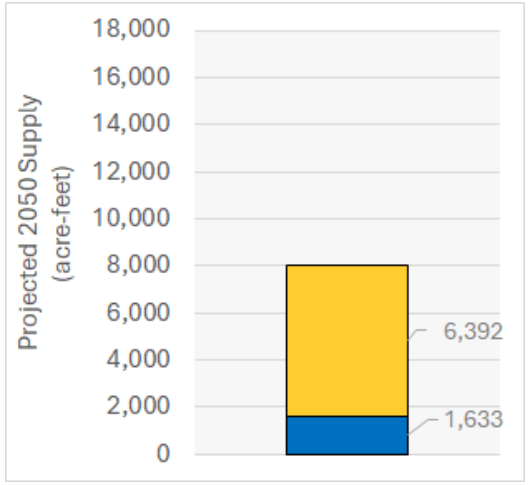
City of La Verne



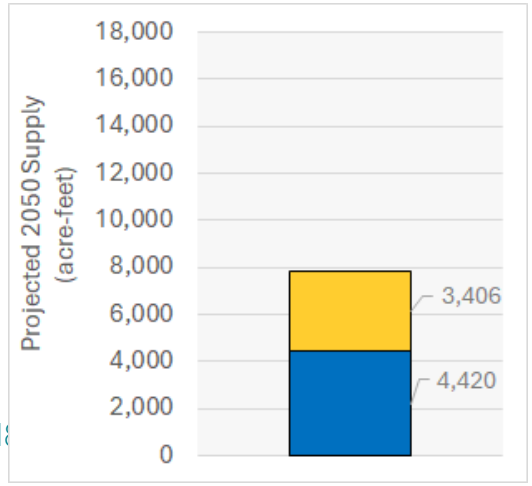
City of Pomona



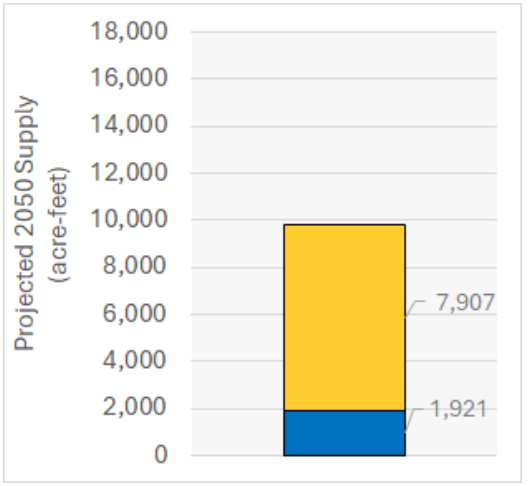
Rowland Water District



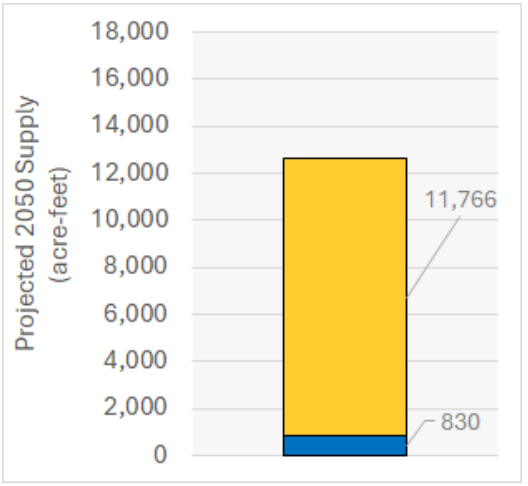
GSWC – Claremont

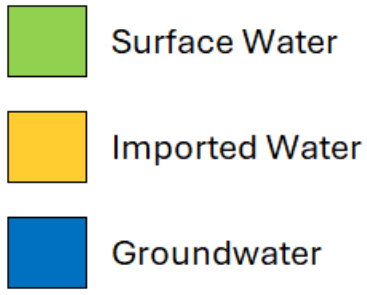


GSWC – San Dimas



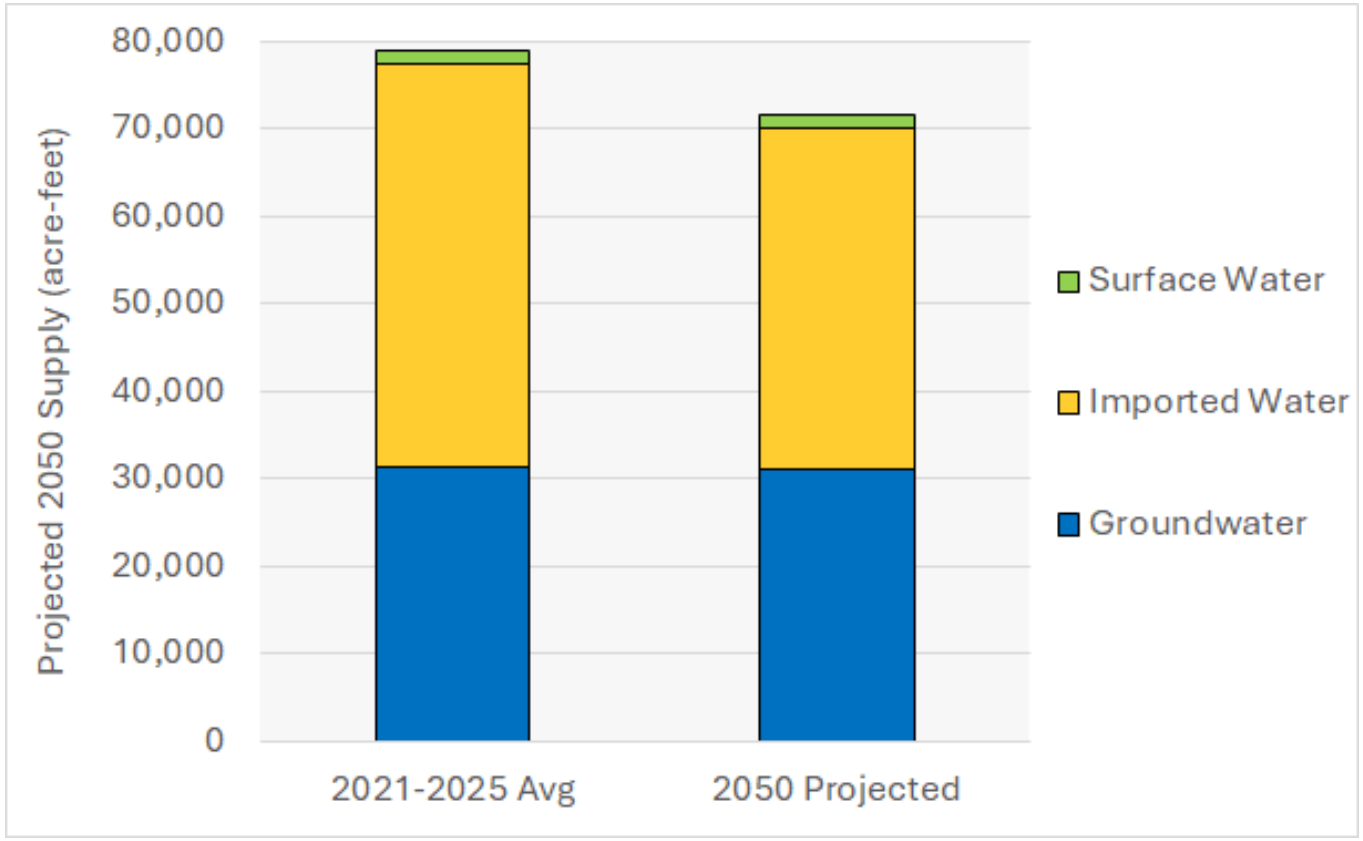
Walnut Valley Water District





* Excludes recycled water

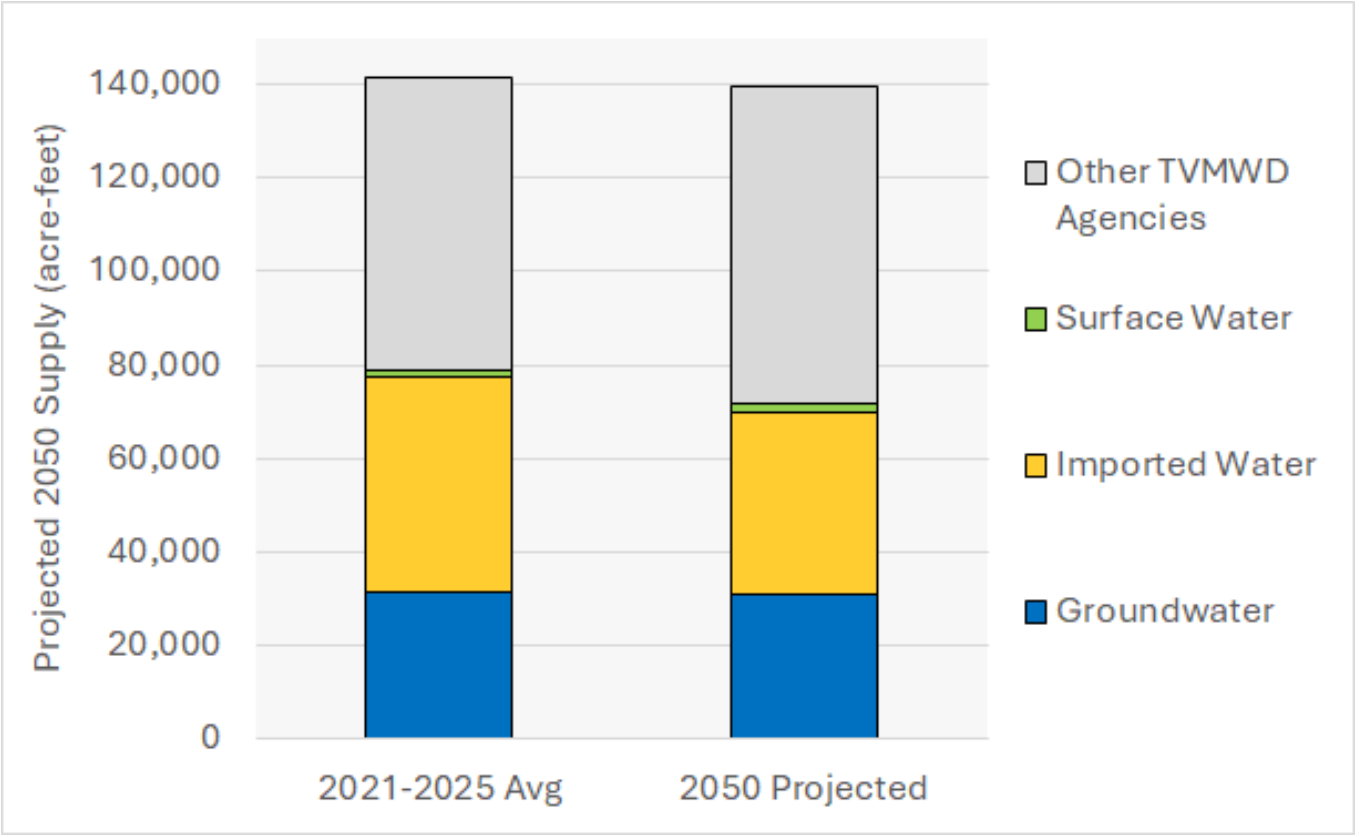
Projected | RUWMP Agencies Water-Use Portfolios (2050)*



Supply (AF)	2021-2025 Average	2050 Projected
Surface Water	1,481	1,576 *(+6%)*
Imported Water	46,137	38,926 *(-16%)*
Groundwater	31,313	31,055 *(-1%)*
TOTAL	**78,931**	**71,557 *(-9%)***

* Excludes recycled water

Projected | Regional Agencies Water-Use Portfolio (2050)*



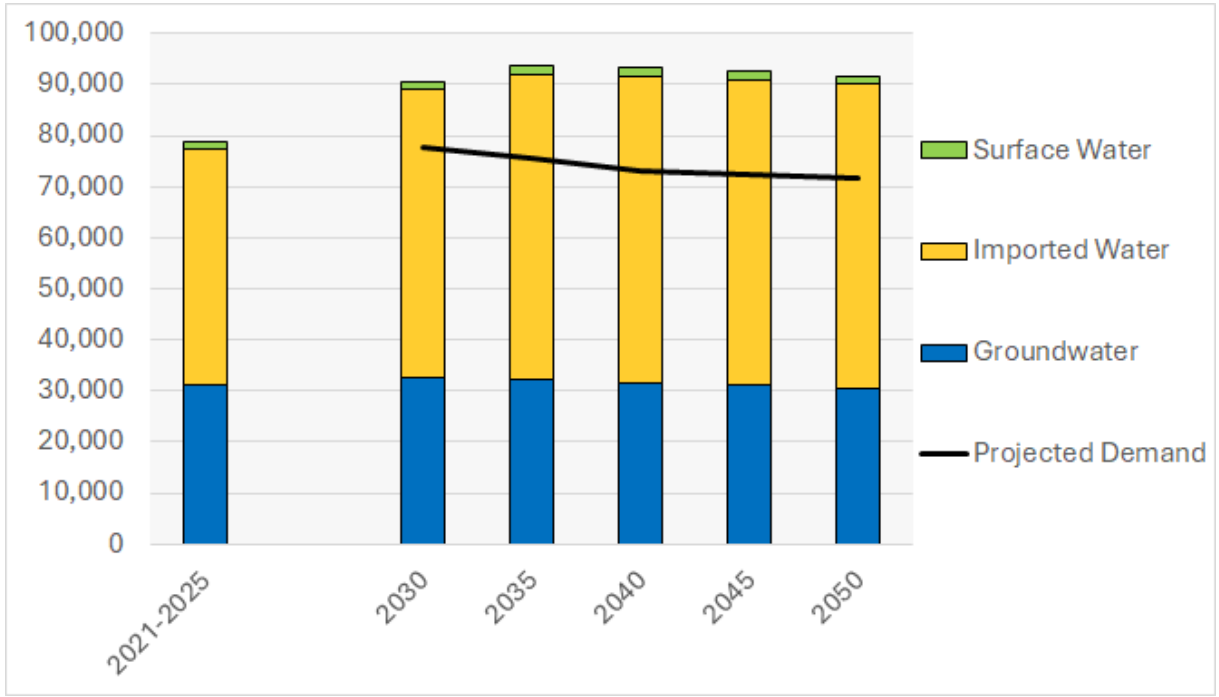
Supply (AF)	2021-2025 Average	2050 Projected
Other TVMWD Agencies[1]	62,759	68,070 *(+8%)*
Surface Water	1,481	1,576 *(+6%)*
Imported Water	46,137	38,926 *(-16%)*
Groundwater	31,313	31,055 *(-1%)*
TOTAL	**141,689**	**139,627 *(-1%)***

[1] Estimated

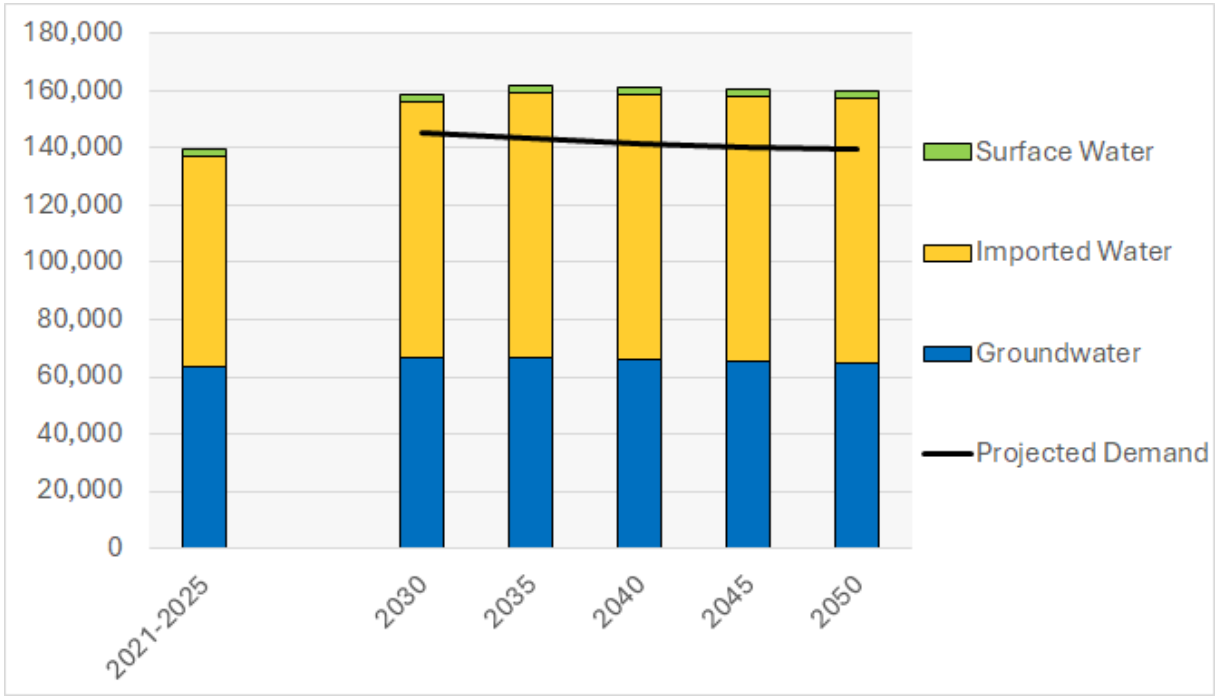
* Excludes recycled water

Projected | Regional Water-Use Portfolio (2030-2050)*

RUWMP-Participating Agencies



Regional (All) Agencies



* Excludes recycled water

Drought Risk Assessment

Drought Risk Assessment (DRA)

What is the Drought Risk Assessment?

The DRA is a stress test required by DWR as part of the UWMP to verify supply reliability under specific hydrologic conditions.

What are the specific hydrologic conditions?

1. Normal Year: Average climate and supply.
2. Single Dry Year: Constrained supply, increased demand.
3. Five-Consecutive-Year Drought: Prolonged period of constrained supply, increased demand.

Why does DWR require a Drought Risk Assessment?

The DRA is intended to test near-term reliability, specifically:

- The functionality of the Supplier's Water Shortage Contingency Plan (WSCP).
- Identify potential shortages.
- Justify short-term demand reduction or supply augmentation measures.

Drought Risk Assessment | Regional Resiliency

The Three Valleys Regional **Supply Reliability** is secured by two pillars:

- MWD's high reliability imported supply
  - MWD's storage reservoirs are currently at a near record-high.
  - Modeling shows that even with cutbacks on SWP and Colorado River supplies, MWD has sufficient storage to meet wholesale demands without shortage allocations over the next 5 years.
- Management of local groundwater basins
  - Major regional basins – Main San Gabriel, Chino, and Six Basins – are adjudicated and managed such that continued pumping is possible during drought.

The Three Valleys Region manages **Demand** via multiple means:

- Baseline demand assumptions
  - Projections include "Passive Conservation" as well as "Active Conservation".
- The WSCP "Safety Net"
  - Agencies can implement shortage levels (Level 1, 2, etc.) to reduce demand by 10-50%+.
- Regional collaboration
  - TVMWD coordinates closely with MWD and retail agencies to monitor key metrics (e.g., SWP allocations, reservoir levels) to determine if WSCP or further actions are necessary.

Drought Risk Assessment | Regional Reliability

Analysis performed for the Drought Risk Assessment shows that even with reduced imported and local supplies and increased weather-driven demands, **the region maintains sufficient supply to meet demand** during single and multi-year drought conditions

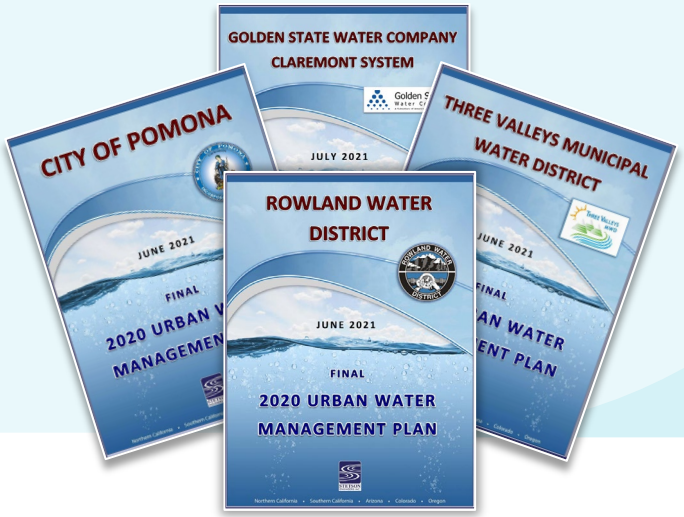
Scenario	Supply Assumption	Demand Assumption	Regional Outcome
Normal Year	Average imported & local yield	Normal water use	Sufficient regional supply
Single Dry Year	Reduced imported allocation	Increased	
5-Year Drought	Constrained imported & local yield	Increased	

Water Shortage Contingency Plan (WSCP) Update

WSCP – 2025 Updates

Document Collection:

- Gathered 2020 UWMP WSCP Chapters
- Reviewed agency WSCPs



Key Updates to WSCPs:

- Updated references 2020 UWMP → 2025 UWMP
- Updated tables and data

Draft 2025 WSCPs Structure:

- Chapter 7: Discusses the WSCP + summarizes any agency insights/updates
- Appendix: Full 2025 WSCP

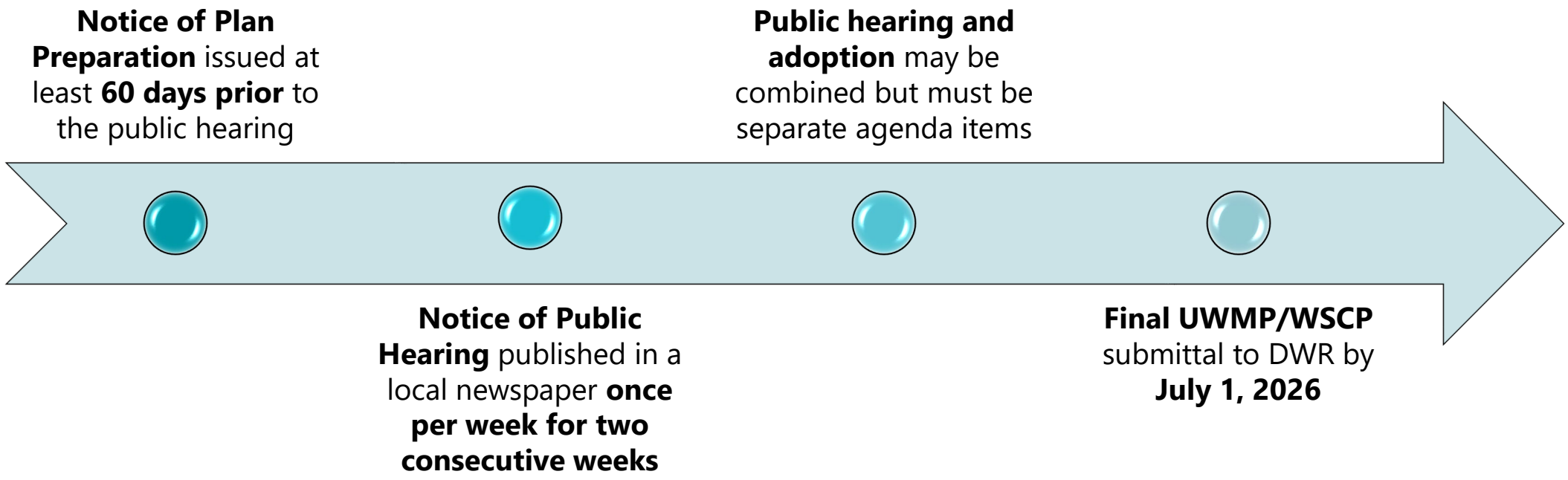
Q&A

Schedule and Next Steps

Schedule

WS 1
Jan
2026
February 2026:
Finalize 2025
WSCPs
March 2026:
Draft for Agency Review
WS 2
March
2026
April 2026:
Public Draft
Final
Adoption
May 2026
Data Analysis & Document Review
Supply & Demand Projections
Agency WSCPs
Regional Context
Agency UWMP Chapters
Supporting Documentation
Final Compiled RUWMP

Public Adoption and Public Notice Process



Public Adoption and Public Notice Process Schedule

Agency	Proposed Public Hearing and Adoption Meeting[1]	Date Notice of Plan Preparation Needed (60-Day)[2]	Date Public Drafts Needed for Website Posting	Newspaper Used for Public Hearing Notice[3]	Newspaper Publication Days	Two-Week Ad Window[3]	Date Final Package Needed for Public Hearing and Adoption[4]
Three Valleys Municipal Water District	May 20, 2026	*March 21, 2026*					
City of Glendora	May 26, 2026	*March 27, 2026*					
City of La Verne	May 18, 2026	*March 19, 2026*					
City of Pomona	May 18, 2026	*March 19, 2026*					
Golden State Water Company – Claremont	May 26, 2026	*March 27, 2026*					
Golden State Water Company – San Dimas	May 26, 2026	*March 27, 2026*					
Rowland Water District	May 12, 2026	*March 13, 2026*					
Walnut Valley Water District	May 18, 2026	*March 19, 2026*					

Notes:

1. The public hearing and adoption may occur at the same meeting but must be separate agenda items.
2. Notice of Plan Preparation must be issued at least 60 days prior to the public hearing. The notices to the cities and counties should include the anticipated location where the 2025 UWMP can be viewed, the UWMP revision schedule, and contact information of the UWMP preparer.
3. Notice of Public Hearing must be published in a local newspaper once per week for two consecutive weeks.
4. Final UWMP (including WSCP) must be submitted to DWR by July 1, 2026. The WSCP must be treated as a stand-alone plan for noticing, public hearing, and adoption, even though it must be submitted as part of the UWMP.

Next Steps

- ❑ **Confirm adoption dates (by Feb 6)**
- ❑ **Finalize demand and supply projections**
  - Coordinating with agencies in finalizing numbers
- ❑ **Develop the Regional UWMP and individual agency UWMP chapters; distribute to participating agencies by March 30**
- ❑ **Participating Agency review of Regional UWMP and individual agency UWMP chapters (end of March-beginning of April)**
- ❑ **Prepare for and schedule Workshop #2 (end of March-beginning of April)**

Did we meet the Objectives for today?

I. **Refresh on RUWMP**

II. **Touch base on progress**

III. **Plan ahead to complete the effort on time**

IV. **Answer your questions**

ADJOURNMENT

Contact Info:
bpen@tvmwd.com or
sonsoy@geiconsultants.com

Regional (Remote) Workshop 1 - Supply and Demand Projections

Agency	Remote Attendees	Email
City of Glendora	Armando De Jesus	ADeJesus@cityofglendora.gov
City of Glendora	Damian Martinez	DMartinez@cityofglendora.gov
City of Glendora	Russell Ackerman	RAckerman@cityofglendora.gov
City of La Verne	Kristie Sanchez	ksanchez@laverneca.gov
City of La Verne	Mike Maestas	mmaestas@laverneca.gov
City of La Verne	Raymond Apodaca	rapodaca@laverneca.gov
City of Pomona	Julie Carver	Julie.Carver@pomonaca.gov
City of Pomona	Maxus Wong	Maxus.Wong@pomonaca.gov
City of Upland	Michelle Madriz	mmadriz@uplandca.gov
City of Upland	Nicole deMoet	ndemoet@uplandca.gov
City of Upland	Norberto Ferreira	nferreira@uplandca.gov
City of Upland	Richard Gonzales	rgonzales@uplandca.gov
City of Upland	Kirk Swanner	kswanner@uplandca.gov
GEI Consultants	Matthew Bachman	MBachman@geiconsultants.com
GEI Consultants	Peter Kavounas	PKavounas@geiconsultants.com
GEI Consultants	Sevim Onsoy	SOnsoy@geiconsultants.com
GEI Consultants	Roger Putty	rputty@geiconsultants.com
GEI Consultants	Fatima Segoviano	FSegoviano@geiconsultants.com
Golden State Water Company	Lincoln Kha	Lincoln.Kha@gswater.com
Metropolitan Water District	Carlos A Carrillo	CCarrillo@mwdh2o.com
Metropolitan Water District	David Sumi	DSumi@mwdh2o.com
Metropolitan Water District/Six Basins	Mike N Ti	mike_ti@mwdh2o.com
Metropolitan Water District/Six Basins	Tiffany Tran	T_Tran@mwdh2o.com
Monte Vista Water District	Michelle Licea	mlicea@mvwd.org
Rowland Water District	Allen Davidson	adavidson@rwd.org
Six Basins Watermaster	Jorge A. Marquez	
Three Valleys	Kirk Howie	khowie@TVMWD.com
Three Valleys	Sylvie Lee	slee@tvmwd.com
Upper Water	Katherine Vazquez	katherine@usgvmwd.org
Walnut Valley Water District	Donna DiLaura	ddilaura@walnutvalleywater.gov
Walnut Valley Water District	Dusty Moisio	dmoisio@rwd.org
Walnut Valley Water District	Greg Galindo	ggalindo@walnutvalleywater.gov
Walnut Valley Water District	James Ning	jning@walnutvalleywater.gov
Walnut Valley Water District	Tom Coleman	TColeman@rwd.org

Regional Workshop #2 Materials

Workshop 2: Draft Regional Urban Water Management Plan Review

April 2, 2026

GEI Consultants

WSC

THREE VALLEYS MUNICIPAL WATER DISTRICT

Workshop Introduction

Three Valleys Municipal Water District

RUWMP-Participating Agencies:

- City of Glendora
- City of La Verne
- City of Pomona
- GSWC – Claremont
- GSWC – San Dimas
- Rowland Water District
- Three Valleys Municipal Water District
- Walnut Valley Water District

Other Member Agencies:

- Boy Scouts of America - Firestone Reservation
- California Polytechnic University, Pomona
- City of Covina
- Mt. San Antonio College
- Suburban Water Systems
- Valencia Heights Water Company

Workshop Objectives

I. **Update on Draft RUWMP**

II. **Plan ahead to complete the RUWMP on time**

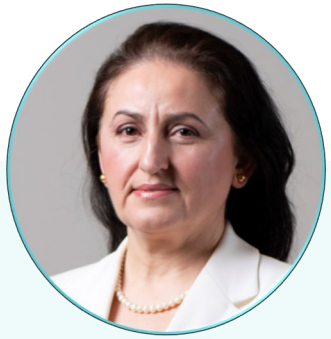
III. **Answer your questions**

Workshop Agenda

5 min	Welcome & Introductions
10 min	Refresher for the 2025 Regional UWMP Structure
30 min	Draft RUWMP Review (Key Assumptions & Results)
15 min	Integrating Local Realities and Regional Reliability
5 min	WSCP Status
20 min	Q&A and Discussion
10 min	Schedule and Next Steps

Presenters and GEI/WSC Project Team

Matthew Bachman
Water Supply & DRA
(Presenter)



Sevim Onsoy, PhD
Project Manager
(Presenter)

Fatima Segoviano
UWMP Development

Imani Lawrence
Water Resources Planner

Roger Putty, PE, PMP
Principal-in-Charge

Kwabena Asante, PhD, PE
Technical Lead, Water Supply Reliability

Peter Kavounas, PE
Technical Advisor

Laine Carlson
Technical Advisor

Spencer Waterman
Technical Lead, Demands

Overview of the 2025 Regional UWMP Structure

Reaional UWMP Structure

Regional Context

Part 1 Contains the information needed to meet the requirements of the UWMP Act for the local agencies who are using this Plan to meet their 2025 UWMP Requirements.

Executive Summary (Lay Description)
1. Introduction
2. Region Description
3. Regional Water Sources and Management
4. Comparison of Regional Supplies and Demands
5. References

Local Agency UWMPs

Part 2 Provides supplemental information for the eight local agencies who are using this Plan to meet their 2025 UWMP requirements.

1. Three Valleys Municipal Water District
2. City of Glendora
3. City of La Verne
4. City of Pomona
5. Golden State Water Co. (Claremont)
6. Golden State Water Co. (San Dimas)
7. Rowland Water District
8. Walnut Valley Water District

Regional Supporting Information

Part 3 Includes all of the supporting documentation referenced in Part 1 that is applicable to the Region as well as the regulatory compliance guide that DWR will use to verify that Part 1 meets the UWMP requirements.

UWMP Agency Supporting Information

Part 4 Includes a set of supporting documentation for each UWMP agency corresponding to their respective chapters in Part 2. Documents will include a compliance guide that DWR will use to verify the agency met the UWMP Act requirements, the Agency's WSCP, and other documents specific to each agency.

Three Valleys

Part 1: Regional Context
Part 2: TVMWD Wholesale Chapter
Part 3: Regional Supporting Information
Part 4: TVMWD Supporting Information

Participating Agency
(e.g., City of Glendora)

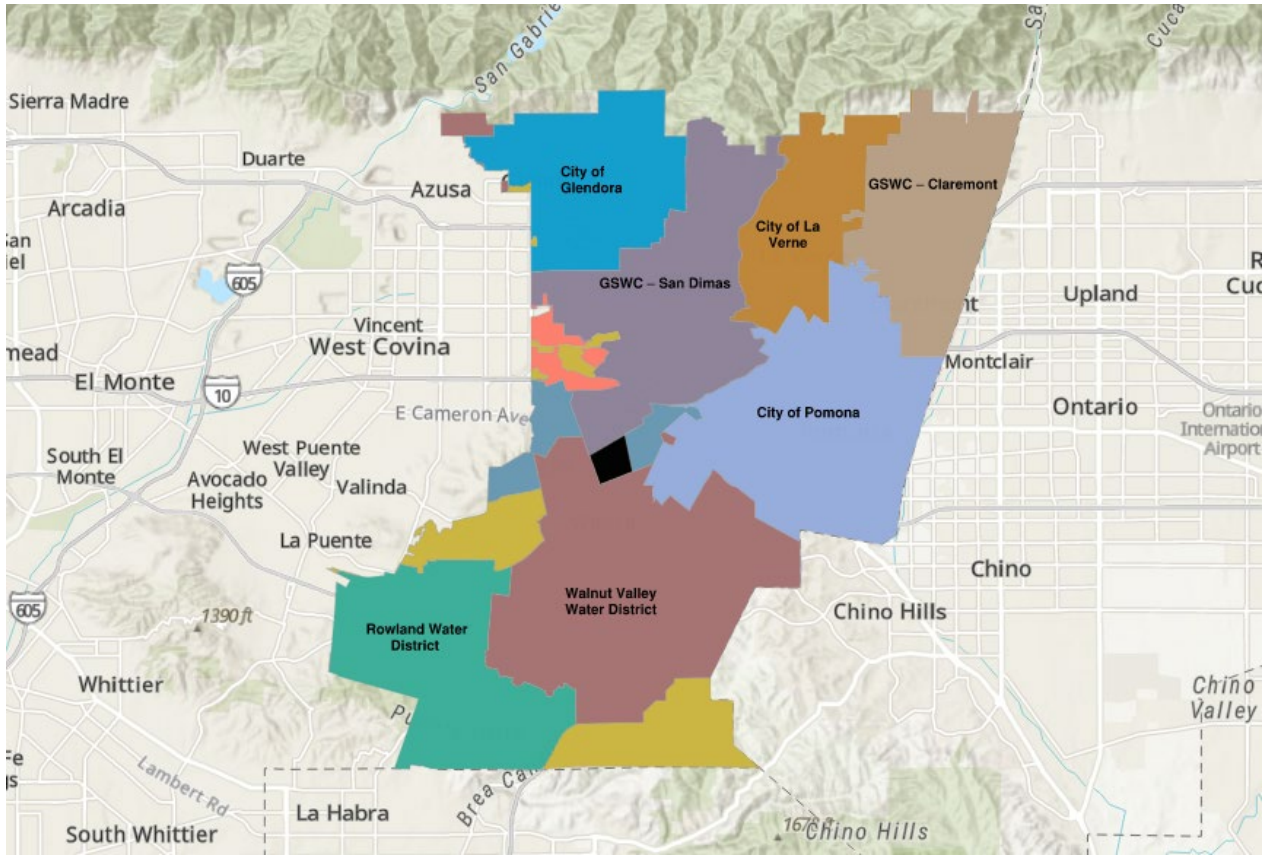
Part 1: Regional Context
Part 2: Agency-Specific Chapter
Part 3: Regional Supporting Information
Part 4: Agency-Specific Supporting Information

Draft RUWMP Review

Regional Portfolio | Data Collection & Background

- **Comprehensive Data Gathering:** Collected historical production, consumption, and water loss data (2021-2025) to establish a “baseline” water use.
- **Agency Collaboration:** Conducted individual meetings with 7 participating agencies to ground-truth demand drivers, supply constraints, and future development plans.
- **Regional Integration:** Incorporated available data for the 6 other TVMWD agencies to build a complete regional picture of the Three Valleys service area.

This dataset serves as the backbone for the RUWMP, ensuring regional infrastructure and supply reliability projects are based on accurate local realities.



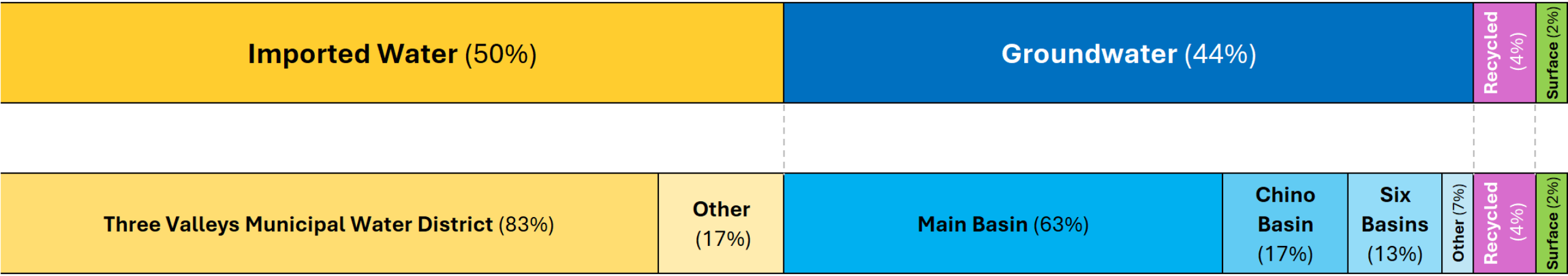
Existing | Regional Water Use Baseline (2021-2025)

Regional Water Use =

RUWMP Participants

+ Other TVMWD Agencies

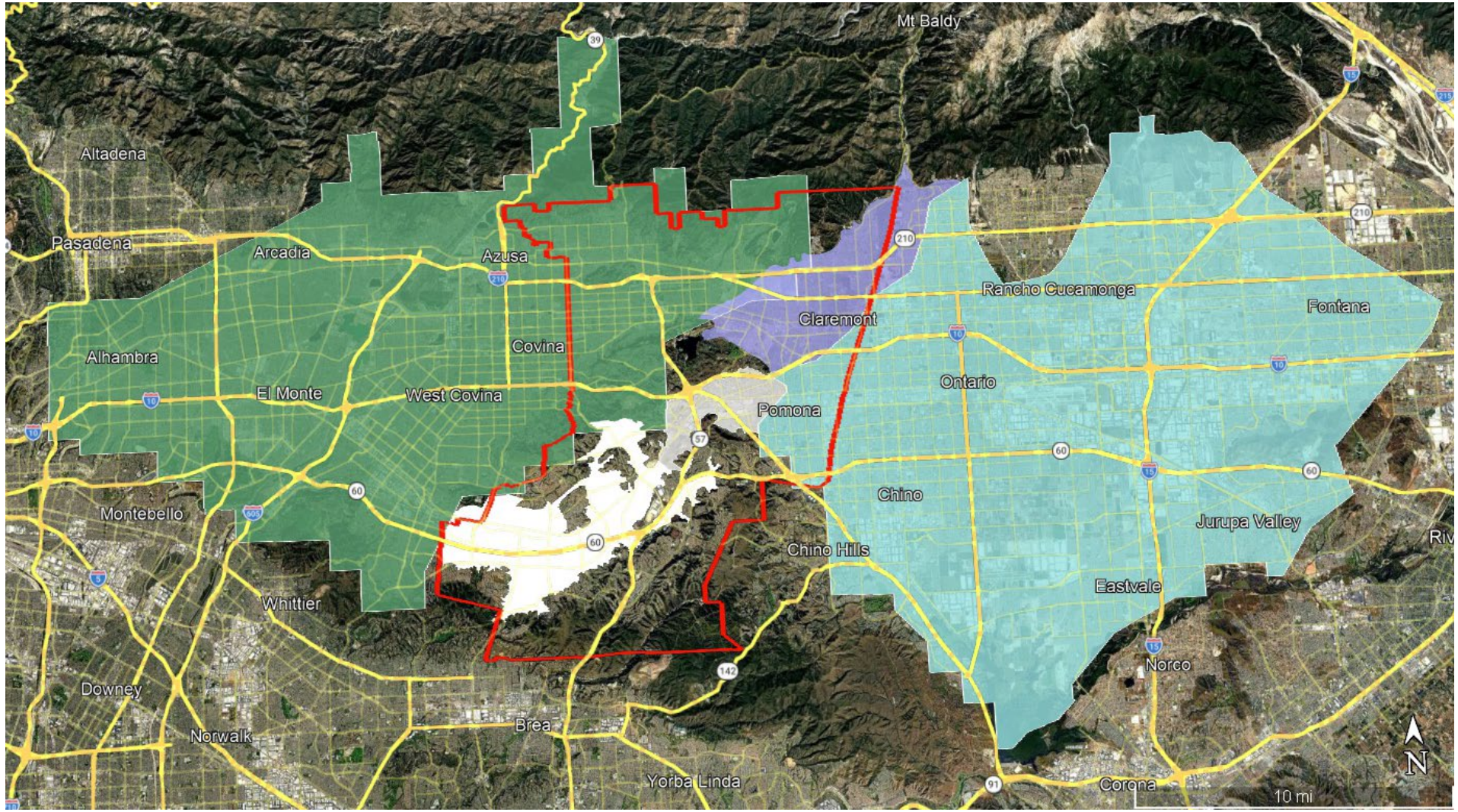
Agency Type	Water Use Data Source
RUWMP Participants (7)	Provided by agencies
Other TVMWD Agencies (6)	Estimated from publicly available documentation and data provided to TVMWD for other planning efforts



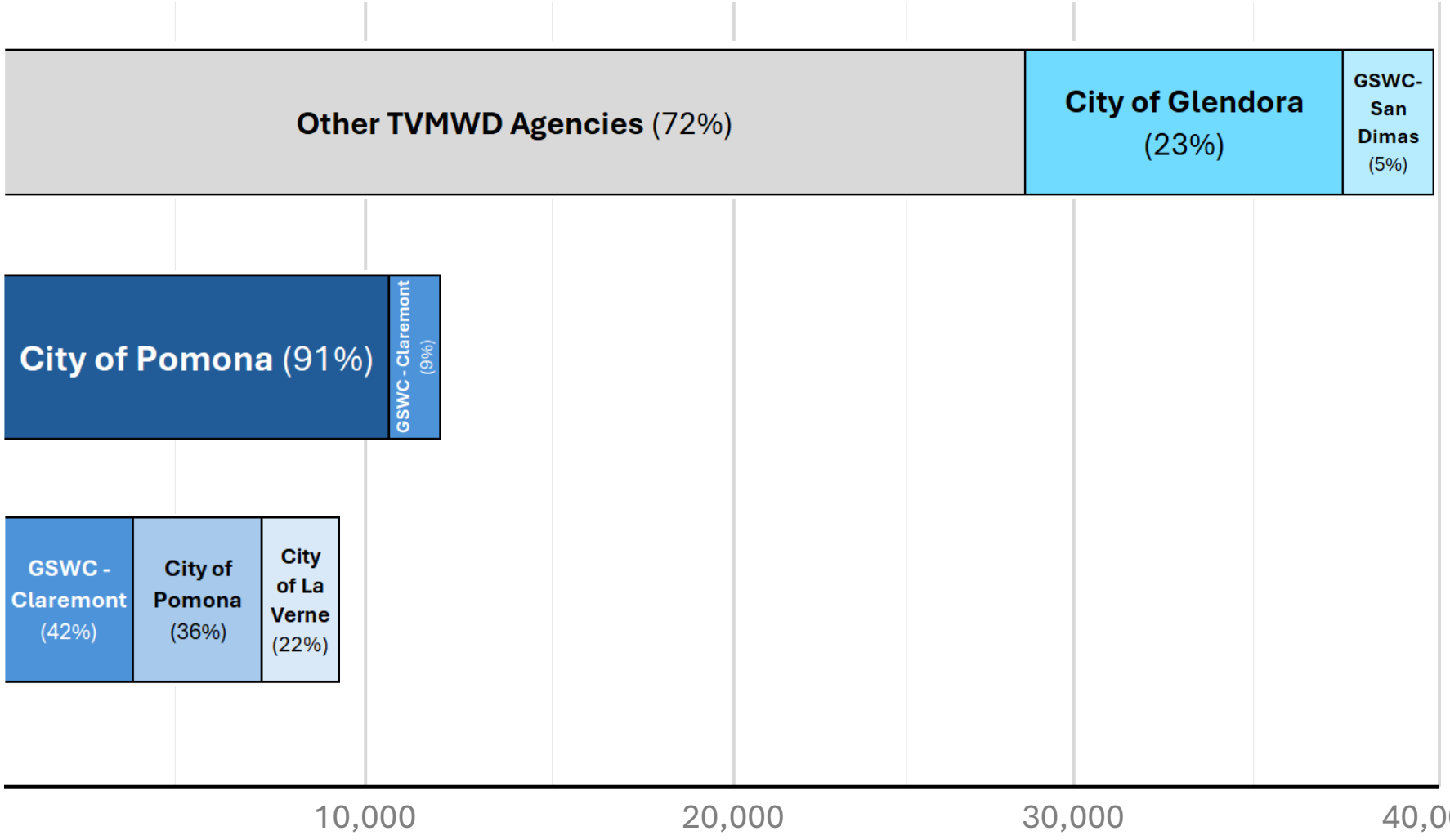
Existing | Regional Groundwater Portfolio

Legend

- Main San Gabriel Basin
- Puente Basin
- Chino Basin
- Six Basins
- Spadra Basin
- Three Valleys



Existing | Regional Groundwater Portfolio (2021-2025)

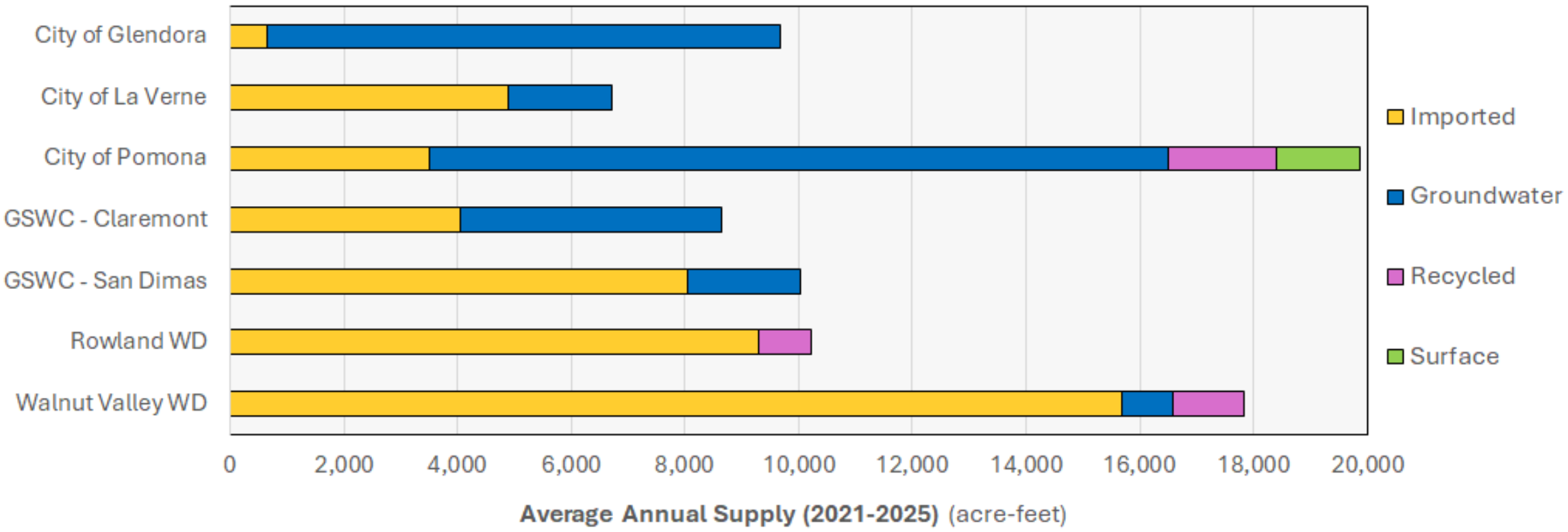


Main Basin

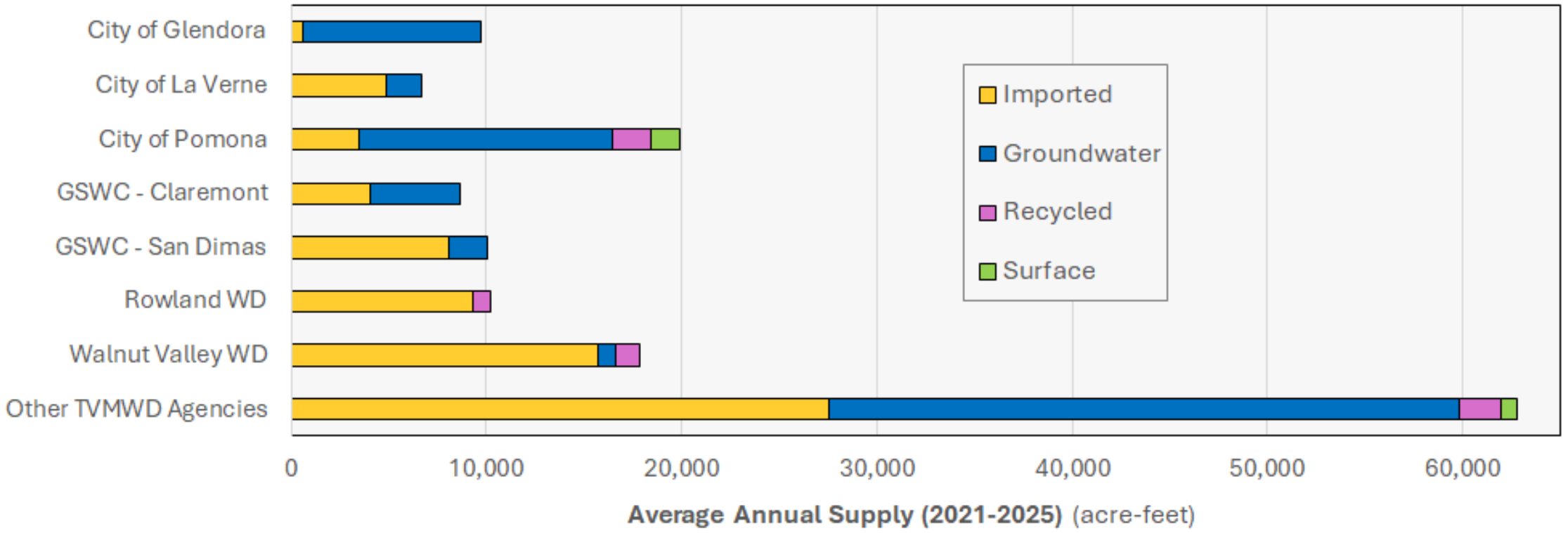
Chino Basin

Six Basins

Existing | RUWMP Agency Water-Use Baselines (2021-2025)



Existing | Regional Water-Use Baselines (2021-2025)



Projected | Demand Projections Methodology

- **Multi-Scenario Analysis:** Developed and presented up to five distinct demand projection methodologies to each participating agency, ranging from "Status Quo" trends to aggressive "CWOL Compliance" scenarios.

- **Agency Collaboration:** Participating agencies worked one-on-one with GEI and WSC to review these scenarios and identify the specific methodology most representative of their local service area.

- **Regional Integration:** The finalized regional demand reflects a "bottom-up" aggregation of these agency-verified selections, ensuring the plan is grounded in local operational reality.

Step 1: Connections Growth Selection

Growth Option 1- Connections Increase at Selected Methods per Use Type	Residential Indoor	Residential Outdoor	CII	Landscape	Other
If Option 1 Selected: Select specified growth method for each use type to the right:	*Population Annual Growth Rate*	*Households Annual Growth Rate*	*Employees Annual Growth Rate*	*Employees Annual Growth Rate*	*Historic Connection Change Rate*

	2025-35	2035-2050
Population Annual Growth Rate	0.15%	0.03%
Households Annual Growth Rate	0.53%	0.12%
Employees Annual Growth Rate	0.16%	0.05%
Historic Connection Change Rate- SFR	-0.24%	-0.24%
Historic Connection Change Rate- MFR	0.00%	0.00%
Historic Connection Change Rate- Commercial	2.40%	2.40%
Historic Connection Change Rate- Landscape	20.34%	20.34%

Step 2: Baseline & Future Demand Factors Selection

	Residential Indoor	Residential Outdoor	CII	Landscape	Other
Baseline Year(s)	2025	2025	2025	2025	2025
Existing Connections: Factor % Change by 2030 *A positive % is a reduction applied to the baseline demand factors.*	0%	0%	0%	0%	0%
Existing Connections: Factor % Change by 2035 onward	1.0%	1.0%	1%	1%	1%
Total Baseline Factor % Change by 2040	2.0%	2.0%	2.0%	2.0%	2.0%
UWUO-Based Reduction Reference for 2040	*45.7%*	*34.6%*	*0%*	*44%*	*N/A*
New Connections: Factor % Change by 2030	10%	10%	10%	10%	10%
New Connections: Factor % Change by 2035 Onward	5%	5%	5%	5%	5%
Total Baseline Factor % Change by 2040	20.0%	20.0%	20.0%	20.0%	20.0%
UWUO-Based Reduction Reference for 2040	*45.7%*	*47.3%*	*0.0%*	*43.9%*	*N/A*
Indoor/ Outdoor Water Usage Percentages	51%	49%			
Indoor Water Usage Percentages			100%	0%	100%
Outdoor Water Usage Percentages			0%	100%	0%

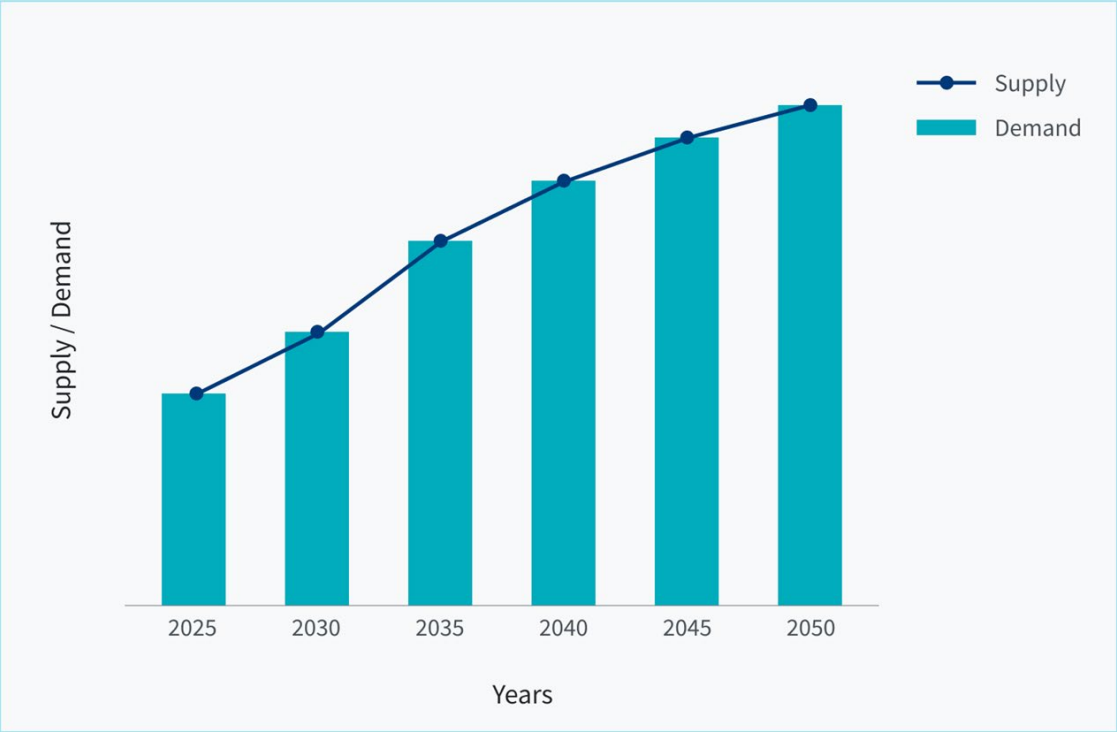
Projected | Supply Projections Methodology

Methodology Option 1

"Real Water" Approach

Baseline local agency supplies = 2021-2025 Average

1. Apply climate change factors from TVMWD Climate Vulnerability Analysis to baseline local agency supplies through 2050[1].
2. Compare agency local supply projections to 2025 UWMP demand projections through 2050.
3. Any projected unmet demand is assumed to be met by imported water supply[1].



[1] Also considers any operating restrictions (e.g., OSY), anticipated availability of supply, legal rights, etc.

Projected | Supply Projections Methodology

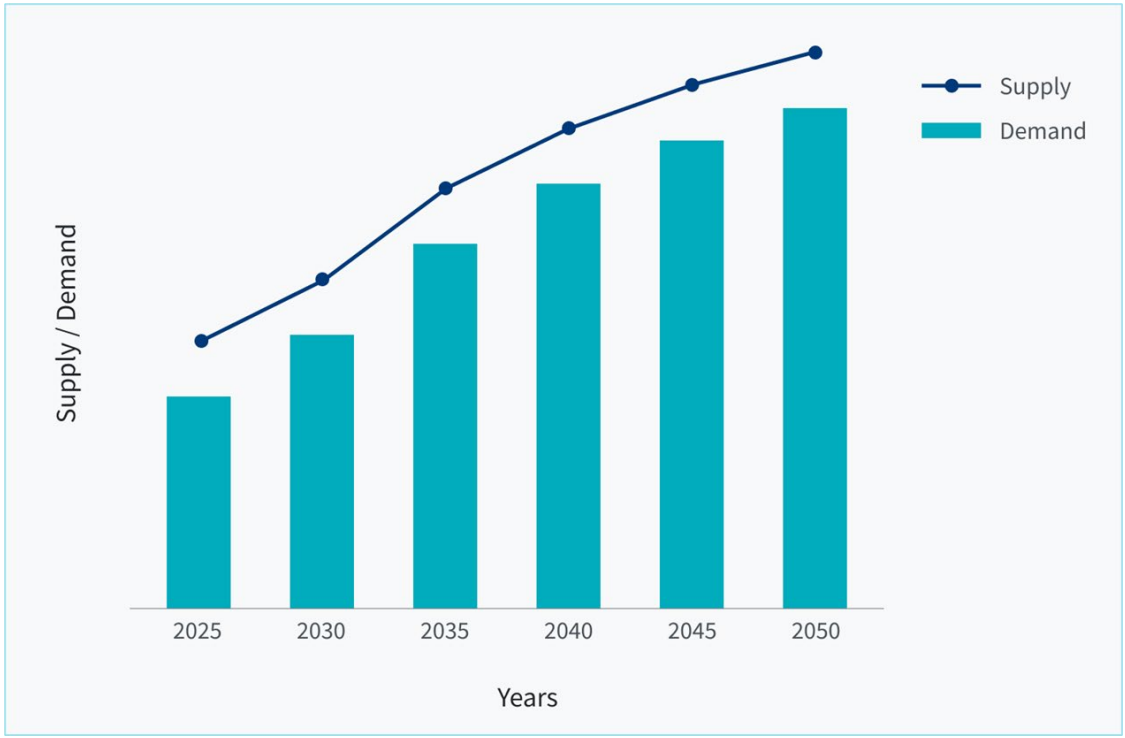
Methodology Option 2

"Paper Water" Approach

Baseline local agency supplies = 2021-2025 Average

1. Apply climate change factors from TVMWD Climate Vulnerability Analysis to baseline local agency supplies through 2050[1].

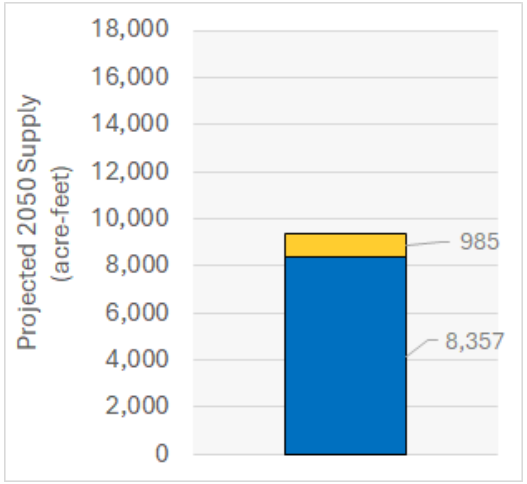
2. Projected imported water supply is determined with the agency based on historical supply, anticipated availability, legal rights, etc., through 2050.



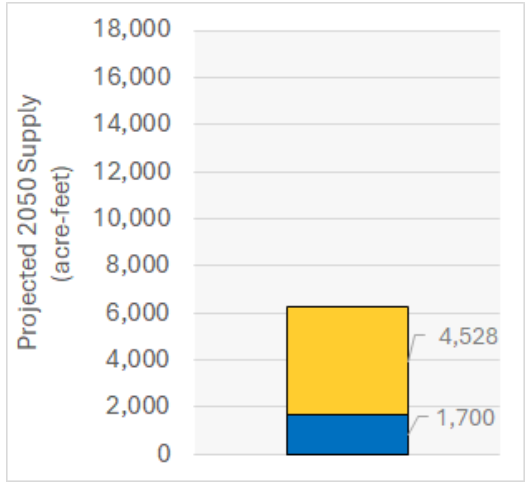
[1] Also considers any operating restrictions (e.g., OSY), anticipated availability of supply, legal rights, etc.

Projected | RUWMP Agency Water-Use Portfolios (2050)*

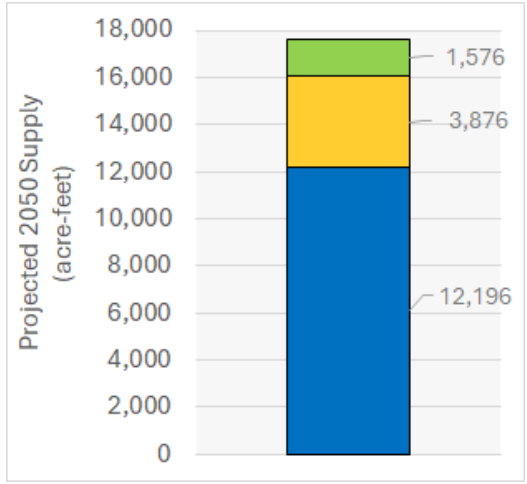
City of Glendora



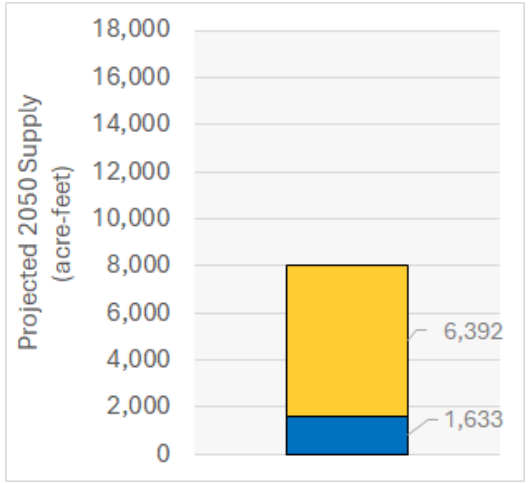
City of La Verne



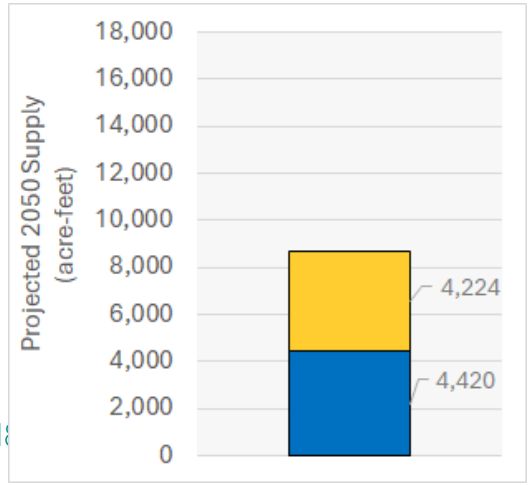
City of Pomona



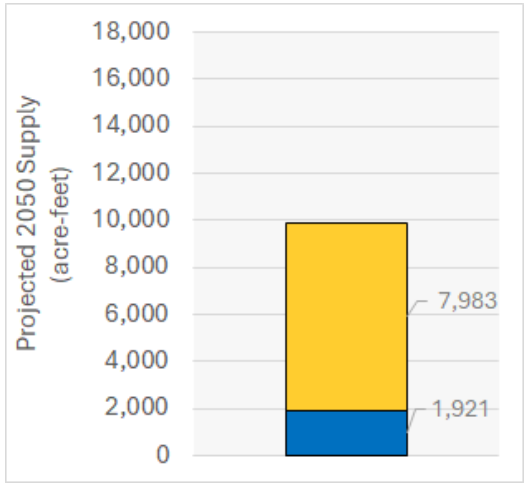
Rowland Water District



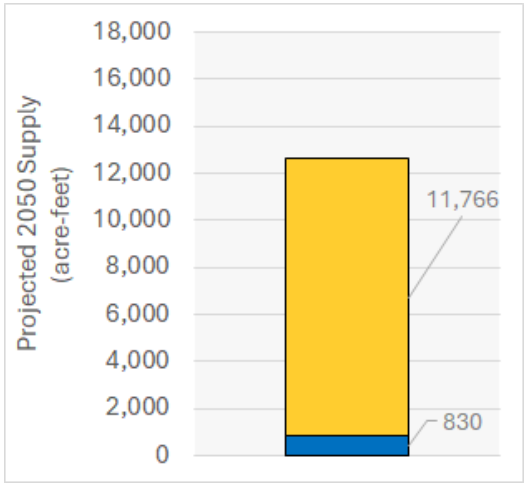
GSWC – Claremont

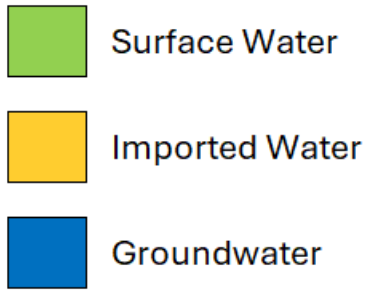


GSWC – San Dimas



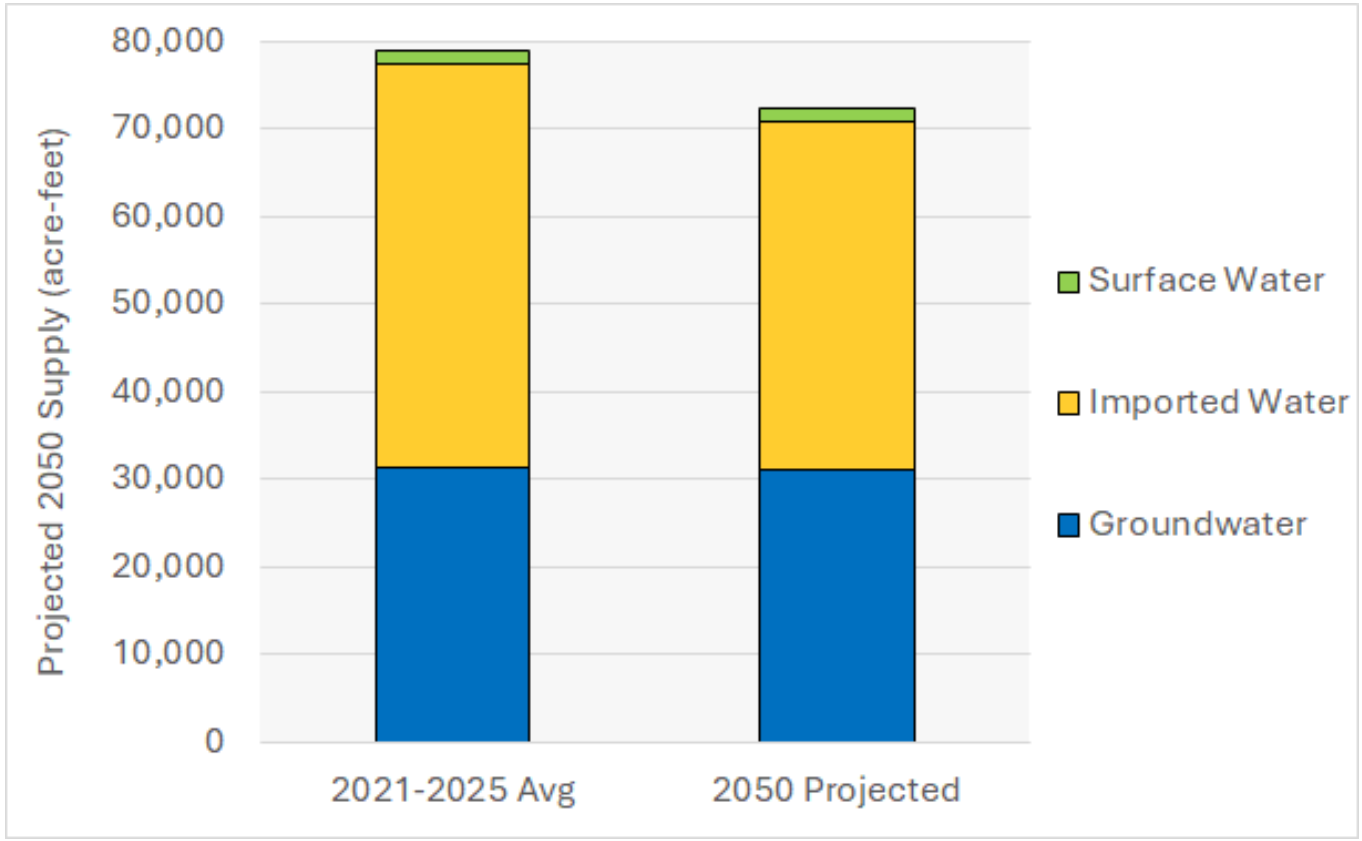
Walnut Valley Water District





* Excludes recycled water

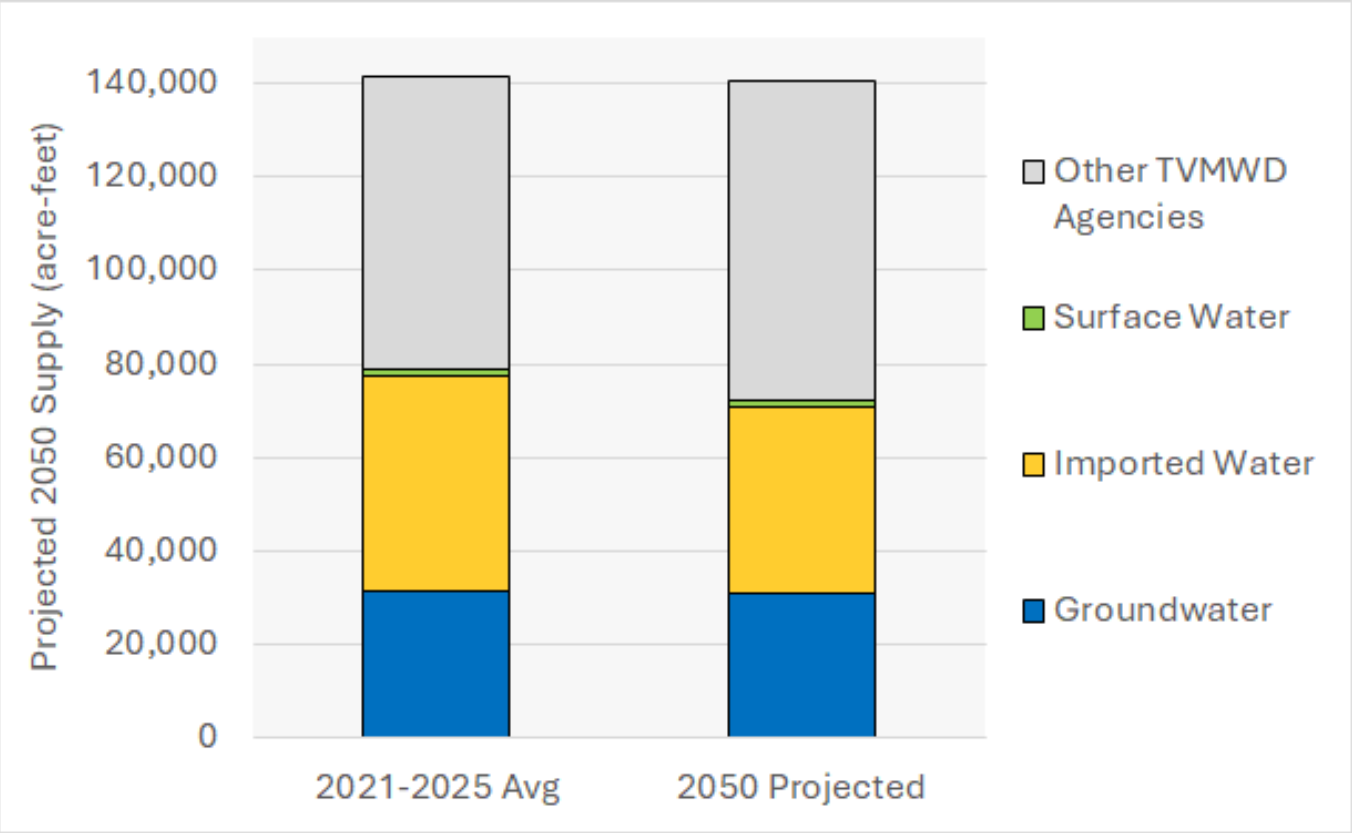
Projected | RUWMP Agencies Water-Use Portfolios (2050)*



Supply (AF)	2021-2025 Average	2050 Projected
Surface Water	1,481	1,576 *(+6%)*
Imported Water	46,137	39,574 *(-14%)*
Groundwater	31,319	31,055 *(-1%)*
TOTAL	**78,931**	**71,557** ***(-8%)***

* Excludes recycled water

Projected | Regional Agencies Water-Use Portfolio (2050)*



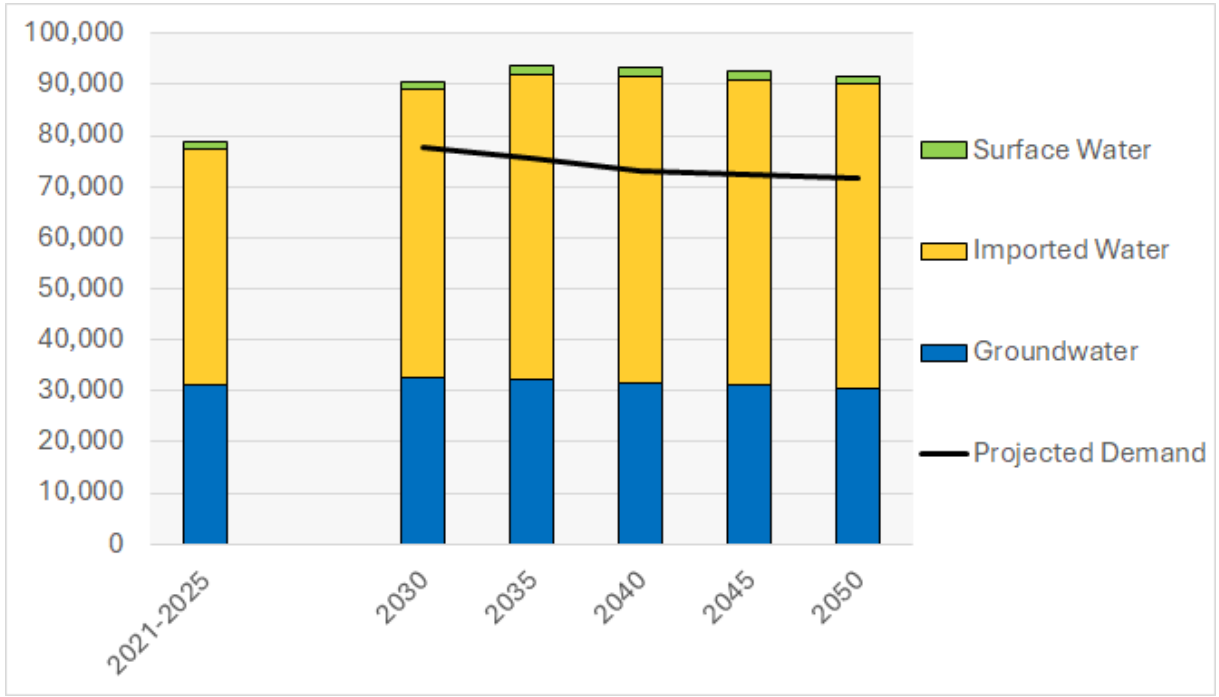
Supply (AF)	2021-2025 Average	2050 Projected
Other TVMWD Agencies[1]	62,759	68,070 *(+8%)*
Surface Water	1,481	1,576 *(+6%)*
Imported Water	46,137	39,754 *(-14%)*
Groundwater	31,319	31,055 *(-1%)*
TOTAL	**141,695**	**140,455 *(-1%)***

[1] Estimated

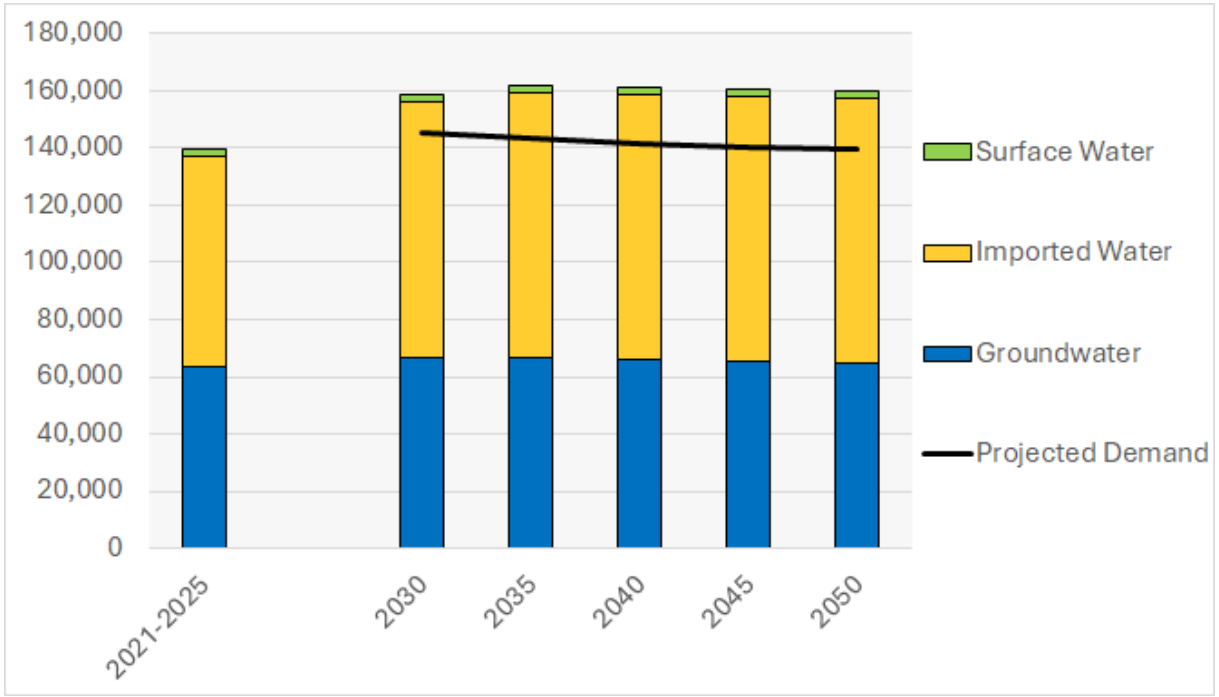
* Excludes recycled water

Projected | Regional Water-Use Portfolio (2030-2050)*

RUWMP-Participating Agencies



Regional (All) Agencies



* Excludes recycled water

Drought Risk Assessment

Drought Risk Assessment (DRA)

What is the Drought Risk Assessment?

The DRA is a stress test required by DWR as part of the UWMP to verify supply reliability under specific hydrologic conditions.

What are the specific hydrologic conditions?

1. Normal Year: Average climate and supply.
2. Single Dry Year: Constrained supply, increased demand.
3. Five-Consecutive-Year Drought: Prolonged period of constrained supply, increased demand.

Why does DWR require a Drought Risk Assessment?

The DRA is intended to test near-term reliability, specifically:

- The functionality of the Supplier's Water Shortage Contingency Plan (WSCP).
- Identify potential shortages.
- Justify short-term demand reduction or supply augmentation measures.

Drought Risk Assessment | Regional Resiliency

The Three Valleys Regional **Supply Reliability** is secured by two pillars:

- MWD's high reliability imported supply
  - MWD's storage reservoirs are currently at a near record-high.
  - Modeling shows that even with cutbacks on SWP and Colorado River supplies, MWD has sufficient storage to meet wholesale demands without shortage allocations over the next 5 years.
- Management of local groundwater basins
  - Major regional basins – Main San Gabriel, Chino, and Six Basins – are adjudicated and managed such that continued pumping is possible during drought.

The Three Valleys Region manages **Demand** via multiple means:

- Baseline demand assumptions
  - Projections include "Passive Conservation" as well as "Active Conservation".
- The WSCP "Safety Net"
  - Agencies can implement shortage levels (Level 1, 2, etc.) to reduce demand by 10-50%+.
- Regional collaboration
  - TVMWD coordinates closely with MWD and retail agencies to monitor key metrics (e.g., SWP allocations, reservoir levels) to determine if WSCP or further actions are necessary.

Drought Risk Assessment | Regional Reliability

Analysis performed for the Drought Risk Assessment shows that even with reduced imported and local supplies and increased weather-driven demands, **the region maintains sufficient supply to meet demand** during single and multi-year drought conditions

Scenario	Supply Assumption	Demand Assumption	Regional Outcome
Normal Year	Average imported & local yield	Normal water use	Sufficient regional supply
Single Dry Year	Reduced imported allocation	Increased	
5-Year Drought	Constrained imported & local yield	Increased	

Integrating Local Realities (Part 2) and Regional Reliability (Part 1)

Legalese | "Lay Description" of RUWMP Part 1 vs. Part 2

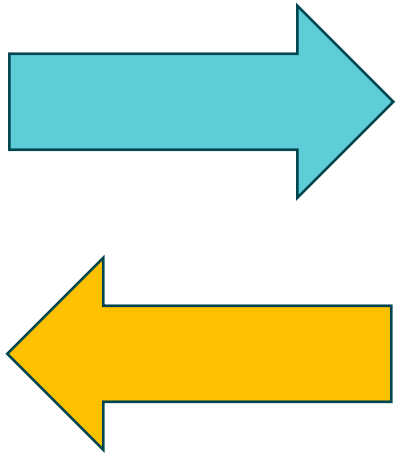
The regional analyses described in Part 1 were conducted using a consistent analytical framework, assumptions, and methodologies that directly apply to this Participating Agency. ***[Agency Name]*** *relies on Part 1 of the RUWMP for the lay description, regional supply availability, and the underlying technical methodology used to evaluate water supply reliability under normal, single dry-year, multiple dry-year, and five-year drought stress-test conditions.*

Building upon that regional foundation, the specific supply and demand comparisons for ***[Agency Name]*** *are provided in the tables within this chapter. Unless otherwise noted, the conclusions of the regional water supply reliability assessment and DRA are directly applicable to this supplier and satisfy the requirements of the Urban Water Management Planning Act and the 2025 UWMP Guidebook.*

RUWMP Integration | Part 2 & Part 1 Symbiosis

- Regional Supply/Demand Details
- MWD Supplies Reliability

Part 1
Regional Context



Part 2
Agency-Specific

- Local Demands
- Local Supplies

Part 2 → Part 1 | The Bottom-Up Aggregation

Part 1
Regional Context

Part 2
Agency-Specific

Table 5-1. Normal Year Supply and Demand (RUWMP Participating Agencies) (Acre-Feet)

Category	2030	2035	2040	2045	2050
Local Groundwater	**32,398**	**33,068**	**32,577**	**31,904**	**31,055**
City of Glendora	9,090	9,018	8,864	8,642	8,357
City of La Verne	1,849	1,834	1,803	1,758	1,700
City of Pomona	13,266	13,160	12,936	12,612	12,196
GSWC - Claremont	4,593	4,534	4,493	4,456	4,420
Imported Water (TVMWD/MWD)	**41,089**	**36,304**	**35,076**	**34,826**	**34,829**
City of Glendora	906	853	825	867	977
City of La Verne	4,503	4,506	4,498	4,505	4,528
City of Pomona	3,315	3,408	3,458	3,617	3,876
Imported Water (Other)[2]	**2,491**	**5,009**	**4,988**	**4,960**	**4,926**
City of Glendora	8	8	7	8	9
GSWC - San Dimas	682	709	707	706	705
Rowland Water District	1,101	1,092	1,073	1,047	1,012

Table 4-4. DWR 6-9R Projected Water Supplies (AF)

Water Supply	Additional Detail on Water Supply	2030	2035	2040	2045	2050
Groundwater (not desalinated)	Main Basin	9,090	9,018	8,864	8,642	8,357
Purchased or Imported Water	Metropolitan Water District – TVMWD	906	853	825	867	977
Purchased or Imported Water	Covina Valley Water Company	8	8	7	8	9
	Total	**10,004**	**9,878**	**9,696**	**9,517**	**9,342**

Part 1 → Part 2 | The Top-Down Verification

Part 1
Regional Context

Part 2
Agency-Specific

Table 3-2. Projected Availability of TVMWD Wholesale Imported Supplies (from MWD)

Hydrologic Scenario	MWD Base Allocations (SWP and CRA)	MWD Storage Withdrawals (DVL, Groundwater Banks)	TVMWD Projected Imported Reliability
Normal Year	Average to High	Minimal (Net Storage Accumulation)	100% of Demand Met
Single Dry Year	Constrained	High (Storage Drawn Down)	100% of Demand Met
5-Year Drought	Severely Constrained	Maximum (Sustained Storage Drawdown)	100% of Demand Met

Table 5-7. Multiple Dry Years Supply and Demand (RUWMP Participating Agencies) (Acre-Feet)

Sequence Year	Category	2030	2035	2040	2045	2050
First Year	Projected Supply	91,557	89,843	87,951	86,923	85,956
	Projected Demand	91,557	89,843	87,951	86,923	85,956
	Surplus / Deficit	0	0	0	0	0
Second Year	Projected Supply	83,467	81,904	80,179	79,242	78,360
	Projected Demand	83,467	81,904	80,179	79,242	78,360
	Surplus / Deficit	0	0	0	0	0
Third Year	Projected Supply	87,401	85,764	83,958	82,977	82,054
	Projected Demand	87,401	85,764	83,958	82,977	82,054
	Surplus / Deficit	0	0	0	0	0
Fourth Year	Projected Supply	93,130	91,387	89,462	88,417	87,433
	Projected Demand	93,130	91,387	89,462	88,417	87,433
	Surplus / Deficit	0	0	0	0	0
Fifth Year	Projected Supply	87,382	85,746	83,940	82,959	82,036
	Projected Demand	87,382	85,746	83,940	82,959	82,036
	Surplus / Deficit	0	0	0	0	0

Table 5-4. DWR 7-4R Multiple Dry Years Supply and Demand Comparison

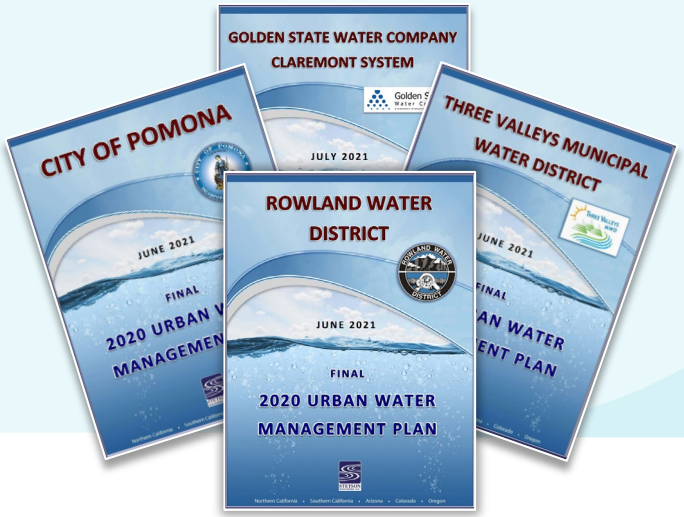
Year	Totals	2030	2035	2040	2045	2050
First Year	Supply Totals	11,188	11,047	10,844	10,644	10,448
	Demand Totals	11,188	11,047	10,844	10,644	10,448
	Difference	0	0	0	0	0
Second Year	Supply Totals	10,170	10,042	9,857	9,675	9,497
	Demand Totals	10,170	10,042	9,857	9,675	9,497
	Difference	0	0	0	0	0
Third Year	Supply Totals	10,223	10,094	9,908	9,725	9,546
	Demand Totals	10,223	10,094	9,908	9,725	9,546
	Difference	0	0	0	0	0
Fourth Year	Supply Totals	11,458	11,314	11,105	10,900	10,700
	Demand Totals	11,458	11,314	11,105	10,900	10,700
	Difference	0	0	0	0	0
Fifth Year	Supply Totals	10,548	10,415	10,223	10,035	9,850
	Demand Totals	10,548	10,415	10,223	10,035	9,850
	Difference	0	0	0	0	0

Water Shortage Contingency Plan (WSCP) 2025

2025 WSCP

Document Collection:

- Gathered 2020 UWMP WSCP Chapters
- Reviewed agency WSCPs



Key Updates to WSCPs:

- Updated references 2020 UWMP → 2025 UWMP
- Updated tables and data

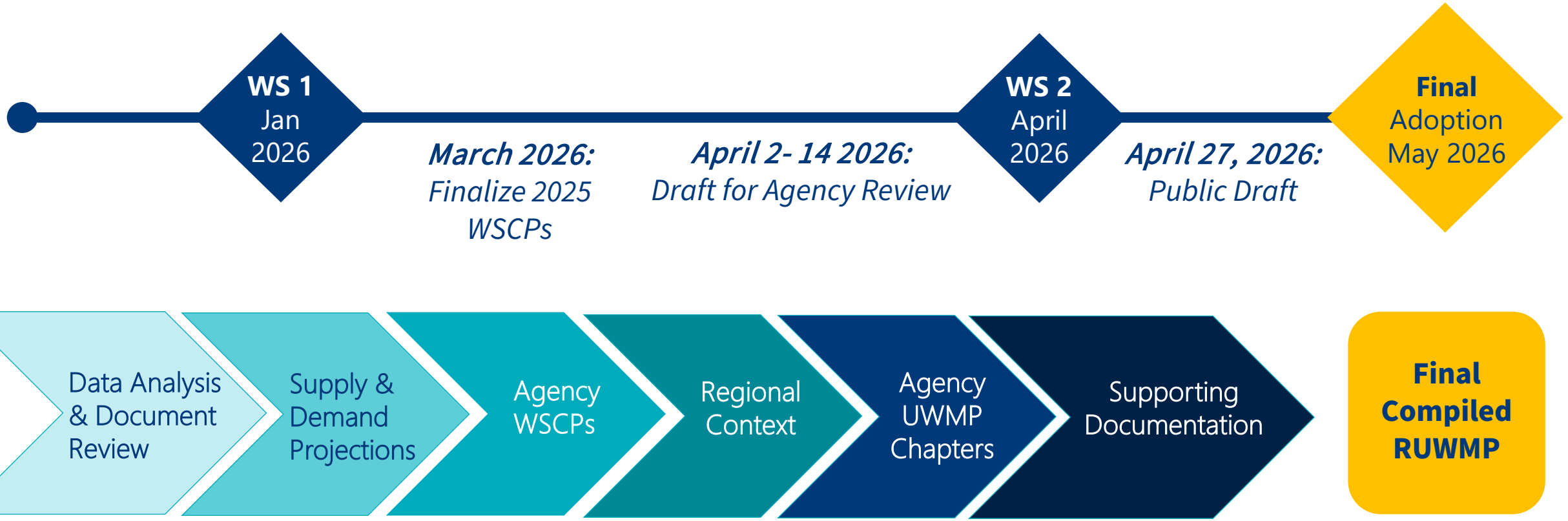
2025 WSCPs Structure:

- Chapter 7: Discusses the WSCP + summarizes any agency insights/updates
- Appendix: Full 2025 WSCP

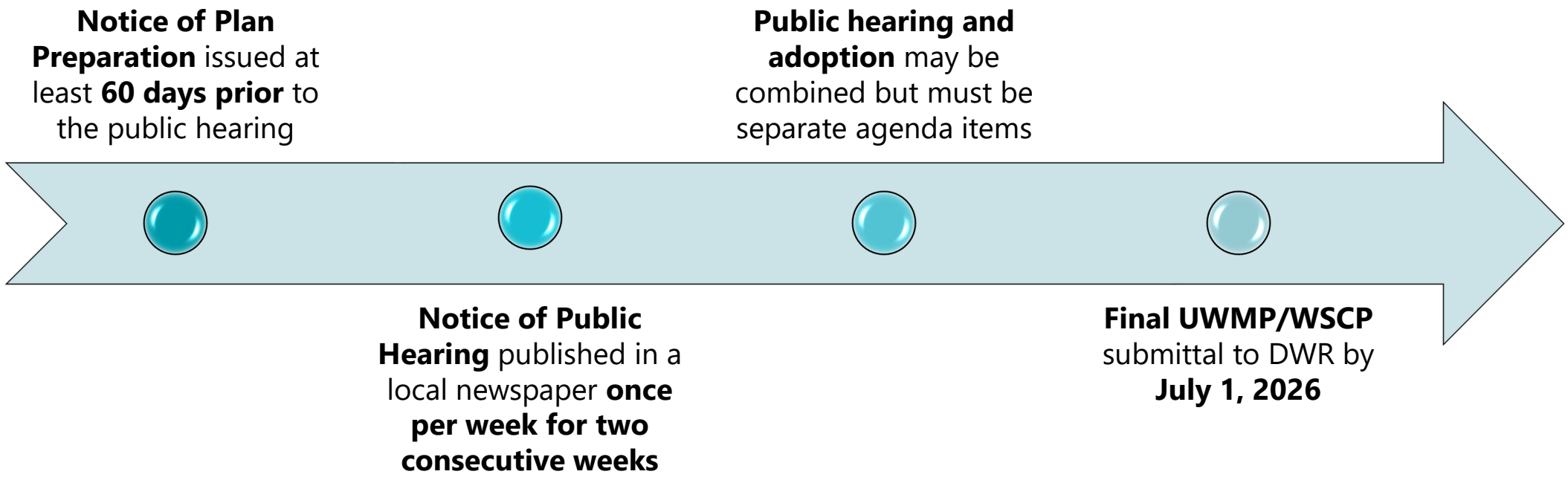
Q&A

Schedule and Next Steps

Schedule


WS 1
Jan
2026
March 2026:
Finalize 2025
WSCPs
April 2- 14 2026:
Draft for Agency Review
WS 2
April
2026
April 27, 2026:
Public Draft
Final
Adoption
May 2026
Data Analysis & Document Review
Supply & Demand Projections
Agency WSCPs
Regional Context
Agency UWMP Chapters
Supporting Documentation
Final Compiled RUWMP

Public Adoption and Public Notice Process



Public Adoption and Public Notice Process Schedule

Agency	Confirmed Public Hearing and Adoption Meeting[1]	Date Notice of Plan Preparation Needed (60-Day)[2]	Date Public Drafts Needed for Website Posting	Newspaper Used for Public Hearing Notice[3]	Newspaper Publication Days	Two-Week Ad Window[3]	Date Final Package Needed for Public Hearing and Adoption[4]
Three Valleys Municipal Water District	May 20, 2026	*March 21, 2026*	April 27, 2026	San Gabriel Valley Tribune	X	Yes	May 12, 2026
City of Glendora	May 26, 2026	*March 27, 2026*		San Gabriel Valley Examiner	X	Yes	May 5, 2026
City of La Verne	May 18, 2026	*March 19, 2026*		Inland Valley Daily Bulletin	X	Yes	May 11, 2026
City of Pomona	May 18, 2026	*March 19, 2026*		Inland Valley Daily Bulletin	X	Yes	April 28, 2026
Golden State Water Company – Claremont	May 26, 2026	*March 27, 2026*		X	X	Yes	May 19, 2026
Golden State Water Company – San Dimas	May 26, 2026	*March 27, 2026*		X	X	Yes	May 19, 2026
Rowland Water District	May 19, 2026	*March 20, 2026*		San Gabriel Valley Tribune	4/28 & 5/5	Yes	May 8, 2026
Walnut Valley Water District	May 18, 2026	*March 19, 2026*		San Gabriel Valley Examiner	X	Yes	May 11, 2026

Notes:

1. The public hearing and adoption may occur at the same meeting but must be separate agenda items.
2. Notice of Plan Preparation must be issued at least 60 days prior to the public hearing. The notices to the cities and counties should include the anticipated location where the 2025 UWMP can be viewed, the UWMP revision schedule, and contact information of the UWMP preparer.
3. Notice of Public Hearing must be published in a local newspaper once per week for two consecutive weeks.
4. Final UWMP (including WSCP) must be submitted to DWR by July 1, 2026. The WSCP must be treated as a stand-alone plan for noticing, public hearing, and adoption, even though it must be submitted as part of the UWMP.

Next Steps

- ❑ **Participating Agency review of Regional UWMP and individual agency UWMP chapters (April 14)**
- ❑ **Hold Public Hearing & Adoption**
- ❑ **Submit Final RUWMP to DWR**

Did we meet the Objectives for today?

I. **Update on Draft RUWMP**

II. **Plan ahead to complete the RUWMP on time**

III. **Answer your questions**

ADJOURNMENT

Contact Info:
bpen@tvmwd.com or
sonsoy@geiconsultants.com

Regional Workshop 2 - Draft UWMP Review

Agency	In-Person Attendees	Email
City of Glendora	Damian Martinez	DMartinez@cityofglendora.gov
City of Glendora	Russell Ackerman	RAckerman@cityofglendora.gov
City of La Verne	Raymond Apodaca	rapodaca@laverneca.gov
City of Pomona	Maxus Wong	Maxus.Wong@pomonaca.gov
Walnut Valley Water District	Donna DiLaura	ddilaura@walnutvalleywater.gov
Walnut Valley Water District	James Ning	jning@walnutvalleywater.gov
Walnut Valley Water District	Jared Macias	jmacias@walnutvalleywater.gov
Three Valleys MWD	Brian Pen	bpen@tvmwd.com
Three Valleys MWD	Sylvie Lee	slee@tvmwd.com
Three Valleys MWD	Kevin Panzer	kpanzer@tvmwd.com
Three Valleys MWD	Antonio Carbajal	acarbajal@tvmwd.com
City of Glendora	Armando De Jesus	ADeJesus@cityofglendora.gov
City of Industry	Joshua Nelson	jnelson@cityofindustry.org
City of La Verne	Mike Maestas	mmaestas@laverneca.gov
City of Upland	Michelle Madriz	mmadriz@uplandca.gov
GEI Consultants	Kwabena Asante	kasante@geiconsultants.com
GEI Consultants	Matthew Bachman	MBachman@geiconsultants.com
GEI Consultants	Sevim Onsoy	SOnsoy@geiconsultants.com
GEI Consultants	Roger Putty	rputty@geiconsultants.com
Golden State Water Company	Ben Lewis	benjamin.lewis@gswater.com
Golden State Water Company	Mark Insco	Mark.Insco@gswater.com
Metropolitan Water District	David Sumi	DSumi@mwdh2o.com
Metropolitan Water District/Six Basins	Mike N Ti	mike_ti@mwdh2o.com
Rowland Water District	Allen Davidson	adavidson@rwd.org
Rowland Water District	Elisabeth Mendez	EMendez@rwd.org
Three Valleys MWD	Kirk Howie	khowie@tvmwd.com
Upper Water	Katherine Vazquez	katherine@usgvmwd.org
Walnut Valley Water District	Tom Coleman	TColeman@rwd.org
Walnut Valley Water District	Tom Monk	tmonk@walnutvalleywater.gov

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RESOLUTION CC 2026-27

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GLENDORA ADOPTING THE 2025 URBAN WATER MANAGEMENT PLAN AND DIRECTING THE FILING AND IMPLEMENTATION OF THE PLAN

THE CITY COUNCIL
City of Glendora, California

WHEREAS, the California Legislature established the Urban Water Management Planning Act (Water Code 16010, et seq.) with the enactment of Assembly Bill 797 during the regular 1983-1984 California Legislature Session; and

WHEREAS, the Urban Water Management Planning Act requires that every urban water purveyor that annually supplies more than 3,000 acre-feet or serves more than 3,000 connections must prepare an Urban Water Management Plan which identifies the reliability of their water sources; and

WHEREAS, the Urban Water Management Planning Act requires that said Urban Water Management Plan must be adopted and filed with the California Department of Water Resources following a public hearing and that said Plan shall be reviewed and updated every five years; and

WHEREAS, the City of Glendora, being an urban water purveyor and annually providing water to nearly 13,000 service connections, has therefore prepared an Urban Water Management Plan update and help a properly noticed public hearing in compliance with the Urban Water Management Planning Act; and

WHEREAS, the City Council of the City of Glendora subsequently closed said hearing at its regular meeting of May 26, 2026; and

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENDORA, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. That the 2025 Urban Water Management Plan update is hereby adopted and ordered filed by the City Clerk; and

SECTION 2. That the Public Works Director is hereby authorized and directed to file the 2025 Urban Water Management Plan update with the California Department of Water Resources in accordance with the requirements of the Urban Water Management Planning Act; and

SECTION 3. The City Clerk shall certify to the passage and adoption of this resolution and shall enter the same in the Book of Original Resolutions.

SECTION 4. The City Clerk shall cause this Resolution to be published once within ten (10) days of adoption in a newspaper or general circulation printed and published within the City of Glendora, and shall post a certified copy of the Resolution in established posting locations according to law.

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PASSED, APPROVED AND ADOPTED by the City Council of the City of Glendora this 9th day of June, 2026.

BY: DocuSigned by: David Fredendall FC21FCE9806E4BA...

DAVID FREDENDALL
Mayor

Jun 15, 2026 | 7:58 PM PDT

APPROVED AS TO FORM:
Aleshire & Wynder, LLP

DocuSigned by: Danny Aleshire 0D5924B7E6ED4A5...

DANNY ALESHIRE
City Attorney

Jun 15, 2026 | 6:09 PM PDT

CERTIFICATION

I, do hereby certify that the foregoing Resolution was duly adopted by the City Council of the City of Glendora at a regular meeting held on the 9th day of June, 2026, by the following vote:

AYES:	MEMBERS:	Allawos, Elias, Thompson, Davis, and Fredendall.
NOES:	MEMBERS:	None.
ABSENT:	MEMBERS:	None.
ABSTAIN:	MEMBERS:	None.

I further certify that said Resolution was published as required by law in a newspaper of general circulation in the City of Glendora, California on the 18th day of June, 2026.

Dated: June 15, 2026

Signed by: Kathleen Sessman 2252A9F44B69431...

KATHLEEN R. SESSMAN
City Clerk/Communications Director

Jun 18, 2026 | 7:18 AM PDT

ORDINANCE NO. 1895

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF GLENDORA ADDING CHAPTER 14.34 ENTITLED WATER CONSERVATION

THE CITY COUNCIL
City of Glendora, California

WHEREAS, the City of Glendora is a general law City;

WHEREAS, the City Council of the City of Glendora is desirous of establishing water conservation standards to ensure that the City is are able to serve the basic health and safety needs for all water customers serviced by the City of Glendora.

NOW, THEREFORE THE CITY COUNCIL OF THE CITY OF GLENDORA **DOES ORDAIN AS FOLLOWS:**

SECTION 1. A new Chapter 14.34 of the Glendora Municipal Code is hereby added to read as follows:

"14.34.010 Definitions

"Consumer" means a person or entity who uses water provided by the City of Glendora.

"Account Holder" means the person or entity responsible for payment of water services provided by the City of Glendora at a particular property, as shown in the City's water billing records.

"Independent Hearing Officer" means a neutral person designated by the city manager. The Independent Hearing Officer may be selected from programs such as the Los Angeles County Bar Association, JAMS or other similar programs offering the services of qualified independent hearing officers to hear such matters.

"Director" means the Director of the Department of Public Works or a designated representative.

"Drought condition" means a condition in which the existing or projected water supply available to the City is not anticipated to meet the ordinary water requirements of Consumers. This condition may be the result of factors including but not limited to voluntary or mandatory curtailment of the City's water allocation the Upper San Gabriel Valley Watermaster, from the Metropolitan Water District, emergency conditions, and/or failure of the City's or its supplier's water distribution systems.

"Independent Hearing Officer" means a neutral person designated by the city manager. The Independent Hearing Officer may be selected from programs such as the Los Angeles County Bar Association, JAMS or other similar programs offering the services of qualified independent hearing officers to hear such matters.

"Flow Restrictor" means a device for reducing the flow of water through a meter.

"Third party purveyor" means water purveyors to which the City provides water, including but not limited to Suburban Water, Covina Irrigating Company and the City of Azusa.

"Waste" means, including but not limited to, any use of water which causes unnecessary water runoff beyond the boundaries of any property as a result of overwatering the landscaping or vegetation, a broken irrigation system, improper spray direction of sprinkler nozzles, or failure to implement best practices irrigation planning. Waste also includes any failure to repair as soon as reasonably possible any leak or rupture in any water pipes, faucets, valves, plumbing fixtures or other water service appliances. Waste shall also mean the use of running water through an exterior hose, pipe or faucet not equipped with an automatic shut-off nozzle.

14.34.020. Application

The provisions of this chapter shall apply to all customers and property served water by the City's Water Division wherever situated, and shall also apply to all property and facilities owned, maintained, operated, or under the jurisdiction of the various officers, departments, commissions, and agencies of the City.

14.34.030. Prohibition Against Waste of Water

It shall be a violation of the Glendora Municipal Code for any Consumer or Account Holder to waste any water obtained from or through the water facilities of the City.

14.34.040. Access to Water Meters

The City shall be given access to a Consumer's water meter for meter reading and repairing, shutting off or turning on water service and installation or removal of flow restrictors, wherever the meter is located. Such access shall not inhibit the operations of the City's Water Division.

14.34.050. Place of Use of Water

Except as otherwise provided in this Ordinance or as specifically authorized by the Director, water received from or through a Consumer's water meter shall be used only on and for the property served by that meter.

14.34.060. Voluntary Water Conservation Drought Condition

A. Upon adoption by the City Council of a Resolution declaring a Voluntary Conservation Drought Condition and for as long as the City is needing or projecting to import at least 25% of its water needs during any 12 month period, all water Consumers will be encouraged to voluntarily reduce water consumption to a level by at least 10%. This shall apply to all public and private properties and facilities.

B. The City shall implement the following programs if a Voluntary Conservation Drought Condition has been declared:

1. Educational outreach:

a. Public mailings to residents on at least a bi-monthly basis requesting voluntary conservation and offering conservation measures suggestions.

b. Purchase conservation materials that can be used to educate customers directly or indirectly through community based organization events.

c. Inform restaurants and motel/hotel establishments of the need to reduce water offerings. Supply materials and signs to assist with the implementation of voluntary conservation measures.

2. Conservation Capital Program:

a. Offer a conservation capital program to customers based on similar economic formulas adopted by the California Public Utilities Commission.

b. Offer a conservation capital program based on any program adopted by the California Public Utilities Commission for other water purveyors.

3. The Director or his designee is authorized to turn off the water of any property that fails to make corrective changes to any broken water system, sprinkler, etc., within 72 hours of being notified by the City by posting in a conspicuous location on the property.

14.34.070 Stage One Drought Condition

A. A Stage One Drought Condition may be implemented by the City Council when one or more of the following conditions exists:

1. Imported water is needed to meet 40% of the City's water system demand for the current or next fiscal year.

2. The City's water well production for the current fiscal year is reduced by 25% below the production level for the same period of the preceding year.

3. Upon recommendation by the Water Commission that a water shortage exists, such as when the projected supply and demand for water reduces storage capacities and/or a reduction in the City's ability to purchase water.

B. Prior to implementation of a stage one drought condition plan as provided in this chapter, the City Council shall hold a public hearing for the purposes of determining whether a the need for implementing a stage one drought condition exists. Notice of the time and place of said public hearing shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City Council may, upon finding that the need for implementing a stage one drought condition exists, order implementation of a stage one drought condition plan as provided in this chapter. Said order shall be made by Resolution of the City Council and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such publication. The provisions of this Section shall

take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. At any time during the stage one drought condition period, the City Council may discontinue any plan or may implement another plan as provided in this chapter. Upon a finding by the City Council that a stage one drought condition no longer exists, the stage one drought condition then in effect shall terminate.

C. Upon adoption by the City Council of a Resolution declaring a Stage One Drought Condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1. Each of the Voluntary Conservation Drought Condition regulations shall be applicable as long as they are not in conflict with the more restrictive regulations of the Stage One Drought Condition.

2. The use of continuous running water from a hose, pipe, or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic or other surfaces shall be prohibited, except in the event the Director determines that such use is the only feasible means of correcting a potential threat to health, sanitation or safety.

3. Every operator of a restaurant providing table service shall offer water only upon request and post table signs notifying its customers of drought conditions and that water is available upon request.

4. Every operator of a hotel, motel, or other commercial establishment offering lodgings shall institute daily washing of towels and linens only upon request and shall post signs in each room notifying customers of the drought condition.

5. Any use of water that causes runoff to occur beyond the immediate vicinity of use shall be prohibited.

6. Watering shall be prohibited from 6:00 a.m. to 8:00 p.m. of any yard, orchard, park, golf course, recreational area, or other area containing vegetation with the following exceptions:

a. The irrigation of trees and shrubs shall be allowed by any means and at any time of the day provided that:

(1) The irrigation shall be confined to the area within the drip line of a tree or shrub.
(2) There shall be no run-off as a result of the irrigation
(3) That the irrigation shall not exceed 5 minutes to each tree or shrub during any 24-hour period.

b. The irrigation of plant material within commercial nurseries shall be allowed at any time of the day provided that:

(1) The water is applied only to one plant or container of plants at a time; and
(2) The water is applied by means of a hose equipped with an automatic shut-off nozzle.

c. The irrigation of golf course greens and City parks shall be allowed by any means and at any time of the day for the purpose of germinating seed, promoting growth of sod, or leaching minerals from the soil for new growth purposes only.

7. When a Stage One Drought Condition is declared, all Consumers shall reduce their water consumption by at least 10% below their average consumption for the same period of the previous year, or the year prior to the Stage One Drought Condition being declared.

D. The Director or his/her designee is authorized to turn off the water of any property that fails to make corrective changes to any broken water system, sprinkler, etc., within 24 hours of being notified by the City by posting in a conspicuous location on the property.

14.34.070 Stage Two Drought Condition

A. A Stage Two Drought Condition may be implemented by the City Council when any of the following conditions exist:

1. City well production losses and Metropolitan Water District purchased water restrictions threaten the City's ability to meet system demand.

2. Imported water is needed to meet 60% of the system demand.

3. Upon recommendation by the Water Commission that a water shortage exists when the projected supply and demand for water reduces storage capacities and/or the ability to purchase water.

B. Prior to implementation of a Stage Two Drought Condition as provided in this chapter, the City Council shall hold a public hearing for the purposes of determining whether a need to implement a Stage Two Drought Condition exists. Notice of the time and place of said public hearing shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City Council may, upon finding that a need to implement a Stage Two Drought Condition exists, order implementation of a Stage Two Drought Condition as provided in this chapter, or other measures which it deems appropriate to address the water shortage. Said order shall be made by Resolution and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such publication. The provisions of this Section shall take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. At any time during the Stage Two Drought Condition period, the City Council may discontinue the Stage Two Drought Condition or may implement another plan as provided in this chapter. Upon a finding by the City Council that a Stage Two Drought Condition no longer exists, the Stage Two Drought Condition then in effect shall terminate.

C. Upon adoption by the City Council of a Resolution declaring a Stage Two Drought Condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City.

1. Each of the Stage One Drought Condition regulations shall be applicable as long as they are not in conflict with any more restrictive regulations of the Stage Two Drought Condition.

2. With the exception of Subsection 3 below, the use of water through a meter that is used solely for irrigation purposes shall be prohibited, and the City shall have the right to shut off water service to any such meter without notice to the Customer, Account Holders or any other person.

3. The watering of any yard, orchard, hillside, park, golf course, recreational area, or other area containing vegetation shall be limited to Monday, Wednesday and Friday for all even address locations shall be limited to Tuesday, Thursday and Saturday for all odd address locations. Such watering times shall be limited to no more than 5 minutes for each water cycle station and done only between the hours of 8:00 p.m. and 6:00 a.m.

4. The private washing of all recreational vehicles and other vehicles shall be prohibited, except by use of a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water.

5. The Director is authorized to discontinue the supply of water to third party water purveyors during a Stage Two Drought Condition.

6. When a Stage Two Drought Condition is declared, all Consumers shall reduce their water consumption by at least 15% below their average consumption for the same period of the previous year, or the year prior to the Stage Two Drought Condition being declared.

14.34.080 Exemptions

A. Exemptions to the water use regulations set forth in this chapter may be granted by the Director for specific uses of water on the basis of hardship, or if necessary to protect the public health, sanitation or safety and in accordance with such guidelines for exemptions as the City Council may adopt, upon written application of the affected Account Holder.

B. In determining whether to grant exemptions to the water regulations, the Director shall take into consideration all factors relevant to the customer's water usage, including, but not limited to:

1. Whether any additional reduction in the customer's water consumption will result in unemployment;

2. Whether additional members have been added to the customer's household;

3. Whether any additional landscaped property has been added to the customer's property subsequent to the base period;

4. Changes in vacancy factors in multi-family housing;

5. Increased number of employees in commercial, industrial and governmental offices;

6. Increased production requiring increased process water;

7. Water uses during new construction;

8. Adjustments to water use caused by emergency, health or safety hazards;

9. First filling of a permit-constructed swimming pool;

10. Water use necessary for reasons related to family illness or health; and

11. Whether the customer had, prior to the implementation of the applicable Drought Condition Plan, taken measures to reduce the Customer's water consumption to the greatest extent possible.

C. Relief shall be granted only on a showing by the Customer that the Customer has achieved the maximum practical reduction in water consumption in the Customer's residential, commercial, industrial, agricultural or governmental water consumption, as the case may be, other than in the specific areas in which relief is being sought. No relief shall be granted to any Customer who, when requested by the Department, fails to provide the Department with relevant information

D. A denial of a request for an exemption shall be made within five (5) calendar days after the application was received. The denial may be appealed to the Water Commission by filing a written request with the City Clerk within ten (10) calendar days after written notice of the Director's decision was deposited in the U.S. mail addressed to the Account Holder at the address shown on the application. The decision of the Water Commission shall be rendered within forty five (45) calendar days after the request was received by the City Clerk. The decision of the Water Commission shall be final.

E. The prohibited uses of water from the Water Division provided in this chapter are not applicable to that use of water necessary for public health and safety or for essential governmental services such as police, fire, and emergency services. Nothing contained in this chapter shall be construed to require the division to curtail the supply of water to any customer when, in the discretion of the division, such water is required by that customer to maintain an adequate level of public health and safety.

13.34.090 Violations

A. Any failure to comply with any provision of this chapter shall be punishable as an infraction or misdemeanor as set forth herein. Every person who violates any provision of this chapter shall be guilty of a separate offense for each and every day during any portion of which the violation is committed, continued or permitted by such person.

B. The Director or his/her designee is authorized to turnoff the water to any property that fails to make emergency repairs to any broken water system or sprinkler.

C. Violations of the regulations of the Stage One or Stage Two Drought Conditions shall be punishable as follows:

1. The Director or his designee shall give first-time violators a courtesy notice of the violation. The first citation shall specify the nature of the violations, the date on which it occurred and the corrective measures to be taken. No prosecution or punishment shall be initiated or levied in connection with the first violation.

2. Upon a second violation within the preceding twelve (12) consecutive calendar months, the water Account Holder shall be punishable as an infraction. The Director shall issue a written notice of violation to the Account Holder for the property where the violation occurred or is occurring, and impose a fine in the amount of $150.00.

3. Upon a third violation within the preceding twelve (12) consecutive calendar months, the water Account Holder shall be punishable as an infraction. The Director shall issue a written notice of violation to the Account Holder for the property where the violation occurred or is occurring, and impose a fine in the amount of $250.00.

4. Upon a fourth, or more violations within the preceding twelve (12) consecutive calendar months, the water Account Holder shall be punishable as a misdemeanor with a fine to be imposed in the amount of $1,000.00.

D. Violations of the regulations of the Stage One or Stage Two Drought Conditions may result in the city installing a flow restrictor on the service to the property where the violation occurred or is occurring, for a period to be determined by the Director.

E. Any penalty imposed pursuant to this chapter shall be added to the account of the Account Holder for the property where the violation occurred or is occurring and shall be due and payable on the same terms and subject to the same conditions as any other charge for regular water service. The maximum amount of penalties which an Account Holder may be required to pay during any twelve consecutive calendar month period are hereby established by this Ordinance of the City of Glendora. Penalties must be paid in full prior to restoration of water service.

F. Nothing in this Ordinance shall limit or be construed to limit the right of an Account Holder to seek reimbursement of a penalty from a tenant or other consumer.

14.34.100. Notice of Violation and Request for Hearing

A. For each violation of this Ordinance, the Director shall give notice as follows:

1. By sending written notice through the U.S. mail to the Account Holder for the property where the violation occurred or is occurring, at the current billing address shown in the City's water billing records; and

2. By affixing written notice in a conspicuous place on the property where the violation occurred or is occurring.

B. Any written notice given under this section shall contain a statement of:

1. The date of the notice;

2. The time, place and nature of the violation;

3. The person (s) committing the violation, if known;

4. The provision (s) of this Ordinance violated;

5. The possible penalties for each violation;

6. The Account Holder's right to request a hearing on the violation and the time within which such a request must be made; and

7. The Account Holder's loss of the right to a hearing in the event the account holder fails to request a hearing within the time required.

C. Any Account Holder receiving a notice of an administrative citation may contest that there was a violation of the code or that he or she is the responsible party by submitting a Request for Hearing form and returning it to the city within ten (10) calendar days of the date of the notice of violation. The Account Holder must also post with the Director a check/money order/cahier's check in the amount of the proposed penalty for the violation(s) at the same time the request for a hearing is made.

D. Within thirty (30) calendar days after the Request for Hearing form is received, an Independent Hearing Officer shall conduct the hearing, at which both written and oral evidence may be presented, and shall decide whether a violation occurred and the appropriate penalty. In determining the appropriate penalty, the Independent Hearing Officer may consider all mitigating factors associated with the violation. The Director shall give written notice of the decision in accordance with Subsection A.1 of this Section.

E. For all appeals under this chapter the decision of the Independent Hearing Officer shall be final.

F. There shall be no surcharge added to the account of the Account Holder and no installation of a flow restrictor until the notice of violation has become final or there is a final decision of the Independent Hearing Officer ordering the penalty and installation of a flow restrictor or shut off of water service.

14.34.110. Water Conservation Standards

A. Plumbing Standards For Water Conservation. Plumbing standards for water conservation shall be as contained in the California Plumbing Code as adopted and amended by the City of Glendora in Chapter 19.08 of the Glendora Municipal Code.

B. Water Conservation Landscape Design Standards. All development proposals that are subject to review by the Department of Planning and Redevelopment, Project Review Committee or Planning Commission shall be required to install drought resistant landscaping in compliance Section 21.03.060 of the Glendora Municipal Code. Each development proposal not subject to

such review shall comply with such other water conservation landscape requirements as may be adopted by the Department of Planning and Redevelopment.

SECTION 2. If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held to be invalid or unenforceable by a court of competent jurisdiction, the remaining portions of this Ordinance shall nonetheless remain in full force and effect. The people of the City of Glendora hereby declare that they would have adopted each section, subsection, sentence, clause, phrase, or portion of this Ordinance, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases, or portions of this Ordinance by declared invalid or unenforceable.

SECTION 3. The Mayor shall sign this ordinance and the City Clerk shall attest and certify to the passage and adoption thereof and cause same to be published at least once in the Glendora Press, a weekly newspaper of general circulation, published in the City of Glendora, which newspaper is hereby designated for that purpose; and thereupon, and thirty (30) days after its passage, this ordinance shall take effect and be in force.

PASSED, APPROVED and **ADOPTED** this 27th day of May, 2008.

City Council of Glendora, California

By: _____
KAREN K. DAVIS, Mayor

ATTEST:

_____
KATHLEEN R. SESSMAN, City Clerk

APPROVED AS TO FORM:

_____
D. WAYNE LEECH, City Attorney

State of California
County of Los Angeles } ss.
City of Glendora

I, Kathleen R. Sessman, City Clerk of the City of Glendora, do hereby certify that the foregoing Ordinance was introduced for first reading on May 13, 2008. Thereafter, said Ordinance was duly approved and adopted at a regular meeting of the City Council on May 27, 2008, by the following roll call vote:

AYES: Council Members: Clifford, Herman, Tessitor, Kelly, Davis
NOES: Council Members: None
ABSENT: Council Members: None
ABSTAIN: Council Members: None

Dated: May 29, 2008

KATHLEEN R. SESSMAN, City Clerk

ORDINANCE NO. 1925

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF GLENDORA, CALIFORNIA AMENDING SECTION 14.34.070 OF THE MUNICIPAL CODE WITH RESPECT TO MANDATORY CONSERVATION MEASURES

THE CITY COUNCIL
CITY OF GLENDORA, CALIFORNIA

WHEREAS, the City of Glendora is a general law City;

WHEREAS, the City Council of the City of Glendora is desirous of establishing water conservation standards to ensure that the City is able to serve the basic health and safety needs for all water customers serviced by the City of Glendora

NOW, THEREFORE THE CITY COUNCIL OF THE CITY OF GLENDORA DOES ORDAIN AS FOLLOWS:

SECTION 1. Section 14.34.070 of the Glendora Municipal Code is hereby amended to read as follows:

14.34.070 Stage One Drought Condition

A. A Stage One Drought Condition may be implemented by the City Council when one or more of the following conditions exists:

1. Imported water is needed to meet 40% of the City's water system demand for the current or next fiscal year.

2. The City's water well production for the current fiscal year is reduced by 25% below the production level for the same period of the preceding year.

3. Upon recommendation by the Water Commission that a water shortage exists, such as when the projected supply and demand for water reduces storage capacities and/or a reduction in the City's ability to purchase water.

B. Prior to implementation of a stage one drought condition plan as provided in this chapter, the City Council shall hold a public hearing for the purposes of determining whether a the need for implementing a stage one drought condition exists. Notice of the time and place of said public hearing shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City Council may, upon finding that the need for implementing a stage one drought condition exists, order implementation of a stage one drought condition plan as provided in this chapter. Said order shall be made by Resolution of the City Council and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such publication. The provisions of this Section shall take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. At any time during the stage one drought condition period, the City Council may discontinue any plan or may implement another plan as provided in this chapter.

Upon a finding by the City Council that a stage one drought condition no longer exists, the stage one drought condition then in effect shall terminate.

C. Upon adoption by the City Council of a Resolution declaring a Stage One Drought Condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1. Each of the Voluntary Conservation Drought Condition regulations shall be applicable as long as they are not in conflict with the more restrictive regulations of the Stage One Drought Condition.

2. The use of continuous running water from a hose, pipe, or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic or other surfaces shall be prohibited, except in the event the Director determines that such use is the only feasible means of correcting a potential threat to health, sanitation or safety.

3. Every operator of a restaurant providing table service shall offer water only upon request and post table signs notifying its customers of drought conditions and that water is available upon request.

4. Every operator of a hotel, motel, or other commercial establishment offering lodgings shall institute daily washing of towels and linens only upon request and shall post signs in each room notifying customers of the drought condition.

5. Any use of water that causes runoff to occur beyond the immediate vicinity of use shall be prohibited.

6. Watering shall be prohibited from 8:00 a.m. to 5:00 p.m. of any yard, orchard, park, golf course, recreational area, or other area containing vegetation with the following exceptions:

a. The irrigation of trees and shrubs shall be allowed by any means and at any time of the day provided that:

(1) The irrigation shall be confined to the area within the drip line of a tree or shrub.

(2) There shall be no run-off as a result of the irrigation

(3) That the irrigation shall not exceed 5 minutes to each tree or shrub during any 24-hour period.

b. The irrigation of plant material within commercial nurseries shall be allowed at any time of the day provided that:

(1) The water is applied only to one plant or container of plants at a time; and

(2) The water is applied by means of a hose equipped with an automatic shut-off nozzle.

c. The irrigation of golf course greens and City parks shall be allowed by any means and at any time of the day for the purpose of germinating seed, promoting growth of sod, or leaching minerals from the soil for new growth purposes only.

7. When a Stage One Drought Condition is declared, all Consumers shall reduce their water consumption by at least 10% below their average consumption for the same period of the previous year, or the year prior to the Stage One Drought Condition being declared.

D. The Director or his/her designee is authorized to turn off the water of any property that fails to make corrective changes to any broken water system, sprinkler, etc., within 24 hours of being notified by the City by posting in a conspicuous location on the property.

14.34.070 Stage Two Drought Condition

A. A Stage Two Drought Condition may be implemented by the City Council when any of the following conditions exist:

1. City well production losses and Metropolitan Water District purchased water restrictions threaten the City's ability to meet system demand.

2. Imported water is needed to meet 60% of the system demand.

3. Upon recommendation by the Water Commission that a water shortage exists when the projected supply and demand for water reduces storage capacities and/or the ability to purchase water.

B. Prior to implementation of a Stage Two Drought Condition as provided in this chapter, the City Council shall hold a public hearing for the purposes of determining whether a need to implement a Stage Two Drought Condition exists. Notice of the time and place of said public hearing shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City Council may, upon finding that a need to implement a Stage Two Drought Condition exists, order implementation of a Stage Two Drought Condition as provided in this chapter, or other measures which it deems appropriate to address the water shortage. Said order shall be made by Resolution and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such publication. The provisions of this Section shall take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. At any time during the Stage Two Drought Condition period, the City Council may discontinue the Stage Two Drought Condition or may implement another plan as provided in this chapter. Upon a finding by the City Council that a Stage Two Drought Condition no longer exists, the Stage Two Drought Condition then in effect shall terminate.

C. Upon adoption by the City Council of a Resolution declaring a Stage Two Drought Condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City.

1. Each of the Stage One Drought Condition regulations shall be applicable as long as they are not in conflict with any more restrictive regulations of the Stage Two Drought Condition.

2. With the exception of Subsection 3 below, the use of water through a meter that is used solely for irrigation purposes shall be prohibited, and the City shall have the right to shut off water service to any such meter without notice to the Customer, Account Holders or any other person.

3. The watering of any yard, orchard, hillside, park, golf course, recreational area, or other area containing vegetation shall be limited to Monday, Wednesday and Friday for all even address locations shall be limited to Tuesday, Thursday and Saturday for all odd address locations. Such watering times shall be limited to no more than 5 minutes for each water cycle station and done only between the hours of 5:00 p.m. and 8:00 a.m.

4. The private washing of all recreational vehicles and other vehicles shall be prohibited, except by use of a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water.

5. The Director is authorized to discontinue the supply of water to third party water purveyors during a Stage Two Drought Condition.

6. When a Stage Two Drought Condition is declared, all Consumers shall reduce their water consumption by at least 15% below their average consumption for the same period of the previous year, or the year prior to the Stage Two Drought Condition being declared.

SECTION 2. If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held to be invalid or unenforceable by a court of competent jurisdiction, the remaining portions of this Ordinance shall nonetheless remain in full force and effect. The people of the City of Glendora hereby declare that they would have adopted each section, subsection, sentence, clause, phrase, or portion of this Ordinance, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases, or portions of this Ordinance by declared invalid or unenforceable.

SECTION 3. The Mayor shall sign this ordinance and the City Clerk shall attest and certify to the passage and adoption thereof and cause same to be published at least once in the Glendora Press, a weekly newspaper of general circulation, published in the City of Glendora, which newspaper is hereby designated for that purpose; and thereupon, and thirty (30) days after its passage, this ordinance shall take effect and be in force.

PASSED, APPROVED and **ADOPTED** this 25th day of August, 2009.

City Council of Glendora, California

BY: _____
KAREN K. DAVIS, Mayor

APPROVED AS TO FORM:

WAYNE LEECH, City Attorney

I, Kathleen R. Sessman, City Clerk of the City of Glendora, California, DO HEREBY CERTIFY that the foregoing Ordinance was introduced for first reading on August 11, 2009 by the following roll call vote:

AYES:	COUNCIL MEMBERS:	Clifford, Murabito, Herman and Davis.
NOES:	COUNCIL MEMBERS:	None.
ABSENT:	COUNCIL MEMBERS:	Tessitor.
ABSTAIN:	COUNCIL MEMBERS:	None.

Thereafter, said Ordinance was duly approved and adopted at a Regular Meeting of the City Council on August 25, 2009, by the following roll call vote:

AYES:	COUNCIL MEMBERS:	Clifford, Murabito, Tessitor Herman and Davis.
NOES:	COUNCIL MEMBERS:	None.
ABSENT:	COUNCIL MEMBERS:	None.
ABSTAIN:	COUNCIL MEMBERS:	None.

I further certify that said Ordinance was published as required by law in a newspaper of general circulation in the City of Glendora, California on the 3rd day of September, 2009.

Dated: August 26, 2009

KATHLEEN R. SESSMAN, City Clerk

ORDINANCE 1996

AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF GLENDORA, CALIFORNIA, ENACTING MANDATORY EMERGENCY WATER CONSERVATION REGULATIONS TO COMPLY WITH GOVERNOR BROWN'S EXECUTIVE ORDER B-29-15 AND THE REGULATIONS PROMULGATED BY THE STATE WATER RESOURCES CONTROL BOARD IN RESPONSE THERETO

THE CITY COUNCIL
City of Glendora, California

THE CITY COUNCIL OF THE CITY OF GLENDORA DOES HEREBY ORDAIN AS FOLLOWS:

WHEREAS, pursuant to Section 36937 of the California Government Code, a City Council may adopt as an urgency measure an ordinance to protect the public safety, health, or welfare; and

WHEREAS, on April 1, 2015, Governor Brown issued Executive Order B-29-15, imposing restrictions on water use in order to achieve an aggregate statewide 25 percent reduction in potable urban water usage through February 2016; and

WHEREAS, on May 5, 2015, in accordance with the Governor's Executive Order B-29-15, the State Water Resources Control Board adopted Resolution 2015-0032 detailing emergency regulations ("Regulations") implementing a statewide 25% reduction in potable urban water use; and

WHEREAS, the Regulations establish conservation levels for water suppliers based on an average Residential Gallons per Capita per Day ("R-GPCD") for the period of July through September 2014, and the City of Glendora has been categorized among the cities mandated with a 36 percent potable urban water use reduction; and

WHEREAS, the City Council of the City of Glendora wishes to implement comprehensive regulations in order to comply with Executive Order B-29-15, to protect the public health, safety, and welfare; and

WHEREAS, the long-term health, safety, and prosperity of the community depends upon having a reliable supply of potable water.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENDORA, CALIFORNIA, DOES RESOLVE, DECLARE, DETERMINE AND ORDER AS FOLLOWS:

SECTION 1. A new Section 14.34.120 of the Glendora Municipal Code is hereby added to read as follows:

"14.34.120 Emergency water conservation drought condition

(a) An emergency water drought condition may be ordered by the City Council in order to comply with the Governor's Executive Order B-29-15, which is implemented by the State Water Resources Control Board's adoption of Resolution 2015-0032 detailing emergency regulations for a statewide 25% reduction in potable urban water use, and other emergency water drought orders and regulations ordered by the Governor or other State boards or agencies.

(b) Prior to implementation of an emergency water drought condition as provided in this chapter, the City Council may, upon finding that a need to order an emergency water drought condition exists, order an emergency water drought condition, or other measures which it deems appropriate to address the water shortage emergency. Said order shall be made by resolution and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such adoption. The provisions of this section shall take effect immediately upon the effective date of the City Council's resolution.

(c) Upon order of an emergency water drought condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

(1) Each of the stage one drought condition regulations shall be applicable as long as they are not in conflict with more restrictive regulations of the emergency water conservation regulations.

(2) All residential users, inclusive of single family, and multi-family 2-4 units shall reduce their water consumption to the R-GPCD consumption levels set forth in a formal resolution adopted by the city council, which will comply with the State of California mandated consumption reduction level regulations.

(3) All non-residential users with landscape areas greater than 500 square feet shall reduce their water consumption by 25% compared to the same billing months from the year 2013.

(4) All non-residential users with no or landscape areas of 500 square feet or less shall reduce their water consumption by 10% compared to the same billing months from the year 2013.

(5) All outdoor ornamental turf watering shall be limited to no more than two days a week and not more than 10 minutes at each water station per day.

(6) To prevent the waste and unreasonable use of water and to promote water conservation, each of the following actions is prohibited, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency:

(a) The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;

(b) The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;

(c) The application of potable water to driveways and sidewalks;

(d) The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system;

(e) The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall;

(f) The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

(g) The irrigation with potable water of ornamental turf on public street medians; and

(h) The irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

(7) All operators of hotels, motels, or other commercial establishments offering lodgings shall provide guests with the option of choosing not to have towels and linens laundered daily. The operators of these facilities shall prominently display notice of this option in each guestroom using clear and easily understood language and ensure such notices are maintained;

(d) The City Manager or his designee is hereby authorized to implement all necessary measures or actions mandated or required to meet water conservation mandates imposed by the California State Water Resources Control Board or other State agencies without any further action by the City Council. All such actions shall be reported to the city council for adoption by resolution prior to implementation.

(e) Violation of the emergency water drought condition regulations shall be punishable as an infraction or misdemeanor as set forth herein. Every person who violates any provision of this chapter shall be guilty of a separate offense for each and every day during any portion of which the violation is committed, continued or permitted by such person. Violations shall be punishable as follows:

(1) The director or his or her designee shall give first-time violators a courtesy notice of the violation. The courtesy notice shall specify the nature of the violation(s), the date on which it occurred, the corrective measures to be performed, and notice that the violator shall:

(a) Perform the corrective action;

(b) Request a water use efficiency audit with the City within 10 days; and

(c) Undertake the relevant corrective action within 10 days after completion of the water use efficiency audit.

(2) Upon a second violation the violation by the water account holder shall be punishable as an infraction. The director or his or her designee shall issue a written notice of violation to the account holder for the property where the violation occurred or is occurring, and impose a fine in the amount of two hundred fifty dollars.

(a) Failure to comply with the corrective actions identified in the remedial water use efficiency audit in the first violation shall be deemed second violation subject to a two hundred fifty dollar fine.

(b) Failure to comply with the corrective actions identified in the remedial water use efficiency audit in the first violation shall be deemed a separate violation every three days thereafter until the corrective action is completed.

(3) Upon a third violation the violation by the water account holder shall be punishable as an infraction. The director shall issue a written notice of violation to the account holder for the property where the violation occurred or is occurring, and impose a fine in the amount of one thousand dollars.

(4) Violations of the emergency water drought condition regulations may result in the City installing a flow restrictor on the service to the property where the violation occurred or is occurring, for a period to be determined by the director.

(5) Any penalty imposed pursuant to this chapter shall be added to the account of the account holder for the property where the violation occurred or is occurring and shall be due and payable on the same terms and subject to the same conditions as any other charge for regular water service. The maximum amount of penalties which an account holder may be required to pay during any twelve consecutive calendar month period are hereby established by this chapter of the Glendora Municipal Code. Penalties must be paid in full prior to restoration of water service.

(6) Nothing in this chapter shall limit or be construed to limit the right of an account holder to seek reimbursement of a penalty from a tenant or other consumer."

SECTION 2. Section 21.03.060 of the Glendora Municipal Code is hereby deleted and repealed in its entirety.

SECTION 3. A new section 21.03.060 of the Glendora Municipal Code is hereby added to read as follows:

"21.03.060 State model water efficient landscaping ordinance adopted by reference.

(a) The City adopts by reference the California State Model Water Efficient Landscaping Ordinance (AB 1881), and any amendments thereto, as the law of the City. One copy of the California State Model Water Efficient Landscaping Ordinance has been, and is now, filed in the office of the planning director, and the ordinance is adopted by reference as if incorporated and set out in full in this chapter. The California State Model Water Efficient Landscaping Ordinance requirements shall apply to the following in addition to the applicable requirements of the California State Model Water Efficient Landscaping Ordinance:

(1) New and rehabilitated landscapes for private projects with a landscape area requiring any permit or application for approval from the City of Glendora.

(2) Any private project involving either the development of a new detached structure equal to or larger than 500 square feet in area.

(3) Any private project involving the addition to an existing structure shall replace their landscape on a 2:1 basis, for example a 500 square foot addition shall require a 1,000 landscape replacement which can include the landscape removed for the footprint of the addition being permitted. The project applicant shall be deemed compliant with this section upon presenting certification by a by a licensed landscape architect that the landscape to be replaced replacement area is already compliant with the most recent State Model Water Efficient Landscape Ordinance.

(4) All new residential construction, new roof installations, patio covers and additions, or when the building permit valuation for remodeling meets or exceeds $25,000 as established by the most recently adopted Master Schedule of Fees for Service, a minimum of two 50 gallon rain barrels shall be installed to capture roof rainwater runoff. The rain barrel capacity must be sufficient to capture the first ¾ inch of rain from the roof of the structure, or another means of retaining the water onsite must be approved by the Building Official. A roof drainage system, such as roof gutters, roof drains or scuppers directing the runoff to the rain barrels is required. The method for capturing the roof runoff is to be approved by the Building Official or his/her designee. Solar photovoltaic systems, mechanical, electrical and plumbing permits are exempted from this requirement;

(5) All property owners of existing single-family and 2-4 unit residential structures shall install a minimum of two 50 gallon rain barrels to capture roof rainwater runoff. The rain barrel capacity must be sufficient to capture the first ¾ inch of rain from the roof of the structure, or another means of retaining the water onsite must be approved by the Building Official by June 2017. A roof drainage system, such as roof gutters, roof drains or scuppers directing the runoff to the rain barrels will be required. The method for capturing the runoff is to be approved by the Building Official or his/her designee."

SECTION 4. Findings. There is a current and immediate threat to the public health, safety, or welfare caused by the statewide drought, as evidenced by Executive Order B-29-15, and the failure to take the actions and to adopt the regulations set forth herein could subject the City of Glendora to fines, and could threaten public health, safety, or welfare, in that: (1) there may not be sufficient water available to the public for basic living necessities; (2) there may not be sufficient water available to the public to fight fires; and (3) there may not be sufficient water available to preserve drought tolerant landscaping, which would adversely impact property values in the city.

SECTION 5. Severability. The provisions of this Ordinance are declared to be severable and if any section, sentence, clause or phrase of this Ordinance shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this Ordinance but they shall remain in effect, it being the legislative intent that this Ordinance shall stand notwithstanding the invalidity of any part.

SECTION 6. Effective Date/Term. The Mayor shall sign this ordinance and the City Clerk shall attest and certify to its passage. This Ordinance is hereby declared an urgency ordinance measure for the immediate preservation of the public health, safety and welfare and shall be effective immediately upon its adoption.

PASSED, APPROVED and **ADOPTED** this 26th day of May, 2015.

City Council of Glendora, California

BY: _____
KAREN K. DAVIS, Mayor

APPROVED AS TO FORM:

_____
D. WAYNE LEECH, City Attorney

CERTIFICATION

I, Kathleen R. Sessman, City Clerk of the City of Glendora, California, DO HEREBY CERTIFY that the foregoing Urgency Ordinance was duly approved and adopted at a Regular Meeting of the City Council on the 26th day of May, 2015, by the following roll call vote:

AYES:	COUNCIL MEMBERS:	Boyer, Nelson, Thompson, Murabito, and Davis
NOES:	COUNCIL MEMBERS:	None
ABSENT:	COUNCIL MEMBERS:	None
ABSTAIN:	COUNCIL MEMBERS:	None

Dated: May 27, 2015

KATHLEEN R. SESSMAN, City Clerk

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)
CA1910044	City of Glendora	13,434	10,113
	Total	**13,434**	**10,113**

Submittal Table 2-2: Plan Identification

Type of Plan	Name of Regional Alliance or RUWMP
Individual UWMP	Three Valleys Regional Urban Water Management Plan

Submittal Table 2-3: Supplier Identification

Type of Supplier	Year Type	Month and date that the year begins (mm/dd)	Units of measure used in UWMP
Supplier is a retail supplier	Fiscal Year	07/01	AF

Submittal Table 2-4 Retail: Water Supplier Information Exchange

The retail Supplier has informed the following wholesale supplier(s) of projected water use.
Wholesale Water Supplier Name
Three Valleys Municipal Water District
Upper San Gabriel Valley Municipal Water District
Covina Valley Water Company

Submittal Table 3-1 Retail: Population - Current and Projected

Category	2025	2030	2035	2040	2045	2050*(opt)*
Population Served	45,593	45,943	46,294	46,368	46,441	46,515

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual

Use Type	Additional Description (as needed)	2025 Actual Water Use Potable or Non-Potable	2025 Actual Water Use Volume (AF)
Single Family		Potable	6,710
Multi-Family		Potable	445
Commercial		Potable	1,161
Landscape		Potable	343
Sales/Transfers/Exchanges to other Suppliers		Potable	18
Distribution System Water Loss		Potable	1,436
		Subtotal Potable	10,113
		Subtotal Non-Potable	0
		Total	**10,113**

Submittal Table 4-2 Retail: Total Uses for Potable, and Non-Potable Water — Projected

Use Type	Additional Description	Projected Water Use Potable or Non-Potable (Optional)	Projected Water Use 2030 (AF)	Projected Water Use 2035 (AF)	Projected Water Use 2040 (AF)	Projected Water Use 2045 (AF)	Projected Water Use 2050 opt (AF)
Single Family		Potable	6,618	6,535	6,415	6,296	6,180
Multi-Family		Potable	587	580	569	559	548
Commercial		Potable	1,185	1,170	1,148	1,127	1,107
Landscape		Potable	161	159	156	153	151
Sales/Transfers/ Exchanges to other Suppliers		Potable	47	46	45	45	44
Distribution System Water Loss		Potable	1,405	1,388	1,362	1,337	1,312
Subtotal Potable			10,003	9,878	9,695	9,517	9,342
Subtotal Non-Potable			0	0	0	0	0
Total			**10,003**	**9,878**	**9,695**	**9,517**	**9,342**

Submittal Table 4-3 Retail: Inclusion in Water Use Projections

Projection Item	Included in Projections?
Are Future Water Savings Included in Projections?	Yes
Are Lower Income Residential Demands Included In Projections?	Yes

Submittal Table 4-5 Retail: Water Loss Audit Reporting

Public Water System ID #	Reporting Period	Submitted to DWR Water Loss Audit Program
CA1910044	2020	Yes
CA1910044	2021	Yes
CA1910044	2022	Yes
CA1910044	2023	Yes
CA1910044	2024	Yes
CA1910044	2025	Yes

Notes: Report submittal status for all five years for each Public Water System as available. The "Volume of Water Loss" quantities for FY 2019-20 through FY 2024-25 were obtained from the annual AWWA Water Loss Audits (and based on the combination of apparent losses and real losses). The AWWA Water Loss Audits were reported on a fiscal year basis.

Submittal Table 4-6 Retail: Progress Towards 2028 Water Loss Standard

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?	Real Water Loss State Water Board Standard 2028 Real Water Loss Standard per Unit per day	Real Water Loss State Water Board Standard Units for Real Water Loss	Real Water Loss Most Recent AWWA Water Loss Audit Number of Units (Connections or Miles corresponding with units selected)	Real Water Loss Most Recent AWWA Water Loss Audit Volume of Total Real Loss (AF) (from AWWA Water Loss Audit)	Real Water Loss Per Unit per Day	Apparent Water Loss State Water Board Standard 2028 Apparent Water Loss Standard per Unit per Day	Apparent Water Loss State Water Board Standard Units for Apparent Water Loss	Apparent Water Loss Most Recent AWWA Water Loss Audit Number of Connections	Apparent Water Loss Most Recent AWWA Water Loss Audit Volume of Total Apparent Loss (AF) (from AWWA Water Loss Audit)	Apparent Water Loss Per Unit per Day
CA1910044	Yes	20.3	Gallons per Service Connection per Day (GPSCD)	13,816	1,660	107.3	13.3	Gallons per Service Connection per Day (GPSCD)	13,816	121	7.8

Water Board's Calculated Water Loss Standards

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress

Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target?	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	Actual 2025 GPCD (From SB X7-7 Compliance Form) *	Did Supplier meet the 2020 Target in 2025? *
n/a	n/a	218	194	Yes	198	Yes

Notes: n/a=Not Applicable

***** Only for suppliers that did not meet the Target in 2020

Submittal Table 6-1 Retail: Groundwater Volume Pumped

Groundwater Type	Potable or Non-Potable (OPTIONAL)	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Alluvial Basin	Potable	Main Basin	10,709	8,646	7,706	8,103	10,099
		Total	**10,709**	**8,646**	**7,706**	**8,103**	**10,099**

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area

Wastewater Collection Name of Wastewater Collection Agency	Wastewater Collection Wastewater Volume Metered or Estimated? Optional	Wastewater Collection Volume of Wastewater Collected from UWMP Service Area 2025 (AF)	Recipient of Collected Wastewater Name of Wastewater Treatment Plant (WWTP) and Place ID Number	Recipient of Collected Wastewater Is WWTP Located Within UWMP Area?
Sanitation Districts of Los Angeles County	Estimated	2,400	San Jose Creek Water Reclamation Plant, Place ID 260156	No
Sanitation Districts of Los Angeles County	Estimated		A.K. Warren Water Resource Facility, Place ID 234156	No
	Total Wastewater Received from UWMP Service Area in 2025:	**2,400**		

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area

Wastewater Treatment Plant Name and Place ID Number	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (Optional)	2025 Volume of Wastewater Received from UWMP Service Area (AF)	Total 2025 Volume of Water Treated (AF)	2025 Outcomes of Treated Wastewater Water Recycled Within UWMP Service Area Treatment Level	2025 Outcomes of Treated Wastewater Water Recycled Within UWMP Service Area Volume (AF)	2025 Outcomes of Treated Wastewater Water Recycled Outside of UWMP Service Area Treatment Level	2025 Outcomes of Treated Wastewater Water Recycled Outside of UWMP Service Area Volume (AF)	2025 Outcomes of Treated Wastewater Effluent Discharge that is not a Permitted Recycled Water Use Treatment Level	2025 Outcomes of Treated Wastewater Effluent Discharge that is not a Permitted Recycled Water Use Volume (AF)	2025 Outcomes of Treated Wastewater Required Discharge for Instream Flow Treatment Level	2025 Outcomes of Treated Wastewater Required Discharge for Instream Flow Volume (AF)	2025 Outcomes of Treated Wastewater Delivered to Another Entity for Additional Treatment Treatment Level	2025 Outcomes of Treated Wastewater Delivered to Another Entity for Additional Treatment Volume (AF)	2025 Outcomes of Treated Wastewater Delivered to Another Entity for Additional Treatment Name of other entity
Total		**0**	**0**		**0**		**0**		**0**		**0**		**0**	

Notes: Wastewater was not treated or disposed of within the UWMP service area; therefore, this table was intentionally left blank.

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

Use Type	Potable or Non-Potable (after treatment if treated) (Optional)	Additional Information	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	Potential Recycled Water Use Volume	Potential Recycled Water Use Narrative page number (Optional)
		Subtotal Potable	0	0	0	0	0	0	0	
		Subtotal Non-Potable	0	0	0	0	0	0	0	
		Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Notes: Recycled water is currently not used and not planned for use within the service area of the supplier; therefore, this table was intentionally left blank.

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

Use Type	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Total	**0**	**0**

Notes: Recycled water was not used in 2025 nor previously projected for use in 2020, therefore, this table was intentionally left blank.

Submittal Table 6-6 Retail: Methods to Encourage Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
		Total (AF)	**0**
		Unit Conversion to AF	**0**

Notes: The Supplier does not plan to expand recycled water use in the future; therefore, this table was intentionally left blank, and a narrative explanation is provided in Section 4.5.1 of the UWMP.

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with other suppliers?	If Yes, Supplier Name	Additional Description	Potable or Non-Potable (after treatment if treated) (OPTIONAL)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier (AF)
Development of new extraction well	No		Well #14 Replacement to develop a new extraction well.	Potable	Ongoing	All Year Types	2,000

Notes: There are future water supply projects or programs not compatible with this table, therefore are described in narrative form in Section 4.7 of the UWMP**.**

Submittal Table 6-8 Retail: Water Supplies — Actual

Water Supply	Additional Description	2025 Potable or Non-Potable (after treatment if treated) (Optional)	2025 Actual Volume (AF)	2025 Total Entitlement (AF) (Optional)
Groundwater (not desalinated)	Main Basin	Potable	10,099	
Purchased or Imported Water	Metropolitan Water District - Three Valley Municipal Water District	Potable	14	
Purchased or Imported Water	Covina Valley Water Company	Potable	0	
		Subtotal Potable	10,113	0
		Subtotal Non-Potable	0	0
		Total	**10,113**	**0**

Submittal Table 6-9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Potable or Non-Potable (after treatment if treated) (OPTIONAL)	Projected Water Supply 2030 Reasonably Available Volume (AF)	Projected Water Supply 2030 Total Entitlement (AF) (Optional)	Projected Water Supply 2035 Reasonably Available Volume (AF)	Projected Water Supply 2035 Total Entitlement (AF) (Optional)	Projected Water Supply 2040 Reasonably Available Volume (AF)	Projected Water Supply 2040 Total Entitlement (AF) (Optional)	Projected Water Supply 2045 Reasonably Available Volume (AF)	Projected Water Supply 2045 Total Entitlement (AF) (Optional)	Projected Water Supply 2050 Reasonably Available Volume (AF)	Projected Water Supply 2050 Total Entitlement (AF) (Optional)
Groundwater (not desalinated)	Main Basin	Potable	9,090		9,018		8,864		8,642		8,357	
Purchased or Imported Water	Metropolitan Water District - Three Valleys Municipal Water District	Potable	906		853		825		867		977	
Purchased or Imported Water	Covina Valley Water Company	Potable	8		8		7		8		9	
		Subtotal Potable	10,004	0	9,879	0	9,696	0	9,517	0	9,343	0
		Subtotal Non-Potable	0	0	0	0	0	0	0	0	0	0
		Total	**10,004**	**0**	**9,879**	**0**	**9,696**	**0**	**9,517**	**0**	**9,343**	**0**

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

Year Type	Base Year	Volume Available (AF)	Percent of Average Supply
Average Year	2021-2025	9,686	100%
Single-Dry Year	2021	11,094	115%
Consecutive Dry Years 1st Year	2018	10,833	112%
Consecutive Dry Years 2nd Year	2019	9,847	102%
Consecutive Dry Years 3rd Year	2020	9,898	102%
Consecutive Dry Years 4th Year	2021	11,094	115%
Consecutive Dry Years 5th Year	2022	10,213	105%

Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison

Total Type	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	10,004	9,879	9,696	9,517	9,343
Use totals	10,004	9,879	9,696	9,517	9,343
Difference	**0**	**0**	**0**	**0**	**0**

Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison

Total Type	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	11,458	11,314	11,105	10,900	10,700
Use totals	11,458	11,314	11,105	10,900	10,700
Difference	**0**	**0**	**0**	**0**	**0**

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison

Year	Total Type / Difference	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	11,188	11,047	10,844	10,644	10,448
	Use totals	11,188	11,047	10,844	10,644	10,448
	Difference	**0**	**0**	**0**	**0**	**0**
Second year	Supply totals	10,170	10,042	9,857	9,675	9,497
	Use totals	10,170	10,042	9,857	9,675	9,497
	Difference	**0**	**0**	**0**	**0**	**0**
Third year	Supply totals	10,223	10,094	9,908	9,725	9,546
	Use totals	10,223	10,094	9,908	9,725	9,546
	Difference	**0**	**0**	**0**	**0**	**0**
Fourth year	Supply totals	11,458	11,314	11,105	10,900	10,700
	Use totals	11,458	11,314	11,105	10,900	10,700
	Difference	**0**	**0**	**0**	**0**	**0**
Fifth year	Supply totals	10,548	10,415	10,223	10,035	9,850
	Use totals	10,548	10,415	10,223	10,035	9,850
	Difference	**0**	**0**	**0**	**0**	**0**

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment

Totals	2026	2027	2028	2029	2030
Total Water Use (AF)	11,188	10,170	10,223	11,458	10,548
Total Supplies (AF)	11,188	10,170	10,223	11,458	10,548
Difference w/o WSCP Action (AF)	**0**	**0**	**0**	**0**	**0**

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels

Standard Shortage Levels	Percent Shortage Range	Suppliers Shortage Levels	Percent Shortage Range
1	Up to 10%		
2	Up to 20%		
3	Up to 30%		
4	Up to 40%		
5	Up to 50%		
6	>50%		

Notes: The Supplier uses the standard six levels of water shortage; therefore, supplier-specific shortage levels and percentage ranges are not separately identified in this table.

Submittal Table 8-2 Retail: Supply Augmentation and Other Actions

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? (Percentage)	How much is this going to reduce the shortage gap? Shortage Gap Reduction Value (AF)	Additional Explanation or Reference (Optional)
1	Transfers		Not applicable (see notes)	
2	Transfers		Not applicable (see notes)	
3	Transfers		Not applicable (see notes)	
4	Transfers		Not applicable (see notes)	
5	Transfers		Not applicable (see notes)	
6	Transfers		Not applicable (see notes)	

Notes: The City will consider increased production from the Main Basin using existing facilities to address increased demands. As noted on Table 2 of the WSCP, the City 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

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? Volume or Percentage	How much is this going to reduce the shortage gap? Shortage Gap Reduction Value (AF)	Additional Explanation or Reference (Optional)	Penalty, Charge, or Other Enforcement?
1	Other - Prohibit use of potable water for washing hard surfaces	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF		Yes
1	CII - Restaurants may only serve water upon request	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF		Yes
1	CII - Lodging establishment must offer opt out of linen service	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF		Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF		Yes
1	Landscape - Limit landscape irrigation to specific times	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF	Water prohibited from 8am to 5pm	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Volume	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF	Must repair within 24 hours of notification	Yes
2	Other	Volume	Collective reduction from all Shortage Level 2 actions is up to 2,646 AF	Includes all Stage 1 actions	Yes
3	Other	Volume	Collective reduction from all Shortage Level 3 actions is up to 3,968 AF	Includes all Stage 2 actions	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? Volume or Percentage	How much is this going to reduce the shortage gap? Shortage Gap Reduction Value (AF)	Additional Explanation or Reference (Optional)	Penalty, Charge, or Other Enforcement?
3	Landscape - Limit landscape irrigation to specific days	Volume	Collective reduction from all Shortage Level 3 actions is up to 3,968 AF		
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 3,968 AF		
4	Other	Volume	Collective reduction from all Shortage Level 4 actions is up to 5,291 AF	Includes all Stage 3 actions	Yes
5	Other	Volume	Collective reduction from all Shortage Level 5 actions is up to 6,614 AF	Includes all Stage 4 actions	Yes
6	Other	Volume	Collective reduction from all Shortage Level 6 actions is up to >6,614 AF	Includes all Stage 5 actions	
6	Landscape - Prohibit certain types of landscape irrigation	Volume	Collective reduction from all Shortage Level 6 actions is up to >6,614 AF		
6	Water Features - Restrict water use for decorative water features, such as fountains	Volume	Collective reduction from all Shortage Level 6 actions is up to >6,614 AF		

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? Volume or Percentage	How much is this going to reduce the shortage gap? Shortage Gap Reduction Value (AF)	Additional Explanation or Reference (Optional)	Penalty, Charge, or Other Enforcement?
6	Landscape - Other landscape restriction or prohibition	Volume	Collective reduction from all Shortage Level 6 actions is up to >6,614 AF		Yes

Submittal Table 10-1 Retail: Notification to Cities and Counties

City or County Name	60 Day Notice	Notice of Public Hearing
Azusa	Yes	Yes
Covina	Yes	Yes
Diamond Bar	Yes	Yes
Glendora	Yes	Yes
Los Angeles County	Yes	Yes

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RESOLUTION CC 2026-28

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GLENDORA ADOPTING THE 2025 WATER SHORTAGE CONTINGENCY PLAN AND DIRECTING THE FILING AND IMPLEMENTATION OF THE PLAN

THE CITY COUNCIL
City of Glendora, California

WHEREAS, the Urban Water Management Planning Act requires that every urban water purveyor that annually supplies more than 3,000 acre-feet or serves more than 3,000 connections must prepare a Water Shortage Contingency Plan within the 2025 Urban Water Management Plan, which identifies their best management practices to efficiently use and conserve water; and

WHEREAS, the Urban Water Management Planning Act requires urban water suppliers to conduct an annual water supply and demand assessment (Annual Assessment) each year and to include in their water shortage contingency plans the procedures they use to conduct the Annual Assessment; and

WHEREAS, the City of Glendora, being an urban water purveyor and annually providing water to nearly 13,000 service connections, has therefore prepared a Water Shortage Contingency Plan update and help a properly noticed public hearing in compliance with the Urban Water Management Planning Act; and

WHEREAS, the City of Glendora's water shortage contingency plan provides that by June of each year, City staff will present a completed Annual Assessment for approval by City Council or by the Council's authorized designee with expressly delegated authority for approval of Annual Assessment determinations; and

WHEREAS, the City Council of the City of Glendora subsequently closed said hearing at its regular meeting of May 26, 2026; and

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENDORA, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. That the Water Shortage Contingency Plan within the 2025 Urban Water Management Plan update is hereby adopted and ordered filed by the City Clerk; and

SECTION 2. That the Director of Public Works is hereby authorized and directed to file the Water Shortage Contingency Plan within the 2025 Urban Water Management Plan update with the California Department of Water Resources in accordance with the requirements of the Urban Water Management Planning Act; and

SECTION 3. That the Director of Public Works is hereby authorized and directed to implement the Water Conservation Programs as detailed in the adopted Water Shortage Contingency Plan within the 2025 Urban Water Management Plan update including the recommendations to the City Council regarding the necessary procedures, rules, and regulations to carry out effective and equitable Water Conservation Programs.

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SECTION 4. That the City Manager is expressly authorized to approve the Annual Assessment each year.

SECTION 5. The City Clerk shall certify to the passage and adoption of this resolution and shall enter the same in the Book of Original Resolutions.

SECTION 6. The City Clerk shall cause this Resolution to be published once within ten (10) days of adoption in a newspaper or general circulation printed and published within the City of Glendora, and shall post a certified copy of the Resolution in established posting locations according to law.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Glendora this 9th day of June, 2026.

BY: DocuSigned by: David Fredendall FC21FCE9806E4BA...

DAVID FREDENDALL
Mayor

Jun 15, 2026 | 7:59 PM PDT

APPROVED AS TO FORM:
Aleshire & Wynder, LLP

DocuSigned by: Danny Aleshire 0D5924B7E6ED4A5...

DANNY ALESHIRE
City Attorney

Jun 15, 2026 | 8:14 PM PDT

CERTIFICATION

I, do hereby certify that the foregoing Resolution was duly adopted by the City Council of the City of Glendora at a regular meeting held on the 9th day of June, 2026, by the following vote:

AYES:	MEMBERS:	Allawos, Elias, Thompson, Davis, and Fredendall.
NOES:	MEMBERS:	None.
ABSENT:	MEMBERS:	None.
ABSTAIN:	MEMBERS:	None.

I further certify that said Resolution was published as required by law in a newspaper of general circulation in the City of Glendora, California on the 18th day of June, 2026.

Dated: June 15, 2026

Signed by: Kathleen Sessman 2252A9F44B69431...

KATHLEEN R. SESSMAN
City Clerk/Communications Director

Jun 18, 2026 | 7:17 AM PDT

2025 WATER SHORTAGE CONTINGENCY PLAN

CITY OF GLENDORA

ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AF	Acre-Foot
AFY	Acre-Feet per Year
AMI	Advanced Metering Infrastructure
CII	Commercial, Industrial, and Institutional
City	City of Glendora
CPI	Consumer Price Index
CPUC	California Public Utilities Commission
CVWC	Covina Valley Water Company
CWC	California Water Code
DMM	Demand Management Measure
DWR	California Department of Water Resources
EDRP	Emergency Drought Response Plan
ERP	Emergency Response Plan
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
GPCD	Gallons Per Capita Per Day
MWD	Metropolitan Water District of Southern California
RRA	Risk and Resilience Assessment
TVMWD	Three Valleys Municipal Water District
USEPA	United States Environmental Protection Agency
UWMP	Urban Water Management Plan
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan

WATER SHORTAGE CONTINGENCY PLAN

LAY DESCRIPTION

WATER SHORTAGE CONTINGENCY PLAN

The City of Glendora's (City) 2025 Water Shortage Contingency Plan (WSCP) discusses and provides the following:

- The City's WSCP is a detailed approach which presents how the City intends to act, or respond, in the event of an actual water shortage.
- Preparation of the City's "Annual Water Supply and Demand Assessment" (Annual Assessment) is discussed. Beginning July 1, 2022, the City has submitted the Annual Assessment each year through 2025. The Annual Assessment includes a review of the City's "unconstrained" water demands for the current year and for a potential upcoming single dry year. Unconstrained water demands represent the City's water demands prior to any response actions the City may invoke pursuant to the City's WSCP.
- The City will manage water supplies to minimize the adverse impacts of water shortages. The City's plan for water usage during periods of shortage is designed to address six standard progressive water shortage levels including up to 10, 20, 30, 40, and 50 percent shortages, and a greater-than 50 percent shortage.
- For each declared water supply shortage level, customers will be required to reduce their consumption by the percentage specified in the corresponding water supply shortage level.
- For each declared water supply shortage level, the City has established response actions to reduce demand on water supplies and to reduce any shortage gaps in water supplies. These demand reduction measures address irrigation, other outdoor use restrictions, and other water use prohibitions.

The operational changes the City will consider in addressing water shortages on a short-term basis are discussed and include improved monitoring, analysis, and tracking of customer water usage to enforce demand reduction measures. The City's Emergency Response Plan (ERP) is summarized. The ERP provides the management, procedures, and designated actions the City and its employees will implement during emergency situations (including catastrophic water shortages) resulting from natural disasters, system failures, and other unforeseen circumstances.

- The preparation of the City's seismic risk assessment and mitigation plan is discussed. The locations of earthquake faults in the vicinity of the City's water service area are provided.
- The effectiveness of the shortage response actions for each of the City's standard water shortage levels is presented. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands.
- The communication protocols implemented by the City when it declares any water shortage level are presented.
- The compliance and enforcement procedures associated with City's standard water shortage levels are presented.
- The legal authorities associated with City's standard water shortage levels are presented.
- The financial consequences associated with City's standard water shortage levels are presented.
- The City will evaluate the need for revising the WSCP in order to resolve any water shortage gaps, as necessary. The steps necessary for the City to adopt and amend its WSCP are presented.

1 WATER SUPPLY RELIABILITY ANALYSIS

CWC 10632.

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

The City's sources of supply were discussed in Chapter 4 of the 2025 Urban Water Management Plan (UWMP) and consist of groundwater pumped from the Main San Gabriel Basin (Main Basin); treated, imported surface water purchased from Metropolitan Water District of Southern California (MWD) through Three Valleys Municipal Water District (TVMWD); and, local treated surface water and/or groundwater purchased from Covina Valley Water Company (CVWC). The Main Basin is adjudicated, and groundwater supplies are managed. The reliability of the various sources of supply are discussed in Chapter 5 of the 2025 UWMP. Based on the adjudication provisions in the Main Basin, the City can produce groundwater without limitation, provided an applicable assessment is paid to the Main Basin Watermaster to purchase untreated imported water for groundwater replenishment. Imported water supplies (both treated and untreated) may be impacted in the event MWD implements its Water Supply Allocation Plan (WSAP) due to a water supply shortage.

2 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

CWC 10632.

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

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

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

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

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

(iii) Existing infrastructure capabilities and plausible constraints.

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

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

CWC 10632.1.

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

Beginning July 1, 2022, the City has submitted an Annual Assessment in accordance with Department of Water Resources' (DWR) guidance and requirements. The Annual Assessment includes a review of the City's unconstrained water demands (i.e., water demands prior to any projected response actions the City may trigger under this WSCP)

for the current year and the upcoming (potential single dry) year. The City also includes information regarding anticipated shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the City's WSCP.

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

The components of an Annual Assessment consist of the following:

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

2.1 DECISION MAKING PROCESS

The City produces groundwater from the Main Basin as its primary source of water supply and that basin is managed on a fiscal year basis. Consequently, during the third quarter of each fiscal year the City reviews its water demands from the initial six months along with the current groundwater basin conditions and local hydrology. This information is used to help develop the Annual Assessment. A draft of the Annual Assessment is circulated internally within the City for peer review and comment. Based on comments received, a redraft is prepared and provided to the City Manager during the Spring of each year. The draft is subsequently provided to the City Manager for final review. Subsequently, a final draft of the Annual Assessment is provided to the City Council for review and included in the agenda as part of a City Council meeting such that it can be approved, and any recommended specific shortage response actions may be enacted. The final Annual Assessment is provided to DWR no later than July 1 of each year.

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

2.2 DATA AND METHODOLOGIES

The key data inputs and methodologies that are evaluated by the City during the preparation of the preliminary assessment includes the following:

1) Evaluation Criteria: The locally applicable evaluation criteria used to prepare the Annual Assessment will be identified. The evaluation criteria includes, 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. The City compares total demand to total supply to identify potential shortages. If shortages are identified, the City will determine the necessary WSCP level and corresponding reduction.

2) Water Supply: A description and available volume of each available water supply source is provided. The descriptions includes a quantification of each available water supply source and is based on a review of current production capacities, historical production, UWMP, 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, prior to any special shortage response actions, are reviewed and calculated as necessary. The review

includes factors such as weather, existing and projected land uses and populations, actual customer consumption and water use factors, monthly Urban Water Supplier Reports, existing water shortage levels (see Section 3), and existing water conservation ordinances (see Section 8.1.1 of the UWMP).

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 are considered and identified by each type of supply. The evaluation includes 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 system infrastructure to meet the water demands during the current year and the upcoming (potential single dry) year are considered. Available production capacities (e.g., groundwater well capacities) and distribution system water losses (see Section 2.1.2 of the UWMP) are reviewed. In addition, capital improvement and replacement projects, as well as potential projects which may increase water system and production capacities (see Section 4.7 of the UWMP), are considered.

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

3 SIX STANDARD WATER SHORTAGE LEVELS

CWC 10632.

(a)(3)(A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.
(a)(3)(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

The City has a legal responsibility to provide water utility services, including water for residential, commercial, industrial, public authority, and for public fire hydrants and private fire services. The City will manage water supplies prudently to minimize the adverse impacts of water shortages. In its 2015 Plan, the City's WSCP was designed to provide a minimum of 50 percent of normal supply during a severe or extended water shortage. Beginning with the 2020 Plan, the City's WSCP is designed to provide water supplies in the event there is less than 50 percent of normal supply during a severe or extended water shortage. Water shortage trigger mechanisms have been established to ensure that this policy is implemented. This includes structured stages of action referred to as water shortage planning levels.

Table 1 on the following page provides a description of the six standard stages of action which may be triggered by a shortage in one or more of the City's water supply sources, depending on the severity of the shortage and its anticipated duration.

Table 1. Water Shortage Contingency Planning Levels

Submittal Table 8-1: Water Shortage Contingency Plan Levels		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions (*Narrative description*)**
1	Up to 10%	Watering shall be prohibited from 8:00a.m. to 5:00p.m. of any yard, orchard, park, golf course, recreational area, or other area containing vegetation. The use of continuous running water from a hose, pipe, or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic or other surfaces shall be prohibited, except in the event the Director determines that such use is the only feasible means of correcting a potential threat to health, sanitation or safety. Watering with hose equipped will require a self-closing valve that requires operator pressure to activate the flow of water.
2	Up to 20%	In addition to Shortage Level 1, every operator of a hotel, motel, or other commercial lodging establishment shall institute daily washing of towels and linens only upon request and shall post signs in each room notifying customers of the Stage 1 Water Supply Shortage Level.
3	Up to 30%	In addition to Shortage Level 2, the use of water through a meter that is used solely for irrigation purposes shall be prohibited, and the City shall have the right to shut off water service to any such meter with or without notice, as allowed by law. Irrigation is limited to three days a week.
4	Up to 40%	In addition to Shortage Level 3, the private washing of all recreational vehicles and other vehicles shall be prohibited, except using a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water or except at a facility using reclaimed or recycled water.
5	Up to 50%	In addition to Shortage Level 4, additional restrictions may be implemented as determined by the City, after notice to customers.
6	>50%	In addition to Shortage Level 5, additional restrictions may be implemented as determined by the City, after notice to customers.

The 2025 Plan requires urban water suppliers to have six standardized water shortage levels in accordance with DWR guidance. The City's previous WSCP, originally included in the City's 2015 Plan, was adopted and amended by the City's Ordinance 1895 (see Appendix A), Ordinance 1925 (see Appendix B), and Urgency Ordinance 1996 (see Appendix C). These Ordinances describe a voluntary stage that will allow the City's

customers to voluntarily reduce their consumption by up to 10 percent if the City declares a Voluntary Conservation Drought Condition. If more serious drought conditions occur, these Ordinances describe two water shortage level stages that would be mandatory once put into effect. Stage 1 accounted for up to 25 percent reduction and Stage 2 accounted for up to 50 percent. Under the Urgency Ordinance 1996, the City may declare an emergency drought condition and may impose more severe restrictions to reduce water consumption, along with the restrictions put in place under the original Voluntary Stage, Stage 1, and Stage 2 water shortage levels.

For its 2025 Plan, the City will continue to incorporate the Voluntary Stage during normal water supply conditions. In 2020, the prior Stage 1 was amended into Stage 1 and Stage 2, which address a water supply reduction of up to 10 percent and 20 percent, respectively. The City's prior Stage 2, which accounted for up to 50 percent reduction, was amended into Stage 3, Stage 4, and Stage 5, which address a water supply shortage of up to 30 percent, 40 percent, and 50 percent, respectively. The emergency drought condition described under Urgency Ordinance 1996 will be considered as the Stage 6 water shortage level that will allow the City to address a water supply reduction of more than 50 percent.

A crosswalk of the existing (prior) and current stages of action is shown in the figure below. The shortage level changes were made in 2020 and have remained the same for 2025.

Corresponding Relationships Between Supplier's 2020 Shortage levels and the 2025 WSCP Mandated Shortage Levels

Established Level	Supply Condition/ Shortage
1	≤ 25%
2	25 to 50%
Emergency Shortage	> 50%

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

Note: The 2020 shortage levels have remained the same for 2025.

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.

4.1 DEMAND REDUCTION

Voluntary Water Conservation Drought Condition (Voluntary Stage)

Under Ordinance 1895, the City Council may declare a Voluntary Stage for any period during which the City needs, or projects needing, to import 25 percent or more of its water

supply during any 12-month period. While this Voluntary Stage is in effect, the City will encourage all its consumers to voluntarily reduce their water consumption by at least 10 percent. In order to do so, the City will implement the following program:

1) Educational Outreach:
    a. Public mailings to residents on at least a bi-monthly basis requesting voluntary conservation and offering conservation measures suggestions.
    b. Purchase conservation materials that can be used to educate customers directly or indirectly through community-based organization events.
    c. Inform restaurants and motel/hotel establishments of the need to reduce water offerings. Supply materials and signs to assist with the implementation of voluntary conservation measures.
2) Conservation Capital Program:
    a. Offer a conservation capital program to customers based on similar economic formulas adopted by the California Public Utilities Commission (CPUC).
    b. Offer a conservation capital program to customers based on any program adopted by the California Public Utilities Commission (CPUC) for other water purveyors.

In addition to the Educational Outreach program, the City Manager or their designee is authorized to turn off the water of any property that fails to make corrective changes to any broken water system (e.g., sprinklers) within 72 hours, or as required by law, of being notified by the City by posting in a conspicuous location on the property.

Stage 1 Water Supply Shortage Level (Up to 10%)

A Stage 1 Water Supply Shortage Level may be implemented by the City Council when one or more of the following conditions exist:

1) Imported water is needed to meet 40 percent of the City's water system demand for the current or next fiscal year.

2) The City's water well production for the current fiscal year is reduced by 25 percent below the production level for the same period of the preceding year.
3) Upon recommendation by the Water Commission that a water shortage exists, such as when the projected supply and demand for water reduces storage capacities and/or a reduction in the City's ability to purchase water.

Upon adoption by the City Council of a Resolution declaring a Stage 1 Water Shortage Level and for as long as it is in effect, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1) Each of the Voluntary Stage regulations shall be applicable if they are not in conflict with the more restrictive regulations of the Stage 1 Water Supply Shortage level.
2) The use of continuous running water from a hose, pipe, or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic or other surfaces shall be prohibited, except in the event the Director determines that such use is the only feasible means of correcting a potential threat to health, sanitation or safety.
3) Every operator of a restaurant providing table service shall offer water only upon request and post table signs notifying its customers of drought conditions and that water is available upon request.
4) Every operator of a hotel, motel, or other commercial establishment offering lodgings shall institute daily washing of towels and linens only upon request and shall post signs in each room notifying customers of the Stage 1 Water Supply Shortage Level.
5) Any use of water that causes runoff to occur beyond the immediate vicinity of use shall be prohibited.
6) Watering shall be prohibited from 8:00 a.m. to 5:00 p.m. of any yard, orchard, park, golf course, recreational area, or other area containing vegetation, with the following exceptions:
    a. The irrigation of trees and shrubs shall be allowed by any means and at any time of the day, provided that:

i. The irrigation shall be confined to the area within the drip line of a tree or shrub.
ii. There shall be no runoff as result of the irrigation.
iii. The irrigation shall not exceed five minutes to each tree or shrub during any 24-hour period.

b. The irrigation of plant material within commercial nurseries shall be allowed at any time of the day provided that:
   i. The water is applied only to one plant or container of plants at a time.
   ii. The water is applied by means of a hose equipped with an automatic shut-off nozzle.

c. The irrigation of golf course greens and City parks shall be allowed by any means and at any time of the day for the purpose of germinating seed, promoting growth of sod, or leaching minerals from the soil for new growth purposes only.

7) The Director is authorized to turn off the water of any property that fails to make corrective changes to any broken water system (e.g., sprinklers) within 24 hours of being notified by the City by posting in a conspicuous location on the property.
8) When a Stage 1 Water Supply Shortage Level is declared, all consumers shall reduce their water consumption by at least 10 percent below their average consumption for the same period of the previous years, or the year prior to the Stage 1 Water Supply Shortage Level being declared.

Stage 2 Water Supply Shortage Level (Up to 20%)

A Stage 2 Water Supply Shortage Level may be implemented by the City Council when one or more of the following conditions exist:

1) Imported water is needed to meet 40 percent of the City's water system demand for the current or next fiscal year.
2) The City's water well production for the current fiscal year is reduced by 25 percent below the production level for the same period of the preceding year.

3) Upon recommendation by the Water Commission that a water shortage exists, such as when the projected supply and demand for water reduces storage capacities and/or a reduction in the City's ability to purchase water.

Upon adoption by the City Council of a Resolution declaring a Stage 2 Water Shortage Level and for as long as it is in effect, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1) Each of the Voluntary Stage regulations shall be applicable if they are not in conflict with the more restrictive regulations of the Stage 2 Water Supply Shortage Level.
2) The use of continuous running water from a hose, pipe, or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic, or other surfaces shall be prohibited, except in the event the Director determines that such use is the only feasible means of correcting a potential threat to health, sanitation, or safety.
3) Every operator of a restaurant providing table service shall offer water only upon request and post table signs notifying its customers of drought conditions and that water is available upon request.
4) Every operator of a hotel, motel, or other commercial establishment offering lodgings shall institute daily washing of towels and linens only upon request and shall post signs in each room notifying customers of the Stage 2 Water Supply Shortage Level.
5) Any use of water that causes runoff to occur beyond the immediate vicinity of use shall be prohibited.
6) Watering shall be prohibited from 8:00a.m. to 5:00p.m. of any yard, orchard, park, golf course, recreational area, or other area containing vegetation, with the following exceptions:
    a. The irrigation of trees and shrubs shall be allowed by any means and at any time of the day, provided that:
        i. The irrigation shall be confined to the area within the drip line of a tree or shrub.

ii. There shall be no runoff as result of the irrigation.
iii. The irrigation shall not exceed five minutes to each tree or shrub during any 24-hour period.

b. The irrigation of plant material within commercial nurseries shall be allowed at any time of the day provided that:
   i. The water is applied only to one plant or container of plants at a time.
   ii. The water is applied by means of a hose equipped with an automatic shut-off nozzle.

c. The irrigation of golf course greens and City parks shall be allowed by any means and at any time of the day for the purpose of germinating seed, promoting growth of sod, or leaching minerals from the soil for new growth purposes only.

7) The Director is authorized to turn off the water of any property that fails to make corrective changes to any broken water system (e.g., sprinklers) within 24 hours of being notified by the City by posting in a conspicuous location on the property.
8) When a Stage 2 Water Supply Shortage Level is declared, all consumers shall reduce their water consumption by at least 10 percent below their average consumption for the same period of the previous year, or the year prior to the Stage 2 Water Supply Shortage Level being declared.

Stage 3 Water Supply Shortage Level (Up to 30%)

A Stage 3 Water Supply Shortage Level may be implemented by the City Council when any of the following conditions exist:

1) City well production losses and MWD purchased water restrictions threaten the City's ability to meet system demand.
2) Imported water is needed to meet 60 percent of the system demand.
3) Upon recommendation by the Water Commission that a water shortage exists when the projected supply and demand for water reduces storage capacities and/or the ability to purchase water.

Upon adoption by the City Council of a Resolution declaring a Stage 3 Water Shortage Level and for as long as it is in effect, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1) Each of the regulations from the preceding Stages shall be applicable as long as they are not in conflict with any more restrictive regulations of the Stage 3 Water Supply Shortage Level.
2) The use of water through a meter that is used solely for irrigation purposes shall be prohibited, and the City shall have the right to shut off water service to any such meter with or without notice, as allowed by law, to the consumer, account holder, or any person, with the following exception:
    a. The watering of any yard, orchard, hillside, park, golf course, recreational area, or other area containing vegetation shall be limited to Monday, Wednesday, and Friday for all even numbered address locations, and Tuesday, Thursday, and Saturday for all odd numbered address locations. Such watering times shall be limited to no more than 5 minutes for each water cycle station and done only between the hours of 5:00 p.m. to 8:00 a.m.
3) The private washing of all recreational vehicles and other vehicles shall be prohibited, except using a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water or except at facilities using recycled or recirculating water.
4) The City Manager, or their designee, is authorized to discontinue the supply of water to third party water purveyors during a Stage 3 Water Supply Shortage Level.
5) When a Stage 3 Water Supply Shortage Level is declared, all consumers shall reduce their water usage by at least 20 percent below their average usage for the same period of the previous year, or the year prior to the Stage 3 Water Supply Shortage Level being declared.

Stage 4 Water Supply Shortage Level (Up to 40%)

A Stage 4 Water Supply Shortage Level may be implemented by the City Council when any of the following conditions exist:

1) City well production losses and MWD purchased water restrictions threaten the City's ability to meet system demand.
2) Imported water is needed to meet 60 percent of the system demand.
3) Upon recommendation by the Water Commission that a water shortage exists when the projected supply and demand for water reduces storage capacities and/or the ability to purchase water.

Upon adoption by the City Council of a Resolution declaring a Stage 4 Water Shortage Level and for as long as it is in effect, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1) Each of the regulations from the preceding Stages shall be applicable as long as they are not in conflict with any more restrictive regulations of the Stage 4 Water Supply Shortage Level.
2) The use of water through a meter that is used solely for irrigation purposes shall be prohibited, and the City shall have the right to shut off water service to any such meter with or without notice, as allowed by law, to the consumer, account holder, or any person, with the following exception:
    a. The watering of any yard, orchard, hillside, park, golf course, recreational area, or other area containing vegetation shall be limited to Monday, Wednesday, and Friday for all even numbered address locations, and Tuesday, Thursday, and Saturday for all odd numbered address locations. Such watering times shall be limited to no more than 5 minutes for each water cycle station and done only between the hours of 5:00 p.m. to 8:00 a.m.

3) The private washing of all recreational vehicles and other vehicles shall be prohibited, except using a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water or except at facilities using recycled or recirculating water.
4) The City Manager, or their designee, is authorized to discontinue the supply of water to third party water purveyors during a Stage 4 Water Supply Shortage Level.
5) When a Stage 4 Water Supply Shortage Level is declared, all consumers shall reduce their water usage by at least 20 percent below their average usage for the same period of the previous year, or the year prior to the Stage 4 Water Supply Shortage Level being declared.

Stage 5 Water Supply Shortage Level (Up to 50%)

A Stage 5 Water Supply Shortage Level may be implemented by the City Council when any of the following conditions exist:

1) City well production losses and MWD purchased water restrictions threaten the City's ability to meet system demand.
2) Imported water is needed to meet 60 percent of the system demand.
3) Upon recommendation by the Water Commission that a water shortage exists when the projected supply and demand for water reduces storage capacities and/or the ability to purchase water.

Upon adoption by the City Council of a Resolution declaring a Stage 5 Water Shortage Level and for as long as it is in effect, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1) Each of the regulations from the preceding Stages shall be applicable as long as they are not in conflict with any more restrictive regulations of the Stage 5 Water Supply Shortage Level.

2) The use of water through a meter that is used solely for irrigation purposes shall be prohibited, and the City shall have the right to shut off water service to any such meter with or without notice, as allowed by law, to the consumer, account holder, or any person, with the following exception:
    a. The watering of any yard, orchard, hillside, park, golf course, recreational area, or other area containing vegetation shall be limited to Monday, Wednesday, and Friday for all even numbered address locations, and Tuesday, Thursday, and Saturday for all odd numbered address locations. Such watering times shall be limited to no more than 5 minutes for each water cycle station and done only between the hours of 5:00 p.m. to 8:00 a.m.
3) The private washing of all recreational vehicles and other vehicles shall be prohibited, except using a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water or except at facilities using recycled or recirculating water.
4) The City Manager, or their designee, is authorized to discontinue the supply of water to third party water purveyors during a Stage 5 Water Supply Shortage Level.
5) When a Stage 5 Water Supply Shortage Level is declared, all consumers shall reduce their water usage by at least 20 percent below their average usage for the same period of the previous year, or the year prior to the Stage 5 Water Supply Shortage Level being declared.

Stage 6 Water Supply Shortage Level (> 50%)

A Stage 6 Water Supply Shortage Level may be implemented by the City Council in order to address any emergency water supply condition that occurs and for as long as it exists.

Upon declaration of a Stage 6 Water Supply Shortage Level and for as long as it is in effect, the following water use regulations, and such other regulations as may be adopted

by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1) Each of the regulations of the preceding Stages shall be applicable as long as they are not in conflict with more restrictive regulations of the Stage 6 Water Supply Shortage Level.
2) All residential users shall reduce their water usage to the Residential Gallons per Capita per Day (R-GPCD) consumption levels set forth and adopted by the City, which will comply with the State of California mandated consumption reduction level regulations.
3) All non-residential users with landscape areas greater than 500 square feet shall reduce their water usage by 25 percent compared to the same billing months from the year 2013.
4) All non-residential users with no or landscape areas 500 square feet or less shall reduce their water usage by 10 percent compared to the same billing months from the year 2013.
5) All outdoor ornamental turf watering shall be limited as follows: A cycle must be complete with water shutoff for at least forty-five minutes before a new cycle can begin.
6) Promotion of water conservation by prohibition of certain actions that would result in misuse and/or waste of water (see Section 8.1 of the UWMP).
7) All operators of hotels, motels, or other commercial establishments offering lodgings shall provide guests with the option of choosing not to have towels and linens laundered daily. The operators of these facilities shall prominently display notice of this option in each guestroom using clear and easily understood language and ensure such notices are maintained.
8) The application of potable water to driveways and sidewalks.
9) The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system.
10) The application of potable water to outdoor landscapes during and within forty-eight hours after measurable rainfall.

11) The irrigation with potable water of ornamental turf on public street medians.
12) The irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.
13) When a Stage 6 Water Supply Shortage Level is declared, all consumers shall reduce their water usage by at least 25 percent below their average usage for the same period of the previous year, or the year prior to the Stage 6 Water Supply Shortage Level being declared.

Table 2 summarizes the City's planned water use restrictions and conservation actions by shortage level, showing how the City will reduce water demand during different stages of a water shortage.

Table 2. Demand Reduction Actions

Submittal Table 8-3: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only*** *Drop Down List*
1	Other - Prohibit use of potable water for washing hard surfaces	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF		Yes
1	CII - Restaurants may only serve water upon request	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF		Yes
1	CII - Lodging establishment must offer opt out of linen service	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF		Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF		Yes
1	Landscape - Limit landscape irrigation to specific times	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF	Water prohibited from 8am to 5pm	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Collective reduction from all Shortage Level 1 actions is up to 1,323 AF	Must begin repair within 24 hours of notification	Yes

Submittal Table 8-3: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only*** *Drop Down List*
2	Other	Collective reduction from all Shortage Level 2 actions is up to 2,646 AF	Includes all Stage 1 actions	Yes
3	Other	Collective reduction from all Shortage Level 3 actions is up to 3,968 AF	Includes all Stage 2 actions	Yes
3	Landscape - Limit landscape irrigation to three specific days	Collective reduction from all Shortage Level 3 actions is up to 3,968 AF		Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Collective reduction from all Shortage Level 3 actions is up to 3,968 AF		Yes
4	Other	Collective reduction from all Shortage Level 4 actions is up to 5,291 AF	Includes all Stage 3 actions	Yes
5	Other	Collective reduction from all Shortage Level 5 actions is up to 6,614 AF	Includes all Stage 4 actions	Yes
6	Other	Collective reduction from all Shortage Level 6 actions is up to >6,614 AF	Includes all Stage 5 actions	Yes
6	Landscape - Prohibit certain types of landscape irrigation	Collective reduction from all Shortage Level 6 actions is up to >6,614 AF		Yes
6	Water Features - Restrict water use for decorative water features, such as fountains	Collective reduction from all Shortage Level 6 actions is up to >6,614 AF		Yes
6	Landscape - Other landscape restriction or prohibition	Collective reduction from all Shortage Level 6 actions is up to >6,614 AF		Yes

NOTES: The City will consider increased production from the Main Basin using existing facilities to address increased demands. As noted, the City plans to implement demand reduction measures in the event water supplies from existing sources are not sufficient to meet anticipated demands.

4.2 SUPPLY AUGMENTATION

The City does not plan to add a new source of water supply to address customer demands but instead will consider increased supplies from existing sources. Table 3 reflects this approach and does not identify any new supplies. Instead, the City will focus on demand reduction measures in the event that existing sources of supply are not sufficient to meet customer demands. As discussed in Chapter 4 of the UWMP, the City's sources of water supply include: groundwater pumped from the Main Basin; treated, imported surface water purchased from MWD through TVMWD; and local treated surface water and/or groundwater purchased from CVWC. As noted in Section 2, beginning July 1, 2022, the City has prepared and submitted an Annual Assessment which includes a review of water supplies available to meet water demands for the current and upcoming years. In the event the City is currently in, or considers entering into, one of the standard water shortage levels identified in Section 3, the City will consider the water supply augmentation actions described below.

For each water shortage level discussed in Section 3, the City will consider supplementing its existing water supplies through increased groundwater production instead of the purchase of additional imported water supplies. Due to previous critically dry conditions, MWD developed the WSAP whereby available supplies are equitably allocated to its member agencies, including TVMWD. The WSAP establishes ten different shortage levels and a corresponding drought allocation to each member agency. Based on the shortage level established by MWD, the WSAP provides a reduced drought allocation to a member agency for its M&I retail demand. The ratio of MWD water supply drought allocation to local water supply will change based on the WSAP stage. The MWD drought allocation can be used to make Full Service water deliveries at the Tier 1 rate up to a Tier 1 allocation. Any Full Service water delivered in excess of a drought allocation is subject to a penalty rate in addition to the normal rate paid for the water.

In addition to the WSAP, MWD describes supply augmentation actions in its Regional 2025 UWMP, which is incorporated by reference. MWD's primary first response to any gap between core supplies (from the State Water Project and Colorado River) and demand is to make optimal use of its supply augmentation options, consisting of drawing from flexible supply programs and storage reserves. MWD has developed and actively manages a portfolio of water supply programs, including water transfer, storage, and exchange agreements. MWD pursues voluntary water transfer and exchange programs to help mitigate supply/demand imbalances and provide additional dry-year supply sources. In addition, MWD has developed significant storage capacity in reservoirs, conjunctive use, and other groundwater storage programs totaling approximately 6.0 million acre-feet (AF). Pursuant to MWD's "Emergency Storage Objective," updated in 2019, approximately 750,000 AF of total stored water is emergency storage reserved by MWD for use in the event of supply interruptions. Based on MWD's historical and ongoing water supply and storage programs and management practices, the City will use up to the treated imported water supply made available from MWD through TVMWD in association with each of the standard water shortage levels identified in Section 3. Water demands will be addressed through increased use of the local groundwater supplies and implementation of demand reduction measures through the various stages of action.

The City will consider augmenting its existing water supplies through the production of additional groundwater from the Main Basin. The Main Basin is managed by the Main Basin Watermaster. During the period of management under the Main Basin Judgment, significant drought events have occurred. In each drought cycle, the Main Basin has been managed to maintain water levels. Parties to the Main Basin Judgment, including the City, are authorized to produce groundwater in excess of their rights and pay assessments for such production to the Main Basin Watermaster. The assessments are used to purchase untreated imported water to replenish the Main Basin. The Main Basin Watermaster purchases untreated imported water to replenish the Main Basin from MWD through TVMWD. Groundwater quality is carefully monitored and managed by the Main Basin Watermaster. Treatment facilities and/or blend plans have been developed by water

agencies to meet potable water standards and to prevent the spread of any groundwater contamination. Groundwater quality in the Main Basin is not expected to impact potable supplies or constrain supply reliability. Based on historical and ongoing management practices, the City will be able to continue relying on the Main Basin for adequate supplies in response to each of the standard water shortage levels identified in Section 3.

Table 3. Supply Augmentation and Other Actions

Submittal Table 8-2: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*
1	Transfers	Not applicable (see table 2)	
2	Transfers	Not applicable (see table 2)	
3	Transfers	Not applicable (see table 2)	
4	Transfers	Not applicable (see table 2)	
5	Transfers	Not applicable (see table 2)	
6	Transfers	Not applicable (see table 2)	

4.3 OPERATIONAL CHANGES

During a water supply shortage situation, the City will manage its water supply resources to provide sufficient water supplies capable of meeting the demands of its customers. Section 4.1 describes the City's standard water shortage levels and associated demand reduction measures. Section 4.1 describes the City's water supply sources and water supply augmentation actions available. The supply augmentation actions and demand reduction measures, when implemented, may potentially result in short-term operational changes which are necessary to allow the City to utilize all available water supply sources in response to water shortage situations.

As noted in Section 2, beginning July 1, 2022, the City has prepared and submitted an Annual Assessment, which includes a review of the water supplies available to meet water demands for the current and upcoming years. Preparation of the Annual Assessment assists the City in determining any potential operational changes. In addition,

the City's standard water shortage levels and the associated demand reduction measures, in conjunction with the City's existing Demand Management Measures (DMM) (discussed in Chapter 8 of the UWMP), will be essential to the City in reducing water demands during any water shortage period. The operational changes the City will consider in addressing non-catastrophic water shortages on a short-term basis include the following:

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

4.4 ADDITIONAL MANDATORY RESTRICTIONS

The mandatory restrictions that are implemented by the City to reduce customer demands are discussed in Section 4.2. There are no additional mandatory restrictions planned at this time.

4.5 EMERGENCY RESPONSE PLAN

Catastrophic water shortages are incorporated in the City's standard water shortage levels (identified in Section 3) and the associated demand reduction measures (described in Section 4.2). In addition to the water supply augmentation actions (Section 4.1) and potential operational changes (Section 4.3) that the City may consider in order to continue

providing sufficient water supplies, the City will review and implement any necessary steps included in its ERP.

As part of the "America's Water Infrastructure Act of 2018", community water systems serving a population greater than 3,300 people, including the City, are required to review and update their "Risk and Resilience Assessment" (RRA) and the associated ERP every five (5) years. However, due to security concerns regarding the submission of these reports, water systems are required to submit certifications to the United States Environmental Protection Agency (USEPA), confirming the current RRA and ERP have been reviewed and updated. For the City, the RRA certification was due by December 31, 2025, and the ERP certification is due by June 30, 2026.

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

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

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

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

The City's ERP, which is currently being reviewed and updated, provides the management, procedures, and designated actions the City and its employees will implement during emergency situations (including catastrophic water shortages) resulting from natural disasters, system failures, and other unforeseen circumstances. The City's ERP (which is incorporated by reference) provides 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 that directly affect the water system and the ability to maintain safe operations (such as a chlorine release, an earthquake, or a threat of contamination). The ERP also incorporates the results of the City's RRA and includes the following:

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

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

4.6 SEISMIC RISK ASSESSMENT AND MITIGATION PLAN

CWC 10632.5.

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

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

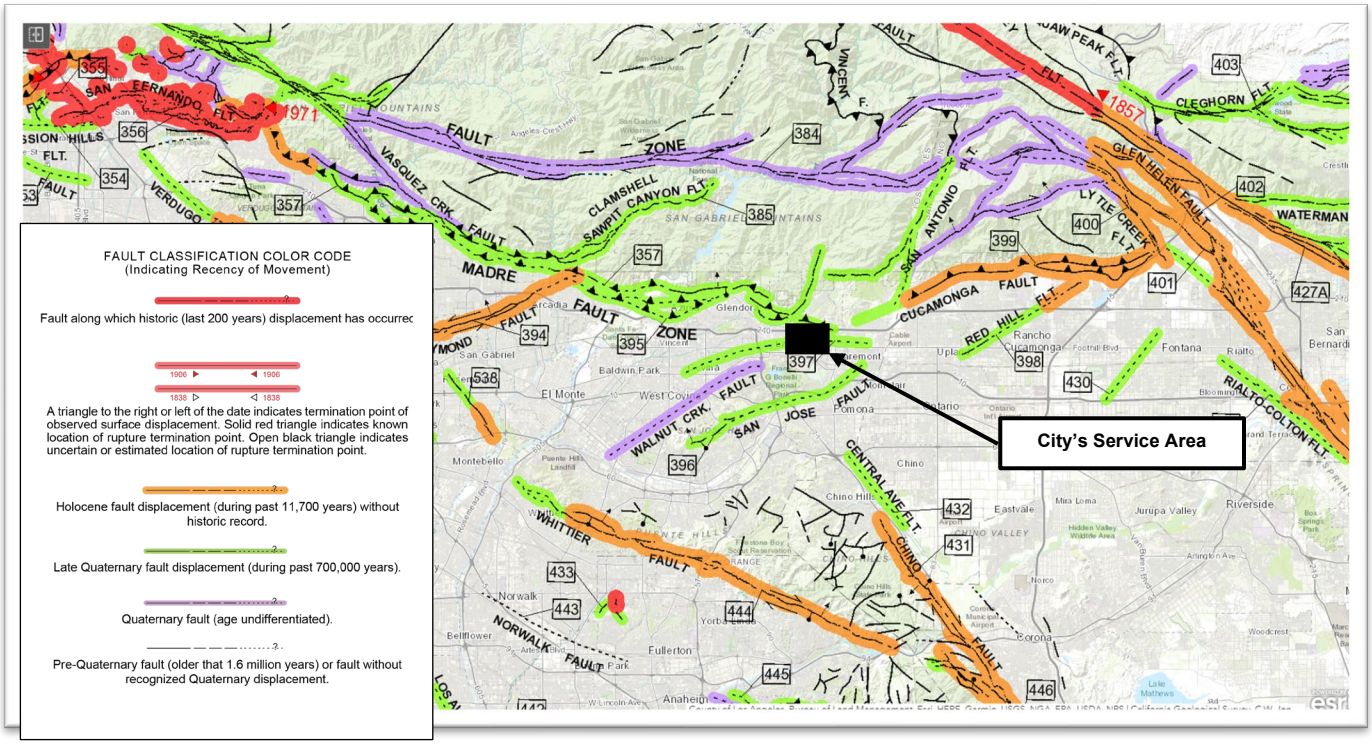
(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or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

The City prepared a local "Hazard Mitigation Plan" which was approved by the Federal Emergency Management Agency (FEMA) in 2025. The Hazard Mitigation Plan identifies effective ways to assess the significant natural hazards (including earthquakes) that may affect the City and its residents. The Hazard Mitigation Plan provides resources, information, and strategies to reduce the City's vulnerability to these hazards, while providing guidance for the coordination of mitigation activities throughout the City. The Hazard Mitigation Plan includes mitigation projects necessary to reduce seismic risk to the City's water distribution system facilities (including its distribution system pipelines, groundwater wells, booster pumps, and storage reservoirs) and potential disruptions in providing water service. The City's Hazard Mitigation Plan is provided in Appendix D.

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 E.

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

Location of Earthquake Faults

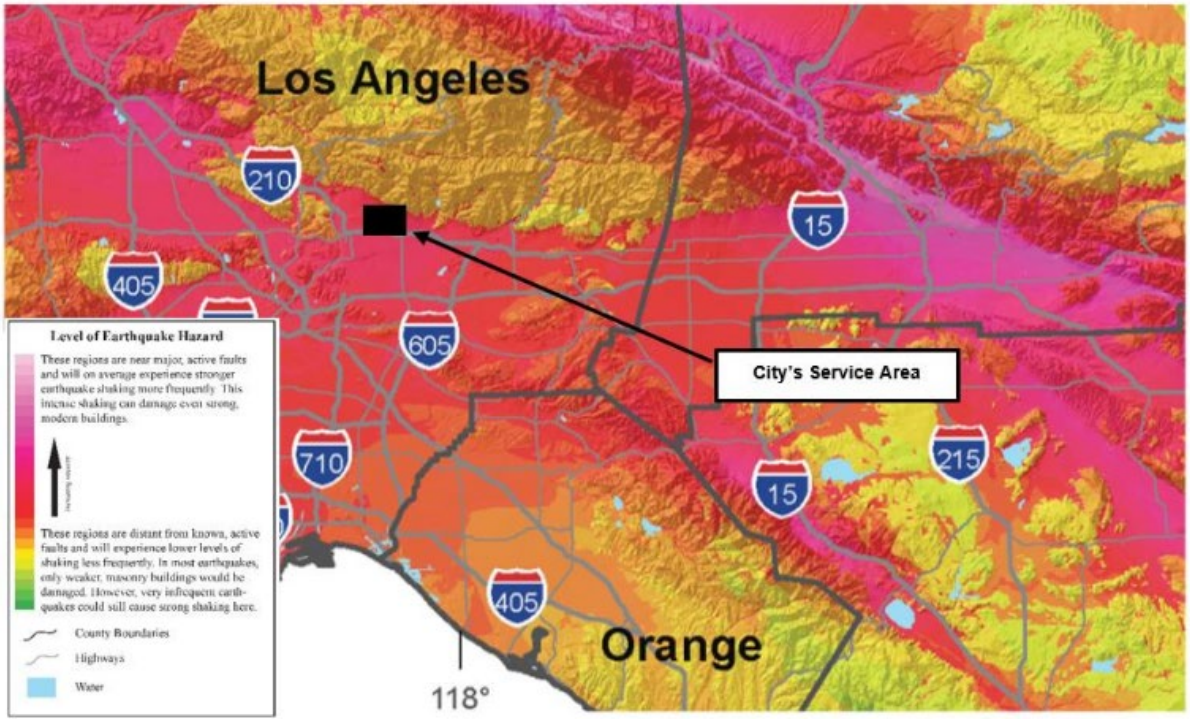


Source: https://maps.conservation.ca.gov/cgs/fam/App/

The following figure provides the relative intensity of ground shaking in the vicinity of the City's service area from anticipated future earthquakes. The locations of relatively long-

period (1.0 second) earthquake shaking, including the City's service area, are provided. Long-period shaking affects tall, relatively flexible buildings, but also correlates with earthquake damage. The shaking potential is calculated based on the level of ground motion that has a 2 percent chance of being exceeded in 50 years (or the level of ground-shaking with an approximate 2,500-year average repeat time). As discussed in Section 4.5, the City has prepared an Emergency Response Plan which provides the management, procedures, and designated actions the City and its employees will implement during emergency situations resulting from natural disasters, including during earthquakes, to ensure that customers receive a reliable and adequate supply of potable water. The City's ERP is incorporated by reference.

Earthquake Shaking Potential



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

4.7 SHORTAGE RESPONSE ACTION EFFECTIVENESS

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

During the past 5 years, the City experienced a consecutive two-year drought within its service area from FY 2021 to FY 2022. Throughout this extended dry year period, the City's annual water production averaged 10,654 acre-feet per year (AFY). During the past five years, the average annual production was approximately 9,686 AFY, with a maximum of up to 11,094 AF during FY 2021. The City has been able to provide sufficient water supplies to its customers, including during long-term droughts and years with historically high water demands. In addition, the City has been able to provide water service to meet maximum day water demands for these years, including during the summer months.

The City's water demands during the most recent five years averaged approximately 8,373 AFY of potable water. Due to conservation efforts and demand management measures (discussed in Chapter 8 of the UWMP), the City's recent water demands have been significantly less than its historical water demands, including during long-term droughts. The City's projected water demands (during normal, single dry, and multiple dry years) are provided in Section 5.3 of the UWMP 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. It is anticipated the City will be able to continue providing sufficient water supplies to its customers to meet projected water demands, including during long-term droughts. In addition, as discussed in Section 4.1, based on historical and on-going management practices, the City will be able to continue relying on its water supply source from the Main Basin for adequate supply

augmentation in response to each of the standard water shortage levels identified in Section 3.

Based on the City's demonstrated ability to meet water demands during past water supply shortages, the adopted water shortage levels, the adjusted operating safe yields, and water supplies during long-term droughts, it is anticipated that the City will be able to provide sufficient water supplies to its customers during each of its standard water shortage levels. Although adequate supplies are anticipated, the cost of those water supplies may become incrementally more expensive. The City will enact varying stages of its WSCP to encourage retail customers to reduce water consumption and at the same time reduce the need to use the more expensive water supplies. Notwithstanding, the effectiveness of each of the City's shortage response actions, in order to reduce any potential gaps between supply and demand, has been quantified in the expected demand reduction section provided in Table 2 and Table 3. The effectiveness of the TVMWD's shortage response actions is based on the City's water demands prior to 2015 (unconstrained demands). The City reduced its water demands in 2015 in response to the Governor's April 1, 2015 Executive Order B-29-15 which mandated statewide reduction in water use of 25 percent. During this period, the City was able to reduce its water demands by approximately 33 percent. This historical water demand reduction was used to estimate the extent of water use reductions for the City's Water Shortage Stages. The City's Water Shortage Stages 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.

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.

Using the same procedure established under the City's Ordinance 1925, the City Council will hold a public hearing for the purposes of determining whether a need to implement a Stage 1, Stage 2, Stage 3, Stage 4, Stage 5, or Stage 6 Water Supply Shortage exists. Notice of the time and place of this public hearing will be published no less than 10 days before the hearing in a daily newspaper of general circulation within the City. Upon finding that a need to implement a Stage 1 through Stage 6 Water Supply Shortage exists, the City Council will order implementation of the appropriate water shortage condition, or other measures which it deem appropriate to address the water shortage. The order will be made by Resolution and will be published one time only in a daily newspaper of general circulation and will become effective immediately following publication. The appropriate regulations that fall under the Stage Level declared will take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. Once a Water Supply Shortage stage is implemented, consumers will receive notification through water bill inserts, flyers sent in the mail, social media postings, and postings made on the City's website.

At any time during the water shortage condition period, the City Council may discontinue the Stage Level or may implement another Stage Level described in the City's WSCP.

Once the City Council finds that a water shortage condition no longer exists, the Stage Level that has been implemented will no longer be in effect.

Using the same procedure established under the City's Urgency Ordinance 1996, if the City Council finds that a water shortage emergency exists, the City Council may order a Stage 6 Water Supply Shortage Level, or other measures which it deems appropriate to address the water shortage emergency. The order will be made by Resolution and shall be published one time only in a daily newspaper of general circulation within the City. Upon the effective date of the City Council's Resolution, the Stage 6 Water Shortage Level and its regulations will take effect immediately.

At any time during the Stage 6 water shortage condition period, the City Council may discontinue the Stage 6 or may implement another Stage Level describe in the City's WSCP. Once the City Council finds that a Stage 6 water shortage condition no longer exists, the Stage Level will no longer be in effect.

6 COMPLIANCE AND ENFORCEMENT

CWC 10632.

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

The City will enforce the six standardized shortage response actions through the provisions established under the City's ordinances.

Under the City's Ordinance 1895, any customer violating the regulations and restrictions on water use set forth in the Ordinance will receive a written warning for the first such violation of Stage 1, Stage 2, Stage 3, Stage 4, or Stage 5 prohibitions. Upon a second violation within the preceding 12 consecutive months, the customer will receive a fine in an amount consistent with violation penalties set forth in Chapter 14.34 of the Glendora Municipal Code. For a third violation within the preceding 12 consecutive months, the customer will receive a fine in an amount consistent with violation penalties set forth in Chapter 14.34 of the Glendora Municipal Code. For a fourth (or more) violation within the preceding 12 consecutive months, the customer's violation will be punishable as a misdemeanor and the customer will receive a fine in an amount consistent with violation penalties set forth in Chapter 14.34 of the Glendora Municipal Code. Violations of Stage 1, Stage 2, Stage 3, Stage 4, or Stage 5 prohibitions may result in the City installing a flow-restrictor on the water service. If a flow-restrictor is placed, the customer will pay the cost of the installation and removal. If water service is disconnected, it will be restored only upon payment by the customer of the turn-on charge fixed by the City Council. A copy of City Ordinance 1895 is provided in Appendix A.

The City approved an Emergency Drought Response Plan (EDRP) on May 26, 2015. The EDRP describes the penalties for violating the Urgency Ordinance 1996, which established water use prohibitions during an emergency drought condition. As mentioned

in Section 4.2, the City considers an emergency drought condition as the Stage 6 water shortage level. The first violation will result in a written warning. The violation notice shall specify the nature of the violation(s), the date on which it occurred, the corrective measures to be performed, and notice that the violator shall: (A) Perform the corrective action; (B) Request a water use efficiency audit with the city within ten days; and,

(C) Undertake the relevant corrective action within ten days after completion of the water use efficiency audit. Upon the second violation, the customer will be subject to a fine in an amount consistent with violation penalties set forth in Chapter 14.34 of the Glendora Municipal Code. For a third violation or more within twelve months, the customer will be subject to a fine in an amount consistent with violation penalties set forth in Chapter 14.34 of the Glendora Municipal Code. Violations of the emergency water drought regulations may result in the City installing a flow restrictor on the service to the property.

7 LEGAL AUTHORITIES

CWC 10632.

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

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

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

CWC Division 1, Section 350

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

Under the City's Ordinance 1895 and Ordinance 1925, the City Council has the legal authority to call a public hearing to discuss the need to declare and implement a Stage 1, Stage 2, Stage 3, Stage 4, or Stage 5 water shortage. Upon finding that a water shortage condition exists, the City Council will adopt a Resolution declaring the appropriate water shortage response action to mitigate the existing drought condition.
Through the City's Urgency Ordinance 1996, the City Council has the authority to declare an emergency water shortage upon finding that one exists. Under this ordinance, the City Council may adopt a resolution that would place a Stage 6 water shortage response into effect without the need of hold a public hearing.

The City shall declare a water shortage emergency in accordance with CA Water Code CHAPTER 3 - Water Shortage Emergencies § 350 – 358.

Legal authorities include California Water Code Sections 71640-71644 Article 3. Water Shortages and CA Water Code § 366 (2025) CHAPTER 3.3 - Excessive Residential Water Use During Drought. The City will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.

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.

To ensure compliance with CWC Chapter 3.3 (commencing with Section 365), additional costs may be incurred to monitor and enforce WSCP actions. These costs may vary depending on the applicable water shortage stage and the duration of the water shortage emergency.

Potential revenue reductions and expense increases associated with activated shortage response actions are regulated and tracked by the City's Finance Division.

The City's primary source of revenue is user service charges, which consists of bi-monthly fixed readiness-to-serve charges according to meter size and a volumetric charge per unit of water consumed. The bi-monthly fixed readiness-to-serve charges are sufficient to meet about 50 percent of the City's fixed expenses. The revenue from the consumption charge is designed to be sufficient to fund the remaining 50 percent of the fixed expenses plus all of the variable expenses associated with the cost of water. The current water rates are provided in Appendix F.

Consumption Rates include components for Tiered Rates and Elevation Rates. The City implements a four (4) consumption tier rate structure to promote water conservation. The Elevation Rate component is broken up by four (4) zone classes, which were established to assign the costs fairly and equitably.

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

The City has historically maintained a financial reserve in its Water Fund. The City may use financial reserves for water system expenditures to make up for shortfalls in water revenue associated with unanticipated reduced water sales for a transient period.

In 2023, the City approved a water rate structure with certain automatic adjustments relating to third-party costs incurred in the operation of the City's water system and the normal cost of living or Consumer Price Index (CPI) inflation adjustment, not to exceed 5 percent. These automatic adjustments are necessary to keep the water operations solvent and financially sound. They allow for the recovery of actual costs for energy purchased from Southern California Edison and the City of Azusa Power, along with any water purchased from MWD through TVMWD. The approved rate structure allows adjustments, if necessary, based on actual costs incurred. The City will provide notification to customers in advance of any rate change before implementation.

9 MONITORING AND REPORTING

CWC 10632.

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

Customer compliance of the provisions adopted by declaration of a WSCP is monitored through the City's water waste enforcement program and advanced metering infrastructure (AMI). Staff track violations, investigations, violation notices, and penalties for non-compliance with the WSCP, and it is reported through the monthly Urban Water Supplier Reports. In addition, the City offers a Smart Water Meter Program utilizing AMI technology that allows customers to self-monitor their water use in real time with customer notifications on leaks and high usage.

10 WSCP REFINEMENT PROCEDURES

CWC 10632.

(a)(10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure

shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

The City's WSCP has been prepared as an adaptive management plan. As discussed in Section 9, the City will monitor and report on the implementation of the WSCP. The City will review the implementation results for any current or potential shortage gaps between water supplies and demands. The City will evaluate the need for revising the WSCP in order to resolve any shortage gaps, as necessary. The City will consider the following potential revisions in the event of a potential shortage gap:

- Implementation of additional public outreach, education, and communication programs (in addition to the programs discussed in Chapter 8 of the UWMP).
- Implementation of more stringent water use restrictions under the standard water shortage levels (discussed in Section 4.1).
- Implementation of stricter enforcement actions and penalties (discussed in Section 6).
- Improvements to the water supply augmentation responses (discussed in Section 4.2), as well as any associated operational changes (discussed in Section 4.3) which may be required.
- Incorporation of additional actions recommended by City staff or other interested parties.

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

This WSCP is adopted as part of the City's 2025 UWMP adoption process discussed in Section 9.2 of the UWMP. It is anticipated that the City will review, revise, and adopt an updated WSCP as part of the 2030 UWMP, as necessary. However, the City will continue

to review the monitoring and reporting data, and if needed, update the WSCP more frequently. Any updates to the City's WSCP will include a public hearing and adoption process by the City Council (see Section 12).

11 SPECIAL WATER FEATURE DISTINCTION

CWC 10632.

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

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

12 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

CWC 10632.

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

CWC 10635.

(c) Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.

The City's WSCP is adopted as part of the City's 2025 UWMP adoption process discussed in Chapter 9 of the UWMP. The process for adopting the City's WSCP includes the following:

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

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

- The City will conduct a public hearing and make the amended WSCP available for public inspection.
- The City Council will adopt the amended WSCP.
- The City will submit the amended WSCP to DWR (electronically through DWR's online submittal tool) within 30 days of adoption.
- Per 10635(c), Within 30 days after submission of the WSCP to DWR, the City will provide the WSCP to any city or county within which they provide water.

Additional information regarding the adoption, submittal, and availability of the City's WSCP (and 2025 UWMP) is provided in Chapter 9 of the UWMP.

APPENDIX A

ORDINANCE 1895

ORDINANCE NO. 1895

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF GLENDORA ADDING CHAPTER 14.34 ENTITLED WATER CONSERVATION

THE CITY COUNCIL
City of Glendora, California

WHEREAS, the City of Glendora is a general law City;

WHEREAS, the City Council of the City of Glendora is desirous of establishing water conservation standards to ensure that the City is are able to serve the basic health and safety needs for all water customers serviced by the City of Glendora.

NOW, THEREFORE THE CITY COUNCIL OF THE CITY OF GLENDORA **DOES ORDAIN AS FOLLOWS:**

SECTION 1. A new Chapter 14.34 of the Glendora Municipal Code is hereby added to read as follows:

"14.34.010 Definitions

"Consumer" means a person or entity who uses water provided by the City of Glendora.

"Account Holder" means the person or entity responsible for payment of water services provided by the City of Glendora at a particular property, as shown in the City's water billing records.

"Independent Hearing Officer" means a neutral person designated by the city manager. The Independent Hearing Officer may be selected from programs such as the Los Angeles County Bar Association, JAMS or other similar programs offering the services of qualified independent hearing officers to hear such matters.

"Director" means the Director of the Department of Public Works or a designated representative.

"Drought condition" means a condition in which the existing or projected water supply available to the City is not anticipated to meet the ordinary water requirements of Consumers. This condition may be the result of factors including but not limited to voluntary or mandatory curtailment of the City's water allocation the Upper San Gabriel Valley Watermaster, from the Metropolitan Water District, emergency conditions, and/or failure of the City's or its supplier's water distribution systems.

"Independent Hearing Officer" means a neutral person designated by the city manager. The Independent Hearing Officer may be selected from programs such as the Los Angeles County Bar Association, JAMS or other similar programs offering the services of qualified independent hearing officers to hear such matters.

"Flow Restrictor" means a device for reducing the flow of water through a meter.

"Third party purveyor" means water purveyors to which the City provides water, including but not limited to Suburban Water, Covina Irrigating Company and the City of Azusa.

"Waste" means, including but not limited to, any use of water which causes unnecessary water runoff beyond the boundaries of any property as a result of overwatering the landscaping or vegetation, a broken irrigation system, improper spray direction of sprinkler nozzles, or failure to implement best practices irrigation planning. Waste also includes any failure to repair as soon as reasonably possible any leak or rupture in any water pipes, faucets, valves, plumbing fixtures or other water service appliances. Waste shall also mean the use of running water through an exterior hose, pipe or faucet not equipped with an automatic shut-off nozzle.

14.34.020. Application

The provisions of this chapter shall apply to all customers and property served water by the City's Water Division wherever situated, and shall also apply to all property and facilities owned, maintained, operated, or under the jurisdiction of the various officers, departments, commissions, and agencies of the City.

14.34.030. Prohibition Against Waste of Water

It shall be a violation of the Glendora Municipal Code for any Consumer or Account Holder to waste any water obtained from or through the water facilities of the City.

14.34.040. Access to Water Meters

The City shall be given access to a Consumer's water meter for meter reading and repairing, shutting off or turning on water service and installation or removal of flow restrictors, wherever the meter is located. Such access shall not inhibit the operations of the City's Water Division.

14.34.050. Place of Use of Water

Except as otherwise provided in this Ordinance or as specifically authorized by the Director, water received from or through a Consumer's water meter shall be used only on and for the property served by that meter.

14.34.060. Voluntary Water Conservation Drought Condition

A. Upon adoption by the City Council of a Resolution declaring a Voluntary Conservation Drought Condition and for as long as the City is needing or projecting to import at least 25% of its water needs during any 12 month period, all water Consumers will be encouraged to voluntarily reduce water consumption to a level by at least 10%. This shall apply to all public and private properties and facilities.

B. The City shall implement the following programs if a Voluntary Conservation Drought Condition has been declared:

1. Educational outreach:

a. Public mailings to residents on at least a bi-monthly basis requesting voluntary conservation and offering conservation measures suggestions.

b. Purchase conservation materials that can be used to educate customers directly or indirectly through community based organization events.

c. Inform restaurants and motel/hotel establishments of the need to reduce water offerings. Supply materials and signs to assist with the implementation of voluntary conservation measures.

2. Conservation Capital Program:

a. Offer a conservation capital program to customers based on similar economic formulas adopted by the California Public Utilities Commission.

b. Offer a conservation capital program based on any program adopted by the California Public Utilities Commission for other water purveyors.

3. The Director or his designee is authorized to turn off the water of any property that fails to make corrective changes to any broken water system, sprinkler, etc., within 72 hours of being notified by the City by posting in a conspicuous location on the property.

14.34.070 Stage One Drought Condition

A. A Stage One Drought Condition may be implemented by the City Council when one or more of the following conditions exists:

1. Imported water is needed to meet 40% of the City's water system demand for the current or next fiscal year.

2. The City's water well production for the current fiscal year is reduced by 25% below the production level for the same period of the preceding year.

3. Upon recommendation by the Water Commission that a water shortage exists, such as when the projected supply and demand for water reduces storage capacities and/or a reduction in the City's ability to purchase water.

B. Prior to implementation of a stage one drought condition plan as provided in this chapter, the City Council shall hold a public hearing for the purposes of determining whether a the need for implementing a stage one drought condition exists. Notice of the time and place of said public hearing shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City Council may, upon finding that the need for implementing a stage one drought condition exists, order implementation of a stage one drought condition plan as provided in this chapter. Said order shall be made by Resolution of the City Council and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such publication. The provisions of this Section shall

take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. At any time during the stage one drought condition period, the City Council may discontinue any plan or may implement another plan as provided in this chapter. Upon a finding by the City Council that a stage one drought condition no longer exists, the stage one drought condition then in effect shall terminate.

C. Upon adoption by the City Council of a Resolution declaring a Stage One Drought Condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1. Each of the Voluntary Conservation Drought Condition regulations shall be applicable as long as they are not in conflict with the more restrictive regulations of the Stage One Drought Condition.

2. The use of continuous running water from a hose, pipe, or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic or other surfaces shall be prohibited, except in the event the Director determines that such use is the only feasible means of correcting a potential threat to health, sanitation or safety.

3. Every operator of a restaurant providing table service shall offer water only upon request and post table signs notifying its customers of drought conditions and that water is available upon request.

4. Every operator of a hotel, motel, or other commercial establishment offering lodgings shall institute daily washing of towels and linens only upon request and shall post signs in each room notifying customers of the drought condition.

5. Any use of water that causes runoff to occur beyond the immediate vicinity of use shall be prohibited.

6. Watering shall be prohibited from 6:00 a.m. to 8:00 p.m. of any yard, orchard, park, golf course, recreational area, or other area containing vegetation with the following exceptions:

a. The irrigation of trees and shrubs shall be allowed by any means and at any time of the day provided that:

(1) The irrigation shall be confined to the area within the drip line of a tree or shrub.
(2) There shall be no run-off as a result of the irrigation
(3) That the irrigation shall not exceed 5 minutes to each tree or shrub during any 24-hour period.

b. The irrigation of plant material within commercial nurseries shall be allowed at any time of the day provided that:

(1) The water is applied only to one plant or container of plants at a time; and
(2) The water is applied by means of a hose equipped with an automatic shut-off nozzle.

c. The irrigation of golf course greens and City parks shall be allowed by any means and at any time of the day for the purpose of germinating seed, promoting growth of sod, or leaching minerals from the soil for new growth purposes only.

7. When a Stage One Drought Condition is declared, all Consumers shall reduce their water consumption by at least 10% below their average consumption for the same period of the previous year, or the year prior to the Stage One Drought Condition being declared.

D. The Director or his/her designee is authorized to turn off the water of any property that fails to make corrective changes to any broken water system, sprinkler, etc., within 24 hours of being notified by the City by posting in a conspicuous location on the property.

14.34.070 Stage Two Drought Condition

A. A Stage Two Drought Condition may be implemented by the City Council when any of the following conditions exist:

1. City well production losses and Metropolitan Water District purchased water restrictions threaten the City's ability to meet system demand.

2. Imported water is needed to meet 60% of the system demand.

3. Upon recommendation by the Water Commission that a water shortage exists when the projected supply and demand for water reduces storage capacities and/or the ability to purchase water.

B. Prior to implementation of a Stage Two Drought Condition as provided in this chapter, the City Council shall hold a public hearing for the purposes of determining whether a need to implement a Stage Two Drought Condition exists. Notice of the time and place of said public hearing shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City Council may, upon finding that a need to implement a Stage Two Drought Condition exists, order implementation of a Stage Two Drought Condition as provided in this chapter, or other measures which it deems appropriate to address the water shortage. Said order shall be made by Resolution and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such publication. The provisions of this Section shall take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. At any time during the Stage Two Drought Condition period, the City Council may discontinue the Stage Two Drought Condition or may implement another plan as provided in this chapter. Upon a finding by the City Council that a Stage Two Drought Condition no longer exists, the Stage Two Drought Condition then in effect shall terminate.

C. Upon adoption by the City Council of a Resolution declaring a Stage Two Drought Condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City.

1. Each of the Stage One Drought Condition regulations shall be applicable as long as they are not in conflict with any more restrictive regulations of the Stage Two Drought Condition.

2. With the exception of Subsection 3 below, the use of water through a meter that is used solely for irrigation purposes shall be prohibited, and the City shall have the right to shut off water service to any such meter without notice to the Customer, Account Holders or any other person.

3. The watering of any yard, orchard, hillside, park, golf course, recreational area, or other area containing vegetation shall be limited to Monday, Wednesday and Friday for all even address locations shall be limited to Tuesday, Thursday and Saturday for all odd address locations. Such watering times shall be limited to no more than 5 minutes for each water cycle station and done only between the hours of 8:00 p.m. and 6:00 a.m.

4. The private washing of all recreational vehicles and other vehicles shall be prohibited, except by use of a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water.

5. The Director is authorized to discontinue the supply of water to third party water purveyors during a Stage Two Drought Condition.

6. When a Stage Two Drought Condition is declared, all Consumers shall reduce their water consumption by at least 15% below their average consumption for the same period of the previous year, or the year prior to the Stage Two Drought Condition being declared.

14.34.080 Exemptions

A. Exemptions to the water use regulations set forth in this chapter may be granted by the Director for specific uses of water on the basis of hardship, or if necessary to protect the public health, sanitation or safety and in accordance with such guidelines for exemptions as the City Council may adopt, upon written application of the affected Account Holder.

B. In determining whether to grant exemptions to the water regulations, the Director shall take into consideration all factors relevant to the customer's water usage, including, but not limited to:

1. Whether any additional reduction in the customer's water consumption will result in unemployment;

2. Whether additional members have been added to the customer's household;

3. Whether any additional landscaped property has been added to the customer's property subsequent to the base period;

4. Changes in vacancy factors in multi-family housing;

5. Increased number of employees in commercial, industrial and governmental offices;

6. Increased production requiring increased process water;

7. Water uses during new construction;

8. Adjustments to water use caused by emergency, health or safety hazards;

9. First filling of a permit-constructed swimming pool;

10. Water use necessary for reasons related to family illness or health; and

11. Whether the customer had, prior to the implementation of the applicable Drought Condition Plan, taken measures to reduce the Customer's water consumption to the greatest extent possible.

C. Relief shall be granted only on a showing by the Customer that the Customer has achieved the maximum practical reduction in water consumption in the Customer's residential, commercial, industrial, agricultural or governmental water consumption, as the case may be, other than in the specific areas in which relief is being sought. No relief shall be granted to any Customer who, when requested by the Department, fails to provide the Department with relevant information

D. A denial of a request for an exemption shall be made within five (5) calendar days after the application was received. The denial may be appealed to the Water Commission by filing a written request with the City Clerk within ten (10) calendar days after written notice of the Director's decision was deposited in the U.S. mail addressed to the Account Holder at the address shown on the application. The decision of the Water Commission shall be rendered within forty five (45) calendar days after the request was received by the City Clerk. The decision of the Water Commission shall be final.

E. The prohibited uses of water from the Water Division provided in this chapter are not applicable to that use of water necessary for public health and safety or for essential governmental services such as police, fire, and emergency services. Nothing contained in this chapter shall be construed to require the division to curtail the supply of water to any customer when, in the discretion of the division, such water is required by that customer to maintain an adequate level of public health and safety.

13.34.090 Violations

A. Any failure to comply with any provision of this chapter shall be punishable as an infraction or misdemeanor as set forth herein. Every person who violates any provision of this chapter shall be guilty of a separate offense for each and every day during any portion of which the violation is committed, continued or permitted by such person.

B. The Director or his/her designee is authorized to turnoff the water to any property that fails to make emergency repairs to any broken water system or sprinkler.

C. Violations of the regulations of the Stage One or Stage Two Drought Conditions shall be punishable as follows:

1. The Director or his designee shall give first-time violators a courtesy notice of the violation. The first citation shall specify the nature of the violations, the date on which it occurred and the corrective measures to be taken. No prosecution or punishment shall be initiated or levied in connection with the first violation.

2. Upon a second violation within the preceding twelve (12) consecutive calendar months, the water Account Holder shall be punishable as an infraction. The Director shall issue a written notice of violation to the Account Holder for the property where the violation occurred or is occurring, and impose a fine in the amount of $150.00.

3. Upon a third violation within the preceding twelve (12) consecutive calendar months, the water Account Holder shall be punishable as an infraction. The Director shall issue a written notice of violation to the Account Holder for the property where the violation occurred or is occurring, and impose a fine in the amount of $250.00.

4. Upon a fourth, or more violations within the preceding twelve (12) consecutive calendar months, the water Account Holder shall be punishable as a misdemeanor with a fine to be imposed in the amount of $1,000.00.

D. Violations of the regulations of the Stage One or Stage Two Drought Conditions may result in the city installing a flow restrictor on the service to the property where the violation occurred or is occurring, for a period to be determined by the Director.

E. Any penalty imposed pursuant to this chapter shall be added to the account of the Account Holder for the property where the violation occurred or is occurring and shall be due and payable on the same terms and subject to the same conditions as any other charge for regular water service. The maximum amount of penalties which an Account Holder may be required to pay during any twelve consecutive calendar month period are hereby established by this Ordinance of the City of Glendora. Penalties must be paid in full prior to restoration of water service.

F. Nothing in this Ordinance shall limit or be construed to limit the right of an Account Holder to seek reimbursement of a penalty from a tenant or other consumer.

14.34.100. Notice of Violation and Request for Hearing

A. For each violation of this Ordinance, the Director shall give notice as follows:

1. By sending written notice through the U.S. mail to the Account Holder for the property where the violation occurred or is occurring, at the current billing address shown in the City's water billing records; and

2. By affixing written notice in a conspicuous place on the property where the violation occurred or is occurring.

B. Any written notice given under this section shall contain a statement of:

1. The date of the notice;

2. The time, place and nature of the violation;

3. The person (s) committing the violation, if known;

4. The provision (s) of this Ordinance violated;

5. The possible penalties for each violation;

6. The Account Holder's right to request a hearing on the violation and the time within which such a request must be made; and

7. The Account Holder's loss of the right to a hearing in the event the account holder fails to request a hearing within the time required.

C. Any Account Holder receiving a notice of an administrative citation may contest that there was a violation of the code or that he or she is the responsible party by submitting a Request for Hearing form and returning it to the city within ten (10) calendar days of the date of the notice of violation. The Account Holder must also post with the Director a check/money order/cahier's check in the amount of the proposed penalty for the violation(s) at the same time the request for a hearing is made.

D. Within thirty (30) calendar days after the Request for Hearing form is received, an Independent Hearing Officer shall conduct the hearing, at which both written and oral evidence may be presented, and shall decide whether a violation occurred and the appropriate penalty. In determining the appropriate penalty, the Independent Hearing Officer may consider all mitigating factors associated with the violation. The Director shall give written notice of the decision in accordance with Subsection A.1 of this Section.

E. For all appeals under this chapter the decision of the Independent Hearing Officer shall be final.

F. There shall be no surcharge added to the account of the Account Holder and no installation of a flow restrictor until the notice of violation has become final or there is a final decision of the Independent Hearing Officer ordering the penalty and installation of a flow restrictor or shut off of water service.

14.34.110. Water Conservation Standards

A. Plumbing Standards For Water Conservation. Plumbing standards for water conservation shall be as contained in the California Plumbing Code as adopted and amended by the City of Glendora in Chapter 19.08 of the Glendora Municipal Code.

B. Water Conservation Landscape Design Standards. All development proposals that are subject to review by the Department of Planning and Redevelopment, Project Review Committee or Planning Commission shall be required to install drought resistant landscaping in compliance Section 21.03.060 of the Glendora Municipal Code. Each development proposal not subject to

such review shall comply with such other water conservation landscape requirements as may be adopted by the Department of Planning and Redevelopment.

SECTION 2. If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held to be invalid or unenforceable by a court of competent jurisdiction, the remaining portions of this Ordinance shall nonetheless remain in full force and effect. The people of the City of Glendora hereby declare that they would have adopted each section, subsection, sentence, clause, phrase, or portion of this Ordinance, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases, or portions of this Ordinance by declared invalid or unenforceable.

SECTION 3. The Mayor shall sign this ordinance and the City Clerk shall attest and certify to the passage and adoption thereof and cause same to be published at least once in the Glendora Press, a weekly newspaper of general circulation, published in the City of Glendora, which newspaper is hereby designated for that purpose; and thereupon, and thirty (30) days after its passage, this ordinance shall take effect and be in force.

PASSED, APPROVED and **ADOPTED** this 27th day of May, 2008.

City Council of Glendora, California

By: _____
KAREN K. DAVIS, Mayor

ATTEST:

_____
KATHLEEN R. SESSMAN, City Clerk

APPROVED AS TO FORM:

_____
D. WAYNE LEECH, City Attorney

State of California
County of Los Angeles } ss.
City of Glendora

I, Kathleen R. Sessman, City Clerk of the City of Glendora, do hereby certify that the foregoing Ordinance was introduced for first reading on May 13, 2008. Thereafter, said Ordinance was duly approved and adopted at a regular meeting of the City Council on May 27, 2008, by the following roll call vote:

AYES: Council Members: Clifford, Herman, Tessitor, Kelly, Davis
NOES: Council Members: None
ABSENT: Council Members: None
ABSTAIN: Council Members: None

Dated: May 29, 2008

KATHLEEN R. SESSMAN, City Clerk

APPENDIX B

ORDINANCE 1925

ORDINANCE NO. 1925

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF GLENDORA, CALIFORNIA AMENDING SECTION 14.34.070 OF THE MUNICIPAL CODE WITH RESPECT TO MANDATORY CONSERVATION MEASURES

THE CITY COUNCIL
CITY OF GLENDORA, CALIFORNIA

WHEREAS, the City of Glendora is a general law City;

WHEREAS, the City Council of the City of Glendora is desirous of establishing water conservation standards to ensure that the City is able to serve the basic health and safety needs for all water customers serviced by the City of Glendora

NOW, THEREFORE THE CITY COUNCIL OF THE CITY OF GLENDORA DOES ORDAIN AS FOLLOWS:

SECTION 1. Section 14.34.070 of the Glendora Municipal Code is hereby amended to read as follows:

14.34.070 Stage One Drought Condition

A. A Stage One Drought Condition may be implemented by the City Council when one or more of the following conditions exists:

1. Imported water is needed to meet 40% of the City's water system demand for the current or next fiscal year.

2. The City's water well production for the current fiscal year is reduced by 25% below the production level for the same period of the preceding year.

3. Upon recommendation by the Water Commission that a water shortage exists, such as when the projected supply and demand for water reduces storage capacities and/or a reduction in the City's ability to purchase water.

B. Prior to implementation of a stage one drought condition plan as provided in this chapter, the City Council shall hold a public hearing for the purposes of determining whether a the need for implementing a stage one drought condition exists. Notice of the time and place of said public hearing shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City Council may, upon finding that the need for implementing a stage one drought condition exists, order implementation of a stage one drought condition plan as provided in this chapter. Said order shall be made by Resolution of the City Council and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such publication. The provisions of this Section shall take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. At any time during the stage one drought condition period, the City Council may discontinue any plan or may implement another plan as provided in this chapter.

Upon a finding by the City Council that a stage one drought condition no longer exists, the stage one drought condition then in effect shall terminate.

C. Upon adoption by the City Council of a Resolution declaring a Stage One Drought Condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

1. Each of the Voluntary Conservation Drought Condition regulations shall be applicable as long as they are not in conflict with the more restrictive regulations of the Stage One Drought Condition.

2. The use of continuous running water from a hose, pipe, or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic or other surfaces shall be prohibited, except in the event the Director determines that such use is the only feasible means of correcting a potential threat to health, sanitation or safety.

3. Every operator of a restaurant providing table service shall offer water only upon request and post table signs notifying its customers of drought conditions and that water is available upon request.

4. Every operator of a hotel, motel, or other commercial establishment offering lodgings shall institute daily washing of towels and linens only upon request and shall post signs in each room notifying customers of the drought condition.

5. Any use of water that causes runoff to occur beyond the immediate vicinity of use shall be prohibited.

6. Watering shall be prohibited from 8:00 a.m. to 5:00 p.m. of any yard, orchard, park, golf course, recreational area, or other area containing vegetation with the following exceptions:

a. The irrigation of trees and shrubs shall be allowed by any means and at any time of the day provided that:

(1) The irrigation shall be confined to the area within the drip line of a tree or shrub.

(2) There shall be no run-off as a result of the irrigation

(3) That the irrigation shall not exceed 5 minutes to each tree or shrub during any 24-hour period.

b. The irrigation of plant material within commercial nurseries shall be allowed at any time of the day provided that:

(1) The water is applied only to one plant or container of plants at a time; and

(2) The water is applied by means of a hose equipped with an automatic shut-off nozzle.

c. The irrigation of golf course greens and City parks shall be allowed by any means and at any time of the day for the purpose of germinating seed, promoting growth of sod, or leaching minerals from the soil for new growth purposes only.

7. When a Stage One Drought Condition is declared, all Consumers shall reduce their water consumption by at least 10% below their average consumption for the same period of the previous year, or the year prior to the Stage One Drought Condition being declared.

D. The Director or his/her designee is authorized to turn off the water of any property that fails to make corrective changes to any broken water system, sprinkler, etc., within 24 hours of being notified by the City by posting in a conspicuous location on the property.

14.34.070 Stage Two Drought Condition

A. A Stage Two Drought Condition may be implemented by the City Council when any of the following conditions exist:

1. City well production losses and Metropolitan Water District purchased water restrictions threaten the City's ability to meet system demand.

2. Imported water is needed to meet 60% of the system demand.

3. Upon recommendation by the Water Commission that a water shortage exists when the projected supply and demand for water reduces storage capacities and/or the ability to purchase water.

B. Prior to implementation of a Stage Two Drought Condition as provided in this chapter, the City Council shall hold a public hearing for the purposes of determining whether a need to implement a Stage Two Drought Condition exists. Notice of the time and place of said public hearing shall be published not less than 10 days before the hearing in a newspaper of general circulation within the City. The City Council may, upon finding that a need to implement a Stage Two Drought Condition exists, order implementation of a Stage Two Drought Condition as provided in this chapter, or other measures which it deems appropriate to address the water shortage. Said order shall be made by Resolution and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such publication. The provisions of this Section shall take effect with the first full billing period commencing on or after the effective date of the City Council's Resolution. At any time during the Stage Two Drought Condition period, the City Council may discontinue the Stage Two Drought Condition or may implement another plan as provided in this chapter. Upon a finding by the City Council that a Stage Two Drought Condition no longer exists, the Stage Two Drought Condition then in effect shall terminate.

C. Upon adoption by the City Council of a Resolution declaring a Stage Two Drought Condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by Resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City.

1. Each of the Stage One Drought Condition regulations shall be applicable as long as they are not in conflict with any more restrictive regulations of the Stage Two Drought Condition.

2. With the exception of Subsection 3 below, the use of water through a meter that is used solely for irrigation purposes shall be prohibited, and the City shall have the right to shut off water service to any such meter without notice to the Customer, Account Holders or any other person.

3. The watering of any yard, orchard, hillside, park, golf course, recreational area, or other area containing vegetation shall be limited to Monday, Wednesday and Friday for all even address locations shall be limited to Tuesday, Thursday and Saturday for all odd address locations. Such watering times shall be limited to no more than 5 minutes for each water cycle station and done only between the hours of 5:00 p.m. and 8:00 a.m.

4. The private washing of all recreational vehicles and other vehicles shall be prohibited, except by use of a bucket and hose equipped with a self-closing valve that requires operator pressure to activate the flow of water.

5. The Director is authorized to discontinue the supply of water to third party water purveyors during a Stage Two Drought Condition.

6. When a Stage Two Drought Condition is declared, all Consumers shall reduce their water consumption by at least 15% below their average consumption for the same period of the previous year, or the year prior to the Stage Two Drought Condition being declared.

SECTION 2. If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held to be invalid or unenforceable by a court of competent jurisdiction, the remaining portions of this Ordinance shall nonetheless remain in full force and effect. The people of the City of Glendora hereby declare that they would have adopted each section, subsection, sentence, clause, phrase, or portion of this Ordinance, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases, or portions of this Ordinance by declared invalid or unenforceable.

SECTION 3. The Mayor shall sign this ordinance and the City Clerk shall attest and certify to the passage and adoption thereof and cause same to be published at least once in the Glendora Press, a weekly newspaper of general circulation, published in the City of Glendora, which newspaper is hereby designated for that purpose; and thereupon, and thirty (30) days after its passage, this ordinance shall take effect and be in force.

PASSED, APPROVED and **ADOPTED** this 25th day of August, 2009.

City Council of Glendora, California

BY: _____
KAREN K. DAVIS, Mayor

APPROVED AS TO FORM:

WAYNE LEECH, City Attorney

I, Kathleen R. Sessman, City Clerk of the City of Glendora, California, DO HEREBY CERTIFY that the foregoing Ordinance was introduced for first reading on August 11, 2009 by the following roll call vote:

AYES:	COUNCIL MEMBERS:	Clifford, Murabito, Herman and Davis.
NOES:	COUNCIL MEMBERS:	None.
ABSENT:	COUNCIL MEMBERS:	Tessitor.
ABSTAIN:	COUNCIL MEMBERS:	None.

Thereafter, said Ordinance was duly approved and adopted at a Regular Meeting of the City Council on August 25, 2009, by the following roll call vote:

AYES:	COUNCIL MEMBERS:	Clifford, Murabito, Tessitor Herman and Davis.
NOES:	COUNCIL MEMBERS:	None.
ABSENT:	COUNCIL MEMBERS:	None.
ABSTAIN:	COUNCIL MEMBERS:	None.

I further certify that said Ordinance was published as required by law in a newspaper of general circulation in the City of Glendora, California on the 3rd day of September, 2009.

Dated: August 26, 2009

KATHLEEN R. SESSMAN, City Clerk

APPENDIX C

URGENCY ORDINANCE 1996

ORDINANCE 1996

AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF GLENDORA, CALIFORNIA, ENACTING MANDATORY EMERGENCY WATER CONSERVATION REGULATIONS TO COMPLY WITH GOVERNOR BROWN'S EXECUTIVE ORDER B-29-15 AND THE REGULATIONS PROMULGATED BY THE STATE WATER RESOURCES CONTROL BOARD IN RESPONSE THERETO

THE CITY COUNCIL
City of Glendora, California

THE CITY COUNCIL OF THE CITY OF GLENDORA DOES HEREBY ORDAIN AS FOLLOWS:

WHEREAS, pursuant to Section 36937 of the California Government Code, a City Council may adopt as an urgency measure an ordinance to protect the public safety, health, or welfare; and

WHEREAS, on April 1, 2015, Governor Brown issued Executive Order B-29-15, imposing restrictions on water use in order to achieve an aggregate statewide 25 percent reduction in potable urban water usage through February 2016; and

WHEREAS, on May 5, 2015, in accordance with the Governor's Executive Order B-29-15, the State Water Resources Control Board adopted Resolution 2015-0032 detailing emergency regulations ("Regulations") implementing a statewide 25% reduction in potable urban water use; and

WHEREAS, the Regulations establish conservation levels for water suppliers based on an average Residential Gallons per Capita per Day ("R-GPCD") for the period of July through September 2014, and the City of Glendora has been categorized among the cities mandated with a 36 percent potable urban water use reduction; and

WHEREAS, the City Council of the City of Glendora wishes to implement comprehensive regulations in order to comply with Executive Order B-29-15, to protect the public health, safety, and welfare; and

WHEREAS, the long-term health, safety, and prosperity of the community depends upon having a reliable supply of potable water.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENDORA, CALIFORNIA, DOES RESOLVE, DECLARE, DETERMINE AND ORDER AS FOLLOWS:

SECTION 1. A new Section 14.34.120 of the Glendora Municipal Code is hereby added to read as follows:

"14.34.120 Emergency water conservation drought condition

(a) An emergency water drought condition may be ordered by the City Council in order to comply with the Governor's Executive Order B-29-15, which is implemented by the State Water Resources Control Board's adoption of Resolution 2015-0032 detailing emergency regulations for a statewide 25% reduction in potable urban water use, and other emergency water drought orders and regulations ordered by the Governor or other State boards or agencies.

(b) Prior to implementation of an emergency water drought condition as provided in this chapter, the City Council may, upon finding that a need to order an emergency water drought condition exists, order an emergency water drought condition, or other measures which it deems appropriate to address the water shortage emergency. Said order shall be made by resolution and shall be published one time only in a daily newspaper of general circulation and shall become effective immediately upon such adoption. The provisions of this section shall take effect immediately upon the effective date of the City Council's resolution.

(c) Upon order of an emergency water drought condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by resolution of the City Council, shall apply to all use of water that is provided by or through the water distribution facilities of the City:

(1) Each of the stage one drought condition regulations shall be applicable as long as they are not in conflict with more restrictive regulations of the emergency water conservation regulations.

(2) All residential users, inclusive of single family, and multi-family 2-4 units shall reduce their water consumption to the R-GPCD consumption levels set forth in a formal resolution adopted by the city council, which will comply with the State of California mandated consumption reduction level regulations.

(3) All non-residential users with landscape areas greater than 500 square feet shall reduce their water consumption by 25% compared to the same billing months from the year 2013.

(4) All non-residential users with no or landscape areas of 500 square feet or less shall reduce their water consumption by 10% compared to the same billing months from the year 2013.

(5) All outdoor ornamental turf watering shall be limited to no more than two days a week and not more than 10 minutes at each water station per day.

(6) To prevent the waste and unreasonable use of water and to promote water conservation, each of the following actions is prohibited, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency:

(a) The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;

(b) The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;

(c) The application of potable water to driveways and sidewalks;

(d) The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system;

(e) The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall;

(f) The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

(g) The irrigation with potable water of ornamental turf on public street medians; and

(h) The irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

(7) All operators of hotels, motels, or other commercial establishments offering lodgings shall provide guests with the option of choosing not to have towels and linens laundered daily. The operators of these facilities shall prominently display notice of this option in each guestroom using clear and easily understood language and ensure such notices are maintained;

(d) The City Manager or his designee is hereby authorized to implement all necessary measures or actions mandated or required to meet water conservation mandates imposed by the California State Water Resources Control Board or other State agencies without any further action by the City Council. All such actions shall be reported to the city council for adoption by resolution prior to implementation.

(e) Violation of the emergency water drought condition regulations shall be punishable as an infraction or misdemeanor as set forth herein. Every person who violates any provision of this chapter shall be guilty of a separate offense for each and every day during any portion of which the violation is committed, continued or permitted by such person. Violations shall be punishable as follows:

(1) The director or his or her designee shall give first-time violators a courtesy notice of the violation. The courtesy notice shall specify the nature of the violation(s), the date on which it occurred, the corrective measures to be performed, and notice that the violator shall:

(a) Perform the corrective action;

(b) Request a water use efficiency audit with the City within 10 days; and

(c) Undertake the relevant corrective action within 10 days after completion of the water use efficiency audit.

(2) Upon a second violation the violation by the water account holder shall be punishable as an infraction. The director or his or her designee shall issue a written notice of violation to the account holder for the property where the violation occurred or is occurring, and impose a fine in the amount of two hundred fifty dollars.

(a) Failure to comply with the corrective actions identified in the remedial water use efficiency audit in the first violation shall be deemed second violation subject to a two hundred fifty dollar fine.

(b) Failure to comply with the corrective actions identified in the remedial water use efficiency audit in the first violation shall be deemed a separate violation every three days thereafter until the corrective action is completed.

(3) Upon a third violation the violation by the water account holder shall be punishable as an infraction. The director shall issue a written notice of violation to the account holder for the property where the violation occurred or is occurring, and impose a fine in the amount of one thousand dollars.

(4) Violations of the emergency water drought condition regulations may result in the City installing a flow restrictor on the service to the property where the violation occurred or is occurring, for a period to be determined by the director.

(5) Any penalty imposed pursuant to this chapter shall be added to the account of the account holder for the property where the violation occurred or is occurring and shall be due and payable on the same terms and subject to the same conditions as any other charge for regular water service. The maximum amount of penalties which an account holder may be required to pay during any twelve consecutive calendar month period are hereby established by this chapter of the Glendora Municipal Code. Penalties must be paid in full prior to restoration of water service.

(6) Nothing in this chapter shall limit or be construed to limit the right of an account holder to seek reimbursement of a penalty from a tenant or other consumer."

SECTION 2. Section 21.03.060 of the Glendora Municipal Code is hereby deleted and repealed in its entirety.

SECTION 3. A new section 21.03.060 of the Glendora Municipal Code is hereby added to read as follows:

"21.03.060 State model water efficient landscaping ordinance adopted by reference.

(a) The City adopts by reference the California State Model Water Efficient Landscaping Ordinance (AB 1881), and any amendments thereto, as the law of the City. One copy of the California State Model Water Efficient Landscaping Ordinance has been, and is now, filed in the office of the planning director, and the ordinance is adopted by reference as if incorporated and set out in full in this chapter. The California State Model Water Efficient Landscaping Ordinance requirements shall apply to the following in addition to the applicable requirements of the California State Model Water Efficient Landscaping Ordinance:

(1) New and rehabilitated landscapes for private projects with a landscape area requiring any permit or application for approval from the City of Glendora.

(2) Any private project involving either the development of a new detached structure equal to or larger than 500 square feet in area.

(3) Any private project involving the addition to an existing structure shall replace their landscape on a 2:1 basis, for example a 500 square foot addition shall require a 1,000 landscape replacement which can include the landscape removed for the footprint of the addition being permitted. The project applicant shall be deemed compliant with this section upon presenting certification by a by a licensed landscape architect that the landscape to be replaced replacement area is already compliant with the most recent State Model Water Efficient Landscape Ordinance.

(4) All new residential construction, new roof installations, patio covers and additions, or when the building permit valuation for remodeling meets or exceeds $25,000 as established by the most recently adopted Master Schedule of Fees for Service, a minimum of two 50 gallon rain barrels shall be installed to capture roof rainwater runoff. The rain barrel capacity must be sufficient to capture the first ¾ inch of rain from the roof of the structure, or another means of retaining the water onsite must be approved by the Building Official. A roof drainage system, such as roof gutters, roof drains or scuppers directing the runoff to the rain barrels is required. The method for capturing the roof runoff is to be approved by the Building Official or his/her designee. Solar photovoltaic systems, mechanical, electrical and plumbing permits are exempted from this requirement;

(5) All property owners of existing single-family and 2-4 unit residential structures shall install a minimum of two 50 gallon rain barrels to capture roof rainwater runoff. The rain barrel capacity must be sufficient to capture the first ¾ inch of rain from the roof of the structure, or another means of retaining the water onsite must be approved by the Building Official by June 2017. A roof drainage system, such as roof gutters, roof drains or scuppers directing the runoff to the rain barrels will be required. The method for capturing the runoff is to be approved by the Building Official or his/her designee."

SECTION 4. Findings. There is a current and immediate threat to the public health, safety, or welfare caused by the statewide drought, as evidenced by Executive Order B-29-15, and the failure to take the actions and to adopt the regulations set forth herein could subject the City of Glendora to fines, and could threaten public health, safety, or welfare, in that: (1) there may not be sufficient water available to the public for basic living necessities; (2) there may not be sufficient water available to the public to fight fires; and (3) there may not be sufficient water available to preserve drought tolerant landscaping, which would adversely impact property values in the city.

SECTION 5. Severability. The provisions of this Ordinance are declared to be severable and if any section, sentence, clause or phrase of this Ordinance shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this Ordinance but they shall remain in effect, it being the legislative intent that this Ordinance shall stand notwithstanding the invalidity of any part.

SECTION 6. Effective Date/Term. The Mayor shall sign this ordinance and the City Clerk shall attest and certify to its passage. This Ordinance is hereby declared an urgency ordinance measure for the immediate preservation of the public health, safety and welfare and shall be effective immediately upon its adoption.

PASSED, APPROVED and **ADOPTED** this 26th day of May, 2015.

City Council of Glendora, California

BY: _____
KAREN K. DAVIS, Mayor

APPROVED AS TO FORM:

_____
D. WAYNE LEECH, City Attorney

CERTIFICATION

I, Kathleen R. Sessman, City Clerk of the City of Glendora, California, DO HEREBY CERTIFY that the foregoing Urgency Ordinance was duly approved and adopted at a Regular Meeting of the City Council on the 26th day of May, 2015, by the following roll call vote:

AYES:	COUNCIL MEMBERS:	Boyer, Nelson, Thompson, Murabito, and Davis
NOES:	COUNCIL MEMBERS:	None
ABSENT:	COUNCIL MEMBERS:	None
ABSTAIN:	COUNCIL MEMBERS:	None

Dated: May 27, 2015

KATHLEEN R. SESSMAN, City Clerk

APPENDIX D

CITY OF GLENDORA'S HAZARD MITIGATION PLAN

City of Glendora

Local Hazard Mitigation Plan

Public Review Draft

March 2025

PUBLIC REVIEW DRAFT

CITY OF GLENDORA
LOCAL HAZARD MITIGATION PLAN

CITY OF GLENDORA
150 S Glendora Avenue
Glendora, CA 91741
Contact: Julie Linger, Business Services Manager
Glendora Police Department

Prepared by:

DE NOVO PLANNING GROUP
180 E. Main Street, Suite 108
Tustin, California 92870
Contact: Starla Barker, AICP
(949) 396-8193

March 2025

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Section 1.0 | Introduction

Natural disasters can cause death and injuries, as well as significant damage to communities, businesses, public infrastructure, and the environment. Each year, natural disasters take the lives of hundreds of people and injure thousands more, and taxpayers pay billions of dollars annually to help recovery efforts. After disasters, repairs and reconstruction are often completed to simply restore the affected areas to their pre-disaster conditions. Such efforts expedite a return to normalcy; however, the replication of pre-disaster conditions results in a cycle of damage, reconstruction, and repeated damage. As the cost of damage from natural disasters continues to increase, communities realize the importance of identifying effective ways to reduce vulnerability to disasters. While it is not possible to prevent disasters from happening, their effects can be reduced or eliminated through well-organized public education and awareness efforts, preparedness, and mitigation. For those hazards that cannot be fully mitigated, the community must be prepared to provide efficient and effective response and recovery.

It is impossible to predict exactly when and where disasters will occur or the extent to which they will impact a community. However, with careful planning and collaboration among public agencies, stakeholders, and citizens, it is possible to minimize losses that may occur from disasters. Proactive mitigation planning helps reduce the cost of disaster response and, by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruption. For hazards that can be mitigated, the City should be prepared to implement efficient and effective short- or long-term actions where needed.

The City of Glendora developed their Local Hazard Mitigation Plan ("LHMP" or "Plan") to reduce future loss of life and property resulting from disasters, and to provide increased resiliency, allowing the City to return to normal sooner, with fewer impacts to people, facilities, and infrastructure. This LHMP is an update to the City of Glendora 2015 Natural Hazard Mitigation Plan.

1.1 PLAN PURPOSE

The purpose of the LHMP is to provide the City with clear direction for hazard mitigation action planning. This LHMP identifies natural and human-induced hazards that threaten the community and provides resources, information, and strategies to reduce these threats, resulting in overall risk reduction.

This plan focuses on the mitigation component of the cycle shown in Figure 1.1, *Disaster Response Cycle*. Hazard mitigation plays an important role in reducing the impacts of disasters by identifying effective and feasible actions to reduce the risks posed by potential hazards. The City is updating this plan to be consistent with current standards and regulations, ensuring that

the understanding of hazards facing its community reflects best available information and current conditions.

The LHMP does not supersede current City plans or strategies (such as the General Plan); rather it enhances the ability to identify, inform and mitigate hazard risks unique to the City. Information in this plan will be used to help guide and coordinate mitigation activities and serve as a tool for decision-makers to direct mitigation activities and resources.

Figure 1-1 Disaster Response Cycle

1.2 PLAN AUTHORITY

FEDERAL REQUIREMENTS

The Robert T. Stafford Disaster Relief and Emergency Act (Stafford Act), as amended by the Disaster Mitigation Act of 2000 (DMA 2000), governs hazard mitigation planning activities like this one. While cities are not mandated to prepare a LHMP, the Stafford Act requires state, local, and tribal governments seeking federal hazard mitigation grant funds to submit a plan that outlines processes for identifying hazards, risks, and vulnerabilities (United States Code [USC] Title 42, Section 5156[a]). To implement the hazard mitigation planning requirements of the Stafford Act, the Federal Emergency Management Agency (FEMA) has issued regulations under Code of Federal Regulations (CFR) Title 44, Part 201. These regulations guide the planning process, content, and approval for hazard mitigation plans. This LHMP complies with the Stafford Act, DMA 2000, and the relevant sections of Title 44 CFR, including Parts 201, 206, and 322.

STATE REQUIREMENTS

California Government Code Section 8685.9 (Assembly Bill [AB] 2140) limits the State's share of disaster relief funds to 75 percent of the amount not covered by federal disaster relief, unless the jurisdiction has adopted a valid hazard mitigation plan that meets DMA 2000 standards. This plan must be incorporated into the jurisdiction's general plan, which can be done through a resolution adopting the LHMP.

The City of Glendora is concurrently updating its General Plan Safety Element, which covers a range of hazards, including geological (seismic and soils), flooding, dam inundation, hazardous materials, fire risks, crime, medical emergencies, aircraft overflight, and climate change resilience. It also addresses disaster preparedness and community safety, ensuring coordination during disaster response situations.

This LHMP is consistent with current federal and State standards, as outlined by the Governor's Office of Emergency Services (CAL OES) and FEMA. It uses the best available information, reflects best practices, and aligns with community values. To comply with AB 2140, the City aims to meet all relevant federal and State requirements, ensuring Glendora is eligible for the appropriate benefits.

Once FEMA issues an Approvable Pending Adoption (APA) notification, the City will formally adopt the LHMP and incorporate it into the Safety Element of the General Plan via resolution. The General Plan Safety Element will reference the LHMP and provide information on how the public can access the current, approved version. Compliance with AB 2140 will be determined by CAL OES.

1.3 PLAN ADOPTION

The previous iteration of the LHMP was approved by Cal OES and FEMA in 2015, and this document serves as a comprehensive update in accordance with recent State and federal regulations. Following FEMA approval, the City Council of Glendora formally adopts the 2025 LHMP as an update to the 2015 LHMP. A copy of the resolution will be provided in Appendix A.

1.4 PLAN ORGANIZATION

The LHMP is organized into the following sections to reflect the logical progression of activities undertaken to develop the plan and includes all relevant documentation required to meet the necessary criteria for FEMA approval. Each section is briefly described below:

Section 1.0: Introduction describes the background and purpose of the plan, as well as the authority established for its development.

Section 2.0: Planning Process describes the LHMP update planning process, as well as the meetings and outreach activities undertaken to engage partner agencies, stakeholders, and the public.

Section 3.0: Community Profile provides the history, geography, and demographics of Glendora, including land use and development trends.

Section 4.0: Risk and Vulnerability Assessment identifies and profiles the natural hazards affecting the City, including their history, risk of future occurrence, and any effects climate change has on their frequency and intensity, where applicable. The selection and confirmation of hazards are also discussed. This section also identifies the vulnerability and risk to the community, including vulnerable populations, and critical facilities associated with each hazard.

Section 5.0: Hazard Mitigation Strategy identifies the specific hazard mitigation actions to reduce potential risks to the City's critical facilities, residents, and business owners to improve resiliency, and assesses the City's capabilities to implement and achieve the mitigation actions.

Section 6.0: Plan Maintenance discusses implementation of the plan, including the process to monitor, evaluate, update, and maintain the LHMP, and identifies opportunities for continued public involvement.

Section 7.0: References identifies the various resources utilized throughout development of the LHMP.

1.5 MITIGATION GOALS

The following goals from the 2015 Natural Hazard Mitigation Plan have been reconfirmed, with minor modifications, as part of the update to the Glendora LHMP:

- 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 hazards.
- Enhance Public Awareness. Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards. Provide information on tools; partnership opportunities, and funding resources to assist in implementing mitigation activities that reduces vulnerabilities.
- 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.
- Encourage Partnerships and Implementation. Strengthen communication and coordinate participation with public agencies, citizens, non-profit organizations, and businesses to support implementation. Encourage leadership within the City and public organizations to prioritize and implement local and regional hazard mitigation activities.
- Strengthen Emergency Services. Establish policy to ensure mitigation projects for critical facilities, services, and infrastructure are prioritized. Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, and businesses. Coordinate and integrate hazard mitigation activities where appropriate, with emergency operations plans and procedures.

1.6 UPDATED COMMUNITY PRIORITIES

The priorities of the City relative to hazard mitigation remain similar to those in the 2015 LHMP. The mitigation goals were reviewed by the Planning Team and determined to be relevant with minor revisions to provide clarity and communicate priorities relative to hazard mitigation that reduces vulnerabilities.

The Community Profile was updated to reflect current demographic data and recent updates to the Glendora General Plan Housing Element. Major development projects have been identified, demonstrating continued growth and development/redevelopment within the City. Potential development to reflect the City's 2021-2029 Housing Element, which was required to include an inventory of land suitable and available for residential development to meet the City's regional housing need allocation (RHNA) of 2,276 units is identified. As part of the identification of sites, environmental constraints, including natural hazards were considered. The sites identified to accommodate the RHNA are primarily comprised of underutilized and vacant sites located within existing Specific Plans in proximity to transportation, and other urbanized areas. These sites are located within an area of the City considered to have reduced vulnerabilities specific to natural hazards.

The planning process for the update included a Project Management Team, led by the Business Services Manager of the Glendora Police Department who coordinated with the Principal Planner in the City's Planning Division relative to the LHMP and Safety Element Update. A Planning Team, comprised of City departments, neighboring cities, emergency responders, healthcare providers, school districts, utility providers, and other partner agencies, provided oversight and information specific to the LHMP update.

A comprehensive approach to community outreach was a primary focus of the Project Management Team. The outreach included a community survey, community outreach event, and six focus group meetings to provide expanded outreach to vulnerable populations. Discussions with the Planning Team and the results of the community survey and outreach indicate the community continues to be concerned with the hazards addressed within the LHMP. The hazards were expanded to include severe weather, consisting of Santa Ana winds and heavy rainstorms, and drought. The remaining hazards were updated to reflect changes since preparation of the 2015 LHMP.

The LHMP update includes a reorganization from the previous plan with a modernized template, structure, and framework for clarity and to streamline the plan. An expanded vulnerability assessment is included in the LHMP update to address vulnerable populations. Similarly, the mitigation strategy was updated to consider specific populations and areas of the City determined to experience higher vulnerability in the event of a hazard event. The mitigation actions were also revised to reflect mitigation actions that have been completed and identify priorities.

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Section 2.0 | Planning Process

This section describes each stage of the planning process used to develop the LHMP. The LHMP planning process provides a framework to document the plan's development and follows FEMA-recommended steps. The LHMP follows a prescribed series of planning steps which includes organizing resources, assessing risk, developing the mitigation plan, drafting the plan, reviewing and revising the plan, and adopting and submitting the plan for approval. Each step is described in this section.

Hazard mitigation planning in the United States is guided by statutory regulations described in the DMA 2000 and implemented through Title 44 CFR Parts 201 and 206. FEMA's hazard mitigation plan guidelines outline a four-step planning process for the development and approval of hazard mitigation plans. Table 2-1, *DMA 2000 CFR Crosswalk*, lists the specific CFR excerpts that contain the requirements for approval, and identifies the applicable section of this LHMP.

TABLE 2-1: DMA 2000 CFR CROSSWALK

DMA 2000 (44 CCFR 201.6)	Glendora LHMP Section
(1) Organize Resources	**Section 2**
201.6(c)(1)	Organize to prepare the plan
201.6(b)(1)	Involve the public
201.6(c)(2) and (3)	Coordinate with other agencies
(2) Assess Risks	**Section 4**
201.6(c)(2)(i)	Assess the hazard
201.6(c)(2)(ii) and (iii)	Assess the problem
(3) Develop the Mitigation Plan	**Section 5**
201.6(c)(3)(i)	Set goals (Section 1)
201.6(c)(3)(ii)	Review possible activities (actions)
201.6(c)(3)(iii)	Draft an action plan
(4) Plan Maintenance	**Section 6**
201.6(c)(5)	Adopt the plan
201.6(c)(4)	Implement, evaluate, and revise

2.1 FORMING THE PLANNING TEAM

PROJECT MANAGEMENT TEAM

The City of Glendora engaged De Novo Planning Group to assist in developing the Local Hazard Mitigation Plan (LHMP). A core Project Management Team, composed of City staff and the Consultant Team, was formed to oversee the organization, facilitation, and execution of the LHMP development process. This team was responsible for the day-to-day coordination of the LHMP work program. Key tasks included forming and assembling the Planning Team, scheduling and organizing Planning Team meetings, preparing and distributing meeting materials, coordinating community engagement activities and meetings, and managing document reviews.

LHMP PLANNING TEAM

The Project Management Team identified a list of participants, which included City staff, adjacent jurisdictions, partner agencies, service providers, and organizations, as potential LHMP Planning Team members. City Staff Planning Team members represented the following City Departments:

- Community Development
- Public Works
- Police Department
- Risk Management
- Human Resources

An invitation was sent via email to individuals advising them of the City's efforts to prepare an LHMP and requesting their participation in preparation of the plan, including an invitation for participation in the Planning Team meetings. The invitation included a request to identify a potential alternate if the specific contact was unable to participate, a copy of the correspondence is included in Appendix B. An invitation was sent to the following agencies and organizations:

- City of Azusa
- City of Covina
- City of San Dimas
- Los Angeles County Fire
- Los Angeles County Area D Disaster Management
- U.S. Forest Service
- Foothill Gold Line
- Los Angeles County Public Works (Flood)
- Southern California Edison
- Southern California Gas Company
- Emanate Health
- Pomona Valley Hospital
- Red Cross
- Glendora Unified School District
- Charter Oak Unified School District
- St. Lucy's Priory High School

- Citrus College
- Azusa Pacific University

The City received responses from some agencies and organizations expressing interest in participating directly on the Planning Team, and others indicating their inability to participate but willingness to provide information.

Together, the Planning Team worked to ensure the success of the planning process. The team's key roles and responsibilities included:

- Participation in Planning Team meetings
- Collection of local information and other requested data
- Providing agency-specific knowledge and input
- Assistance with the public engagement process
- Decision on plan process and content
- Development and prioritization of mitigation actions
- Review and comment on the draft LHMP

Table 2-2, *LHMP Planning Team*, identifies the Planning Team members that directly participated in the Planning Team meetings and their roles in the LHMP development process.

TABLE 2-2: LHMP PLANNING TEAM

Organization	Name, Title
City of Glendora Project Management Team	
City of Glendora Police Department	Julie Linger, Public Safety Management Analyst LHMP Lead
City of Glendora Planning Division	Hans Friedel, AICP, Principal Planner General Plan Safety Element Lead
City of Glendora	
City of Glendora Public Works	Jessica Clark, Business Services Manager
City of Glendora Risk Management	Marie Ricci, Administrative Services Director
City of Glendora Human Resources	Rita Wendling, Interim Assistant Director
City of Glendora Police Department	Matt Egan, Police Chief
City of Glendora Police Department	Mike Randazzo, Police Captain
City of Glendora Police Department	Chris Stabio, Police Captain
Neighboring Cities	
City of Azusa	Jennifer Wu, Emergency Manager
City of San Dimas	Anissa Livas, Senior Administrative Analyst
Emergency Service Providers	
Los Angeles County Fire	Noble Robinson, Battalion Chief
Los Angeles County Fire	Mike Inman, Assistant Fire Chief
Utility/Infrastructure Service Providers	
Southern California Gas Company	Ms. O'Shields, Public Affairs Manager
Hospitals/Health Care Agencies	
Pomona Valley Hospital	Steven Storbakken
Emanate Health	Angela Sharma
School Districts	
Glendora Unified School District	Tamra Fry, Safety/Risk Compliance Officer
Charter Oak Unified School District	Bob Lind, Director of Maintenance and Operations
Charter Oak Unified School District	Nate Cabibil, Maintenance Supervisor
Community Partners	
Red Cross	Nahomi Rodriguez
Red Cross	Ryan Chan, Disaster Program Manager

The LHMP Planning Team held three meetings, as summarized in Table 2-3, *Planning Team Meeting Summary*. The first two meetings included invitations to the entire Planning Team distribution list. Meeting 3 consisted of a focused group to focus on the existing plan's mitigation actions and progress toward the actions. Meeting materials, including PowerPoint presentations, sign-in sheets, agendas, meeting summaries, and other relevant handouts are provided in Appendix B.

TABLE 2-3: PLANNING TEAM MEETING SUMMARY

Meeting	Date	Discussion Items
1	June 28, 2023	• Introductions • Roles & Responsibilities • Project and LHMP Goals • Purpose and Requirements of the LHMP • Confirm Hazard and Identify Community Assets
2	July 26, 2023	• Hazards to be Profiled • Critical Facilities • Problem/Issue Statements • Capabilities Assessment • Review Mitigation Actions • Public Involvement Update
3	August 23, 2023	Mitigation Strategy – Review of existing mitigation actions and progress, discussion of ongoing mitigation actions and potential new mitigation actions to consider

As part of the Planning Team meetings, components of the plan and updates were reviewed and discussed. Clarifications and additional information were obtained from Planning Team participants. Separate from the Planning Team meetings, discussions occurred with individuals and organizations on the Planning Team, as well as outside of the Planning Team to obtain additional information to further inform the LHMP.

Upon preparation of the draft LHMP, each of the planning team participants were provided with a link to access the plan and provide comments and/or respond to request for additional information and clarification. Comments and additional information received on the draft LHMP were incorporated into the document.

PUBLIC OUTREACH AND ENGAGEMENT

A public outreach and engagement strategy was developed to solicit public involvement and input in the LHMP planning process. Components of the public outreach program are described below, refer to Appendix B for outreach materials.

Webpage and Social Media

A dedicated webpage on the City's website provided information on the LHMP, including a description of a hazard mitigation plan, its importance, and how the public could be involved in the planning process. A link to complete the community survey was provided along with a contact at the City for any comments or questions. Information on the City's website was available for the entirety of the LHMP development process. The website was updated throughout the planning process and provided notifications and access to LHMP materials. The draft LHMP was also made available for review.

By conducting virtual outreach through the City's website, the City was able to reach a wide audience, including underserved and vulnerable populations who may have been unable to attend in-person events. Individuals were able to access all information at their own convenience and had the ability to communicate directly with City staff regarding questions or comments. Published content was also advertised via the City of Glendora's RSS Feed (subscription distribution lists) and social media channels.

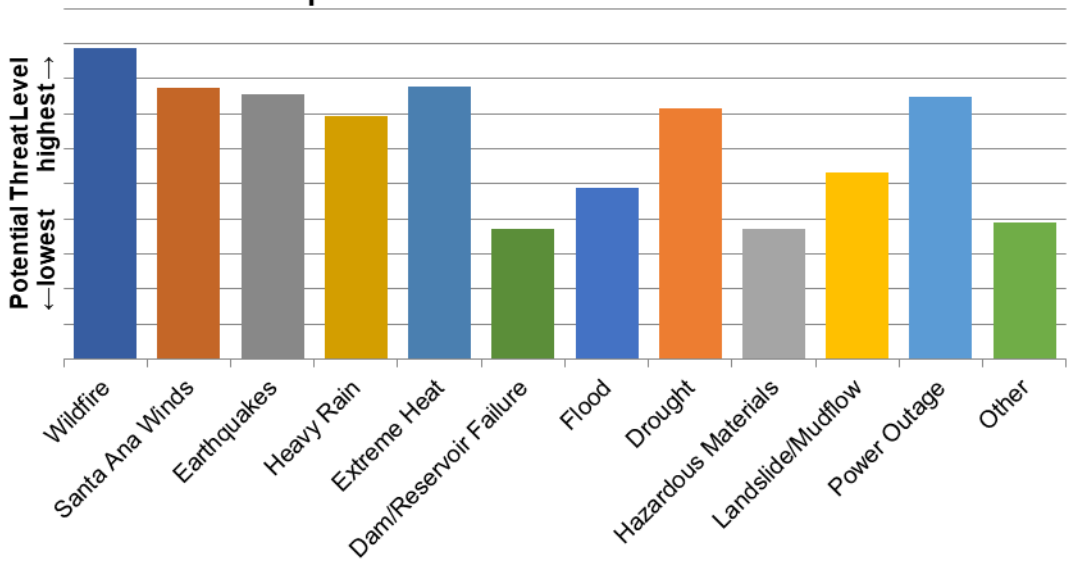
Community Survey

A community survey was developed to obtain input from the public about various hazard mitigation topics. In addition to basic demographic information, the survey asked residents to identify specific safety concerns, including what hazards they felt were most likely to impact their neighborhood or property. Residents were also asked what actions they had taken to be more resistant to hazards. Information gained from the survey was used by the Planning Team to identify potential mitigation actions that would reduce damage and disruption from disaster or emergency events and how best to improve communication and dissemination of information.

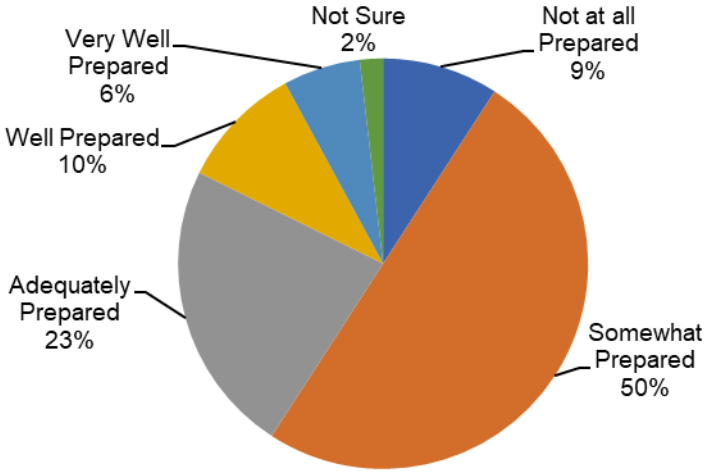
The survey was made available for completion on the LHMP webpage from August 16, 2023 to September 22, 2023, and the survey link was distributed via email by the City and Planning Team members. The survey link was also advertised and distributed at all Community Events, described below. The survey received 164 responses. Of the responses received, 59 respondents provided contact information. Input received was generally consistent with feedback received during one-on-one conversations at the community events and during the focus groups. Respondents were most concerned about wildfire, seismic hazards, drought, and high winds/Santa Ana wind events. Power outages that could occur because of hazard events were also identified as a significant concern. Respondents identified email, social media, city/agency website, and city/agency newsletters as the communication preference to receive information about reducing vulnerabilities to homes and neighborhoods. Nearly half (44.8 percent) of respondents felt that the City, County, and/or other agencies could help residents become better prepared for a disaster by increasing awareness of special needs and vulnerable populations.

Input received from the survey validated the hazards identified in the 2015 Natural Hazard Mitigation Plan, which have been retained and expanded upon in this LHMP update. The input was also considered when reviewing and developing mitigation actions specifically related to vulnerabilities, how the community can become better prepared, and the importance of preparedness, coordination, and response actions.

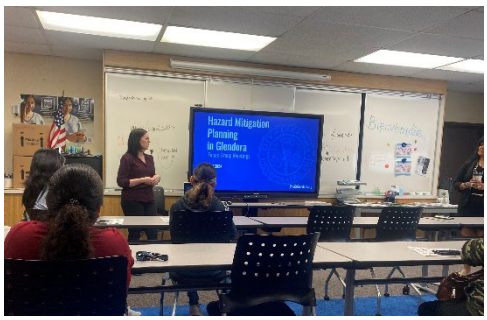
Question 6: Rank the hazards based on the likelihood of potential threat to Glendora.



Question 8: How prepared is your household to deal with a hazard event likely to occur in Glendora?



Focus Groups



Six focus group meetings were conducted to provide an opportunity for outreach to specific groups and organizations to ensure diversity in the public participation process, and to obtain input directly from and relative to populations deemed more vulnerable to natural hazards within the community. As part of the meetings, an overview of hazard mitigation and the LHMP update process was provided. The participants were asked to provide input on issues or concerns related to the specific hazards and potential mitigation actions. Attendees engaged in an open discussion guided by questions specific to the group. The Project Management team met with the following groups and organizations:

- La Fetra Center. The La Fetra Center, in coordination with the City Recreation & Human Services Department, provides programs, services, and activities to older residents. Members of the Project Management Team attended a regularly scheduled lunch program providing meals to residents 60 years of age and older on April 16, 2024. The conversation focused on concerns about evacuation, especially for older people who are not able to drive or have other special needs, and how emergency information is communicated and received. This also provided an opportunity to inform the attendees of the emergency alert system.
- The Los Angeles Centers for Alcohol and Drug Abuse (LACADA). LACADA is the leading provider of alcohol and drug abuse services in Los Angeles. The Project Management Team met with LACADA-associated partners including representatives from Homeless Outreach, Housing Navigator, and the Glendora Police Department on April 16, 2024. The discussion focused on topics related to the unsheltered population and provided the Planning Team with additional knowledge to supplement statistical data on vulnerable populations.
- Youth Advisory Board. The Glendora Youth Advisory Board is a volunteer advisory and social group consisting of students aged between 12 and 17. The Project Management Team met with members of the Youth Advisory Board on April 16, 2024. The discussion focused on awareness of hazards and concerns of school-age youth. This information was used to supplement statistical data on vulnerable populations.
- Glendora Chamber of Commerce. The Glendora Chamber of Commerce is a voluntary organization of businesses who band together to encourage and promote a positive, balanced, and vital economy. The Project Management Team met with the Chamber on April 17, 2024. The meeting focused on topics related to businesses and their employees, including channels of communication during and after a hazard event and emergency preparedness, particularly for smaller businesses.
- Charter Oak Unified School District (USD) Parent Workshop. The Charter Oak USD provides several resources to parents of students. The Project Management Team met with eight

parents during a workshop event on April 17, 2024. Due to the presence of non-English speakers, the presentation and discussion were translated into Spanish. The discussion focused on non-English speaking parents with school-age children. Information obtained from the focus group was used to supplement statistical data on vulnerable populations.

- Glendora USD Safety Committee Meeting. The Glendora USD Safety Committee is a committee of parents dedicated to student safety. The Project Management Team met with the Safety Committee during a regularly scheduled meeting on April 17, 2024. The discussion focused on parents with school-age children and existing hazard mitigation activities conducted at schools. This information was used to supplement statistical data on vulnerable populations.

Similar to the community survey, discussions and input received from the focus groups further validated the hazards identified in the 2015 Natural Hazard Mitigation Plan, which have been retained and expanded upon in this LHMP update. The input also helped identify and reconfirm what worries people the most when they consider the potential impacts of a hazard event. This information was considered when reviewing and developing mitigation actions specifically related to vulnerable populations.

Community Events

The Project Management Team hosted a booth at community events to inform the public about the LHMP update process, obtain feedback on hazards, and encourage completion of the survey. A raffle was held to engage and encourage participation. The community events included the Glendora Emergency Preparedness Day (Prepare Fair) on September 14, 2023, and an Earth Day event on April 20, 2024.

Public Review Draft LHMP

A public review draft LHMP was originally made available to the public for review and comment, beginning March 6, 2025 and ending April 4, 2025. The draft LHMP was made available on the City's LHMP webpage and at the City's Planning counter. The Planning Team assisted in advertising availability of the draft LHMP through their email distribution lists and social media. Information was provided on how to submit comments or ask questions regarding the draft LHMP.

REVIEW AND INCORPORATE EXISTING INFORMATION

The LHMP Planning Team referenced a variety of plans, studies, data, and technical reports available from local, State, and federal sources to prepare the LHMP. Primary resources reviewed and incorporated as part of the LHMP planning process are listed in Table 2-4, *Primary Plan Resources*. A complete list of resources is included in Section 7.0, References.

TABLE 2-4: PRIMARY PLAN RESOURCES

Plans, Studies, Reports and Other Technical Data/Information	Planning Process/Area of Document Inclusion
Agency for Toxic Substances and Disease Registry /Center for Disease Control's (CDC) Social Vulnerability Index (SVI)	Vulnerability Assessment
Cal Fire	Hazard Profiles, Vulnerability Assessment, Mitigation Strategy
Cal-Adapt	Hazard Profiles, Vulnerability Assessment, Mitigation Strategy
California Department of Water Resources	Hazard Profiles, Vulnerability Assessment
California Geological Survey	Hazard Profiles, Vulnerability Assessment
California State Hazard Mitigation Plan	Hazard Profiles
City of Glendora General Plan	Community Profile, Hazard Profiles, Mitigation Strategy
County of Los Angeles All-Hazards Mitigation Plan	Hazard Profiles, Vulnerability Assessment
FEMA Local Mitigation Planning Handbook, May 2023	Multiple plan sections
FEMA Local Mitigation Planning Policy Guide, Effective April 19, 2023	Multiple plan sections
FEMA Community Lifelines Implementation Toolkit	Stakeholder identification and outreach
FEMA Guide to Expanding Mitigation	Stakeholder identification and outreach, Vulnerability Assessment, Mitigation Strategy
FEMA National Risk Index	Hazard Profiles, Vulnerability Assessment
FEMA Map Service Center	Hazard Profiles, Vulnerability Assessment
National Drought Mitigation Center	Hazard Profiles, Vulnerability Assessment
U.S. Census American Community Survey	Community Profile, Vulnerability Assessment
U.S. Drought Monitor	Hazard Profiles, Vulnerability Assessment

2.2 ASSESS RISKS

In accordance with FEMA requirements, the LHMP Planning Team identified and confirmed the natural hazards affecting Glendora and assessed the community's associated vulnerability from those hazards. Results from this phase of the LHMP planning process aided subsequent identification of appropriate mitigation actions to reduce risk from these hazards, refer to Section 5.0, Mitigation Strategy.

IDENTIFY/PROFILE HAZARDS

Based on a review of past hazards in the existing plan, as well as a review of existing plans, reports, and other technical studies, data, and information, the LHMP Planning Team determined if specific hazards were valid and identified other hazards that could affect the City. Content for each hazard profile is provided in Section 4.0, Hazards Assessment.

ASSESS VULNERABILITIES

Hazard profiling exposes the unique characteristics of individual hazards and begins the process of determining which areas within the City are vulnerable to specific hazard events. The vulnerability assessment included input from the LHMP Planning Team and a GIS overlaying method for hazard risk assessments. Using these methodologies, populations and critical facilities impacted by hazards were identified and potential loss estimates were determined where available. The vulnerability assessments for each hazard are provided in Section 4.0.

2.3 DEVELOP MITIGATION PLAN

IDENTIFY GOALS

The City's previously adopted 2015 Natural Hazard Mitigation Plan provided relevant information in preparation of this LHMP, including the identification of mitigation goals. The Planning Team reviewed the previously developed goals and upon discussion, the mitigation goals were reconfirmed, with minor modifications, to guide the specific mitigation actions aimed at reducing risk and preventing loss associated with natural hazards. The Mitigation goals are presented in Section 1.5, Mitigation Goals.

DEVELOP CAPABILITIES ASSESSMENT

A capabilities assessment is a comprehensive review of all the various mitigation capabilities and tools currently available to the City to implement the mitigation actions prescribed in the LHMP. The LHMP Planning Team identified the planning and regulatory, administrative and technical, financial, and education and outreach capabilities to implement mitigation actions, as detailed in Section 5.0.

IDENTIFY MITIGATION ACTIONS

As part of the LHMP planning process, existing mitigation actions were reviewed to assess whether they had been completed, were in progress or on-going, or continued to be relevant. New mitigation actions were also identified and developed. The mitigation actions were prioritized as high, medium, or low. The process was informed by the identification of the hazards, problems/issues statements identified by the Planning Team, input received as part of the community outreach, and vulnerability assessment. During this process, the capabilities assessment was also referenced to better understand if the capability already existed and needed to be expanded, or if the capability was not currently available. A detailed discussion of the identification and prioritization of mitigation actions is provided in Section 5.0.

PLAN REVIEW AND REVISION

As previously noted, once the draft LHMP was completed, a public review period was provided from March 6, 2025 to April 4, 2025, to allow public review and comments. Comments received on the draft LHMP were reviewed and the LHMP was revised, as appropriate.

PLAN ADOPTION AND SUBMITTAL

This plan will be submitted to Cal OES and FEMA for review. Upon receiving “approvable pending adoption” notification from FEMA, this plan will be presented to the City Council for their consideration. If approved, a copy of the resolution will be provided in Appendix A.

PLAN MAINTENANCE

Plan maintenance procedures, found in Section 6.0, Plan Maintenance, include the measures the City will take to ensure the LHMP’s continuous long-term implementation. The procedures also include the way the LHMP will be regularly monitored, reported upon, evaluated, and updated to remain a current and meaningful planning document.

Section 3.0 | Community Profile

3.1 GEOGRAPHY AND ENVIRONMENT

The City of Glendora covers approximately 19.6 square miles (about 12,540 acres) in eastern Los Angeles County. It is located at the intersection of the 57 and 210 freeways, in the foothills of the San Gabriel Mountains. Glendora is bordered by the Angeles National Forest to the north, the City of Azusa to the west, the City of Covina to the south, and the City of San Dimas to the east (see Figure 3-1, *Regional Vicinity*, and Figure 3-2, *City and Sphere of Influence*). Additionally, the City's Planning Area includes about 260.5 acres of unincorporated Los Angeles County within its sphere of influence (SOI).

Two predominant terrain types are located within Glendora: alluvial fan and foothill. The alluvial fan portion of the City is characterized by gently to moderately sloping areas within the City where a vast majority of urban development has already occurred. The foothill portion of the City is characterized by moderate to very steep hillsides predominantly located along the northern boundary adjacent to the Angeles National Forest. In addition, a small area known as "South Hills" located in the southern portion of the City is also characterized by foothill terrain. Elevations in the City range from 776 feet to 3,600 feet.

The nearest major river is the San Gabriel River, which traverses northwest section of the Planning Area. According to the State Water Resources Control Board, the San Gabriel River receives drainage from 689 square miles of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The river itself does not pose any significant impact on the City; its channel is typically dry and only carries substantial water flow during major rainstorms.

3.2 CLIMATE

Temperatures in the City of Glendora typically range from 45 degrees Fahrenheit in the winter months to over 92 degrees Fahrenheit in the summer months. However, the temperatures can vary over a wide range, particularly when the Santa Ana winds blow, bringing higher temperatures and very low humidity. Temperatures occasionally exceed 100 degrees Fahrenheit in the summer months (June-September), and rarely drop below 30 degrees Fahrenheit in the winter months (November-March). Rainfall in the City averages less than three inches of rain per month. Actual rainfall in the southern California region tends to fall in large amounts during sporadic and often heavy storms rather than consistently over storms at somewhat regular intervals.

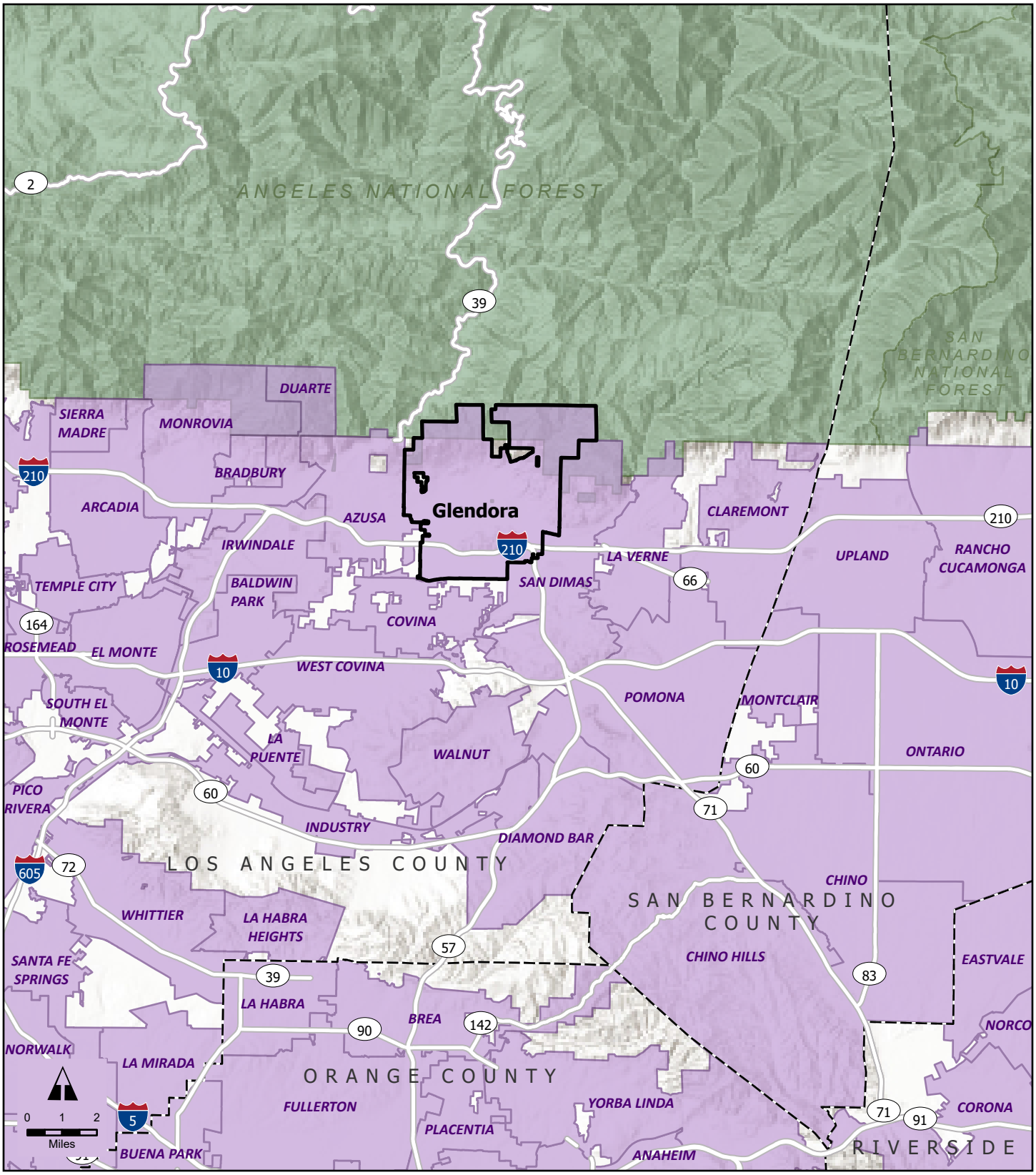
3.3 HISTORY

The City of Glendora was founded in 1887 and incorporated in 1911. According to the City's General Plan Historic Preservation Element, Glendora's rich history traces back to the presence of the Gabrielino Indians, dating as far back as 6000 B.C. During the era of Mexican governance, the area now known as Glendora was part of a Mexican land grant, which was acquired by British merchant Henry Dalton in 1844. Following the Mexican-American War, the Treaty of Guadalupe Hidalgo was signed in 1848, ceding California's lands to the United States.

The town's development began in the late 1880s under the leadership of George Dexter Whitcomb, who named it "Glendora" by combining the word "glen" with his wife Leadora's name. Glendora grew rapidly in the late 19th and early 20th centuries, fueled in part by the arrival of the Pacific Electric Railway in 1907, which connected the town to neighboring cities and spurred further expansion.

Agriculture, particularly citrus farming, was the cornerstone of Glendora's early economy. The region’s mild climate and fertile soil made it an ideal location for citrus cultivation, and cooperatives were established to support this thriving industry. In addition to agriculture, social, educational, and religious institutions flourished, with organizations such as the Glendora Women's Club, the Masonic Lodge, and various churches playing vital roles in the town's growth. Glendora officially became a city in 1911, marking a significant milestone in its development.

As time passed, Glendora saw substantial economic growth, including key infrastructure projects, residential expansion, and the development of industrial and commercial sectors. Today, more than 50,000 residents call Glendora home, enjoying excellent public and private schools, parks, and community services. The City is also known for its safety, boasting one of the lowest crime rates in Los Angeles County.



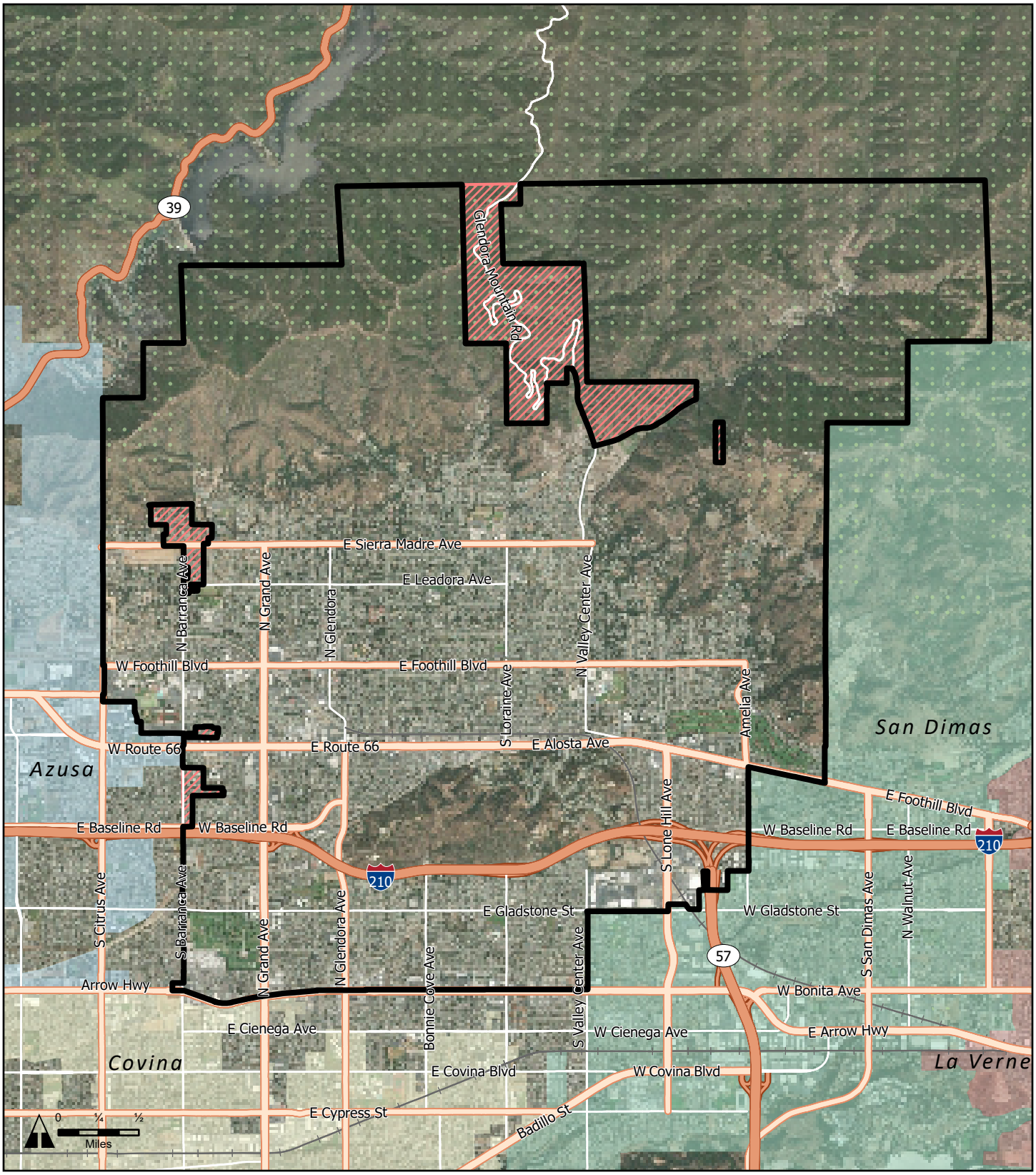
LEGEND

- Glendora City Limits
- Incorporated Area
- County Boundary
- National Forest Lands

CITY OF GLENDORA, CALIFORNIA

Figure 3-1. Regional Vicinity

Sources: Los Angeles County GIS; Southern California Association of Governments; USFS; MAXAR Imagery 4/4/2021. Map date: November 13, 2024.



LEGEND

- Glendora City Limits
- Angeles National Forest
- Glendora Sphere of Influence (SOI)

Other Incorporated Areas

- Azusa
- Covina
- La Verne
- San Dimas

CITY OF GLENDORA, CALIFORNIA

Figure 3-2. City and Sphere of Influence

Sources: Los Angeles County GIS; Southern California Association of Governments; USFS; MAXAR Imagery 4/4/2021. Map date: November 13, 2024.

3.4 DEMOGRAPHICS

Basic demographic data for Glendora (population, education, employment, and housing) obtained from the US Census 2018-2022 American Community Survey (ACS) is summarized below.[1]

POPULATION

Table 3-1, *Glendora and Los Angeles County Population and Housing Data (2022)*, provides an overview of the City's and County's demographics.

TABLE 3-1: GLENDORA AND LOS ANGELES COUNTY POPULATION AND HOUSING DATA (2022)

Category	Glendora	Los Angeles County
Total Population	52,095	9,936,690
Percent of Residents that are children (under 18 years)	22.4%	21.1%
Percent of Residents that are senior citizens (65 and over)	16.8%	14.2%
Median Age (years)	40.4	37.4
Median Household Income	$106,718	$83,411
Median House Value	$749,400	$732,200
Occupied Housing Units	16,751	3,363,093
Percent of Renter Occupied	32.1%	53.8%

Source: US Census American Community Survey 5-Year Estimates 2018-2022.

Glendora's 2022 estimated population is 52,095 residents. When compared to Los Angeles County, the City has a higher household income, home ownership rate, and median house value. The median age of City residents is 40.4, higher than the median age of County residents at 37.4. The City has a higher percentage for both residents under 18 and residents over 65 when compared to the County. Approximately 22.4 percent of the City's population is below the age of 18 and approximately 16.8 percent is above the age of 65.

A greater percentage of Glendora residents identify as white when compared to Los Angeles County; refer to Table 3-2, *Glendora and Los Angeles County Racial and Ethnic Composition (2022)*. Hispanic or Latino persons of any race constitute 40.0 percent of the City's residents compared to 48.7 percent of County residents. Persons identifying as Asian make up 11.2 percent of the population. Persons identifying as "some other race" account for 12.4 percent of the population, while those reporting two or more races make up 16.1 percent of the City's population.

[1] The 2018-2022 American Community Survey (ACS) 5-year estimates is the most current 5-year data profile available. It represents 60 months of collected data and provides the most reliable and largest data set.

TABLE 3-2: GLENDORA AND LOS ANGELES COUNTY RACIAL AND ETHNIC COMPOSITION (2022)

Category	Glendora		Los Angeles County	
	Population	Percentage of Population	Population	Percentage of Population
White	29,386	56.4%	3,937,901	39.6%
Black or African American	1,286	2.5%	780,993	7.9%
American Indian and Alaskan Native	660	1.3%	111,096	1.1%
Asian	5,859	11.2%	1,473,634	14.8%
Native Hawaiian and Other Pacific Islander	54	0.1%	23,400	0.2%
Some Other Race	6,464	12.4%	2,253,956	22.7%
Two or More Races	8,386	16.1%	1,355,710	13.6%
Hispanic or Latino (of any race)[1]	20,863	40.0%	4,837,594	48.7%
Total	**52,095**	**100%**	**9,936,690**	**100%**

Source: US Census American Community Survey 5-Year Estimates 2018-2022.

Notes:

1. Hispanic or Latino persons are not counted as a separate racial or ethnic category; persons who identify as Hispanic or Latino are also included in other racial or ethnic categories.

EDUCATIONAL ATTAINMENT

When compared to Los Angeles County, residents of Glendora exhibit higher levels of educational attainment (see Table 3-3, *Glendora and Los Angeles County Educational Attainment (2022)*). Among Glendora residents aged 25 and older, 14.1 percent hold a graduate or professional degree, 23.2 percent have earned a bachelor's degree, and 11.1 percent possess an associate degree. Additionally, only 3.9 percent of adults in Glendora have not completed high school, in contrast to 8.0 percent of adults across the broader Los Angeles County.

TABLE 3-3: GLENDORA AND LOS ANGELES COUNTY EDUCATIONAL ATTAINMENT (2022)

Educational Attainment (25 years and older)	Glendora		Los Angeles County	
	Population	Percentage of Population	Population	Percentage of Population
Less than 9th Grade	1,178	3.3%	811,822	11.7%
9th to 12th Grade, no diploma	1,411	3.9%	552,831	8.0%
High School Graduate	7,800	21.6%	1,412,260	20.4%
Some College, No Degree	8,232	22.8%	1,260,211	18.2%
Associate Degree	4,000	11.1%	482,967	7.0%
Bachelor's Degree	8,381	23.2%	1,542,422	22.3%
Graduate or Professional Degree	5,101	14.1%	847,137	12.3%
Total	**36,103**	**100**	**6,909,650**	**100**

Source: US Census American Community Survey 5-Year Estimates 2018-2022.

EMPLOYMENT

Of the 41,954 residents over 16 years of age, almost two-thirds (61.9 percent or 25,964 residents) are in the labor force. Out of the 25,964 people in the labor force, 24,366 (58.1 percent) are employed and 1,589 (3.8 percent) are unemployed. The educational services and health care/social services sector employ the largest number of City residents (28.5 percent), followed by retail trade (10.8 percent), and professional scientific, management, and administrative and waste management services (9.2 percent). The median household income in the City is $106,718. While approximately 13.2 percent of employees work from home, a majority of Glendora' residents commute outside of the City for work. The average commute travel time is 33.6 minutes.

HOUSING AND HOUSEHOLD CHARACTERISTICS

In 2022, Glendora had a total of 16,751 occupied housing units (households) (see Table 3-4, Glendora and Los Angeles County Household Characteristics (2022)). The predominant housing type in the city is single-family detached units, which make up approximately 70.3 percent of the housing stock. According to the U.S. Census ACS 5-Year Estimates (2018-2022), about 74.1 percent of Glendora's existing housing was built between 1940 and 1979.

TABLE 3-4: GLENDORA AND LOS ANGELES COUNTY HOUSEHOLD CHARACTERISTICS (2022)

Household Type	Glendora		Los Angeles	
	Population	Percent	Population	Percent
Families	12,834	76.6%	2,218,646	66.0%
With related children of householder under 18 years	5,951	35.5%	1,045,971	31.1%
Housholder Living Alone	3,074	18.4%	870,733	26.0%
65 Years and Older	1,556	9.3%	301,059	9.0%
Non-family	3,917	23.4%	1,144,447	34.0%
Total Households	16,751	100%	3,363,093	100%
Average Household Size	3.04		2.89	
Average Family Size	3.45		3.56	

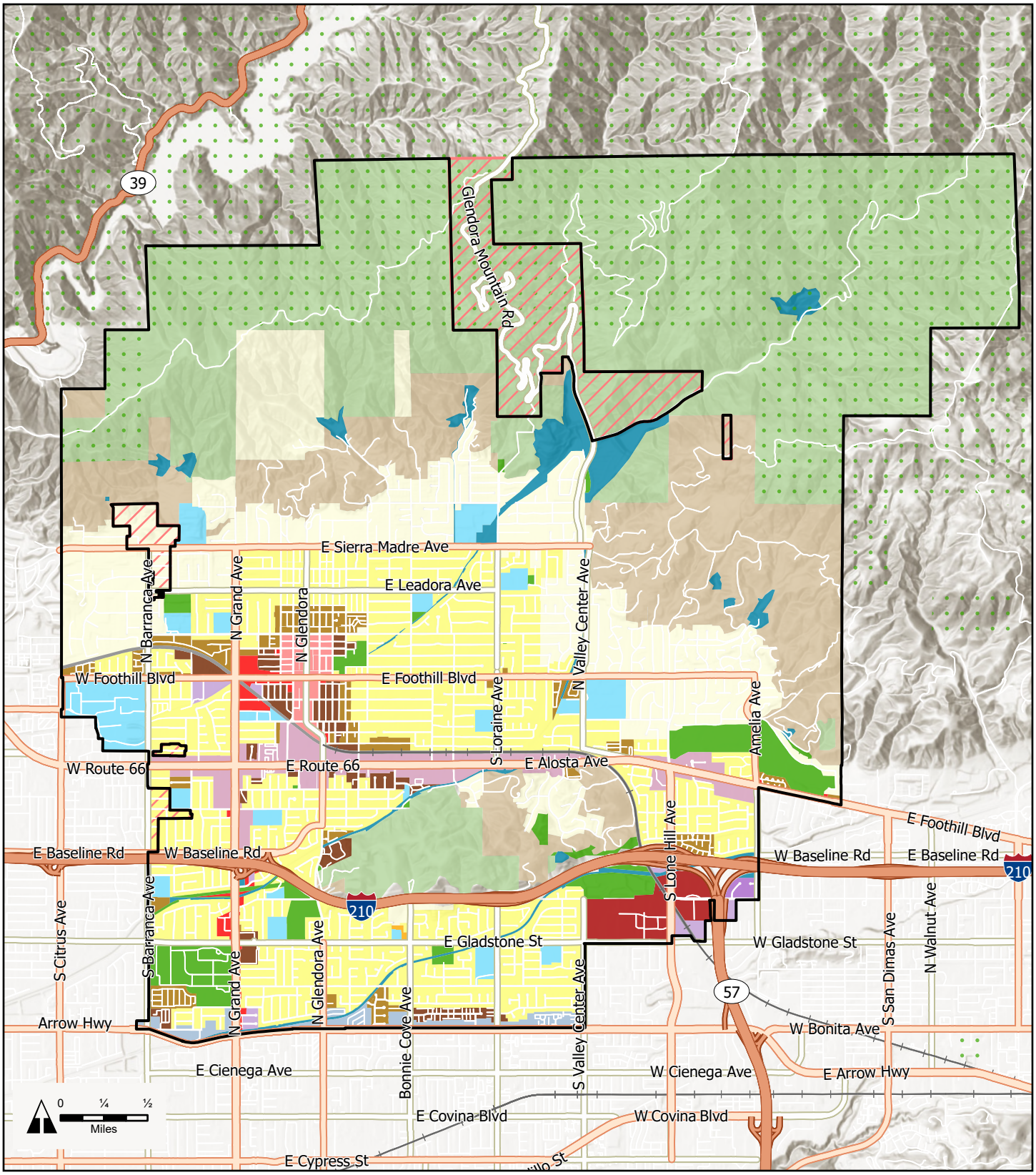
Source: US Census American Community Survey 5-Year Estimates 2018-2022.

In Glendora, families constituted 76.6 percent of the 16,751 housing units in the City, which represents a relatively higher proportion than in Los Angeles County (66.0 percent). Families with children represented 35.5 percent of households in Glendora and 31.1 percent in Los Angeles County. Single-person households represented 18.4 percent of households in Glendora, which is lower than the proportion of single-person households in Los Angeles County (26.0 percent).

Household size identifies sources of population growth and household overcrowding. In general, a city's average household size will increase over time if there is a trend toward larger families. In communities where the population is aging, the average household size may decline. The average household size for Glendora in the 2018-2022 period was 3.04, which was higher than Los Angeles County, with an average household size of 2.89.

3.5 LAND USES AND EXISTING DEVELOPMENT

The development of Glendora is directed by its General Plan, which assigns land use designations to all areas within the city's planning boundary (see Figure 3-3, *General Plan Land Use Map*). Table 3-5, *Land Use Designations*, outlines the current land use designations and provides descriptions of the typical uses permitted in each designation. Additionally, Table 3-6, *Glendora Development Capacity (2025)*, details the development capacity projected for the city under the General Plan.



LEGEND

- Glendora City Limits
- Sphere of Influence
- Angeles National Forest
- Hillside Very Low Density
- Low Density
- Low/Medium Density
- Medium Density
- Medium/High Density
- High Density
- General Commercial
- Regional Commercial
- Light Industrial
- General Industrial
- Civic/Institutional
- Utility and Flood Control
- Conservation Open Space
- Open Space
- Railroad
- Arrow Highway Specific Plan
- Route 66 Specific Plan
- Village Mixed Use

Sources: City of Glendora Public Map Viewer, accessed 3-7-2024; Los Angeles County GIS; Southern California Association of Governments; USFS. Map date: November 13, 2024.

CITY OF GLENDORA, CALIFORNIA

Figure 3-3. General Plan Land Use Map

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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TABLE 3-5: LAND USE DESIGNATIONS

Land Use	Maximum DUs or Maximum FAR	Summary Description of Land Use Designation
Residential Land Use		
Hillside Very Low Residential	1 du/ac	The Hillside Density Residential Designation is intended for hillside areas and allows for the development of single-family residential development on lots of at least one acre in size. The preservation of natural hillside features is strongly encouraged within this land use designation.
Low Density Residential	3 du/ac	Low Density Residential Designation is intended for the transitional areas between hillside areas and higher density single-family residential areas. This designation allows for the development of single family residential on lots ranging from 10,500 to 30,000 square feet.
Low/Medium Density Residential	6 du/ac	Low/Medium Density is the most intensive designation for single-family residences and encompasses most of the non-hillside areas. This designation allows for the development of the smallest detached single-family residential lots and the typical lots range in size from 7,500 to 8,500 square feet in size.
Medium Density Residential	11 du/ac	Medium Density Residential Designation allows for multiple and single family attached housing and is a transitional between the detached single-family areas and the higher density multiple family areas. This designation allows for a variety of housing types including small-lot single family, apartments, duplexes, condominiums, and townhouses.
Medium/High Density Residential	15 du/ac	Medium/High Density allows for multiple and single family attached housing and is transitional between the lower density attached housing areas and the higher density multiple family areas. Medium/High Density allows for a variety of housing types including apartments, duplexes, townhouses, and patio homes.
High Density Residential	25 du/ac[1]	High Density is the most intensive residential land use designation. This designation is found along major and secondary arterials and is used as a transition between the other residential land uses and the more intensive non-residential land uses. Development at this density requires consideration of internal and external circulation, the relationship of buildings and units to each other, and the provision of common open space and private outdoor living areas.
Mixed Use		
Village Mixed Use	30 du/ac/ up to 1.0 FAR	The Village Mixed Use Designation is intended to preserve and enhance the unique character of the

Land Use	Maximum DUs or Maximum FAR	Summary Description of Land Use Designation
		Village area and to encourage a mix of complimentary development. Encouraged development includes professional offices, public/quasi-public facilities, retail businesses, small-lot single family and multiple family residential developments.
Commercial		
General Commercial	0.5 FAR	The General Commercial designation is intended for general commercial uses. These include retail businesses, professional offices, automotive services, and other similar businesses. Development may take the form of single or multi-tenant establishments, including shopping centers.
Regional Commercial	0.5 FAR	The Regional Commercial designation is intended to encourage the development of regionally serving commercial development. The intended uses within this designation include major department stores, specialty retail outlets, restaurants, offices, automobile dealerships, hotel, and other complementary uses.
Industrial		
Light Industrial	0.35 FAR	The Light Industrial designation is intended to encourage general industrial uses which are compatible with surrounding land uses, and which would not degrade the character of adjacent neighborhoods. This designation is intended to serve business parks, research, and development, technology centers, corporate and office uses, “clean” industry and support retail uses, auto truck and equipment sales, warehousing, and distribution.
General Industrial	0.35 FAR	The General Industrial designation is intended for more intensive industrial uses, such as manufacturing, fabrication, assembly, processing, trucking, warehousing and distribution, equipment, and servicing. Uses include industrial research, assembly, and testing of electronics, instruments, and office and related machinery, wholesaling, warehousing, administrative offices, and regional or home offices of industry.
Other		
Civic/Institutional	--	The Civic/Institutional designation includes educational uses, such as primary and high schools, colleges, universities hospitals, and governmental facilities.
Utility and Flood Control	--	The Utility and Flood Control designation is intended to designate those areas in the city that are developed for utility and flood control use.

Land Use	Maximum DUs or Maximum FAR	Summary Description of Land Use Designation
Route 66 Corridor Specific Plan	Various	The Route 66 Corridor Specific Plan designation allows for the implementation of a complimentary mix of land uses, consistent with the policies and regulations contained within the Specific Plan that governs land uses within a particular area. The Specific Plan land use designation provides for tailored development standards, design guidelines and other policy and regulatory elements that guide future land use and improvements.
Arrow Highway Specific Plan	Various	The Arrow Highway Specific Plan implements the City's vision for its southernmost corridor by fostering livability, housing, retail, and service options; improving and integrating open space and community spaces; encouraging catalytic projects; and improving mobility. The Specific Plan establishes development standards, parking standards, design guidelines, a mobility and infrastructure component, administration and implementation plan, and other requirements to ensure the orderly development of the Arrow Highway Specific Plan area.
Open Space		
Conservation Open Space	--	The Conservation Open Space designation includes areas that are publicly owned, undeveloped and will remain in a natural state. This designation is intended to protect areas with high scenic value, environmental and habitat sensitivity, and passive recreational facilities.
Open Space	--	The Open Space designation includes public and privately owned open space areas such as parks, golf courses, and cemeteries. The Open Space designation generally contains active and passive recreational facilities available for public use.

Source: City of Glendora, *General Plan Land Use Element*, 2006; City of Glendora, *Arrow Highway Specific Plan*, 2018.

Notes:

1. In the Grand-Foothill Multi-Family Residential Overlay Zone the residential density maximum may reach up to 30 dwelling units per acre.

TABLE 3-6: GLENDORA DEVELOPMENT CAPACITY (2025)

Land Use Designation	Acres	Percentage of the City Total	Potential DU (Minimum)	Potential DU (Maximum)	Potential SF
Residential					
Hillside Very Low Residential	1,907.01	15.21	191	1,907	
Low Density Residential	1,090.56	8.70	1,200	3,272	
Low/Medium Density Residential	1,874.28	14.95	5,810	11,246	
Medium Density Residential	109.21	0.87	666	1,201	
Medium/High Density Residential	134.44	1.07	1,492	2,017	
High Density Residential	125.19	1.00	1,890	3,130	
Total Residential	5,240.69	41.79	11,249	22,772	
Mixed Use					
Village Mixed Use	38.50	0.31	72	144	209,633
Total Mixed Use	38.50	0.31	72	144	209,633
Commercial					
General Commercial	97.14	0.77			1,480,996
Regional Commercial	114.56	0.92			1,746,582
Total Commercial	211.70	1.69			3,227,578
Industrial					
Light Industrial	30.14	0.24			459,514
General Industrial	39.55	0.32			602,979
Total Industrial	69.69	0.56			1,062,493
Other					
Civic/Institutional	346.82	2.77			
Route 66 Corridor Specific Plan	286.93	2.28	1,228	1,228	4,432,309
Utility and Flood Control ROW	267.39	2.13			
Street and Freeway ROW	1,382.24	11.02			
Railroad ROW	51.59	0.41			
Total Other	2,334.97	18.61			
Open Space					
Open Space	4,304.86	34.33			
Conservation Open Space	339.38	2.71			
Open Space	4,644.24	37.04			
Total – City Limits	**12,507.47**	**100.00**	**12,550**	**24,144**	**8,932,013**
Unincorporated Los Angeles County (SOI)	260.47				
Total – City and SOI	**12,800.26**				

Source: City of Glendora, *General Plan Land Use Element*, 2006.

3.6 DEVELOPMENT TRENDS AND FUTURE DEVELOPMENT

Glendora is an urbanized community that is largely built out, with limited vacant land available for new development. Since the adoption of the 2015 Natural Hazards Mitigation Plan, new development has primarily taken the form of infill development on underutilized sites within the City. The City Limits and Sphere of Influence (SOI) have not expanded since that time; however, the City of Glendora has experienced population growth and new development, while also adopting plans that support future development in specific areas of the city. Glendora's population has grown by approximately 2,022 people, or 4.0%, since 2015, while other demographic characteristics have remained largely unchanged.[2] Since preparation and adoption of the 2015 Natural Hazards Mitigation Plan, the City of Glendora has experienced population growth and new development and has adopted plans that provide opportunities for future development within specific areas of the City.

PROPOSED DEVELOPMENT

Table 3-7, *Major Development Projects*, shows current major development projects under construction, approved or proposed within the City. Major development projects include new residential construction of at least eleven dwelling units or more, and new commercial construction of 5,000 square feet (SF) or more.

[2] The 2015 Local Hazard Mitigation Plan estimated the City's population using the 2010 US Census population of 50,073.

TABLE 3-7: MAJOR DEVELOPMENT PROJECTS

Project Address	Project Name	Type of Development	Project Description	Status
Northwest Glendora	La Colina (Former Monrovia Nursery)	Residential	121 lot single-family subdivision	Under Construction
950 Silent Ranch	"Grand Estates"	Residential	12 Lot single-family subdivision	Approved
1121 E Arrow Highway	"Central Park"	Residential	19 3-story residential units in 3 attached buildings	Approved
531 E Arrow Highway	N/A	Residential	33 attached 3-story residential condo units	Approved
1237 Bonnie Cove Ave	Citrus Oak	Residential	30 Detached condo subdivision 2-story homes	Approved
630 W Foothill Blvd	N/A	Commercial	9,500 SF Medical Office	Approved
210 S Grand Ave	N/A	Commercial	20,974 SF Medical Office	Approved
400 N Glendora Ave	Cornerstone Bible Church Expansion	Institutional	New 9,287 SF Sanctuary	Approved
1201 E Arrow Hwy	N/A	Residential	46 attached 3-story residential condo units	Approved
1861 E Route 66	SkinPerfect Building	Commercial	6,232 SF Medical Office	Approved
1717 S Grand Ave	N/A	Commercial	Car Wash	Proposed
723 E Route 66	N/A	Residential	39 attached 3-story residential condo units -- zone change	Approved
1332 S Lone Hill	N/A	Industrial Service	47,800 SF industrial	Proposed
631-657 Arrow Highway	N/A	Residential	46-unit residential	Proposed
Southwest corner of Sunflower and Gladstone	Sunflower & Gladstone	Residential	81 detached & attached residential units	Proposed

Source: City of Glendora, *Current Development Projects*, https://www.cityofglendora.org/departments/economic-development/development-projects, accessed November 7, 2024.

GENERAL PLAN HOUSING ELEMENT UPDATE

The Southern California Association of Governments (SCAG) 6th Cycle Final Regional Housing Needs Assessment (RHNA) Allocation Plan was approved in March 2021 and identifies housing growth by county and city to accommodate projected population growth needs. On December 16, 2022, the City of Glendora adopted their Housing Element Update to accommodate the RHNA projected housing needs. The RHNA Allocation for Glendora is outlined in Table 3-8, *Glendora RHNA Allocation (2021-2029)*.

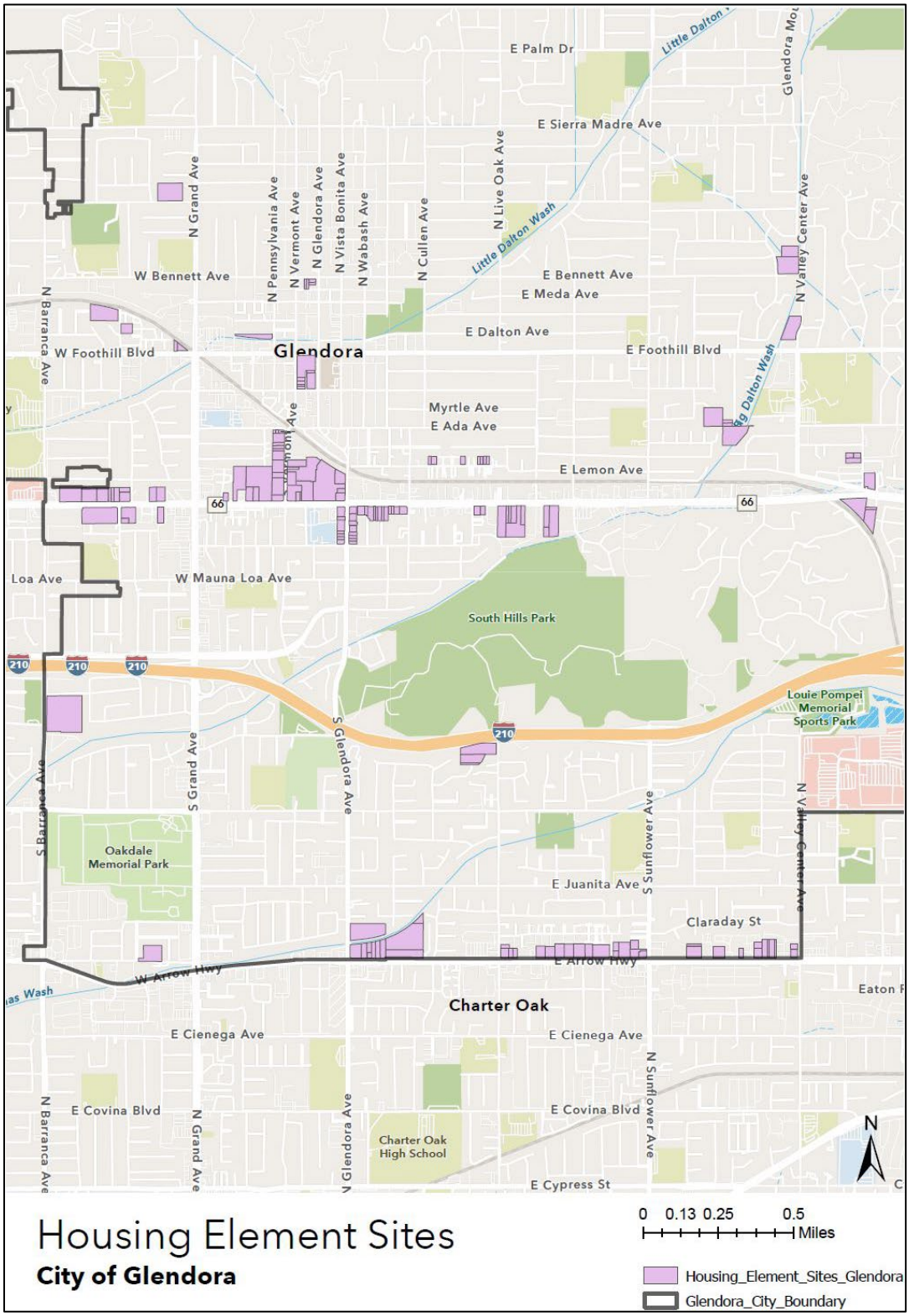
TABLE 3-8: GLENDORA RHNA ALLOCATION (2021-2029)

Income Category	2021-2029 RHNA
Extremely Low Income	368
Very Low	367
Low	386
Moderate	388
Above Moderate	767
Total	**2,276**

Source: Southern California Association of Governments, *SCAG 6th Cycle Final RHNA Allocation Plan*, 2021.

As shown in Table 3-6, the RHNA plan allocated 2,276 new housing units to Glendora for the October 2021 through October 2029 planning period. Although the City is required to provide adequate land to accommodate the 2,276 new housing units, the City is not required to build housing. The 2021-2029 Housing Element accommodates the RHNA through a combination of new residential and mixed-use development on identified underutilized and vacant sites, located primarily within the Route 66 Corridor Specific Plan, Arrow Highway Specific Plan, and other urbanized areas of the City; the development of accessory dwelling units (ADUs) throughout the City; and projects that have either been approved or were in the entitlement process. Figure 3-4, *Housing Element Sites Inventory*, shows the location of sites identified for future residential development by the 2021-2029 Housing Element.

FIGURE 3-4: HOUSING ELEMENT SITES INVENTORY



Source: City of Glendora, *City of Glendora 2021-2029 Housing Element*, 2021.

The Route 66 Corridor Specific Plan establishes a comprehensive policy and regulatory guidance document for all properties within the Route 66 Corridor specific plan project area. The plan area contains approximately 287.18 acres, generally located along Route 66 from Barranca Avenue on the west to Amelia Avenue on the east. The Specific Plan was adopted in December 2003 and was revised in May 2017. The Specific Plan provides the necessary regulatory and design guidance that will ensure future development implements the adopted policy for the project area. The Route 66 Corridor Specific Plan is a community-based plan, developed with extensive input by policy makers, business owners and property owners. The policy and regulatory elements of the specific plan are reflective of public consultation with business and property owners, developers, appointed and elected officials, staff, and the public.

The Arrow Highway Specific Plan, adopted in 2018, outlines a long-term vision and goals for a 2.73-mile stretch of Arrow Highway. The plan aims to revitalize the corridor through a mix of redevelopment initiatives, including neighborhood-serving retail, office spaces, light industrial uses, a variety of housing options, as well as bike paths and open spaces. It also introduces new land use designations and development standards for both residential and commercial properties.

GLENDORA METRO STATION AND FOOTHILL EXTENSION

The Foothill Extension (formerly the Gold Line Foothill Extension) is an ongoing construction project extending the light rail A Line (formerly Gold Line), a part of the Los Angeles County Metropolitan Transportation Authority (Metro) public transit system. The Glendora Metro Station is located just south of the City's historic downtown, east of Vermont Avenue and west of Glendora Avenue. The center platform station has light rail tracks on either side (one for westbound and one for eastbound trains).[3] Once the project is completed, a trip from Glendora to Pasadena will take approximately 22 minutes and further to downtown Los Angeles will take approximately 51 minutes. Major project construction was completed in January 2025; the extension is undergoing final testing, training, and preparation and is anticipated to open for passenger service in summer 2025.[4]

3.7 INFRASTRUCTURE SYSTEMS

Infrastructure systems within the City, such as roadways, water and wastewater facilities, electricity, and natural gas, provide vital community and individual functions. Local transportation and water and wastewater conveyance facilities and distribution systems are maintained and operated by the City. Electricity, natural gas, and regional wastewater conveyance and treatment facilities are primarily owned, operated, and maintained by other agencies. The ability for

[3] Metro Gold Line Foothill Extension Construction Authority, *Glendora*, https://foothillgoldline.org/cities_stations/glendora/, accessed September 9, 2024.

[4] Metro Gold Line Foothill Extension Construction Authority, *Foothill Gold Line News,* https://foothillgoldline.org/dual_content/sign-up-for-e-news/, accessed February 25, 2025.

infrastructure systems to remain operational during hazard events and emergencies will contribute to the City's ability to withstand or recover sooner from hazard events.

TRANSPORTATION

Regional access is provided via the Foothill Freeway (I-210). The I-210 Freeway provides east-west regional circulation through the City, connecting with the Orange Freeway (SR-57) at the eastern boundary of the City. There are three roadways that interchange with the I-210 Freeway: Grand Avenue, Sunflower Avenue, and Lone Hill Avenue. Inspection and maintenance of the City's transportation facilities are critical to ensuring their protection against disasters, such as earthquakes.

Public transportation in the City is provided through a combination of regional transit systems and various city contracted bus systems. The Los Angeles County Metropolitan Authority (Metro) provides bus service, connecting the City to the larger San Gabriel region. Light rail service will be provided to the City with the future extension of the A Line (Gold Line). The Glendora to Pomona Foothill Extension segment was completed in January 2025 and is anticipated to begin operation in summer 2025. In addition to the public transit options, the City offers a Dial-Ride-Service, which is a shared ride, curb-to-curb, transportation service provided to Glendora Residents who are 62 years of age or older, as well as residents who are younger than 62 who are unable to independently use the public transportation system due to disability.

WATER AND WASTEWATER

The City of Glendora Public Works Department, Water Division (GWD) provides potable water service to the majority of the City's residents and businesses. A small portion of the City is served by Suburban Water Systems and the City of Azusa Light & Water Department. According to the City of Glendora 2020 Urban Water Management Plan (UWMP), the City is classified as an urban water supplier because it serves more than 3,000 customers. The City's main source of water supply is groundwater pumped from the Main San Gabriel Valley Basin. Additional water sources include the filtered surface water from the Metropolitan Water District of Southern California (MWD), and filtered surface water from the Covina Irrigating Company (CIC). According to GWD, potable water is disinfected with chlorine (CIC and groundwater) or chloramines (MWD) before it is delivered to residents and businesses. MWD imported water sources are a blend of State Water Project water from northern California and water from the Colorado River Aqueduct. CIC source water originates from the San Gabriel Mountains.

The wastewater generated in the City of Glendora is treated by the Sanitation Districts of Los Angeles County (LACSD). According to the UWMP, wastewater is tied through the City's local sewer collection system. The City's local sewers connect 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 in the City's service area.

The water reclamation plants serving the City include the San Jose Creek Water Reclamation Plant (SJCWRP) and the Joint Water Pollution Control Plant (JWPCP). The SJCWRP has a treatment capacity of about 100 MGD. According to LACSD, the JWPCP treats 260 million gallons of wastewater per day (mgd) and has a total permitted capacity of 400 mgd.

ELECTRICITY

Southern California Edison (SCE) provides electricity to the City of Glendora. Electricity is distributed from power plants through power lines and substations. There are underground and overhead powerlines within the City. Damage to a substation or the larger distribution system outside of the City could result in power loss to the City. More localized power losses can also occur in the event transmission lines are damaged.

NATURAL GAS

Southern California Gas (SoCalGas) provides gas service to the City of Glendora. According to SoCalGas Gas Transmission Pipeline map of Los Angeles County, there is a high-pressure distribution line that runs along South Glendora Avenue to Route 66 within the City. Other gas transmission pipelines and high pressure (greater than 60 pounds per square inch) gas distribution mains run through other areas of Los Angeles County. Damage to these facilities could interfere with the natural gas service in the City. Similarly, more localized disruptions could occur in the event lower pressure distribution mains and smaller service lines connected to the gas meters at homes and businesses are damaged.

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Section 4.0 | Risk and Vulnerability Assessment

4.1 HAZARD IDENTIFICATION

This section outlines the natural hazards that may impact Glendora, detailing their identification, classification, and the considerations used to assess their potential risk to the community. FEMA identifies a wide range of natural hazards that could affect communities, though their list is not exhaustive and allows for the inclusion of additional hazards based on local context. While Glendora may not be susceptible to all of these hazards, the Planning Team utilized various resources—including the City's 2015 Natural Hazards Mitigation Plan, the Glendora General Plan Safety Element, the County of Los Angeles General Plan 2035 Safety Element, the California State Hazard Mitigation Plan (SHMP), and FEMA's hazard list—to evaluate the risks specific to the area. The discussion of each hazard was informed by past occurrences in the City and surrounding areas, along with input from the community through surveys, outreach events, and focused meetings. Professional expertise and knowledge also played a key role in identifying and analyzing hazards.

Table 4-1, *Glendora Hazard Identification*, summarizes the hazards considered for inclusion in the Local Hazard Mitigation Plan (LHMP), incorporating findings from FEMA's National Risk Index to further assess the City's exposure to each identified hazard. In the process, the Planning Team consolidated some hazards into broader categories, renamed others for clarity, and added new hazards. For example, fault rupture, seismic ground shaking, liquefaction, and seismic-induced landslides are now grouped under the broader category of Seismic and Geologic Hazards. Severe Weather encompasses Santa Ana winds, heavy rain events (including those during El Niño years), and extreme heat, with extreme heat being newly included. Dam/Reservoir Failure now includes the potential for reservoir failures, and mudflows are categorized under non-seismic induced landslides. Drought has also been added as a new hazard to the profile.

Climate change, while not considered a separate hazard, is recognized as a factor that may intensify existing hazards. The Planning Team decided to address climate change within the profiles of specific hazards it may exacerbate. Additionally, power outages—whether planned or unplanned—are a secondary concern linked to multiple hazards. These outages are discussed in detail within the Severe Weather profile and cross-referenced in other relevant hazard profiles.

TABLE 4-1: GLENDORA HAZARD IDENTIFICATION

Hazards	Include in City LHMP?	Discussion of Hazard's Inclusion or Exclusion
Avalanche	No	Avalanches are not applicable to Glendora.
Climate Change*	Yes	Climate change is not a discrete hazard but may change the characteristics of a hazard that affects the community, such as frequency and intensity. Climate change is discussed within each of the applicable hazard profiles.
Coastal Flooding	No	Not applicable due to distance from the coast.
Cold Wave	No	Not applicable due to climatic conditions.
Dam/Reservoir Failure*	Yes	Dams and reservoirs occur within and around the City and their potential failure could impact the City.
Drought	Yes	The City depends on groundwater and imported surface water, both of which are susceptible to drought.
Earthquake	Yes	The City is underlain by the Sierra Madre Fault Zone. Hazards associated with earthquakes are addressed within the hazard category Seismic and Geologic Hazards.
Hail/Ice Storm	No	The City does not typically experience significant hail or ice storms.
Heat Wave (Extreme Heat)	Yes	Although extreme heat conditions are not typical within Glendora, they are becoming more common and typically have a greater impact on vulnerable populations. Extreme heat is addressed within the hazard category Severe Weather.
Landslide	Yes	Portions of the City are located within areas identified as having a potential to experience seismic-induced landslides. Additionally, due to the topography of the City, there is the potential for slope instability and mudflows. These topics are addressed within the hazard category Seismic and Geologic Hazards.
Lightning	No	The City does not typically experience significant lightning events resulting in damage.
Flood (Riverine Flooding)	Yes	FEMA-identified floodplains are located within the City and are therefore included.
Geological Hazards*	Yes	Geological hazards that occur within the City are primarily associated with landslides, mudflows, and slope instability. These are addressed under the hazard category Seismic and Geologic Hazards.
Hazardous Materials*	No	Hazardous materials are not generated within the City. Potential impacts associated with hazardous materials are more likely associated with a hazardous material spill along major transportation routes, which are addressed at the regional level and within the City's Emergency Operations Plan.
Hurricane	No	Hurricanes do not occur within the City.
Liquefaction*	Yes	Portions of the City are located within areas identified as having the potential for liquefaction. Liquefaction is addressed within the hazard category Seismic and Geologic Hazards.
Seismic Hazards*	Yes	The City is located within an area of southern California susceptible to earthquake ground shaking and associated seismic hazards, including liquefaction. These topics are addressed within the hazard category Seismic and Geologic Hazards.

Hazards	Include in City LHMP?	Discussion of Hazard's Inclusion or Exclusion
Strong Wind	Yes	The City experiences periods of high wind events associated with Santa Ana wind conditions. Within the LHMP, these events are addressed under the hazard category Severe Weather.
Tornado	No	Tornadoes do not occur within the City.
Tsunami	No	Not applicable due to distance from the coast.
Volcanic Activity	No	The City is not located within an active volcano area.
Wildfire	Yes	The City contains areas identified as fire hazards. Wildfire is profiled within the LHMP.
Winter Weather	Yes	The City does not typically experience severe winter storm events. However, Glendora does experience heavy rain events with extended durations. Within the LHMP, heavy rains events are addressed under the hazard category Severe Weather.

Source: City of Glendora, 2024; FEMA National Risk Index.

Note: * indicates a hazard that is not included in FEMA's National Risk Index but is locally relevant.

The following hazards are discussed within the LHMP:

- Climate Change (integrated into each hazard)
- Dam/Reservoir Failure
- Drought
- Flood
- Seismic and Geologic Hazards (ground shaking, liquefaction, landslides, mudflows, slope instability)
- Severe Weather (heavy rains, Santa Ana wind events, extreme heat)
- Wildfire

4.2 HAZARD PROFILES

This section contains profiles for the hazards identified as having the potential to occur in Glendora. Each hazard includes a description of the hazard, location of where the hazard may occur, history of the hazard, and the probability of the hazard's future occurrence.

The probability of future occurrences are based on historical frequencies, statistical probabilities, hazard probability maps, and other available information. Probabilities are defined as follows:

- Unlikely – There may or may not have been historic occurrences of the hazard in the community or region and data suggest that occurrences are unlikely. The chance of future occurrences is less than 1 percent each year.
- Occasional – There may or may not have been historic occurrences of the hazard in the community or region, but data suggest there is a possibility that the hazard will occur in the community. The chance of future occurrences is between 1 to 10 percent each year.
- Likely – There has been historic occurrences of the hazard in the community or region and data suggest it is likely that the hazard will continue to occur in the community. The chance of future occurrences is between 10 to 90 percent each year.
- Highly likely – There has been historic occurrences of the hazard in the community or region and data suggest it is highly likely to continue to occur in the community. The chance of future occurrences is 90 percent or above each year.

DAM/RESERVOIR FAILURE

Description

A dam is an artificial barrier preventing the flow of water or loose solid materials (such as soil or snow) or a barrier built across a watercourse for impounding water. Dam failure is the uncontrolled release of impounded water from behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, and terrorism can all cause a dam to fail. Dam failure causes downstream flooding that can affect life and property.

Reservoirs are defined as an artificial lake, pond, impoundment or tank, used to store water. Reservoirs can be created on the surface by constructing dams to store water. Additionally, tank reservoirs can be constructed to store water either above ground, on the surface, or below ground. Reservoir failure is the uncontrolled release of impounded water from a reservoir. Similar to dams, flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, and terrorism activities can all cause a reservoir to fail. Seismic activity may also cause inundation by the action of a differential movement of a reservoir and the water within, causing shearing or buckling of the reservoir infrastructure.

Dam or reservoir failures are most likely to happen for the following reasons:[1]

- Overtopping, caused by water spilling over the top of a dam; usually a precursor of dam failure because of inadequate spillway design, debris blockage of spillways, or settlement of the dam crest.
- Foundation defects, including settlement and slope instability.
- Cracking caused by natural settling of a dam or seismic movements.
- Inadequate maintenance and upkeep.
- Piping, when seepage through a dam is not properly filtered, soil particles continue to progress and form sinkholes in the dam.

FEMA and Cal OES require all dam owners to develop an Emergency Action Plan (EAP) for warning, evacuation, and post-flood actions. In the event of a major dam failure, mutual aid from all levels of government would be required for an extended period. Recovery efforts would include the removal of debris, clearing roadways, demolishing unsafe structures, assistance in reestablishing public services, and providing continued care for the affected population.

Dams are regulated by the Department of Water Resources, Division of Safety of Dams (DSOD). DSOD ensures dam safety by:[2]

- Reviewing and approving dam enlargements, repairs, alterations, and removals, and ensuring that the dam appurtenant structures are designed to meet minimum requirements.
- Performing independent analyses to understand dam and appurtenant structures performance, including structural, hydrologic, hydraulic, and geotechnical evaluations.
- Overseeing construction to ensure work is performed in accordance with approved plans and specifications.
- Inspecting each dam on an annual basis to ensure it is safe, performing as intended, and not development issues.
- Periodically reviewing the stability of dams and their major appurtenances in light of improved design approaches and requirements, as well as new findings regarding earthquake hazards and hydrologic estimates in California.

[1] Association of State Dam Safety Officials, *Dam Incident Database Search*, https://damsafety.org/Incidents, accessed July 19, 2023.
[2] California Department of Water Resources, *Division of Safety of Dams*, https://water.ca.gov/programs/all-programs/division-of-safety-of-dams, accessed June 4, 2024.

DSOD is responsible for assigning each jurisdictional dam a downstream hazard potential. The downstream hazard potential is based on potential downstream impacts to life and property should the dam fail when operating with a full reservoir. The downstream hazard is not related to the condition of the dam or the likelihood of the dam failing in either the short- or long-term. Dams in southern California usually do not operate at full capacity at all times of the year, and thus hazard risks and classifications are a worst-case scenario assessment. The DSOD definitions for downstream hazards are borrowed from the Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures. FEMA categorizes the downstream hazard potential into three categories – low, significant, and high – DSOD adds a fourth category of extremely high:[3]

- Low: No probable loss of human life and low economic and environmental losses. Losses are expected to be principally limited to the owner's property.
- Significant: No probable loss of human life but can cause economic loss, environmental damage, impacts to critical facilities, or other significant impacts.
- High: Expected to cause loss of at least one human life.
- Extremely High: Expected to cause considerable loss of human life or would result in an inundation area with a population of 1,000 or more.

Source: Kiewit, *Dams by Kiewit*, https://www.linkedin.com/posts/kiewit_dams-by-kiewit-activity-7034553427934265344-P1-Z, accessed November 21, 2024.

DSOD uses the U.S. Army Corps of Engineer's National Inventory of Dams condition assessment rating definition as a guideline in assigning condition assessments. A dam safety deficiency is defined as a load capacity limit or other issue that can result in a failure of the dam or appurtenant structure. It is a characteristic or condition that does not meet the applicable minimum regulatory criteria. Conditions assessment definitions are as follows:

Satisfactory	No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the minimum applicable state or federal regulatory criteria or tolerable risk guidelines. Typical Circumstances:

[3] California Department of Water Resources, Definitions for Downstream Hazard and Condition Assessment, https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Division-of-Safety-of-Dams/Files/Publications/Division-of-Safety-of-Dams-Definitions-for-Downstream-Hazard-and-Condition-Assessment.pdf, September 2021, accessed June 4, 2024.

- No existing deficiencies or potentially unsafe conditions are recognized, with the exception of minor operational and maintenance items that require attention.
- Safe performance is expected under all loading conditions including the design earthquake and design flood.
- Permanent risk reduction measures (reservoir restrictions, spillway modifications, operating procedures, etc.) have been implemented to eliminate identified deficiencies.

Fair	No existing dam safety deficiencies are recognized for normal operating conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action. Note: Rare or extreme events are defined by the regulatory agency based on their minimum applicable state or federal criteria. Other Circumstances: ▪ Lack of maintenance requires attention to prevent developing safety concerns. ▪ Maintenance conditions may exist that require remedial action greater than routine work and/or secondary studies or investigations. ▪ Interim or permanent risk reduction measures may be under consideration.
Poor	A dam safety deficiency is recognized for normal operating conditions which may realistically occur. Remedial action is necessary. Poor may also be used when uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency. Investigations and studies are necessary. Other Circumstances: ▪ Dam has multiple deficiencies or a significant deficiency that requires remedial work. ▪ Lack of maintenance (erosion, sinkholes, settlement, cracking, unwanted vegetation, animal burrows, inoperable outlet gates) has affected the integrity or the operation of the dam under normal operational conditions and requires remedial action to resolve. ▪ Critical design information is needed to evaluate the potential performance of the dam. For example, a field observation or a review of the dam's performance history has identified a question that can only be answered by review of the design and construction history for the dam. Uncertainty arises when there is no design and/or construction documentation available for review and additional analysis is needed to better understand the risk associated with operation under normal operational conditions. ▪ Interim or permanent risk reduction measures may be under consideration.
Unsatisfactory	A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.

	Typical Circumstances: ▪ A critical component of the dam has deteriorated to unacceptable condition or failed. ▪ A safety inspection indicates major structural distress (excessive uncontrolled seepage, cracks, slides, sinkholes, severe deterioration, etc.), advanced deterioration, or operational deficiencies which could lead to failure of the dam or its appurtenant structures under normal operating conditions. ▪ Reservoir restrictions or other interim risk reduction measures are required. ▪ A partial or complete reservoir drawdown may be mandated by the state or federal regulatory agency.
Not Rated	The dam has not been inspected, is not under state jurisdiction, or has been inspected but, for whatever reason, has not been rated.

Location and Extent

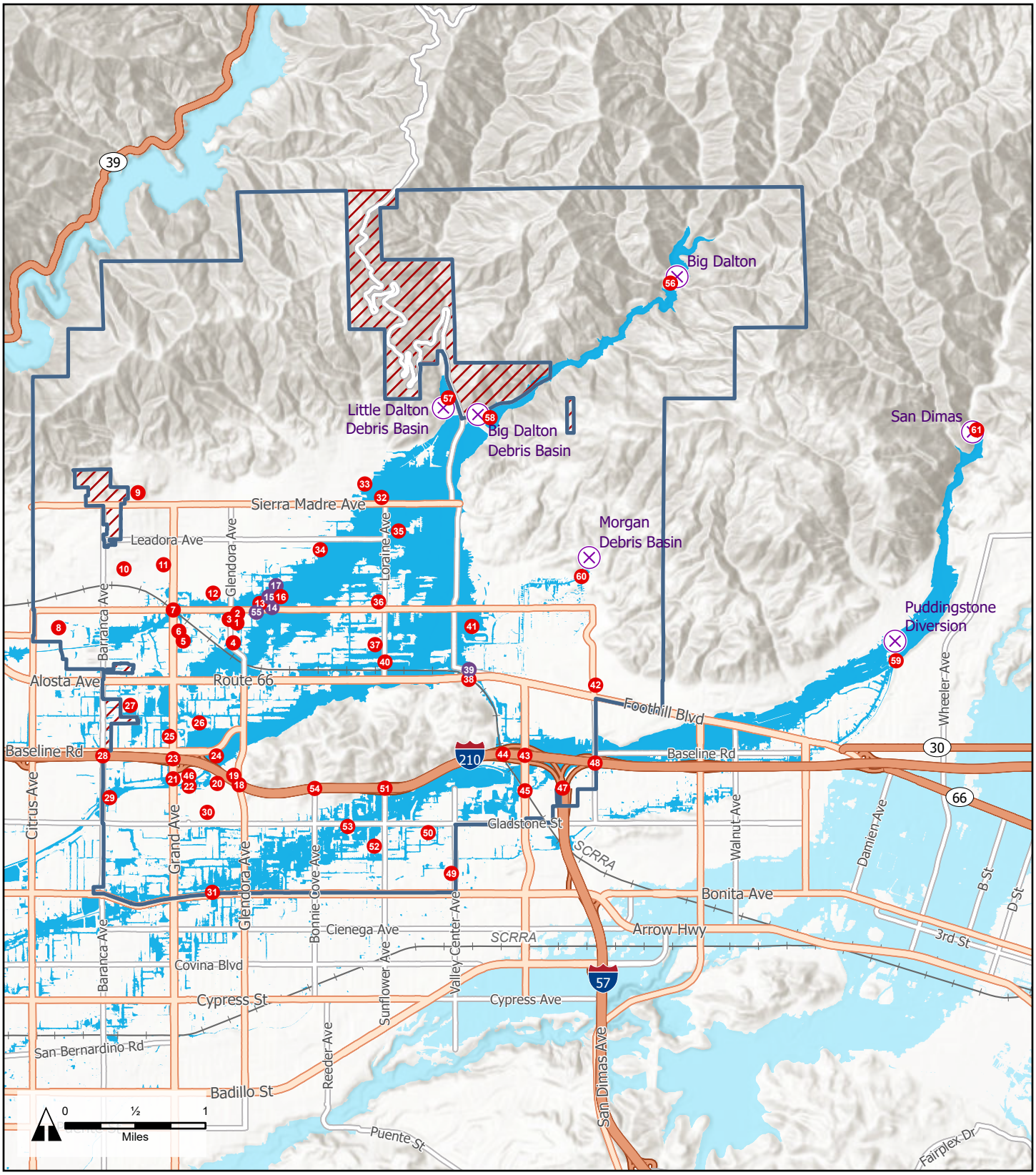
Critical dams and reservoirs with the potential to inundate parts of the City are identified in Table 4-2, *Dams With Inundation Areas Affecting Glendora* and shown on Figure 4-1, *Dams With Inundation Areas Affecting Glendora*. DSOD's downstream hazard potential and condition assessment for each dam and reservoir are also provided in Table 4-2.

TABLE 4-2: DAMS WITH INUNDATION AREAS AFFECTING GLENDORA

Name of Dam	Owner	Dam Purpose	Downstream Hazard Potential	Condition Assessment
Little Dalton Debris Basin	Los Angeles County Department of Public Works	Debris Control, Flood Risk Reduction	Extremely High	Satisfactory
Big Dalton Debris Basin	Los Angeles County Department of Public Works	Debris Control, Flood Risk Reduction	High	Satisfactory
Big Dalton	Los Angeles County Department of Public Works	Flood Risk Reduction, Water Supply	Extremely High	Satisfactory
Puddingstone Diversion	Los Angeles County Department of Public Works	Other, Flood Risk Reduction	High	Satisfactory
Morgan Debris Basin	Los Angeles County Department of Public Works	Debris Control	High	Satisfactory
San Dimas	Los Angeles County Department of Public Works	Flood Risk Reduction, Irrigation, Water Supply	Extremely High	Satisfactory

Source: Department of Water Resources, Division of Safety of Dams, *Dams Within Jurisdiction of the State of California, Dams Listed Alphabetically by Dam Name*, September 2023; National Inventory of Dams, *Dams of the Nation*, https://nid.sec.usace.army.mil/#/, accessed June 4, 2024.

The geographic extent of dam or reservoir failure is dependent on the type of infrastructure and amount of water stored at the time of the hazard incident. Development of maps that show inundation areas in the event of dam failure is the responsibility of the dam's owner. Inundation maps have been prepared as part of the EAP effort through DSOD and Cal OES. As shown in Figure 4-1, inundation areas occur within a significant portion of the central and southern areas of the City, trending in a southwesterly direction, generally between Little Dalton Wash and Big Dalton Wash, and along San Dimas Wash. Inundation areas include, but are not limited to, residential and commercial uses. A total of 2,168.4 acres within the City and Sphere of Influence (SOI) are located within inundation areas.



LEGEND

- Critical Facility
- Facility of Concern
- City of Glendora
- Sphere of Influence
- Dam with Inundation Area Affecting Glendora
- Dam Failure Inundation Areas affecting Glendora
- Nearby Dam Failure Inundation Areas

CITY OF GLENDORA, CALIFORNIA

Figure 4-1. Dams with Inundation Areas Affecting Glendora

Sources: California Department of Water Resources, Division of Dam Safety; Los Angeles County GIS. Map date: December 12, 2024.

Previous Occurrences

The City of Glendora has not experienced a dam or reservoir failure. Since the 20th century, there have been a total of seven dam incidences deemed as failures in California. Of these, six have been in southern California; refer to Table 4-3, *Dam Failures in Southern California*. The most recent dam failure occurred in the San Fernando Valley area of Los Angeles County in 1971.

TABLE 4-3: DAM FAILURES IN SOUTHERN CALIFORNIA

Name of Dam	City/Region	County	Year	Reason for Failure
Lower Otay	Chula Vista	San Diego	1916	Heavy flooding, overtopped; 30 fatalities
Sweetwater	Bonita	San Diego	1916	Heavy flooding, overtopped; 30 fatalities
Sheffield	Santa Barbara	Santa Barbara	1925	Earthquake-induced slide
Saint Francis	San Francisquito Canyon	Los Angeles County	1928	Sudden failure at full capacity due to poor construction; 450 fatalities
Baldwin Hills	Los Angeles	Los Angeles County	1963	Leak through embankment turned into washout; 5 fatalities
San Fernando/ Van Norman	San Fernando/ Granada Hills	Los Angeles County	1971	Earthquake-induced slide; failed due to poor construction

Source: Association of State Dam Safety Officials, *Dam Incident Database Search*, https://damsafety.org/incidents, accessed June 5, 2024.

Probability of Future Occurrences

The primary hazards that could cause failure of the reservoirs and their associated dams are strong earthquake ground shaking, seiche, and liquefaction. Seiches are changes or oscillations of water levels within a confined water body caused by fluctuation in the atmosphere, tidal currents, or earthquakes. All the sites listed in Table 4.1 would be subject to seismic ground shaking, as is the entire southern California region, due to the presence of numerous major faults; refer to the Seismic and Geologic Hazards Profile for more information. In addition, portions of the Little Dalton Debris Basin, Big Dalton Debris Basin, and Puddingstone Diversion are within a mapped liquefaction zone; portions of the Big Dalton, Morgan Debris Basin, and San Dimas are within a mapped landslide zone; and the Big Dalton Debris Basin is underlain by the Sierra Madre fault zone. There have been no dam or reservoir failures near the City and no recent failures within Los Angeles County. Over the years, the State of California has implemented stringent standards, regulations, and regular inspections of dam facilities, including after the Oroville Dam crisis in 2017, requiring additional inundation mapping and emergency preparedness planning. Additionally, as shown in Table 4-2, all dams with the potential to inundate parts of Glendora have received a condition assessment rating of “satisfactory” by the DSOD. Therefore, the probability of future occurrences of reservoir or dam failure is considered to be unlikely.

Climate Change Considerations

Dam/reservoir failure is not directly correlated to climate change. Dam and reservoir failure could be caused by seismic activity, which is also not caused by climate change. However, ground failure (due to oversaturated soils) compromising infrastructure integrity or heavy rains overtopping dams could occur. Repetitive severe storm events could increase “wear and tear”

and require additional maintenance and infrastructure improvements to protect dam and reservoir integrity and function. Largely, dam and reservoir operations occur outside of climate change and are not directly impacted by climate change conditions.

DROUGHT

Description

Drought in its simplest definition is an extremely dry climatic period where the available water falls below a statistical average for a region. Drought is also defined by factors other than rainfall, including vegetation conditions, agricultural productivity, soil moisture, water levels in reservoirs, and stream flow. Droughts or water shortages are a gradual phenomenon, occurring over multiyear periods and increasing with the length of dry conditions. When precipitation is less than normal for a period, the flow of streams and rivers declines, water levels in lakes and reservoirs fall, and the depth to water in wells increases. If dry weather persists and water supply problems develop, the dry period can become a drought. Drought cycles are common in southern California and are influenced by cyclical El Niño and La Niña events.

El Niño and La Niña are opposing weather phenomena that significantly impact global climate patterns.[4] El Niño occurs when Pacific trade winds weaken, causing warm ocean water to move eastward toward the Americas. This shift in water temperature alters atmospheric circulation, resulting in wetter conditions and increased flooding in the southern U.S. La Niña, the opposite of El Niño, occurs when trade winds strengthen, pushing more warm water toward Asia and increasing upwelling along the west coast of the Americas. This results in drier conditions in the southern U.S., often resulting in droughts.

The term “drought” can have different meanings depending on how a water deficiency affects day to day activities. Drought is a complex natural hazard, which is reflected in the following four definitions commonly used to describe it:[5]

- Agricultural – Agricultural drought is based on the impacts to agriculture by factors such as rainfall deficits, soil water deficits, reduced groundwater, or reservoir levels needed for irrigation.
- Hydrological – Hydrological drought is based on the impact of rainfall deficits on the water supply such as stream flow, reservoir and lake levels, and ground water table decline.
- Meteorological – Meteorological drought is based on the degree of dryness or rainfall deficit and the length of the dry period.

[4] National Oceanic and Atmospheric Administration, *What are El Niño and La Niña?*, https://oceanservice.noaa.gov/facts/ninonina.html, accessed June 10, 2024.
[5] National Oceanic and Atmospheric Administration, *Understanding Drought and How to Respond*, https://www.weather.gov/safety/drought, accessed June 5, 2024.

- Socioeconomic – Socioeconomic drought is based on the impact of drought conditions (meteorological, agricultural, or hydrological drought) on supply and demand of some economic goods. Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related deficit in water supply.

Although climate is a primary contributor to hydrological drought, other factors such as changes in land use (i.e., deforestation), land degradation, and the construction of dams all affect the hydrological characteristics of a region. Since regions are interconnected by natural systems, the impact of meteorological drought may extend well beyond the borders of the precipitation-deficient area. Changes in land use upstream may alter hydrologic characteristics such as infiltration and runoff rates, resulting in more variable stream flow and a higher incidence of hydrologic drought downstream. Land use change is one way human actions alter the frequency of water shortage even when no change in precipitation has been observed.

Droughts cause public health and safety impacts, as well as economic and environmental impacts. Public health and safety impacts are primarily associated with catastrophic wildfire risks and drinking water shortage risks for small water systems in rural areas and private residential wells. Examples of other impacts include costs to homeowners due to loss of residential landscaping, degradation of urban environments due to loss of landscaping, agricultural land fallowing and associated job loss, degradation of fishery habitat, and tree mortality with damage to forest ecosystems. Drought conditions can also result in damage to older infrastructure that is located within dry soils with potential to leak or break. Dead or dying vegetation poses a risk to falling and damaging structures and infrastructure systems.

In Los Angeles County, drought conditions typically result in implementation of large-scale conservation efforts, reducing water supplies to customers and altering the pricing system by implementing higher rates for water usage that exceeds certain levels (i.e., wasteful). Higher rates that may be imposed during a drought could have disproportionate impacts on lower-income households. Reduction in groundwater supplies during drought conditions can also result in the need for water agencies that have high reliance on local groundwater supplies to purchase larger amounts of imported water. Drought conditions have also resulted in drier brush and an increase in the size and severity of wildfires; refer to the Wildfire Hazard Profile for further discussion.

Location and Extent

Droughts are generally widespread events that could easily affect the entire City of Glendora, and the larger Los Angeles County region. The geographic extent of drought conditions could extend to every resident and business owner receiving water from the City of Glendora Water Division, Suburban Water Systems, and the City of Azusa Light & Water Department, the water suppliers for the City. These three water suppliers rely on imported water from other regions (e.g., Colorado River and Northern California) via aqueducts. As a result, droughts can be caused or made worse by conditions in the regions in which the water originates.

Drought severity depends on numerous factors, including duration, intensity, geographic extent, as well as regional water supply demands by humans and vegetation. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity. The magnitude of drought is usually measured in time and the severity of the hydrologic deficit.

The U.S. Drought Monitor is a map released weekly that indicates the portions of the United States that are experiencing drought and the severity of the drought based on five classifications: abnormally dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought: moderate (D1), severe (D2), extreme (D3), and exceptional (D4); refer to Table 4-4, *Drought Severity Classification*.

TABLE 4-4: DROUGHT SEVERITY CLASSIFICATION

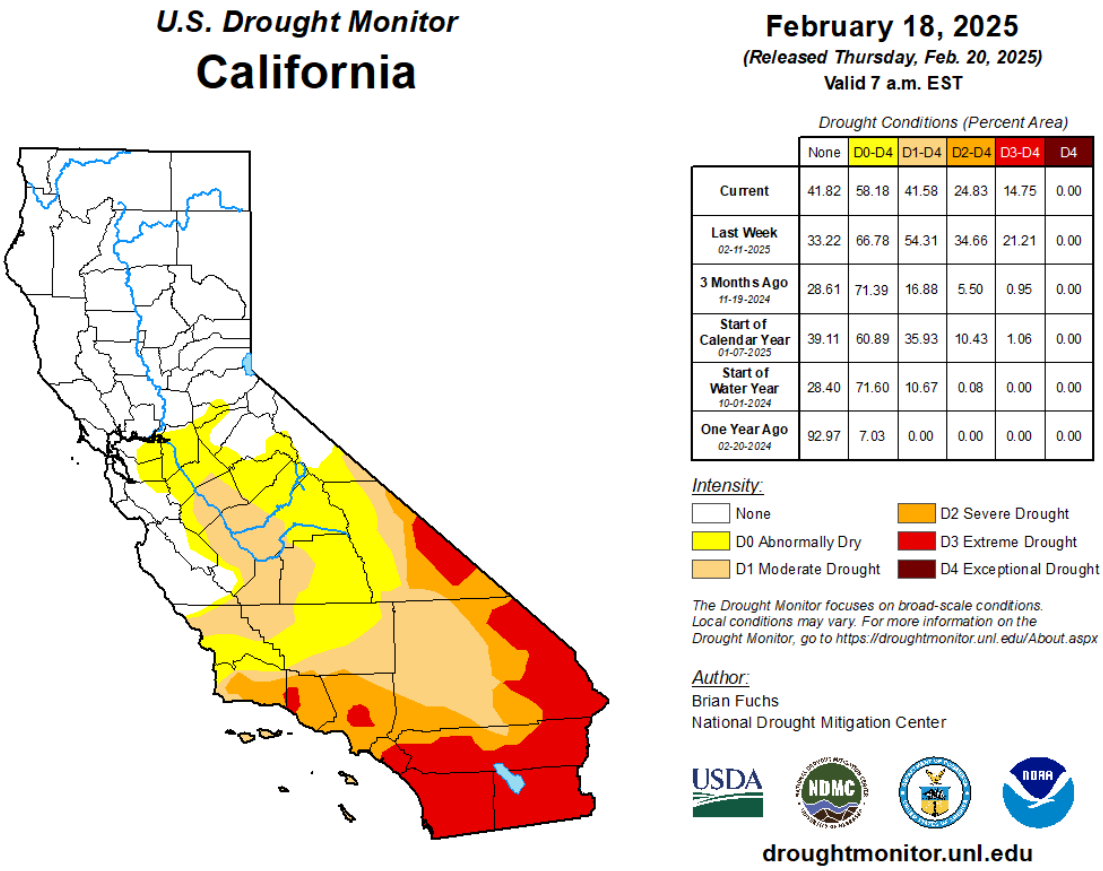
Category	Description	Possible Impacts
D0	Abnormally Dry	Active fire season begins; dryland crop germination is stunted; soil is dry; snowpack is minimal.
D1	Moderate Drought	Dryland pasture growth is stunted; landscaping and gardens need irrigation earlier; wildlife patterns begin to change; stock ponds and creeks are lower than usual. .
D2	Severe Drought	Fire season is longer, with high burn intensity, dry fuels, and large fire spatial extent; river flows decrease; reservoir levels are low, and banks are exposed.
D3	Extreme Drought	Fire season lasts year-round; water conservation rebate programs increase; water use restrictions are implemented.
D4	Exceptional Drought	Water shortages are widespread; surface water is depleted; poor air quality affects health; fields are left fallow.

Source: U.S. Drought Monitor, *Drought Classification*, https://www.droughtmonitor.unl.edu/About/AbouttheData/DroughtClassification.aspx, accessed June 3, 2024; U.S. Drought Monitor, *California*, https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CA, accessed June 3, 2024.

The Drought Monitor is not a forecast but looks backward, providing a weekly assessment of drought conditions based on how much precipitation did or did not fall. Because drought is a slow-moving hazard, it may take more than one good rainfall to end a drought, especially if an area has been in drought for a long time.

Figure 4-2, *Drought Monitor Map*, depicts the drought monitor map, which identifies areas of drought and labels them by intensity as shown in Table 4-3. As of February 18, 2025, Los Angeles County is classified as D1, D2, and D3 by the U.S. Drought Monitor, meaning parts of the County are currently experiencing moderate-to-extreme drought conditions. Glendora is identified as D2, meaning it is experiencing severe drought conditions.

FIGURE 4-2: DROUGHT MONITOR MAP



Source: United States Drought Monitor, *California*, https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CA, accessed February 25, 2025.

Previous Occurrences

Although defining drought can be challenging across a large geography, California has experienced numerous severe droughts over the past century. FEMA declared one drought emergency for California in January 1977, and other drought emergency declarations have been declared by the State. According to the 2023 State Hazard Mitigation Plan, from 1950 to 2022, there were 11 drought State Emergency Proclamations in California.[6]

Table 4-5, *Historical Droughts*, shows the historical droughts that have occurred in California from 1827 through the present.

[6] California Governor's Office of Emergency Services, *2023 California State Hazard Mitigation Plan*, https://www.caloes.ca.gov/wp-content/uploads/Hazard-Mitigation/Documents/2023-California-SHMP_Volume-1_11.10.2023.pdf, published August 2023, accessed June 4, 2024.

TABLE 4-5: HISTORICAL DROUGHTS

Date	Area Affected	Notes
1827-1916	Statewide	Multiyear: 1827–29, 1843–44, 1856–57, 1863–64 (particularly extreme), 1887–88, 1897–1900, 1912–13.
1917-21	Statewide except central Sierra Nevada and north coast	Simultaneous in affected areas, 1919–20. Most extreme in north.
1922–26	Statewide except central Sierra Nevada	Simultaneous in effect for entire State only during 1924, which was particularly severe.
1928-37	Statewide	Simultaneously in effect for the entire State, 1929–34. Longest, most severe in State's history.
1943–51	Statewide	Simultaneously in effect for entire State, 1947–49. Most extreme in south.
1959–62	Statewide	Most extreme in Sierra Nevada and central coast.
1976–77	Statewide, except for southwestern deserts	Driest 2 years in State's history. Most severe in northern two-thirds of State.
1987–92	Statewide	Moderate, continuing through 1989. Most extreme in northern Sierra Nevada.
2000-2002	Statewide	Most severe in southern California.
2007-2009	Statewide	Twelfth driest 3-year period on record at the time. Most severe in western San Joaquin Valley.
2012-17	Statewide	Most severe California drought on record.
2021-23	Statewide	Drought emergency proclamation issued in April 2021 with additional orders May 2021, July 2021, October 2021, and October 2022. Drought restrictions eased in March 2023.

Source: Paulson, Chase, Roberts, and Moody, *National Water Summary 1988-89-- Hydrologic Events and Floods and Droughts*, 1991; California Department of Water Resources, *California's Most Significant Droughts: Comparing Historical and Recent Conditions*, February 2015; California Governor's Office of Emergency Services, *2023 California State Hazard Mitigation Plan*, August 2023.

The most severe drought on record began in 2012 and continued through 2016. On January 17, 2014, the governor of California declared a State drought emergency, and on April 1, 2014 the governor announced the first-ever mandatory 25 percent statewide water use reduction and a series of actions to help save water, increase enforcement to prevent wasteful water use, streamline the State's drought response, and invest in new technologies that would make California more drought resilient. At the time of the announcement, the volume of snowpack in California's mountains was approximately 14 percent of normal. Despite multiple storms in February 2014, drought conditions persisted. By the end of May 2014, all of California was in a condition of "extreme" or "exceptional" drought. At the same time, the volume of snowpack had decreased to less than 10 percent of normal and water stored in Statewide Reservoirs was at 56 percent of normal.[7] On April 7, 2017, the governor issued an executive order ending the drought emergency in Southern California, including Los Angeles County.

On October 19, 2021, the governor of California declared a State drought emergency, which added the eight counties, including Los Angeles County (not included within an executive order

[7] California Department of Water Resources, *California's Most Significant Droughts: Comparing Historical and Recent Conditions*, February 2015.

in April, May, or July 2021) calling for a voluntary reduction of water use by 15 percent across California.[8] This declaration followed the second driest year on record and near record low storage in California's largest reservoirs. The proclamation required local water suppliers to implement water shortage contingency plans responsive to local conditions and prepare for the possibility of a third dry year. On March 28, 2022, the governor issued an executive order noting continued drought conditions and requiring urban water suppliers to activate, at a minimum, Level 2 of their customized Water Shortage Contingency Plans. These plans, required by State law, are developed by local water agencies to navigate drought and each plan is customized based on an agency's unique infrastructure and management. Triggering Level 2 of these plans involves implementing water conservation actions to prepare for a water shortage level of up to 20 percent. For example, in many communities, this would mean reducing the number of days that residents can water outdoors, among other measures. On March 24, 2023, the governor rolled back some drought emergency provisions that were no longer needed due to improving water conditions, while maintaining other measures that support regions and communities still facing water supply challenges, and that continue building up long-term water resilience.[9]

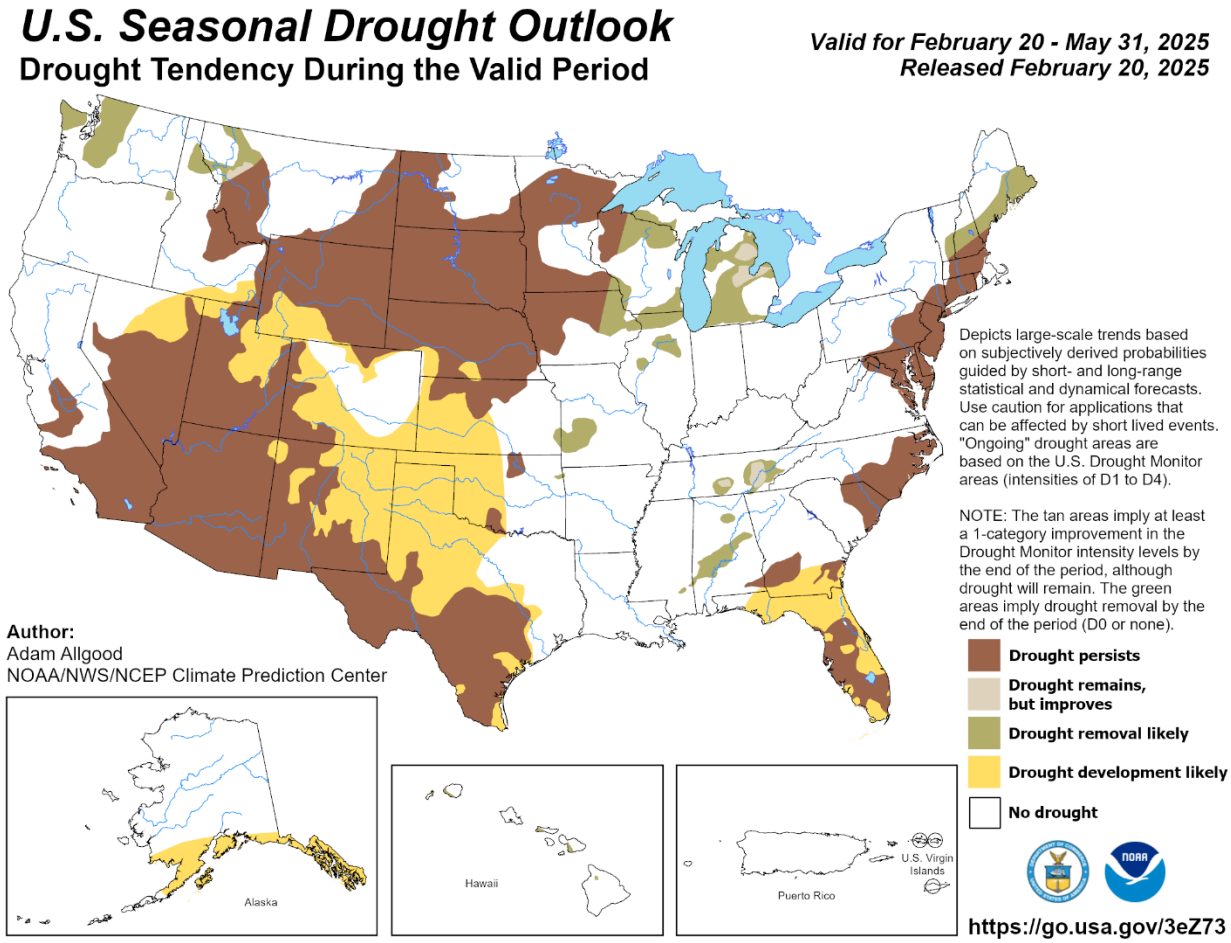
The City of Glendora Water Division provides water conservation programs and resources, including education programs, free water efficiency upgrades and rebates, water smart gardening workshops, water saving tips, and leak reporting.[10] During drought conditions, the City of Glendora Water Division educates residents and business owners regarding State-mandated water conservation measures. The City's Municipal Code (Chapter 14.34, *Water Conservation* and 21.03.060, *State Model Water Efficient Landscaping Ordinance Adopted by Reference*) includes water conservation and landscape water use standards, guidelines, and calculations to promote conservation and efficient use of water in the City.

Probability of Future Occurrences

Based on previous occurrences and trends in California, the likelihood that Glendora will experience drought conditions in the future is considered high. The U.S. Seasonal Drought Outlook depicts large-scale trends based on U.S. Drought Monitor areas (intensities of D1 to D4), as shown in Figure 4-3, *U.S. Seasonal Drought Outlook*. The coastal southern California region, including Glendora, is currently showing drought tendencies that are likely to persist. The probability of future occurrences is considered highly likely.

[8] California Governor's Office, *Proclamation of a State of Emergency*, October 2021.
[9] Governor Gavin Newsom, *Governor Newsom Eases Drought Restrictions*, https://www.gov.ca.gov/2023/03/24/governor-newsom-eases-drought-restrictions/, accessed June 5, 2024.
[10] City of Glendora, Water Conservation, https://www.cityofglendora.org/departments-services/public-works/water/water-conservation, accessed June 5, 2024.

FIGURE 4-3: U.S. SEASONAL DROUGHT OUTLOOK



Source: National Weather Service Climate Prediction Center, *U.S. Seasonal Drought Outlook*, https://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png, accessed February 25, 2025.

Climate Change Considerations

Climate change can exacerbate droughts by making them more frequent, longer, and more severe. According to the 2023 State Hazard Mitigation Plan, there is a high probability of future drought events in the State, with at least one period of drought occurring somewhere in California every year. Climate scientists studying California find that drought conditions are likely to become more frequent and persistent over the twenty-first century due to climate change, such as more frequent and extended periods of high temperature conditions. Decreasing snowmelt, reduced precipitation, and higher temperatures are all expected effects of climate change. The *California Adaptation Planning Guide* states that the pressure climate change places on ground water reliance during times of drought is not sustainable. *California's Fourth Climate Change Assessment* states that California has experienced a succession of dry spells, and with warmer conditions the impacts of these droughts have increased. Additionally, recent droughts (2012-2016 and 2020-2022) have been followed by very wet winters, providing further indication of continued climate volatility. Increasing populations and increasing demand for water in southern

portions of California are anticipated to continue and may result in future challenges associated with drought conditions and climate change for Glendora and other communities.

Governor Brown's 2014 drought emergency declaration noted that droughts could occur more regularly into the future. Additionally, Governor Newsom's 2022 executive order notes that climate change continues to intensify the impacts of droughts. The experiences faced by water supply agencies during the recent and current droughts have prompted actions to examine water storage, distribution, management, conservation, and use policies more closely. Water districts drafted administrative drought actions and implemented mechanisms allowing for administrative consistency and coordination to address drought conditions statewide.

FLOOD

Description

Flooding occurs when a waterway, either a natural one or an artificial drainage channel, receives more water than it is capable of conveying, causing the water level in the waterway to rise. Depending on how long these conditions last and the amount of water the waterway receives in proportion to its capacity, the rising water level may eventually overtop the waterway's banks or any other boundaries to the drainage area, resulting in flooding in the surrounding area.

Floods often occur during heavy precipitation events, when the amount of rainwater exceeds the capacity of storm drains or flood control channels. Floods can also happen when infrastructure such as levees, dams, or culverts fail, or when a section of drainage infrastructure fails, and water cannot be drained from an area fast enough. These failures can be linked to precipitation events (i.e., when water erodes away a levee, allowing water to escape and flood nearby areas), or can be a consequence of other emergency situations (i.e., a dam collapsing due to an earthquake).

FEMA defines flood or flooding as a general and temporary condition of partial or complete inundation of normally dry land areas from:

- The overflow of inland or tidal waters;
- The unusual and rapid accumulation or runoff of surface waters from any source; or,
- Mudslides (i.e., mudflows) which are proximately caused by flooding and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.

Floods can be caused by several factors, including:

- Weather and climate patterns (e.g., El Niño, La Niña, Pineapple Express, Atmospheric River, etc.)

  - El Niño and La Niña are complex weather patterns resulting from variations in ocean temperatures in the equatorial Pacific. Warmer or colder than average ocean temperatures in one part of the world can influence weather around the globe. El Niño and La Niña episodes typically last 9 to 12 months, but some prolonged events may last for years.[11]
  - Pineapple Express is a name given to an atmospheric river on the West Coast. It is a channel in the atmosphere that moves vast amounts of moisture and can result in massive showers.
- Hydrologic features such as reservoirs, ponds, lakes, rivers, etc. can have a large impact on the amount of flooding.
- The absorption capacity of the ground depends on the composition of soil and bedrock of the area. Less absorbent soil conditions in addition to lack of proper storm infrastructure can result in flooding.
- Type and density of vegetation is related to absorption of moisture affecting the flow of water.
- Patterns of land use/urbanization relates to the pervious and impervious nature of the ground.
- Expected level, age, and condition of flood management infrastructure will impact flooding conditions.
- Large-scale wildfires dramatically alter the terrain and ground conditions. Vegetation absorbs rainfall, reducing runoff. However, wildfires leave the ground charred, barren, and unable to absorb water, creating conditions ripe for flash flooding and mudflow. Flood risk remains significantly higher until vegetation is restored – up to five years after a wildfire.[12]

The force of a flood can be enough to carry away large objects and damage structures, causing considerable damage to buildings and infrastructure. In severe instances, floodwaters themselves can destroy structures or move them off their foundation. Floods can saturate and weaken soil, potentially making structures built on them more susceptible to damage or collapse. Flooding can affect water quality, as large volumes of water can transport contaminants into water bodies and overload storm and wastewater systems. Additionally, large increases in water volume can cause water body erosion and loss of aquatic habitat. It can also cause great economic loss to people and government due to the destruction of roads, bridges, farms, businesses, houses, and automobiles.

[11] National Oceanic and Atmospheric Administration, *What are El Niño and La Niña?*, https://oceanservice.noaa.gov/facts/ninonina.html, accessed June 10, 2024.
[12] Federal Emergency Management Agency, *Flood Risks Increase After Fires*, https://www.fema.gov/sites/default/files/documents/fema_flood-after-fire_factsheet_nov20.pdf, accessed June 4, 2024.

Location and Extent

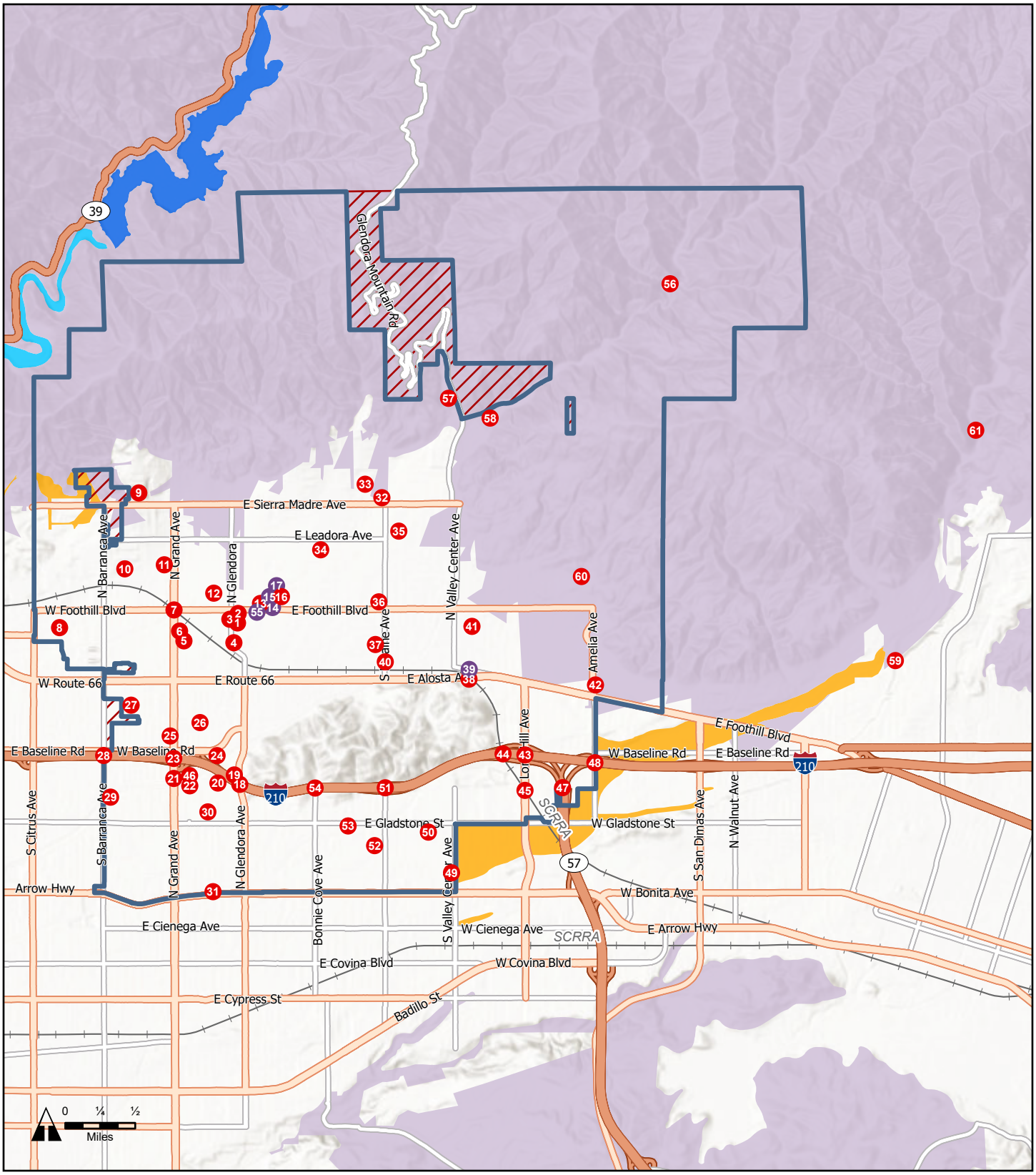
The City is adjacent to the San Gabriel Mountains and located within the San Gabriel River Watershed. The San Gabriel River Watershed is in the eastern portion of Los Angeles County where it is bounded by the San Gabriel Mountains to the north, San Bernardino/Orange County to the east, the division of the Los Angeles River from the San Gabriel River to the west, and the Pacific Ocean to the south.[13] The watershed drains into the San Gabriel River from the San Gabriel Mountains flowing 58 miles south until its confluence with the Pacific Ocean. Three flood channels traverse Glendora: Little Dalton Wash, Big Dalton Wash, and San Dimas Wash. The concreted-lined channels serve as floodways that manage floodwater flow.

Flood zones within Glendora are determined by Flood Insurance Rate Maps (FIRMs), produced by FEMA in partnership with various communities. A FIRM is the official flood map that shows a community's flood hazard areas. These may include high-hazard (Special Flood Hazard Areas [SFHA]), moderate- to low-hazard areas, and undetermined areas. A SFHA map shows the 100-year floodplain, divided into zones A and AE.[14] A FIRM also includes 500-year floodplains and higher, classified as moderate and minimal risk areas. The extent or magnitude of flooding is measured by percentage and annual chance floods. A 100- and 500-year flood is an event that has a 1 in 100 (1 percent) and 1 in 500 (0.2 percent) chance, respectively, of occurring in any given year. This data is incorporated into FIRMs to support the National Flood Insurance Program (NFIP) and provide the basis for community floodplain management regulations and flood insurance requirements.

A regulatory floodway is a subset of the 100-year floodplain and is defined by FEMA as the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities must regulate development in these floodways to ensure that there are no increases in flood elevations.

Figure 4-4, *Flood Hazard Zones*, shows the locations of flood zones in Glendora, and Table 4-6, *Acreage by FEMA Flood Zones*, provides the details and acreage of these zones that occur within the planning area. The majority of developed areas in Glendora are identified as Zone X, meaning that the area is located outside of SFHAs and have minimal risk of flood hazard. Potential flooding could occur in a northwestern portion of the City mapped within the 500-year floodplain, generally located along Sierra Madre Avenue. Additionally, a significant portion of the City has not been mapped for flood hazards by FEMA. These unmapped areas occur in the northern and eastern foothills of the City and generally consist of open space and low-density residential uses. Development within flood hazard areas is expected to comply with flood protection standards that reduce vulnerability to flood impacts and ensure safe use and occupation of structures.

[13] County of Los Angeles Public Works, *San Gabriel River Watershed*, http://www.ladpw.org/wmd/watershed/sg/, accessed July 7, 2023.
[14] Federal Emergency Management Agency, *National Flood Insurance Program, Flood Insurance Manual*, April 2024, https://www.fema.gov/sites/default/files/documents/fema_nfip_flood-insurance-manual_042024.pdf, accessed June 10, 2024.



LEGEND

- Critical Facility
- Facility of Concern
- City of Glendora
- Sphere of Influence
- 100-year Flood Zone
- 100-year Flood Zone (contained in channel)
- 500-year Flood Zone
- unshaded — Area of Minimal Flood Hazard
- No Flood Hazard Study has been Conducted

Sources: FEMA National Flood Hazard Layer, Los Angeles County, 10-19-2023; Los Angeles County GIS. Map date: December 12, 2024.

CITY OF GLENDORA, CALIFORNIA

Figure 4-4. Flood Hazard Zones

TABLE 4-6: ACREAGE BY FEMA FLOOD ZONES

Flood	Risk	Area (Acres)
100-Year Flood and Regulatory Floodway	High	0.0
500-Year Flood	Moderate to Minimal	49.8
Area of Minimal Flood Hazard (Zone X)	Minimal	5,859.3
Undetermined/No Study Conducted (Zone D)	Undetermined	7,333.5

Source: Federal Emergency Management Agency, June 18, 2024.

Flooding can also occur outside of mapped flood hazard zones during heavy rain events associated with extensive runoff. Localized flooding typically occurs when significant amounts of rain fall over a short time and/or, because of overloaded or blocked stormwater drainage systems that cause sheet flow into streets and low-lying areas.

Source: Ralls, T., ABC 7, *Rain floods Southern California roads*, *https://abc7.com/rain-flooding-mud-slide-socal-camarillo-glendora-silverado-flow-debris-southern-california-la/419008/*, accessed November 21, 2024.

Previous Occurrences

Past occurrences of flood damage in the City of Glendora have occurred as early as 1938, when one of the worst rainstorms on record caused overflow of the Little Dalton Wash channel and street flooding throughout the City.[15] Another significant flood event affecting the City of Glendora occurred in 1969 and was caused by intense rainfall.[16] The 1969 flood event had a significant impact, particularly in the northern part of the City, where flooding and mudslides caused over 50 million dollars in damages to private and public properties. Improvements to City and County flood control systems after these events has greatly reduced the flooding hazard in Glendora.

[15] The Glendora Press-Gleaner, *Glendora Escapes with Minor Damage as Rain Floods Southland Area*, March 4, 1938, https://ccdl.claremont.edu/digital/collection/cwd/id/4756, accessed June 10, 2024.
[16] U.S. Geologic Survey, *Flood of January 1969 near Azusa and Glendora, California*, https://pubs.er.usgs.gov/publication/ha424, accessed June 10, 2024.

The National Weather Service report, *A History of Significant Weather Events in Southern California*, includes a chronological list of events organized by weather type.[17] One of these events specifically mentions heavy rainfall occurring in Glendora in 1956. Additionally, the National Oceanic and Atmospheric Administration (NOAA) Storm Event Database summarizes flood events of regional significance affecting the City of Glendora. These are documented below:[18]

- In May 1998, heavy rain produced local urban flooding across Los Angeles County. Local street flooding was reported in Glendora.
- In April 1999, moderate to locally heavy rainfall produced minor street flooding across coastal areas of Ventura and Los Angeles counties.
- In February 2000, heavy rain totaling two to six inches produced flash flooding across Santa Barbara, Ventura, and Los Angeles counties. Flash flooding and mudslides closed parts of San Gabriel Canyon Road in the Angeles National Forest. The heavy showers resulted in numerous reports of street flooding across the area.
- In March 2000, heavy showers produced widespread street flooding across Los Angeles County.
- In April 2000, a powerful Pacific storm brought heavy rain, causing urban flooding in Los Angeles County.
- In March 2001, Los Angeles county received one to three inches of heavy rainfall, with numerous reports of flooding and mudslides.
- In February 2003, a powerful winter storm brought heavy rain to southern California. Rainfall totals over coastal areas ranged from one to five inches with higher amounts in the mountains. Widespread flooding was reported across Los Angeles County.
- In January 2005, a powerful Pacific storm brought heavy rain, snow, flash flooding, high winds and landslides to central and southern California. During the five-day event, rainfall totals ranged from three to 10 inches over coastal areas with up to 32 inches in the mountains
- In January 2008, a powerful Pacific storm brought strong winds, heavy rainfall, flash flooding, and winter storm conditions to central and southern California. Rainfall totals ranged from five to 11 inches in the foothills and mountains. The heaviest rainfall fell over favored south-facing mountain slopes.
- In January 2010, a series of powerful winter storms affected central and southern California. As this series of storms moved across the area, they brought heavy rain, flash flooding, gusty

[17] National Weather Service, *A History of Significant Weather Events in Southern California*, https://www.weather.gov/media/sgx/documents/weatherhistory.pdf, March 2024.
[18] National Oceanic and Atmospheric Administration, *Storm Events Database*, https://www.ncdc.noaa.gov/stormevents/, accessed Jun 10, 2024.

winds, heavy snow, and severe weather to the area. Rainfall ranged from eight to 16 inches in the foothills and mountains.

- In February 2014, heavy showers and thunderstorms moved across the communities of Azusa and Glendora, generating flash flooding and debris flows. Rainfall totals ranged from between six and 12 inches across the mountains and foothills. Law enforcement reported that several homes were damaged due to debris flows.
- In January 2016, a powerful winter storm brought heavy rain and snow, flash flooding, and gusty winds to the Los Angeles area. Rainfall totals from this storm generally ranged between two and six inches with locally higher amounts in some foothill areas.
- In December 2021, a winter storm hit southern California, producing heavy rainfall ranging between two to eight inches. Numerous reports of nuisance roadway flooding as well as downed trees were reported.
- In August 2023, Tropical Storm Hilary brought heavy rain and significant flooding to Ventura and Los Angeles counties. Rainfall totals in mountain areas ranged between three to nine inches. Rainfall rates were impressive, with rates of around one inch in less than an hour reported at times. With such heavy rainfall, numerous reports of flash flooding as well as mud and debris flows were received.

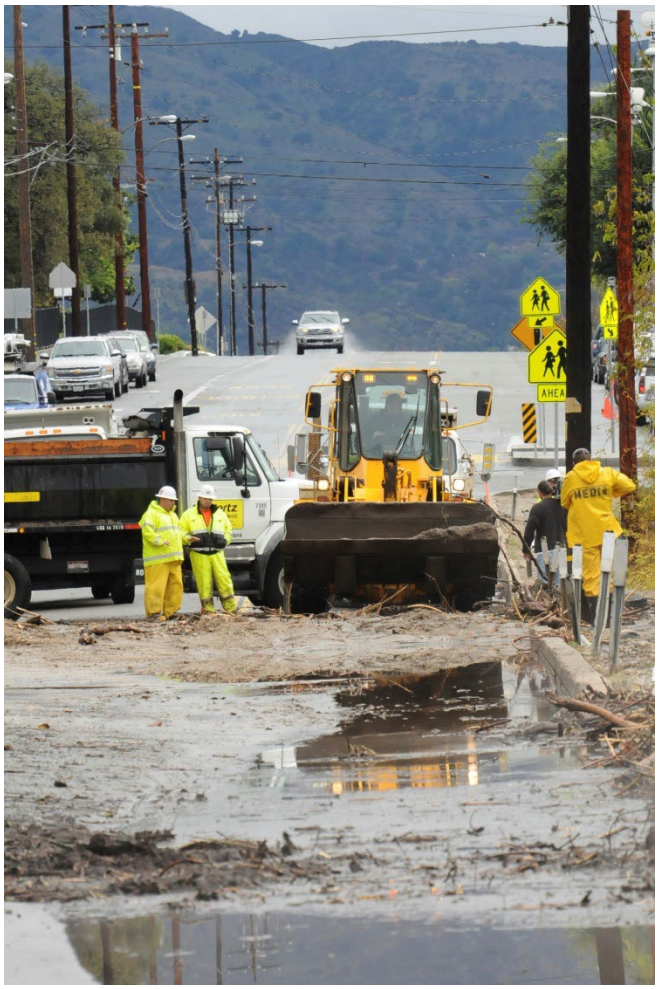
Probability of Future Occurrences

This section addresses flooding resulting from heavy precipitation events, distinct from flooding caused by reservoir or dam failure, which was covered in the previous section. Areas within the 100-year flood zone have a 1 percent chance of flooding in any given year. However, Glendora has no areas within this high-risk zone. The 500-year flood zone, with a much lower risk of flooding (0.2 percent chance per year), includes a small area of approximately 49.8 acres in the northwestern part of the city, near Sierra Madre Avenue. Flooding incidents are most likely to occur within FEMA-designated flood zones.

The City and County maintain an extensive storm drain system that would normally divert any excessive rainfall into appropriate channels. After the historic flooding events discussed above, the City made improvements to infrastructure such as the construction of dams, basins, and flood control channels to mitigate flood hazards. These improvements decrease the probability of a major flood occurrence in the City. Additionally, the City prohibits development in any area determined to be subject to flood hazard by reason of inundation, overflow, or erosion unless provisions are made to eliminate the hazards to the satisfaction of the City Engineer by providing adequate drainage facilities, protective walls or devices, suitable fill, raising the floor level of the structures, or by a combination of methods. The City also prepares for flood events by maintaining and proactively removing debris prior to significant rain events. However, infrastructure and flood control facilities could be overwhelmed during a large storm event, resulting in flooding not limited to the FEMA flood zones. The probability of future occurrences is considered likely.

Climate Change Considerations

Climate change is expected to influence the frequency and intensity of precipitation events throughout California and could have a direct effect on flooding. According to research conducted by UCLA, California will experience extremely wet and extremely dry seasons by the end of the century. It is predicted that "over the next 40 years, the State will be 300 to 400 percent more likely to have a prolonged storm sequence as severe as the one that caused the legendary California flood more than 150 years ago."[19] The Fourth Climate Change Assessment indicates the intensity of heavy precipitation events is increasing and identifies a medium-high confidence for future change. While the annual rainfall averages may remain constant, the wet season may be narrower, leading to large downpours in a short period of time that overwhelm infrastructure and lead to increased flooding. With population density and increased urbanization of Los Angeles County, increased precipitation events and associated flooding could be devastating.



Source: City of Glendora, February 28, 2014.

[19] Colgan, D. (UCLA), *Study forecasts a severe climate future for California*, April 2018, https://newsroom.ucla.edu/releases/california-extreme-climate-future-ucla-study, accessed June 10, 2024.

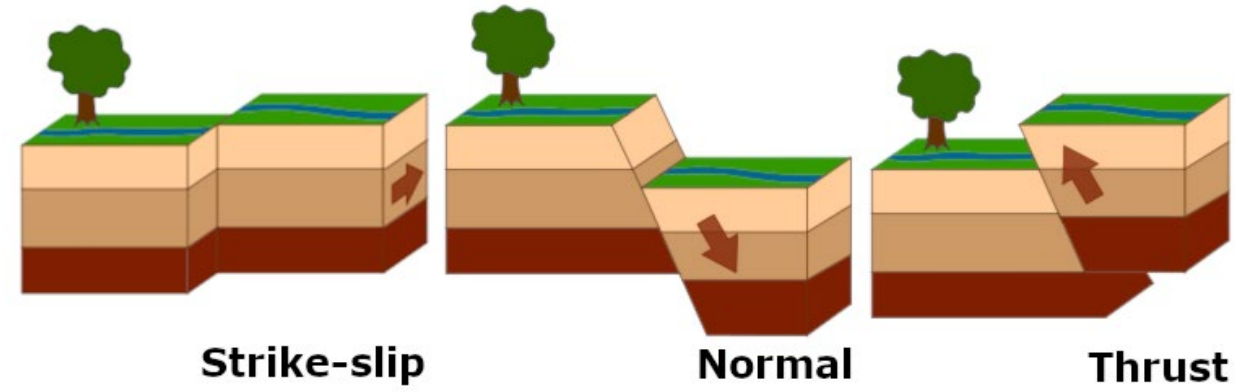
SEISMIC AND GEOLOGIC HAZARDS

Description

Surface Faulting and Ground Motion

The US Geological Survey (USGS) defines an earthquake as a sudden slip on a fault and the resulting ground shaking and radiated seismic energy caused by the slip (or any other sudden stress changes in the earth).[20] Faults are fractures along the earth's crust between two blocks of earth and can be defined as a strike slip, normal, or thrust faults, as depicted in Figure 4-5, *Types of Faults*, below.

FIGURE 4-5: TYPES OF FAULTS



Source: U.S. Geological Survey, *Earthquake Hazards Program,* https://www.usgs.gov/programs/earthquake-hazards, accessed June 11, 2024.

Fault movement can occur rapidly, in the form of an earthquake, or may occur slowly, in the form of creep. During an earthquake, the rock on one side of a fault suddenly slips with respect to the other. Earthquakes occur without warning and result in effects such as ground motion, surface faulting, and ground failure (including liquefaction and landslides), described below.

Ground motion is seismic shaking (vibration) of the ground during an earthquake.[21] When a fault ruptures, seismic waves radiate in all directions and cause 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 motion.

Seismic shaking can be strong enough to result in widespread devastation or virtually undetectable by the average person. The intensity of seismic shaking is a result of the release by the fault rupture (how much of the accumulated stress was released), the length of the rupture (the longer the slip along the fault line, the greater the shaking), and the depth at which the rupture occurs (ruptures that occur closer to the surface often cause stronger shaking). Usually, areas

[20] U.S. Geological Survey, *Earthquake Hazards Program*, https://www.usgs.gov/glossary/earthquake-hazards-program, accessed June 11, 2024.
[21] U.S. Geological Survey, *What are the Effects of Earthquakes?,* https://www.usgs.gov/programs/earthquake-hazards/what-are-effects-earthquakes, accessed June 11, 2024.

closest to the site of the rupture experience the greatest shaking, although differences in geology and soil can also have an impact.

Seismic shaking can damage or destroy buildings and structures and may cause partial or total collapse. Ground movement can damage or destroy infrastructure on or beneath the surface, such as roads, rail lines, and utility lines and pipes. This in turn, can cause hazardous materials releases, water main breaks, and other dangerous situations resulting from infrastructure failure. Falling debris and structures also create a risk of personal injury or death.

Surface faulting is the differential movement of two sides of a fracture, where the ground breaks apart. The length, width, and displacement of the ground characterize surface faults, which occur based on the type of underlying fault.

Faults occur at the boundaries between large sections of the earth's surface, called tectonic plates. While most of California sits on the North American plate, the San Gabriel Valley area (which includes the City of Glendora) is on the Pacific plate. The San Andreas Fault is the main boundary between the North American and Pacific plates, but other fault lines can be found up to 200 miles away. The presence of the San Andreas Fault and other faults is the reason for California's frequent seismic shaking and other tectonic activity.

Landslides, Mudflows, and Slope Instability

Areas with steep slopes and valleys are potentially subject to instability. These areas may be prone to hazards such as rock falls, slope failures, and debris flows (mudflows). While seismic shaking can cause landslides, other causes can include erosion, soil saturation, excess weight from accumulation of rain or snow, and human-made conditions such as construction disturbance or vegetation removal.

When a hillside or other slope becomes unstable, the soil and rocks that make up the slope slide toward the bottom. Landslides are often sudden, although some occur very slowly over a long period of time. Loose and fractured materials are more likely to slide than compact materials or solid rock, and steep slopes are at greater risk than gentle rises. Areas that have been recently burned by wildfires are more susceptible to sliding because the fire destroys the plant cover that helps stabilize slopes.

Regardless of the cause or specific form, a landslide can damage or destroy structures built on the sliding material or in its path. Underground infrastructure, such as pipelines or telecommunication lines, may be severed during a landslide. This could lead to infrastructure-induced flooding if water pipes are broken. In addition to property damage, landslides can crush or bury people, creating a risk of serious injury or death.

Liquefaction

Liquefaction is a phenomenon that occurs when ground shaking causes saturated soils, primarily clay-free deposits such as sand or silt, to lose strength and act like a viscous fluid. Soils that are poorly consolidated and combine with groundwater during an earthquake lose their shear strength and take on the properties of a heavy liquid. Certain soils are more susceptible to liquefaction, particularly younger and looser sediment closer to the water table. Liquefaction causes three types of ground failure, as described below:[22]

- Lateral spreads involve the lateral movement of large blocks of soil as a result of liquefaction of an underlying layer. They generally develop on gentle slopes, most commonly between 0.3 and 3 degrees. Horizontal movements commonly are as much as 10 to 15 feet. However, where slopes are particularly favorable, and the duration of ground shaking is long, lateral movement may be as much as 100 to 150 feet. Lateral spread usually breaks up internally, forming numerous fissures and scarps.
- Flow failures consist of liquefied soil or blocks of intact material riding on a layer of liquefied soil and are the most catastrophic type of ground failure caused by liquefaction. They commonly move several feet and up to dozens of miles under certain conditions. Flow failures usually form in loose saturated sands or silts on slopes greater than three degrees.
- Loss of bearing strength occurs when the soil supporting buildings or other structures liquefies. When large deformations occur, structures settle and tip. The general subsurface geometry required for liquefaction-caused bearing failures is a layer of saturated, cohesionless soil that extends from near the ground surface to a depth equal to about the width of the building.

Location and Extent

Surface Faulting and Ground Motion

The City of Glendora is located within the seismically active southern California region. The City is underlain by the Sierra Madre Fault Zone, a major fault zone which runs along the southern margin of the San Gabriel Mountains. In addition, several other major faults are located within the region that could have an impact on the City; refer to Figure 4-6, *Regional Fault Map*. The San Andreas Fault, considered the most seismically active fault in the southern California region, is located approximately 20 miles northeast of the City.

Earthquakes that could affect the City would most likely originate from the Sierra Madre or San Andreas Fault Zones, described below. These faults are close enough in proximity or expected to generate strong enough shaking that could affect the City. Geologic conditions within the foothill portions of the City could be impacted more severely due to the steep topography and the relative instability of some of the geologic units in this portion of the City.

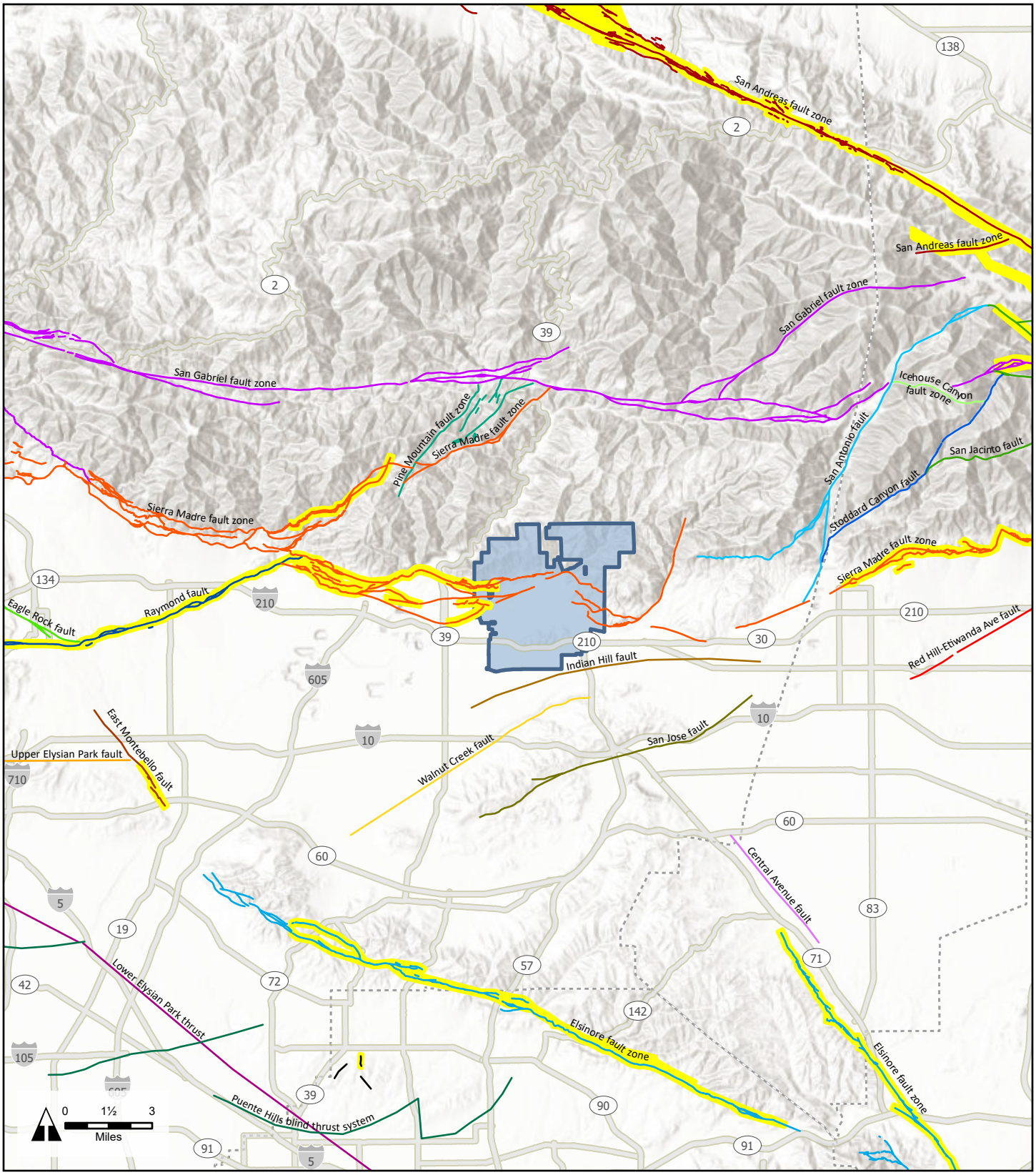
[22] U.S. Geological Survey, *What are the Effects of Earthquakes?,* https://www.usgs.gov/programs/earthquake-hazards/what-are-effects-earthquakes, accessed June 11, 2024.

- Sierra Madre Fault Zone: The Sierra Madre Fault Zone consists of east-west trending faults and folds, which extend along the southern margin of the San Gabriel Mountains. This fault zone is approximately 35 miles in length and terminates at Dalton Canyon to the east and at the San Fernando Fault to the west. This fault is composed of five individual segments, which range in activity. Portions of the City overlying this fault are located within Alquist-Priolo Special Study zones; the segments within the City are considered potentially active. Data gathered on this fault suggests that the slip rate ranges from 0.36 to 4 millimeters per year and this fault is expected to generate earthquakes with a magnitude of 6.0-7.0.[23] Faults that are associated with this fault system include the:
    - Cucamonga Fault
    - Duarte Fault
    - San Fernando Fault
    - San Gabriel Fault
    - Clamshell-Sawpit Canyon Fault
    - Raymond Fault
- San Andreas Fault Zone: The San Andreas Fault Zone, located approximately 20 miles northeast of the City, is a right-lateral strike-slip that extends approximately 745 miles from Cape Mendocino to the Salton Sea. It has caused numerous major earthquakes throughout California's history and has the potential to cause destructive ground shaking in the southern California region. Data gathered on this fault suggests that the slip rate ranges from 20 to 35 millimeters per year and this fault is expected to generate earthquakes with a magnitude of 6.8-8.0.

Southern California is subject to potential ground shaking in the event of an earthquake. Ground shaking can result in extensive structural damage, injury, and death. Ground shaking would be particularly damaging to residential buildings constructed of wood or reinforced masonry construction, and to mobile homes. Other buildings that do not typically perform well in earthquakes are soft-story buildings. These types of buildings have a story (typically the first floor) that lacks adequate strength or toughness due to too few shear walls.

Source: County of Los Angeles Fire Department, *Northridge Earthquake 30th Anniversary: Reflections and Lessons Learned*, https://fire.lacounty.gov/northridge-earthquake-30th-anniversary-reflections-and-lessons-learned/, accessed November 21, 2024.

[23] Southern California Earthquake Center, *Earthquake Information*, https://scedc.caltech.edu/earthquake/sierramadre.html, accessed June 11, 2024.



LEGEND

- City of Glendora
- County Boundary
- Quaternary Fault (various colors)
- Alquist-Priolo Zone of Required Investigation

CITY OF GLENDORA, CALIFORNIA

Figure 4-6. Regional Fault Map

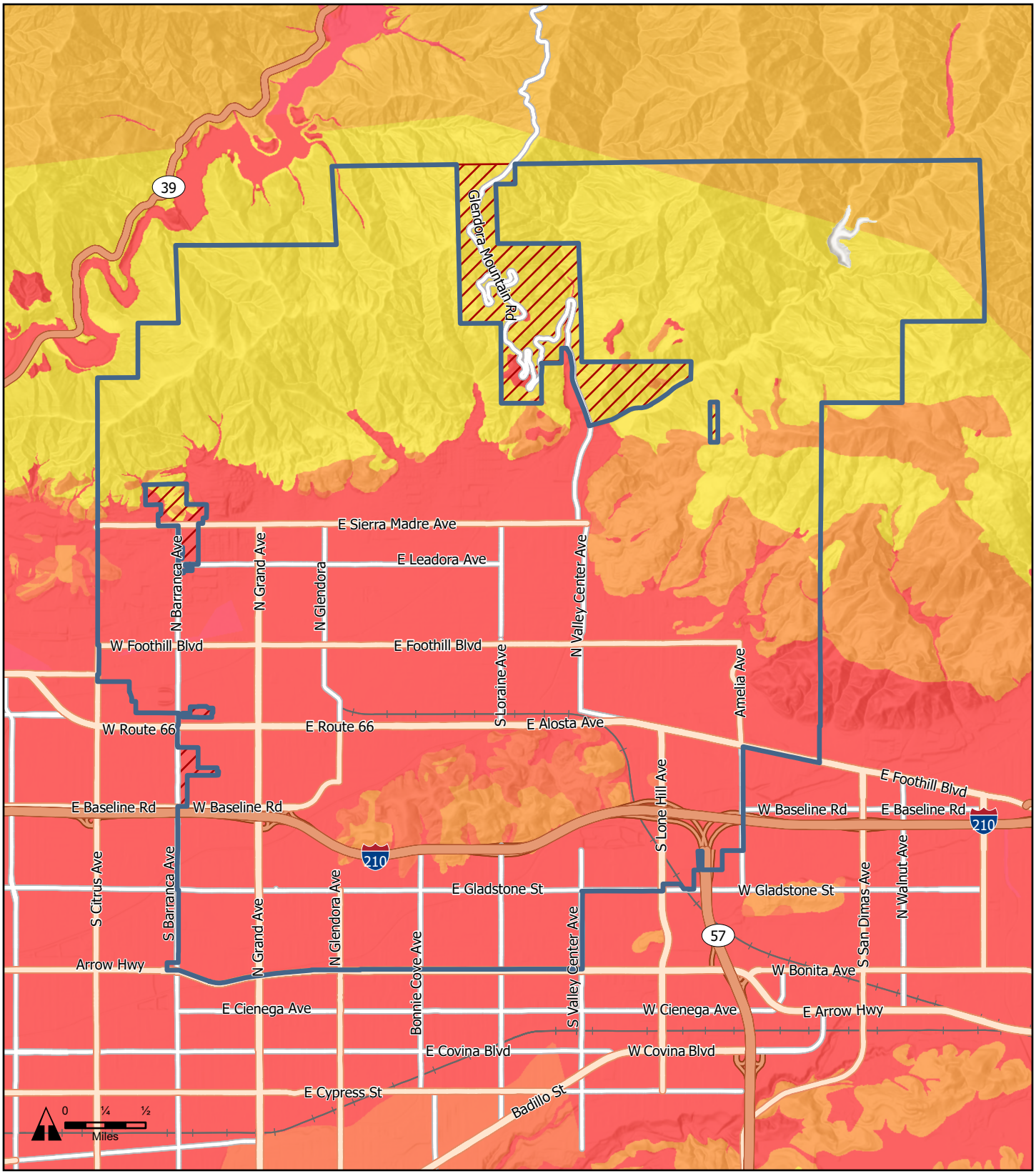
Sources: California Geological Survey; US Geological Survey; California State Geoportal. Map date: December 12, 2024.

Intensity and Magnitude

Earthquake ground shaking is generally expressed in terms of intensity and magnitude. Several scales may be used to measure the strength or intensity of an earthquake.[24] Magnitude scales, like the moment magnitude (Mw), measure the size of the earthquake at its source. An earthquake event has a single magnitude; however, the degree of ground shaking that the earthquake causes varies from place to place based on distance, type of surface material, and other factors. Figure 4-7, *Earthquake Shaking Potential*, shows the potential for the City to experience earthquake ground shaking. As shown, the entire City is identified as having lower-to-moderate ground shaking potential, with more populated flat areas generally having a higher ground shaking potential than the hillside areas.

In contrast to magnitude, other scales describe earthquake intensity, which can vary depending on distance from earthquake epicenter and local characteristics. The Modified Mercalli intensity scale expresses earthquake intensity experienced at a particular location on a scale of increasing levels of intensity that range from imperceptible shaking to catastrophic destruction. It does not have a mathematical basis; instead, it is an arbitrary ranking based on observed effects. The level of intensity assigned to a specific location is a more meaningful measure of severity to the nonscientist than the magnitude because intensity refers to the effects experienced. Table 4-7, *The Modified Mercalli Intensity Scale*, lists abbreviated descriptions of the Modified Mercalli intensity levels.

[24] U.S. Geological Survey, *Earthquake Magnitude, Energy Release, and Shaking Intensity*, https://www.usgs.gov/programs/earthquake-hazards/earthquake-magnitude-energy-release-and-shakingintensity#:~:text=Moment%20Magnitude%20(MW)%20is,magnitude%20range%20where%20they%20overlap, accessed June 11, 2024.



LEGEND

City of Glendora

Sphere of Influence

Earthquake Shaking Potential

Highest — decreasing intensity — Lowest

CITY OF GLENDORA, CALIFORNIA

Figure 4-7. Earthquake Shaking Potential

Sources: California Geological Survey Map Sheet 48, Earthquake Shaking Potential for California 2016; Los Angeles County GIS. Map date: March 7, 2024.

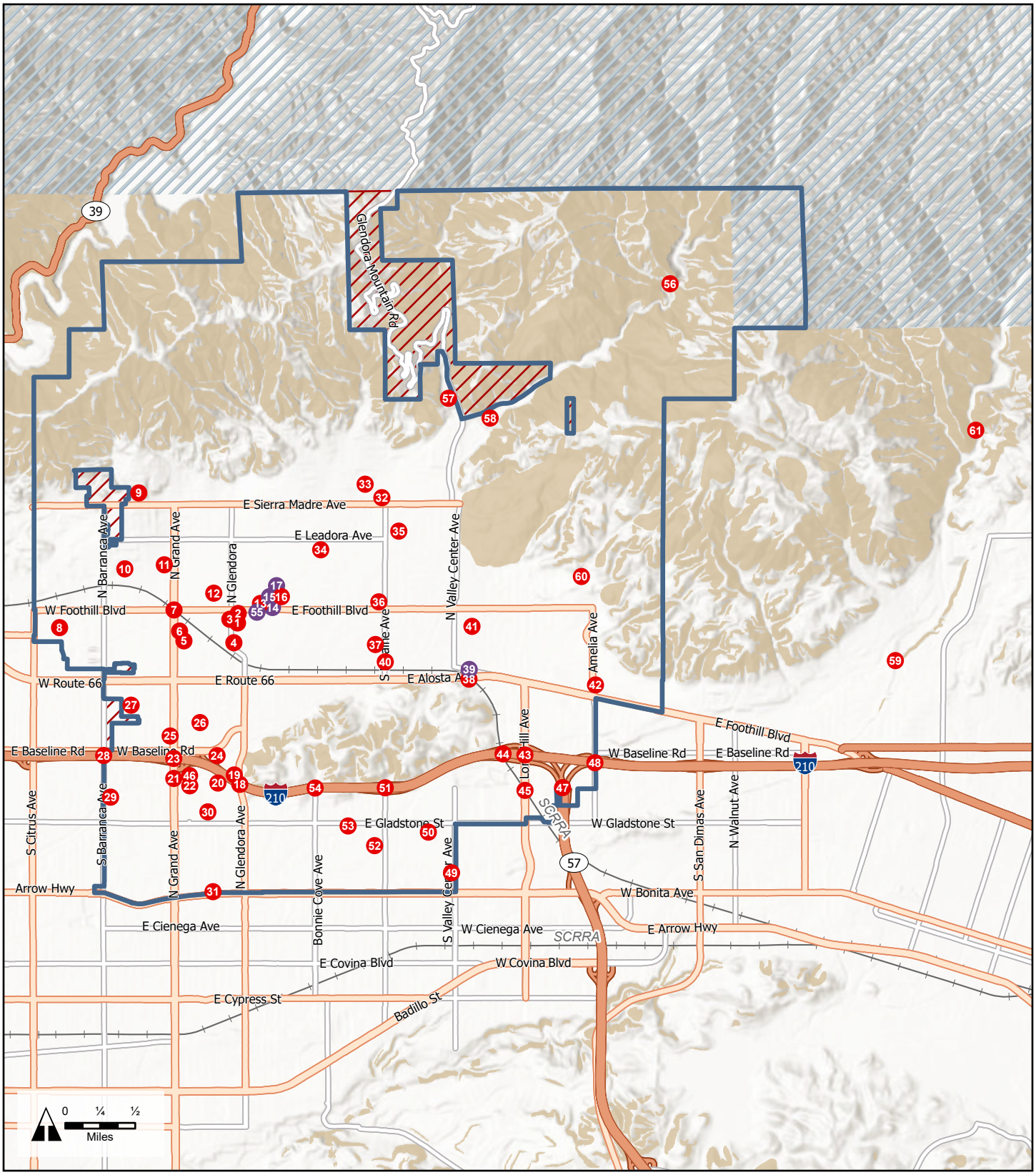
TABLE 4-7: THE MODIFIED MERCALLI INTENSITY SCALE

Intensity	Shaking	Description/Damage
I	Not Felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes and windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specifically designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

Source: U.S. Geological Survey, *The Modified Mercalli Intensity Scale*, https://www.usgs.gov/natural-hazards/earthquake-hazards/science/modified-mercalli-intensity-scale?qt-science_center_objects=0#qt-science_center_objects, accessed June 11, 2024.

Landslides, Mudflows, and Slope Instability

The topography of Glendora includes areas characterized by moderate to very steep hillsides and therefore has the potential for slope instability and landslides. According to the General Plan Safety Element, geologic conditions within the foothill portions of Glendora could be impacted more severely due to the steep topography and the relative instability of some of the geologic units in this area of the City. Such areas may be prone to hazards such as surficial failures, mudflows, debris flows, rock falls, soil creep, and erosion. Failures of human-made slopes could also occur in some of the previously developed areas of the City. In addition, wildfires can destabilize hillsides and create hydrophobic soils, leading to an increased potential of landslides and debris flows. The potential for earthquake-induced landslides in hillside terrain is also present. Areas of known landslides or areas generally susceptible to landslides and slope instability within Glendora have been identified and mapped by the California Geological Survey (CGS); refer to Figure 4-8, *Landslide Hazard Zones*. As shown, areas susceptible to landslides include the northern and eastern foothills of the City, as well as the “South Hills” located in the southern portion of the City.



LEGEND

- Critical Facility
- Facility of Concern
- City of Glendora
- Sphere of Influence
- Landslide Zone

CITY OF GLENDORA, CALIFORNIA

Figure 4-8. Landslide Hazard Zones

Sources: California Geological Survey Regulatory Maps Portal; Los Angeles County GIS. Map date: December 12, 2024.

Liquefaction

Liquefaction generally occurs within areas that have high groundwater (less than 50 feet below the earth's surface), loose sandy alluvial deposits (usually of recent age), and the potential for significant ground shaking. Available data indicates that groundwater levels beneath the City range between 100 to 150 feet deep. Certain locations, however, have shallow groundwater conditions and could be susceptible to liquefaction. Areas susceptible to liquefaction within the City have been identified and mapped by the CGS; refer to Figure 4-9, *Liquefaction Hazard Areas*. As shown, areas susceptible to liquefaction include the northern foothills, a western portion of the City along Foothill Boulevard, and the southeastern portion of the City along Interstate 210 (I-210).

Previous Occurrences

Surface Faulting, Ground Motion, and Liquefaction

As discussed above, a variety of faults are located within and near the City of Glendora. Table 4-8, *Major Earthquake Faults of Particular Concern*, identifies faults of concern and last major ruptures.

TABLE 4-8: MAJOR EARTHQUAKE FAULTS OF PARTICULAR CONCERN

Fault Name	Type of Faulting	Last Major Rupture	Slip Rate	Interval Between Major Ruptures	Probable Magnitude (Mw)
Cucamonga	Thrust	Very recent Holocene	5 to 14 mm/year	Estimated roughly between 600-700 years	6.0 – 7.0
Elsinore	Right-lateral strike-slip	May 15, 1910 (Mw6, no surface rupture observed)	Roughly 4.0 mm/year	Roughly 250 years	6.5 – 7.5
Newport Inglewood	Right-lateral; local reverse slip associated with fault steps	March 10, 1933 (Mw6.4, no surface rupture)	0.6 mm/year	Unknown	6.0 - 7.0
Palo Verdes	Right-reverse	Holocene, offshore; Late Quaternary, onshore	0.1 to 3.0 mm/year	Unknown	6.0 – 7.0
Santa Monica	Left-reverse	Late Quaternary	0.27 to 0.39 mm/year	Unknown	6.0 – 7.0
San Andreas	Right-lateral strike-slip	January 9, 1857 (Mojave segment)	20 to 35 mm/year	Average of about 140 years on the Mojave segment; recurrence interval varies greatly	6.8 – 8.0
San Fernando	Thrust	February 9, 1971 (Mw6.6).	5 mm/year	Roughly 200 years	6.0 – 6.8
San Jacinto	Right-lateral strike-slip	April 9, 1968 (Mw6.5 on Coyote Creek segment)	7 to 17 mm/year	Between 100 and 300 years	6.5 – 7.5
Sierra Madre	Reverse	Holocene	0.36 to 4 mm/year	Several thousand years	6.0 – 7.0

Sources: Southern California Earthquake Center, *Earthquake Information*, https://scedc.caltech.edu/earthquake/faults.html, accessed on June 11, 2024.
Notes: mm = millimeters; Mw = moment magnitude

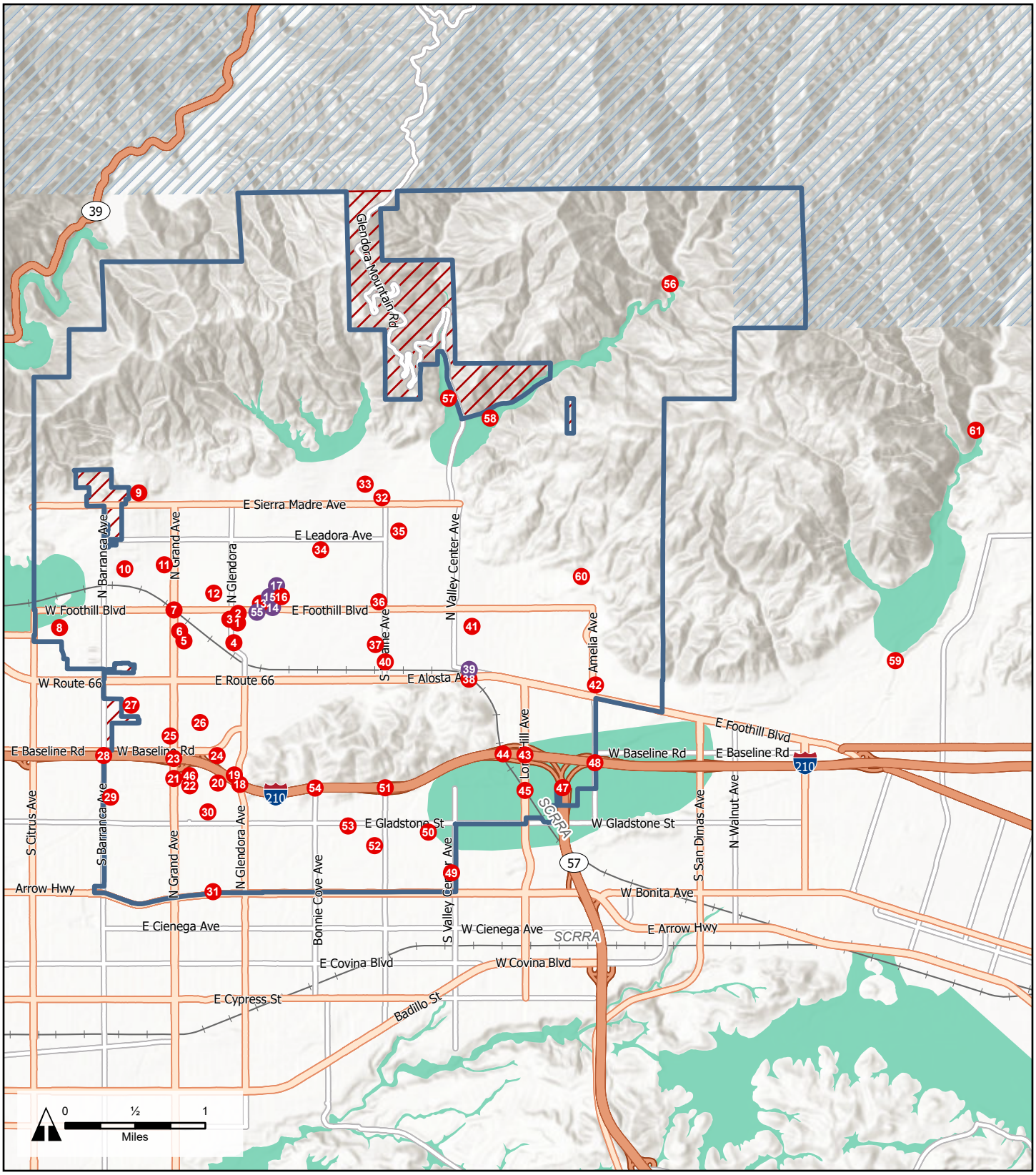
Table 4-9, *Significant Historical Earthquakes in Southern California*, identifies major earthquakes that have occurred in southern California. The Northridge Earthquake and the Whittier Narrows Earthquake both resulted in major disaster declarations from the federal government, which included Los Angeles County as a designated area.[25]

[25] Federal Emergency Management Agency, *Disasters and Other Declarations*, https://www.fema.gov/disaster/declarations, accessed June 12, 2024.

TABLE 4-9: SIGNIFICANT HISTORICAL EARTHQUAKES IN SOUTHERN CALIFORNIA

Earthquake Name	Year	Estimated Magnitude
Wrightwood	1812	7.5
Santa Barbara Earthquake	1812	7.1
Los Angeles	1855	6.0
Palmdale	1857	6.3
San Bernardino	1858	6.0
Wrightwood	1899	6.4
San Jacinto	1899	6.7
Elsinore	1910	6.0
San Jacinto	1918	6.8
North San Jacinto	1923	6.3
Long Beach	1933	6.4
San Fernando	1971	6.5
Whittier Narrows	1987	5.8
Landers	1992	7.2
Big Bear	1992	6.5
Northridge	1994	6.7
Chino Hills	2008	5.4
Ridgecrest	2019	7.1

Source: Southern California Earthquake Data Center, *Significant Earthquakes and Faults*, http://scedc.caltech.edu/significant/index.html, accessed June 12, 2024; California Department of Conservation, *California's Big Earthquakes*, https://www.conservation.ca.gov/cgs/earthquakes/significant, accessed June 12, 2024; U.S. Geological Survey, *Search Earthquake Catalog*, https://earthquake.usgs.gov/earthquakes/search/, accessed June 12, 2024.



LEGEND

- Critical Facility
- Facility of Concern
- City of Glendora
- Sphere of Influence
- Liquefaction Zone

CITY OF GLENDORA, CALIFORNIA

Figure 4-9. Liquefaction Hazard Areas

Sources: California Geological Survey Regulatory Maps Portal; Los Angeles County GIS. Map date: December 12, 2024.

Liquefaction-induced ground failure historically has been a major cause of earthquake damage in southern California. During the 1971 San Fernando and 1994 Northridge earthquakes, significant damage to roads, utility pipelines, buildings, and other structures in the Los Angeles area was caused by liquefaction-induced ground displacement.[26] According to the CGS Seismic Hazard Zone Reports, no areas of documented historic liquefaction are known within the City limits or the larger Glendora, Azusa, Baldwin Park, and San Dimas Quadrangles.[27]

Landslides, Mudflows, and Slope Instability

Like much of California, Los Angeles County has experienced landslides. Landslides in Los Angeles are generally trigged by intense and/or prolonged rainfall but can also occur after an earthquake. [28] There were 17 federally declared landslide disasters in Los Angeles County between 1953 and 2019.[29]

CGS landslide mapping identifies numerous landslide events that have occurred in Glendora, specifically within the northern and eastern foothills and South Hills. [30] Significant landslides in Glendora include the 1969 landslide, which destroyed approximately 175 homes due to debris flow and caused nearly 14.6 million dollars in damages. More recently, Glendora experienced mudflows in 2014 due to heavy winter storms, prompting evacuations in the foothills affected by the Colby Fire.[31]

Source: City of Glendora, 1969.

Probability of Future Occurrences

Surface Faulting, Ground Motion, and Liquefaction

The City of Glendora is in a known seismically active area, and thus the probability for future seismic hazard occurrences is considered high. Given the significant seismic shaking events in the region, it is certain that such events will continue. The southern California region has many fault lines (including major faults), and it is almost inevitable that a regional fault line will rupture in the foreseeable future and cause a major seismic shaking event.

The USGS Uniform Earthquake Rupture Forecast Version 3 released in 2017 provides a perspective of the likelihood each California region will experience a magnitude 6.7 or larger earthquake in the next 30 years; refer to Table 4-10, *Los Angeles Region Earthquake*

[26] California Department of Conservation, Division of Mines and Geology, *Seismic Hazard Zone Report for the Glendora, Azusa, San Dimas, and Baldwin Park 7.5-Minute Quadrangles, Los Angeles County, California*, 1998.
[27] Ibid
[28] County of Los Angeles, *2020 County of Los Angeles All-Hazards Mitigation Plan*, 2020.
[29] California Governor's Office of Emergency Services, *California State Hazard Mitigation Plan*, November 2023.
[30] California Department of Conservation, *Landslide Inventory*, https://maps.conservation.ca.gov/cgs/lsi/app/, accessed June 13, 2024.
[31] Guinyard, T., Lopez, A., and Lloyd J., *Glendora Police: Evacuate Before It's Too Late*, February 2014, https://www.nbclosangeles.com/news/local/mud-debris-flows-reported-in-glendora/1972470/, accessed June 13, 2024.

Probabilities, and Table 4-11, *Likelihood of One or More Earthquakes Occurring in the Next 30 Years in Los Angeles County Region by Fault*.

TABLE 4-10: LOS ANGELES REGION EARTHQUAKE PROBABILITIES

Magnitude (greater than or equal to)	Average Repeat Time (years)	30-Year Likelihood of One or More Events
5.0	1.4	100%
6.0	10	96%
6.7	40	60%
7.0	61	46%
7.5	109	31%
8.0	532	7%

Source: U.S. Department of the Interior and U.S. Geological Survey, *UCERF3: A New Earthquake Forecast for California's Complex Fault System Fact Sheet*, March 2015.

Notes:

1. M≥5 means magnitude greater than or equal to 5.0, and likewise for the other two magnitude thresholds.
2. The 30-year period measured by this report is 2014 to 2044; a 30-year period is used as it is the typical duration of a homeowner mortgage.
3. Actual repeat times will exhibit a high degree of variability and will almost never exactly equal the average listed in the table above.

TABLE 4-11: LIKELIHOOD OF ONE OR MORE EARTHQUAKES OCCURRING IN THE NEXT 30 YEARS IN LOS ANGELES COUNTY REGION BY FAULT

Magnitude	Sierra Madre, Subsection 2	Cucamonga, Subsection 3	Elsinore (Glen Ivy) rev, Subsection 0	Newport-Inglewood alt 2, Subsection 4	San Andreas San Bernardino N), Subsection 1
M≥6.7	1.12%	1.08%	3.21%	0.74%	22.44%
M≥7.0	1.08%	0.98%	1.81%	0.61%	19.74%
M≥7.5	0.72%	0.63%	1.01%	0.27%	16.13%
M≥8.0	0.03%	0.03%	<0.01%	--	6.61%

Source: U.S. Department of the Interior and US Geological Survey, *The Third California Earthquake Rupture Forecast (UCERF3), Google Earth file with fault probabilities*, March 2015.

Notes:

1. M≥6.7 means magnitude greater than or equal to 6.7, and likewise for the other magnitude thresholds.
2. Values shown are the magnitude mean over a 30-year period (2014 to 2044); a 30-year period is the typical duration of a homeowner mortgage.

Based on the data, and the historic occurrences of earthquake activity in southern California, it is concluded that the probability of future occurrences impacting the City is highly likely.

Landslides, Mudflows, and Slope Instability

Glendora's steep topography and geological conditions make it especially vulnerable to slope instability and landslides. Additionally, the City and surrounding San Gabriel Mountains are prone to wildfires, which can further destabilize hillsides and create hydrophobic soils, increasing the likelihood of landslides and debris flows. Earthquake-induced landslides in the area's hillside terrain also pose a risk. Given these factors, the probability of future landslides, mudflows, and other slope stability issues impacting the City is considered highly likely.

Climate Change Considerations

Surface Faulting, Ground Motion, and Liquefaction

Earthquakes are caused by seismic activity, which is not directly correlated with climate change. Therefore, climate change is not expected to cause any changes to the frequency or intensity of seismic shaking or liquefaction with Glendora or the region.

Landslides, Mudflows, and Slope Instability

Climate change could bring increased drought conditions, resulting in drier soil conditions, as well as a possibility of increased precipitation levels of greater frequency and duration. Drought conditions cause soil to dry out over time, reducing the ability for soils to absorb precipitation when storms occur. Decreased absorption can result in increased amounts of runoff with the potential for landslide and/or mudflow conditions. More significant or frequent storm events can also result in more precipitation to be absorbed by the soil of slopes in Glendora and could destabilize hillsides and cause an increase in the frequency of landslide events, mudflows, or liquefaction. Increased temperatures and dry conditions can also result in wildfires. When wildfires burn through an area, they often cause reduced vegetation and destabilization of soil that can also result in landslides or mudflows during intense storm events.

SEVERE WEATHER

Description

Heavy Rains

During severe weather events such as strong storms, rain can fall at such a high rate that it cannot drain away fast enough. Heavy rain can cause flooding, leading to inundation and potential damage to buildings, roadways, and other critical infrastructure. Heavy rainfall conditions can also trigger landslides, mudflow, and slope instability due to the added weight of rain-saturated slopes and weakened slopes from the pressure the groundwater exerts on porous hillside materials. In California, heavy rainfall events are often short, intense bursts of rain, but in some cases, heavy rain can persist for multiple days.

Thunderstorms are rainstorms with lightning that can also include strong winds and hail. According to the National Weather Service, a severe thunderstorm must have at least one of the following: hail that is one inch in diameter or larger; or winds of 58 miles per hour or greater.[32] Such storms form from a combination of moisture, rapidly rising warm air, and a force capable of lifting air, such as a warm front, cold front, or mountain. Typical thunderstorms are 15 miles in diameter and last an average of 30 minutes.

[32] National Weather Service, *What Constitutes a Severe Thunderstorm*, https://www.weather.gov/bmx/outreach_svr, accessed June 13, 2024.

Lighting is a flash of electrical energy produced by a thunderstorm. Lightning kills approximately 50 people in the United States each year and injures hundreds.[33] Lightning can be cloud to air, cloud to cloud, or cloud to ground. Cloud to ground strikes can also be the cause of wildfires.

Santa Ana Winds

Santa Ana winds are warm, dry winds that push dry air from the inland deserts of California and the Southwest over the mountains between coastal California and the deserts. They form when high pressure builds over the desert of the Great Basin region, causing winds to blow from the east toward the Pacific Ocean and lower air pressure offshore. As air moves west from the Great Basin toward California, where pressure is lower, it gains speed as it whips through mountain valleys and passes. The resulting airflow can reach speeds upwards of 30 mph, and gusts of more than twice this speed.[34] The phenomenon occurs during the fall and early winter. Santa Ana windstorms can last for several days at a time. These hot and very dry winds dry out vegetation, increasing the fuel available to feed fires. The gusts can also fan flames and spread wildfires.

Extreme Heat

Extreme heat conditions are defined as weather that is much hotter than average for a particular time and place, and sometimes more humid. The heat index is a measure of how hot it feels when relative humidity is factored into the actual temperature. High humidity can cause the heat index to increase drastically and create dangerous health conditions.[35]

Typically, the National Weather Service (NWS) issues Excessive Heat Warning/Advisory when the heat index is predicted to be 105°F or greater for two or more consecutive days, although the temperature cut-off varies for different regions.[36] Cal-Adapt identifies an extreme heat day or warm night as a day in a year when the daily maximum/minimum temperature exceeds the 98th historical percentile of daily maximum/minimum temperatures based on the historical data from 1961-1990 between April and October. For the City of Glendora, the 98th percentile would be 100.2°F.[37] Additionally, Cal-Adapt defines a heat wave as periods of four consecutive extreme days or warm nights when the daily temperature is above the extreme heat threshold.

Power Outage

Power outages are a secondary effect of severe weather events in Glendora. During severe weather incidents, such as high winds, Southern California Edison (SCE), electricity supplier to the City, may implement an operational practice called Public Safety Power Shutoffs (PSPS), to

[33] California Governor's Office of Emergency Services, *2023 California State Hazard Mitigation Plan*, https://www.caloes.ca.gov/wp-content/uploads/Hazard-Mitigation/Documents/2023-California-SHMP_Volume-1_11.10.2023.pdf, published August 2023, accessed June 4, 2024.
[34] California Governor's Office of Emergency Services, *2023 California State Hazard Mitigation Plan*, https://www.caloes.ca.gov/wp-content/uploads/Hazard-Mitigation/Documents/2023-California-SHMP_Volume-1_11.10.2023.pdf, published August 2023, accessed June 4, 2024.
[35] U.S. Environmental Protection Agency, *Climate Change and Extreme Heat*, https://www.epa.gov/sites/default/files/2016-10/documents/extreme-heat-guidebook.pdf, accessed June 13, 2024.
[36] National Weather Service, *Heat Watch vs. Warning*, https://www.weather.gov/safety/heat-ww, accessed June 13, 2024.
[37] Cal-Adapt, *Extreme Heat Days & Warm Nights*, https://cal-adapt.org/tools/extreme-heat/, accessed June 13, 2024.

preemptively shut off power in high-risk areas during potentially dangerous fire conditions. This program is designed to proactively prevent electric systems from starting a wildfire when winds and temperatures are high.

Strong Santa Ana winds, high temperatures, and low humidity are all severe weather conditions that could trigger a PSPS event. The frequency of PSPS events depends on weather and environmental factors; SDG&E and SCE make decisions to implement PSPS based on internal thresholds, assessment of real-time information, and situational awareness data. If a PSPS is necessary, SCE communicates with public safety authorities, first responders, and the affected communities. Additionally, customers are notified prior to shutting off power, where conditions allow advanced notification.

When weather forecasts indicate extreme fire conditions, SCE begins predictive modeling to assess potential impacts while monitoring weather watch alerts from the National Weather Service. Leading up to an event, weather forecasts and the potential for wildfire are refined. Two days prior to extreme fire conditions forecasted, SCE would coordinate first with the local government, emergency management community, and first responders. A first notification would go out to customers 48 hours prior to the shut off, a second notification 24 hours prior, and a final notification with power shut off. It is noted that actual or sudden onset of extreme weather conditions could impact coordination and notification efforts.[38]

Outside of the PSPS events, there is the potential for power outages to occur within the City. SCE defines a major outage as a large, unexpected outage caused by either accidents or natural disasters. While uncommon, loss of electrical power is a potential secondary effect of severe weather events.

Location and Extent

A heavy rain, Santa Ana wind, or extreme heat event would occur throughout the entire City. While PSPS would only affect certain circuits within the City, a major power outage could affect the entirety of the City, including public infrastructure such as water/wastewater, transportation facilities, and emergency services. Power lines located aboveground are more likely to be impacted during an event. However, local lines are connected to regional lines which are typically located aboveground. Therefore, power outages or interruptions could occur from events not directly impacting the City.

Heavy Rains

One of the indicators for a heavy rain season is the Oceanic Niño Index (ONI), used to monitor the El Niño-Southern Oscillation (ENSO). To calculate the ONI, scientists from NOAA's Climate Prediction Center calculate the average sea surface temperature in the El Niño 3.4 region (area of the east-central equatorial Pacific Ocean) for each month, and then average it with values from

[38] Southern California Edison, *Public Safety Power Shutoffs*, https://www.sce.com/safety/wildfire/psps, accessed March 20, 2019.

the previous and following months. This running 3-month average is compared to a 30-year average. The observed difference from the average temperature in that region, whether warmer or cooler, is the ONI value for that 3-month "season." Based on the ONI, the El Niño (warm) and La Niña (cool) events in the tropical Pacific are categorized as weak, moderate, strong, or very strong.[39]

Source: Gauthier, R., Los Angeles Times, *Los Angeles prepares for rainstorms*, https://www.latimes.com/local/la-me-ln-los-angeles-rain-storms-photos-photogallery.html, accessed November 21, 2024.

Glendora experiences an average of 21.7 inches of rain per year and experiences an average of 39 days of precipitation per year.[40] Precipitation is rain, snow, sleet, or hail that is at least .01 inches on the ground. Storm drain infrastructure in the City is jointly owned and operated by the City of Glendora and the Los Angeles County Flood Control District (LACFCD). Typically, the City's drainage systems can accommodate heavy rain events, as the City and LACFCD proactively inspect, clean, and clear catch basins, flow lines, channels, and other drainage infrastructure to prevent flooding and other issues in anticipation of a storm. However, localized flooding has occurred throughout the City, particularly in low spots or where infrastructure is unable to accommodate peak flows during a storm event; refer to the Flood discussion above. In most cases, localized flooding dissipates quickly after heavy rain ceases. During heavy rain events, sandbags are utilized to prevent erosion and runoff into the public storm drain.

Santa Ana Winds

Hurricane winds are measured using the Saffir-Simpson Hurricane Wind Scale. Although hurricane events are not typical within Glendora, the scale can be used to measure strong winds that are not associated with a hurricane event. The scale uses measurements in pressure, wind speed, and damage potential to identify the types of damage associated with sustained wind events; refer to Table 4-12, *Saffir-Simpson Hurricane Wind Scale*. Depending on the severity of the wind event, any part of the City can be affected by severe winds.

[39] National Oceanic and Atmospheric Administration, *Climate Variability: Oceanic Niño Index*, https://www.climate.gov/news-features/understanding-climate/climate-variability-oceanic-nino-index, published August 30, 2009, accessed June 13, 2024.
[40] Best Places, *Glendora, CA Climate*, https://www.bestplaces.net/climate/city/ca/glendora, accessed June 14, 2024.

TABLE 4-12: SAFFIR-SIMPSON HURRICANE WIND SCALE.

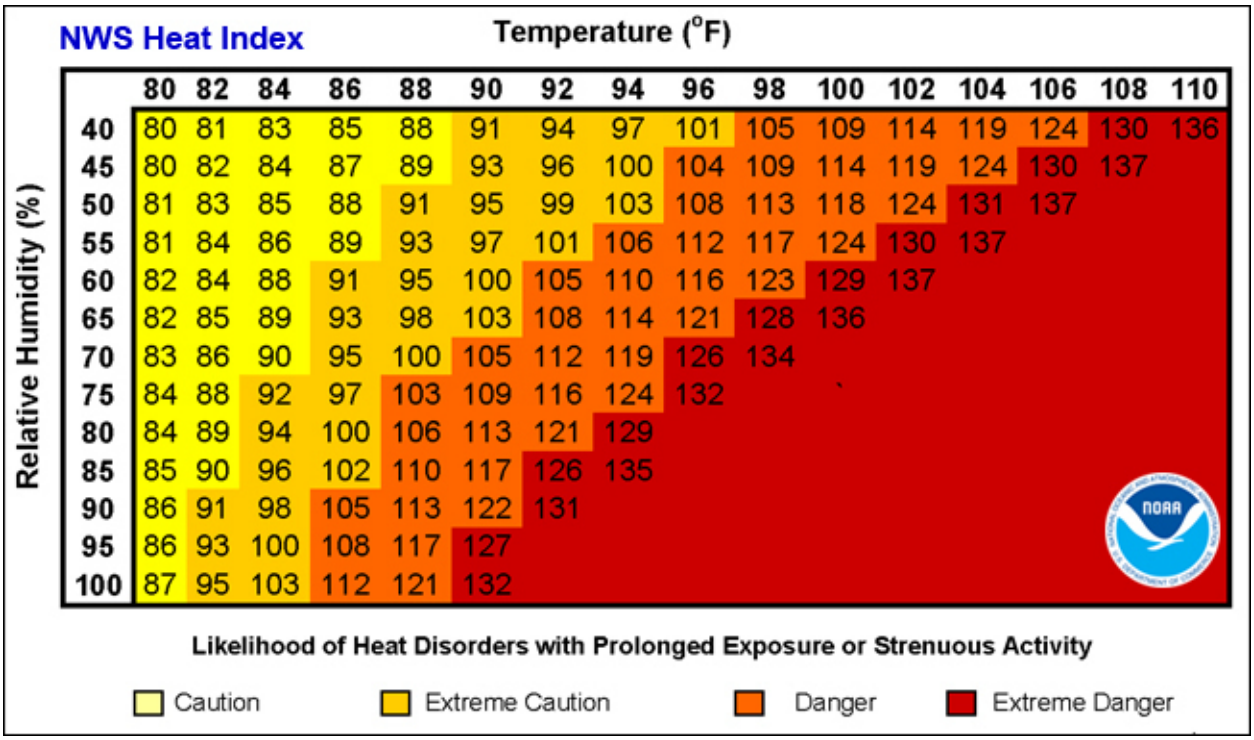
Category	Sustained Wind Speed	Description of Damages
1	74–95 mph	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding, and gutters. Large branches of trees will snap, and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96–110 mph	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3	111–129 mph	Devastating damage: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4	130–156 mph	Catastrophic damage: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	157 mph or higher	Catastrophic damage: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or

Source: National Weather Service, *Saffir-Simpson Hurricane Wind Scale*, https://www.nhc.noaa.gov/aboutsshws.php, accessed June 14, 2024.

Extreme Heat

The Heat Index, which measures the "apparent temperature" when considering both air temperature and humidity, is used by the NWS to identify extreme heat days. Extreme heat is particularly dangerous when occurring for a prolonged period (heat waves). Figure 4-10, ***Heat Index***, shows the likelihood of heat disorder with prolonged exposure or strenuous activity associated with various temperatures and relative humidity. As described above, the NWS indicates alert procedures when the Heat Index is expected to exceed 105°F (depending on local climate). An extreme heat event would occur throughout the City.

FIGURE 4-10: HEAT INDEX



Source: National Weather Service, *NWS Heat Index*, https://www.weather.gov/images/safety/heatindexchart-650.jpg, accessed June 14, 2024.

Power Outage

High Fire Risk Areas are areas with circuits within California Public Utilities Commission's (CPUC) Tier 2 (elevated risk) and Tier 3 (extreme risk) Fire Threat Areas. The CPUC Fire-Threat Map was developed with input from the U.S. Forest Service, California Department of Forestry and Fire Protection, and the State's investor-owned utilities, including SCE.

SCE uses their own thresholds prior to initiating a PSPS event. When evaluating weather and environmental conditions, SCE considers a variety of factors which include but are not limited to:

- National Weather Service Red Flag Warnings
- SCE meteorological assessments
- SCE Fire Potential Index
- SCE Fire Scientist assessments
- Real-time situational awareness information
- SCE Fire Management/Office of Emergency Management input
- Concerns from local or State fire authorities
- Mandatory or voluntary evacuation orders in place

- Expected impact of de-energizing circuits on essential services (including public safety agencies, water pumps, traffic controls, etc.)
- Other operational considerations to minimize wildfire ignitions

Previous Occurrences

Heavy Rains

The rainy season in Glendora traditionally occurs between November into early May; although severe rains have occurred during other times of the year when weather conditions permit. Refer to the Flood Hazard Profile for a summary of specific regional storms that caused heavy rains in the City.

Santa Ana Winds

Santa Ana winds occur annually between September to May in the City of Glendora. These events have caused tree limbs to fall and debris to scatter, at times resulting in blocked roadways and downed powerlines. Significant Santa Ana wind events in Glendora's recent history include an event in December 2011, where wind gusts of up to 80 miles per hour caused trees to fall and damage to power lines. As many as 230,000 were reported without power in the area and the City declared a state of emergency due to the severe winds, which caused an estimated $300,000 in damage.[41] Since then, there have been many records of high winds. Most incidents of high wind in the City of Glendora are the result of either the Santa Ana winds or La Niña/El Niño wind conditions.

Extreme Heat

Based on Cal Adapt's observed historical information (1961 through 2004), the City experiences four extreme heat days per year on average. [42] Over the past 20 years (2003-2023), the Santa Fe Dam monitoring station in Irwindale (located approximately 3.5 miles west of the City) has experienced an extreme heat event (101°F or higher) every year.[43] During this period, the maximum temperature during extreme heat events reached an average of 104.5°F. The southern California region experienced one of the most severe heatwaves during June 2012. During a seven-day period from June 14th to 20th, 2012, maximum daily temperatures stayed above 110°F. More recently, in 2022, California experienced a record-breaking severe heatwave. From September 1st through September 9th, 2022, temperature records for September were shattered across the western portion of the United States, including the San Gabriel Valley, where temperatures reached 111°F.

[41] Lodevico-To'o, Hazel, *Glendora City Manager Estimates $300,000 in Wind Damages*, http://glendora.patch.com/articles/glendora-city-manager-estimates-300-000-in-wind-damages, published December 7, 2011, accessed June 14, 2024.
[42] Cal-Adapt, *Extreme Heat Days & Warm Nights*, https://cal-adapt.org/tools/extreme-heat/, accessed June 13, 2024.
[43] National Oceanic and Atmospheric Administration, *Climate Data Online Search: Santa Fe Dam California*, CA US, https://www.ncei.noaa.gov/cdo-web/datasets/GHCND/stations/GHCND:USR0000CSFD/detail, accessed June 18, 2024.

Power Outage

Power outages due to severe weather events have affected parts of the City. Recent power outages include an event in January 2022 due to downed trees from Santa Ana winds;[44] and an event in December 2021, where hundreds of homes lost power due to high winds and storm conditions.[45] Recent PSPS events include a November 2023 warning for the City of Glendora and surrounding area, as a precaution because of dry conditions and strong winds that could damage power lines and potential spark wildfires.[46] Advance notice was provided to SCE customers advising that power could be off for the whole period; turned off more than once; may not begin exactly at the announced plan outage started time; and conditions may require the planned outage to be postponed. More recently, PSPS warnings and power outages affecting some areas occurred in January 2025 due to high winds and fire conditions associated with the Eaton Fire.

Probability of Future Occurrences

Heavy Rains

El Niño and La Niña are opposite phases of a natural climate pattern across the tropical Pacific Ocean that swings back and forth every 3-7 years on average.[47] Together, they are called El Niño-Southern Oscillation (ENSO). The ENSO pattern in the tropical Pacific can be in one of three states: El Niño, Neutral, or La Niña. El Niño (the warm phase) and La Niña (the cool phase) lead to significant differences from the average ocean temperatures, winds, surface pressure, and rainfall across parts of the tropical Pacific. Neutral indicates that conditions are near their long-term average.

According to the National Weather Service, ENSO conditions have returned to neutral after experiencing El Niño conditions from winter to spring 2023-24; however, La Niña conditions are projected to develop during July to September (65% chance) and persist into the Northern Hemisphere during winter 2024-25 (85% chance).[48] Typically, El Niño is associated with warm, wet winters in southern California, while La Niña is associated with cooler and drier conditions. As such, the southern California area could experience a rapid swing from heavy precipitation to dryness. However, due to the cyclical nature of these climate patterns, and based on previous occurrences and weather trends in southern California, it is anticipated that heavy rains will continue to occur in the City. The probability of future occurrences is considered highly likely.

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[44] City of Glendora, *City Updates: SCE Power Outage Map Link & Phone Number*, https://www.cityofglendora.org/Home/Components/News/News/6270/23?npage=14, accessed June 19, 2024.

[45] Fernandes, S. and Hernández, C., *LA Is Drenched. Here's How The Storm Is Impacting The Area*, https://laist.com/news/climate-environment/los-angeles-storm-what-you-need-to-know, accessed June 19, 2024.

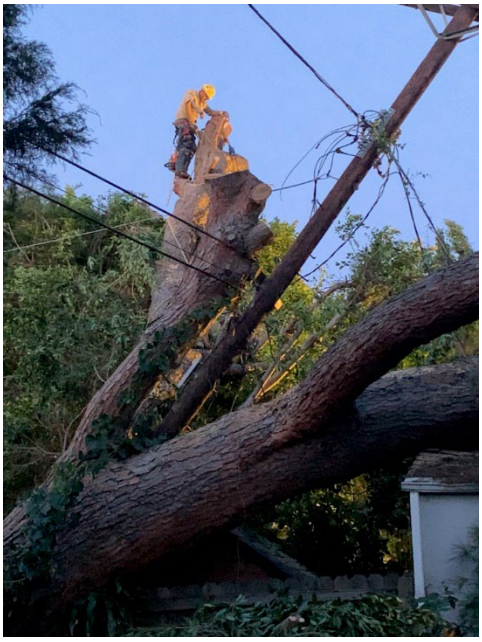
[46] McMillan, R., *SoCal Edison warns of possible power shutoffs as powerful Santa Ana winds increase fire threat*, https://abc7.com/wind-power-shutoffs-socal-edison-fire/14029054/, accessed June 19, 2024.

[47] National Oceanic and Atmospheric Administration, *El Niño and La Niña: Frequently asked questions*, https://www.climate.gov/news-features/understanding-climate/el-ni%C3%B1o-and-la-ni%C3%B1a-frequently-asked-questions#:~:text=El%20Ni%C3%B1o%20and%20La%20Ni%C3%B1a%20are%20opposite%20phases%20of%20a,for%20El%20Ni%C3%B1o%2DSouthern%20Oscillation, accessed June 19, 2024.

[48] National Oceanic and Atmospheric Administration, *El Niño/Southern Oscillation (ENSO) Diagnostic Discussion*, https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.shtml, published June 13, 2024, accessed June 19, 2024.

Santa Ana Winds

High winds, or Santa Ana wind events for purposes of this LHMP, have historically occurred annually within southern California and the City of Glendora. According to the National Weather Service, these winds are most common during the cooler months of the year, occurring from September to May. Due to the topography of the area, weather patterns, and annual occurrence, there is no indication that these events will not continue to occur in the future. Thus, due to their 100 percent annual occurrence, it is highly likely that high winds related to Santa Ana wind events will continue to occur in the City.



Source: LADWP, *LADWP Crews Prepared as Heavy Rain and Wind Storm Forecasted, Reminds Public to Stay Away from Downed Power Lines*, https://www.ladwpnews.com/ladwp-crews-prepared-as-heavy-rain-and-wind-storm-forecasted-reminds-public-to-stay-away-from-downed-power-lines/ accessed November 21. 2024.

Extreme Heat

Extreme heat events have historically occurred within southern California and the City. According to the National Weather Service, California has been experiencing more frequent and severe heat waves. Cal-Adapt Extreme Heat Days & Warm Nights tool indicates that for most areas of California, the climate models project a significant rise in the number of days exceeding what is now considered extremely hot for the given area. For Glendora, baseline data (1961 through 1990), shows the City experiences four extreme heat days per year on average, which is projected to increase to increase to 18 days per year on average by mid-century (2035 through 2064).[49] Thus, based on the historical occurrence of four extreme heat days per year and projected increase in future occurrences of 18 days per year, the probability that extreme heat events will continue to occur in the City is highly likely.

Power Outage

Power outage and/or PSPS events are typically associated with heavy rains, Santa Ana winds, and extreme heat. These associated events are highly likely to continue to occur in the City. Thus, based on previous occurrences and the probability of future heavy rains, Santa Ana winds, and extreme heat, power outage is highly likely to continue to occur in the City.

Climate Change Considerations

Climate change has direct effects on heavy rain events. According to research conducted by UCLA, California will experience extremely wet and extremely dry seasons by the end of the century. Climate scientists predict that “over the next 40 years, the State will be 300 to 400 percent more likely to have a prolonged storm sequence as severe as the one that caused the legendary

[49] Cal-Adapt, *Extreme Heat Days & Warm Nights*, https://cal-adapt.org/tools/extreme-heat/, accessed June 13, 2024.

California flood more than 150 years ago."[50] The Fourth Climate Change Assessment indicates the intensity of heavy precipitation events is increasing and identifies a medium-high confidence for future change. While the annual rainfall averages may remain constant, the wet season may be narrower, and precipitation is expected to fall in fewer, more extreme events.

According to the California Adaptation Planning Guide, local heat waves are likely to occur much more frequently. Climate models project a significant rise in the number of days exceeding what is normally considered extremely hot for Glendora. The number of heat waves is very likely to increase because of climate change, reflecting the global trend. According to Cal-Adapt, the number of extreme heat days in Glendora, defined as a day when the high temperature is at least 100.2°F, is expected to rise from a historical annual average of four days per year to 18 days per year by the middle of the century (2035 through 2064), and to an average of 24 days per year by the end of the century (2070 through 2099).[51] The number of warm nights in Glendora is also expected to increase, which is defined as temperatures above 68.6°F. Climate change is expected to increase the number of warm nights from a historical annual average of four nights per year to 35 warm nights per year by the middle of the century (2035 through 2064) and 49 warm nights per year by the end of the century (2070 through 2099).

SCE reports that increased power outages are directly related to climate change, and states on their website that PSPS will become "the new normal during high fire/wind events." PSPS will become increasingly required to mitigate fire risk as increased severity and duration of extreme weather events occur.

Additionally, climate change may result in storm events, Santa Ana winds, and heat waves occurring outside of traditional seasons of the year. This could increase secondary effects, such as flooding, erosion, or wildfire events.

WILDFIRE

Description

A wildfire is defined as an unplanned and unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fire where the object is to extinguish the fire. Wildfire is a natural part of the southern California ecosystem, helping to clear brush and debris, and is a necessary part of the various species' life cycles. Wildfires can be sparked by lightning, accidents, or arson.

Human activity has changed the buffer zone between urbanized and undeveloped areas, known as the wildland-urban interface, where naturally fire-prone landscapes abut developed neighborhoods. The natural setting of a wildland-urban interface can make these areas highly

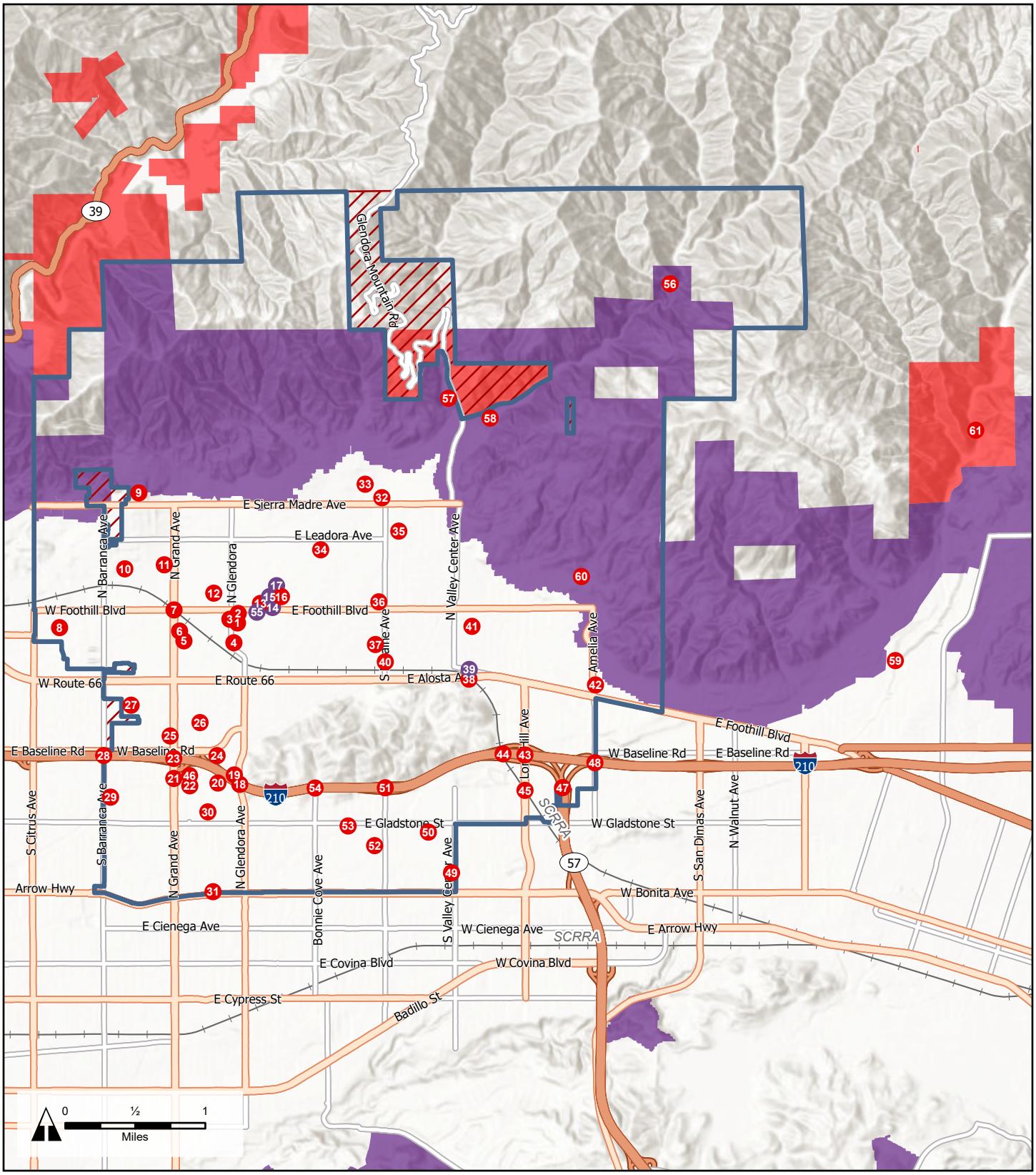
[50] Colgan, D. (UCLA), *Study forecasts a severe climate future for California*, April 2018, https://newsroom.ucla.edu/releases/california-extreme-climate-future-ucla-study, accessed June 10, 2024.
[51] Cal-Adapt, *Extreme Heat Days & Warm Nights*, https://cal-adapt.org/tools/extreme-heat/, accessed June 13, 2024.

desirable places to live, and many of these areas in California are now developed. This development has brought more people into wildfire-prone areas. The availability of fuel and increasing encroachment into the wildland-urban interface have made wildfires a common and dangerous hazard in California. Certain development patterns pose more difficult fire problems. These include multi-story, wood frame, high-density apartment developments; multi-story research developments; large continuous developed areas with combustible roofing materials; and facilities that use and/or store hazardous materials. Features of structural conditions that affect fire control include the type and use of structure, area of building, number of stories, roof covering, and exposures to the building.

Location and Extent

CAL FIRE prepares wildfire hazard severity maps including mapping areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), define the application of various mitigation strategies and influence how people construct buildings and protect property to reduce the risk associated with wildland fires. While FHSZ do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern. Zones are designated on varying degrees from moderate, high, and very high. A large portion of land within the City is open space and includes rugged topography with highly flammable chaparral vegetation, making wildland fires a significant risk to the community and within the City's SOI. Very High Fire Hazard Severity Zones (VHFHSZs) are in the northern and eastern foothills of the City; refer to Figure 4-11, *Fire Hazard Severity Zones*. Additionally, FHSZ are not limited to the City of Glendora. Land designed as VHFSZ is also located within the cities of Azusa and San Dimas, immediately west and east-southeast of Glendora, respectively. The Angeles National Forest is located to the north of the City and contains land designated as VHFSZ within a State Responsibility Area and land within a Federal Responsibility Area.

Fire protection challenges within Glendora occur where development is located within and directly adjacent to wildland-urban interface areas. As the number of structural features increase, so does the risk of incidence of fire. Wildfires are not measured on a specific scale and are usually classified by size or impact. The size and severity of any fire depends on the availability of fuel, weather conditions, and topography, although wildfires in the wildland-urban interface do not need to be identified as large to be damaging. Due to the location of development within and adjacent to Very High Fire Hazard Severity Zones, there is the potential for a wildfire to spread quickly and through a large portion of the City, depending on the conditions and nature of the fire.



LEGEND

- Critical Facility
- Facility of Concern
- City of Glendora
- Sphere of Influence

Fire Hazard Severity Zones in Local Responsibility Areas

- Very High

Fire Hazard Severity Zones in State Responsibility Areas

- Moderate*
- High*
- Very High

* there are no lands with this classification within the mapped extent

CITY OF GLENDORA, CALIFORNIA

Figure 4-11. Fire Hazard Severity Zones

Sources: CalFire 4-1-2024; Los Angeles County GIS. Map date: December 12, 2024.

Previous Occurrences

Fire season in southern California traditionally occurs between May and September. However, it should be noted that Glendora has experienced some of its most devastating fires during the fall (outside of the traditional fire season), including the Colby fire, as described below.

Major Wildfires in Los Angeles County History

Los Angeles County has experienced a number of major wildfires in the past, including the 1919 Ravenna and San Gabriel fires which claimed a combined 115,000 acres, and the 1970 Wright-Clampitt-Agua Dulce Fire which claimed approximately 135,000 acres.[52] Since 2005, there have been over 110 incidents burning 10 acres or more in Los Angeles County.[53] Table 4-13, *Major Wildfires in Recent Los Angeles County History*, identifies the most significant historical fires in Los Angeles County dating back to 2004 in terms of the amount of acreage claimed.

TABLE 4-13: MAJOR WILDFIRES IN RECENT LOS ANGELES COUNTY HISTORY

Name	Year	Acres Claimed
Station Fire	2009	160,577
Bobcat Fire	2020	115,796
Woolsey Fire	2018	96,949
Ranch Fire	2007	58,401
Bridge Fire	2024	56,030
Buckweed (Agua Dulce) Fire	2007	38,000
Lake Fire	2020	31,089
Powerhouse Fire	2013	30,274
Topanga Fire	2005	24,175
Creek Fire	2017	15,619
Sesnon Fire	2008	14,703
Crown Fire	2010	13,918
Sayre Fire	2008	11,262

Source: California Department of Forestry and Fire Protection, Incidents, https://www.fire.ca.gov/Incidents, accessed June 13, 2024; County of Los Angeles Fire Department, *Bobcat Fire Status*, https://fire.lacounty.gov/bobcat-fire-status/, accessed June 13, 2024.
Note: For purposes of this LHMP, major wildfires are defined as burning more than 10,000 acres in total.

Significant Historical Wildfires Near Glendora

Some of the most significant fires occurring in the vicinity of Glendora area are described below.

2009 Station Fire. The Station Fire is the 10th largest wildfire in California history, burning 160,577 acres and killing two firefighters once it began in late August 2009. The fire started in the Angeles National Forest near the U.S. Forest Service ranger station on the Angeles Crest Highway (SR 2). The blaze threatened 12,000 structures in the National Forest and the nearby communities of La Cañada Flintridge, Glendale, Acton, La Crescenta, Littlerock, Pasadena, and Altadena, as well as the Sunland and Tujunga neighborhoods of Los Angeles. The fire was predicted to burn for months and travel miles to the City of Azusa adjacent to Glendora. The

[52] Los Angeles County Fire Museum, *Timeline of Significant Dates*, https://www.lacountyfiremuseum.com/lacofd-timeline/, accessed June 13, 2024.
[53] California Department of Forestry and Fire Protection, Incidents,

Station Fire burned on the slopes of Mount Wilson, threatening numerous television, radio, and cellular antennas on the summit, as well as the Mount Wilson Observatory, which includes several historically significant telescopes and astronomical facilities operated by UCLA, USC, UC Berkeley, and Georgia State University. In October 2009, the fire extinguished due to a fall rainstorm.

2014 Colby Fire. The Colby Fire was a wildfire in the Angeles National Forest. It was ignited along the Colby Truck Trail in the San Gabriel Mountains in northern Los Angeles County. The fire started on January 16, 2014, caused by an illegal campfire that blew out of control. January fires are unusual in southern California, but there was little rainfall in the area leading up to the fire, which led to a “red flag” fire danger situation. Warm temperatures, low humidity, and an excess of dry brush in the foothills around Glendora (which had not burned significantly since the 1960s) encouraged the growth of the fire. By January 26, the Colby Fire was contained but had burned 1,992 acres. The fire, which was fanned by strong Santa Ana winds, destroyed five homes, injured one person, and forced the evacuation of 3,600 people at its peak.

2016 San Gabriel Complex Fire. The San Gabriel Complex Fire ignited the morning of June 20, 2016. The Complex Fire consisted of two fires: the Reservoir Fire and the Fish Fire. Both fires originated northeast of the city limits. The cause of the Reservoir Fire was due to a vehicle crash, while the cause of the Fish Fire is still under investigation. The fires burned fuel that was between seven and 10 years old with six- to eight-foot-tall chaparral and large grass crops. At the height of the fire, 1,376 homes were evacuated. The American Red Cross established an evacuation center and 1,460 staff from multiple local, state, and federal agencies worked to protect property and suppress the fire. Road closures were in place and law enforcement patrolled for security while firefighters worked through the night to contain the fire. Although the San Gabriel Complex Fire threatened homes in the City, no property damage was reported.

2020 Bobcat Fire. The Bobcat Fire started on September 6, 2020. By December 18, it was fully contained and had burned 115,796 acres in the central San Gabriel Mountains in the Angeles National Forest. It is one of the largest fires on record in Los Angeles County. The fire triggered mandatory evacuation orders in parts of Arcadia and Camp Williams. Forest Service investigators determined the cause of the fire was a power line conductor igniting overhead trees. The fire initially spread southward prompting evacuation orders for residents in Sierra Madre, Monrovia, Bradbury, and Duarte, along with evacuation warnings for those in Arcadia, Pasadena, and Altadena. The fire then grew westward and threatened the Mount Wilson Observatory, approaching within 500 feet of the observatory as firefighters worked to protect the structure. By September 17, the fire rapidly expanded to the north into Pleasant View Ridge Wilderness due to moderate coastal winds, leading to mandatory evacuations in Antelope Valley as the fire approached Juniper Hills. Containment difficulties were exacerbated by very dry vegetation and rugged topography that made it difficult to access. An estimated 6,000 structures were threatened and there were six injuries. The fire destroyed 27 residences and damaged 28 others. It also destroyed 83 structures and damaged 19 others.

2024 Bridge Fire. The Bridge Fire began on September 8, 2024 in the Angeles National Forest near Glendora. The fire began after a recent heat wave and fueled by dry conditions and high winds, spread to over 56,030 acres in Los Angeles and San Bernardino counties. Evacuation orders were issued in the Angeles National Forest area, including Wrightwood and Mount Baldy, and evacuation warnings were issued for the Foothill Communities, including portions of Claremont, La Verne, and San Dimas. The fire destroyed 17 structures and damaged 81 others. There were eight confirmed fire personnel and civilian injuries.

Source: Margolis, J. and Ujiiye, T., *Bridge Fire explodes to 47K acres; more than 30 homes destroyed*, https://laist.com/news/climate-environment/bridge-fire-angeles-national-forest-evacuations, accessed November 21, 2024.

2025 Eaton Fire. The Eaton Fire began on the evening of January 7, 2025 in Eaton Canyon in the San Gabriel Mountains, near Altadena. The fire was one of several major concurrent fires in the County being driven by dry conditions and extremely powerful Santa Ana winds, including the Palisades Fire and Hughes Fire. By February 20, 2025, the fire was completely contained and had burned 14,021 acres. The Eaton Fire is one of the most destructive wildfires in California history, destroying an estimated 9,414 structures, damaging 1,074 others, and resulting in 17 confirmed fatalities and nine injuries.

Probability of Future Occurrences

Wildfires have a high probability of occurring due to Glendora's location at the base of the San Gabriel Mountains, which creates a wildland-urban interface that makes the City particularly susceptible to wildfire. Los Angeles County is continually exposed to Santa Ana winds during the fall season; however, these winds can occur at other times of the year as well. Additionally, as with the recent Eaton, Bobcat, San Gabriel Complex, Colby, and Bridge fires, it is highly likely that

fires of regional significance will occur in the San Gabriel Mountains that could impact the City of Glendora. The wildland-urban interface is likely to experience wildfires in future years.

Climate Change Considerations

Several of the largest California wildfires have occurred in the past decade, including the August Complex Fire, Dixie Fire, and Mendocino Complex Fire.[54] During 2018, the Camp Fire became the deadliest wildfire in California history, killing 85 civilians and burning over 153,000 acres in Butte County.[55] Southern California experienced several severe fires in recent history, including the Eaton Fire, Palisades Fire, Bobcat Fire, Woolsey Fire, Lake Fire, and Creek Fire.

Climate change is expected to cause an increase in temperatures, as well as more frequent and intense drought conditions. The severity of a wildfire is dependent on the amount of oxygen, heat, wind, relative humidity, and fuel. Excessive heat and low humidity during the summer and fall months are likely to occur. It is possible that higher temperatures could cause local native chaparral and scrub ecosystems to change to grasslands. This would increase dry plant matter, which could cause wildfires to move more quickly or spread into developed areas of Glendora.

It is well documented that regional wildfires will likely become an increased threat, which could have secondary consequences for the City. Fires located in different parts of Los Angeles, Orange, Riverside, or San Bernardino counties can negatively impact air quality in the City. Wildfires release smoke, ash, and other particulate matter that substantially degrade air quality (including fine particulate matter, $PM_{2.5}$). $PM_{2.5}$ is particularly damaging to human health since particulate matter of this size can deeply penetrate lung tissue and affect a person's respiratory and cardiovascular systems. While poor air quality affects everyone, people with weakened immune systems or preexisting conditions, children, seniors, and people who spend a disproportionate amount of time outside are at an increased risk of wildfire smoke. The increase in wildfire frequency and size can contribute to periods of unhealthy to hazardous air quality, which leads to respiratory health impacts and worsens health impacts in persons with preexisting health conditions.

[54] California Department of Forestry and Fire Protection, *Top 20 Largest California Wildfires*, October 2022.
[55] California Department of Forestry and Fire Protection, *Camp Fire,* https://www.fire.ca.gov/incidents/2018/11/8/camp-fire/, accessed June 13, 2024.

4.3 VULNERABILITY/RISK ASSESSMENT

Vulnerability refers to a description of which assets, including structures, systems, populations, and other assets as defined by the community, within locations identified to be hazard-prone, are at risk from the effects of the identified hazards. A vulnerability analysis predicts the extent of damage to the built environment that may result from a hazard event of a given intensity in a specific area.

HISTORY OF DISASTERS AND OTHER DECLARATIONS

Federally declared disasters and other declarations affecting Los Angeles County from 2014 to 2025 are listed below in Table 4-14, *Los Angeles County FEMA Disaster Declarations (2014-2025)*. As shown, the greatest threats to the County and City include fire, severe weather, flooding, and seismic and geologic hazards such as landslide and mudslide.

TABLE 4-14: LOS ANGELES COUNTY FEMA DISASTER DECLARATIONS (2014-2025)

Disaster Number	Description	Declaration Date/ Incident Period	Assistance Provided
5051	Fire (California Colby Fire)	01-16-2014 (01-16-2014 to 01-22-2014)	N/A
5124	Fire (California Old Fire)	06-05-2016 (06-04-2016 to 06-10-2016)	Public Assistance
5129	Fire (California Fish Fire)	06-21-2016 (06-20-2016 to 06-30-2016)	Public Assistance
5132	Fire (California Sage Fire)	07-09-2016 (07-09-2016 to 07-14-2016)	Public Assistance
5135	Fire (California Sand Fire)	07-23-2016 (07-22-2016 to 08-01-2016)	Public Assistance
4305	Flood (Severe Winter Storms, Flooding, and Mudslides in California)	03-16-2017 (01-18-2017 to 01-23-2017)	Public Assistance, Risk Mitigation Assistance
5201	Fire (California la Tuna Fire)	09-02-2017 (09-01-202017 to 09-10-2017)	Public Assistance
5225	Fire (California Creek Fire)	12-05-2017 (12-05-2017 to 12-14-2017)	Public Assistance
5226	Fire (California Rye Fire)	12-05-2017 (12-05-2017 to 12-14-2017)	Public Assistance
5227	Fire (California Skirball Fire)	12-06-2017 (12-06-2017 to 12-15-2017)	Public Assistance
3396	Fire (California Wildfires)	12-08-2017 (12-04-2017 to 12-29-2017)	N/A
4353	Fire (California Wildfires, Flooding, Mudflows, and Debris Flows)	01-02-2018 (12-04-2017 to 01-31-2018)	Individual Assistance, Public Assistance, Hazard Mitigation Assistance
3409	Fire (California Wildfires)	11-09-2018 (11-08-2018 to 11-25-2018)	N/A
5280	Fire (California Woolsey Fire)	11-09-2018 (11-08-2018)	N/A
4407	Fire (California Wildfires)	11-12-2018 (11-08-2018 to 11-25-2018)	Individual Assistance, Public Assistance, Hazard Mitigation Assistance
5293	Fire (California Saddleridge Fire)	10-11-2019 (10-10-2019)	Public Assistance, Hazard Mitigation Assistance
5296	Fire (California Tick Fire)	10-24-2019 (10-24-2019)	Public Assistance
5297	Fire (California Getty Fire)	10-28-2019 (10-28-2019)	Public Assistance
3428	Biological (California Covid-19)	03-13-2020 (01-20-2020 to 05-11-2023)	Public Assistance
4482	Biological (California Covid-19 Pandemic)	03-22-2020 (01-20-2020 to 05-11-2023)	Individual Assistance, Public Assistance, Hazard Mitigation Assistance
5374	Fire (California Bobcat Fire)	09-13-2020 (09-13-2020)	N/A

Disaster Number	Description	Declaration Date/ Incident Period	Assistance Provided
4569	Fire (California Wildfires)	10-16-2020 (09-04-2020 to 11-17-2020)	Individual Assistance, Public Assistance, Hazard Mitigation Assistance
3591	Flood (California Severe Winter Storms, Flooding, and Mudslides)	01-09-2023 (01-08-2023 to 01-31-2023)	N/A
4683	Flood (California Severe Winter Storms, Flooding, Landslides, and Mudslides)	01-14-2023 (12-27-2022 to 01-31 2023)	Individual Assistance, Public Assistance, Hazard Mitigation Assistance
3592	Flood (California Severe Winter Storms, Flooding, Landslides, and Mudslides)	03-10-2023 (03-09-2023 to 07-10-2023)	N/A
4699	Severe Storm (California Severe Winter Storms, Straight-line Winds, Flooding, Landslides, and Mudslides)	04-03-2023 (02-23-2023 to 07-10-2023)	Individual Assistance, Public Assistance, Hazard Mitigation Assistance
4769	Severe Storm (California Severe Winter Storms, Tornadoes, Flooding, Landslides, and Mudslides)	04-13-2024 (01-31-2024 to 02-09-2024)	Public Assistance
5537	Fire (California Bridge Fire)	09-11-2024 (09-08-2024 to ongoing)	Public Assistance
5548	Fire (California Franklin Fire)	12-10-2024 (12-9-2024 to ongoing)	Public Assistance
5549	Fire (California Palisades Fire)	1-7-2025 (1-7-2025 to ongoing)	Public Assistance
5550	Fire (California Eaton Fire)	1-7-2025 (1-8-2025 to ongoing)	Public Assistance
5551	Fire (California Hurst Fire)	1-7-2025 (1-8-2025 to ongoing)	Public Assistance
4856	California Wildfires and Straight-line Winds	1-7-2025 (1-8-2025 to ongoing)	Individual Assistance, Public Assistance, Hazard Mitigation Assistance

Source: Federal Emergency Management Agency, *Disasters and Other Declarations*, https://www.fema.gov/disaster/declarations, accessed January 24, 2025.

State-proclaimed disasters affecting Los Angeles County from 2014 to 2025 are listed in Table 4-15, *California State Disaster Declarations for Los Angeles County (2014-2025)*. State-proclaimed disasters affecting the County and City include severe weather and wildfire.

TABLE 4-15: CALIFORNIA STATE DISASTER DECLARATIONS FOR LOS ANGELES COUNTY (2014-2025)

Disaster Code	Description	Date of Disaster
65	Severe Rainstorms	July 2015
68	Rainstorms	October 2015
71	Sand Fire	July 2016
77	January Winter Storms	January 2017
77.1	February Winter Storms	February 2017
86	La Tuna Fires	September 2017
93	Creek & Rye Fires	December 2017
108	Hill & Woolsey Fires	November 2018
109	Atmospheric River Storm System	January and February 2019
112	Eagle, Reche, Saddleridge, Sandalwood, and Wolf Fires	October 2019
113	Kincade and Tick Fires	October 2019
116	CA wildfires	September 2020
127	December Winter Storms	December 2021
135	Tropical Storm Kay	September 2022
138	Route Fire (Declared November 2022)	August 2022
140	Severe Winter Storms	December 2022 and January 2023
141	Severe Winter Storms	February 2023 and March 2023
142	Tropical Storm Hilary	August 2023
146	Severe Winter Storms	February 2024
147	Storms	March 2024
153	Bridge & Airport Fires	September 2024
157	Fires & Windstorm	January 2025

Source: California State Franchise Tax Board, *List of California Disasters*, https://www.ftb.ca.gov/file/business/deductions/disaster-codes.html, accessed January 24, 2025.

METHODOLOGY

For each of the hazards profiled in the previous section, a vulnerability/risk assessment is provided in this section. It should be noted that the actual losses will depend on the type, location, magnitude, and extent of the hazard event.

The vulnerability/risk examines three aspects of each hazard: the physical threat to critical facilities, facilities of concern, and residential and non-residential structures; the social threat to vulnerable populations, including residents and visitors to the City; and the threat to any other assets that may be affected.

This section relies primarily on the following data sources:

- U.S. Census [2017-2021 American Community Survey (ACS) 5-year estimates]
- Center for Disease Control and Prevention (CDC)/ Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index (SVI)
- California Environmental Protection Agency (CalEPA) SB 535 Disadvantaged Communities
- FEMA's National Risk Index

Census data and associated analysis/mapping conducted as part of the City's Housing Element Update were reviewed and compared to the hazards and associated mapping provided within this LHMP to provide an understanding of socially vulnerable populations that may potentially reside within an area of the City subject to hazards. This information was supplemented by the CDC/ATSDR SVI, which uses U.S. census data to determine the social vulnerability of each census tract and ranks each tract on 16 variables, in order to identify communities that may need support before, during, or after disasters. These variables are grouped into four themes that cover major areas of social vulnerability: socioeconomic status (e.g., income below 150% of poverty level, unemployed, no health insurance), household characteristics (e.g., 65 years or older, aged 17 years or younger, single parent households, English language proficiency), racial and ethnic minority status, and housing type and transportation (e.g., multi-unit structures, mobile homes, crowding, no vehicle).

FEMA's National Risk Index was reviewed in regard to the risks associated with the natural hazards with the potential to affect the City and County. FEMA's National Risk Index leverages available data for natural hazard and community risk factors to develop a baseline risk measurement at the county and census tract level. Risk refers to the potential for negative impacts as a result of a natural hazard. FEMA's National Risk Index does not include human-induced hazards. For example, a flood resulting from changes in river flows is a natural hazard, whereas flooding due to a dam failure is considered a manmade hazard, and therefore excluded from the National Risk Index.

In determining risk, FEMA's National Risk Index considers three components: a natural hazards component (expected annual loss), a consequence enhancing component (social vulnerability), and a consequence reduction component (community resilience). Expected Annual Loss represents the average economic loss in dollars resulting from natural hazards each year. It is calculated for each hazard type and quantifies loss for relevant consequence types: buildings, people, and agriculture. Social vulnerability is the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood. Community resilience is the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions

CRITICAL FACILITIES AND FACILITIES OF CONCERN

The LHMP Planning Team identified 61 critical facilities and facilities of concern for incorporation in the hazard vulnerability/risk analysis; refer to Table 4-16 and Figure 4-12, *Glendora Critical Facilities and Facilities of Concern*. Critical facilities and facilities of concern are owned, operated, and maintained by various agencies, not just the City. Critical facilities are buildings that are essential for the delivery of vital services or protection of a community. Critical facilities include emergency operation centers, healthcare facilities, police and fire stations, schools and power stations. These facilities support critical community lifelines that enable the continuous operation of critical business and government functions and are essential to human health and safety or economic security. Damage to these facilities caused by a hazard event has the potential to impair response and recovery and may lead to disruption of services. Facilities of concern are less vital to safety and well-being, but may assist in evacuations, serve as assembly points or temporary shelters, or provide a supportive role in preparing for and recovering from hazard events.

Where available, the LHMP Planning Team identified a facility's potential loss value, comprised of replacement and contents for each facility. The data was provided by the City's property insurance schedule and therefore, information for facilities not owned by the City are not shown (e.g. infrastructure, private buildings). In some instances, replacement cost information was not made available. If a facility is destroyed in a hazard event, the replacement and contents values indicate the cost to replace the entire facility and all of its contents. Typically, the cost to repair a damaged facility would be less than the replacement value. While the replacement and contents values are used throughout this plan to estimate potential losses, it is noted that the actual cost to recover from a hazard event will depend on the type and magnitude of the event.

The critical facilities were mapped in GIS and overlaid with mapped hazard areas (those hazards that have a specific geographic area) to determine which assets are located in each hazard area. Hazard areas and critical facility overlays were conducted for dam inundation, flood, seismic ground shaking, landslide (specific to seismic conditions), liquefaction, and wildfires.

Due to the nature of the hazards and availability of information, hazard overlays were not prepared for drought, landslide/mudflow, and severe weather. These hazards are not geographically defined and have the potential to affect the entire community. There are no defined hazard areas for moisture-induced landslides and mudflows, although as discussed in the hazard profile, they typically occur along hillside areas and can result from conditions caused by other hazards, such as heavy rains following wildfires. For the purposes of this LHMP, it is assumed these hazards could potentially impact the entire community, including the critical facilities.

Replacement and contents values for the facilities in each hazard area are provided to estimate the potential losses based on the method described above. However, the likelihood that all facilities are completely damaged at the same time or that the entirety of a structure and its

contents are damaged is extremely unlikely. Most impacts are anticipated to be isolated to certain locations based on the hazard.

TABLE 4-16: GLENDORA CRITICAL FACILITIES AND FACILITIES OF CONCERN

Map ID	Name	Type	Owner/ Responsible Agency	Location	Critical Facility	Facility of Concern
1	Glendora Police Facility / City Transmitter Site	Government	City of Glendora	150 S Glendora Avenue	X	
2	Glendora City Hall	Government	City of Glendora	116 E Foothill Boulevard	X	
3	Glendora Library and Cultural Center	Government	City of Glendora	140 S Glendora Avenue	X	
4	Frontier Telephone Center	Communications	Frontier	252 S Glendora Avenue	X	
5	Foothill Presbyterian Hospital	Medical	Emanate Health	250 S Grand Avenue	X	
6	Foothill Medical Arts Building	Medical	Privately Held	210 S Grand Avenue	X	
7	A Line (Gold Line) Overcrossing	Transportation Infrastructure	Los Angeles County Metropolitan Transportation Authority	Grand Avenue / Foothill Boulevard	X	
8	Citrus College	School	Citrus Community College District	1000 W Foothill Boulevard	X	
9	St. Lucy's Priory High School	School	St. Lucy's Priory	655 W Sierra Madre	X	
10	Sandburg Middle School	School	Glendora Unified School District	819 W Bennett Avenue	X	
11	La Fetra Elementary School	School	Glendora Unified School District	547 W Bennett Avenue	X	
12	LA County Fire Station #151	Government	Los Angeles County Fire Department	231 W Mountain View Avenue	X	
13	La Fetra Senior Center	Community	City of Glendora	333 E Foothill Boulevard	X	
14	City Transportation Center	Government	City of Glendora	410 E Dalton Avenue		X
15	Glendora Youth Center	Community	City of Glendora	427 E Dalton Avenue		X
16	American Legion Building	Community	City of Glendora	159 N Cullen Avenue	X	
17	Liberty House	Community	City of Glendora	181 N Cullen Avenue		X
18	I-210 Overcrossing at Glendora Ave	Transportation Infrastructure	Caltrans	I-210/ Glendora Avenue	X	
19	LA Dept of Water and Power High Voltage Transmission Lines	Electrical Infrastructure	Los Angeles Department of Water and Power	1000 S Glendora Avenue west to Grand Avenue and east to the South Hills	X	

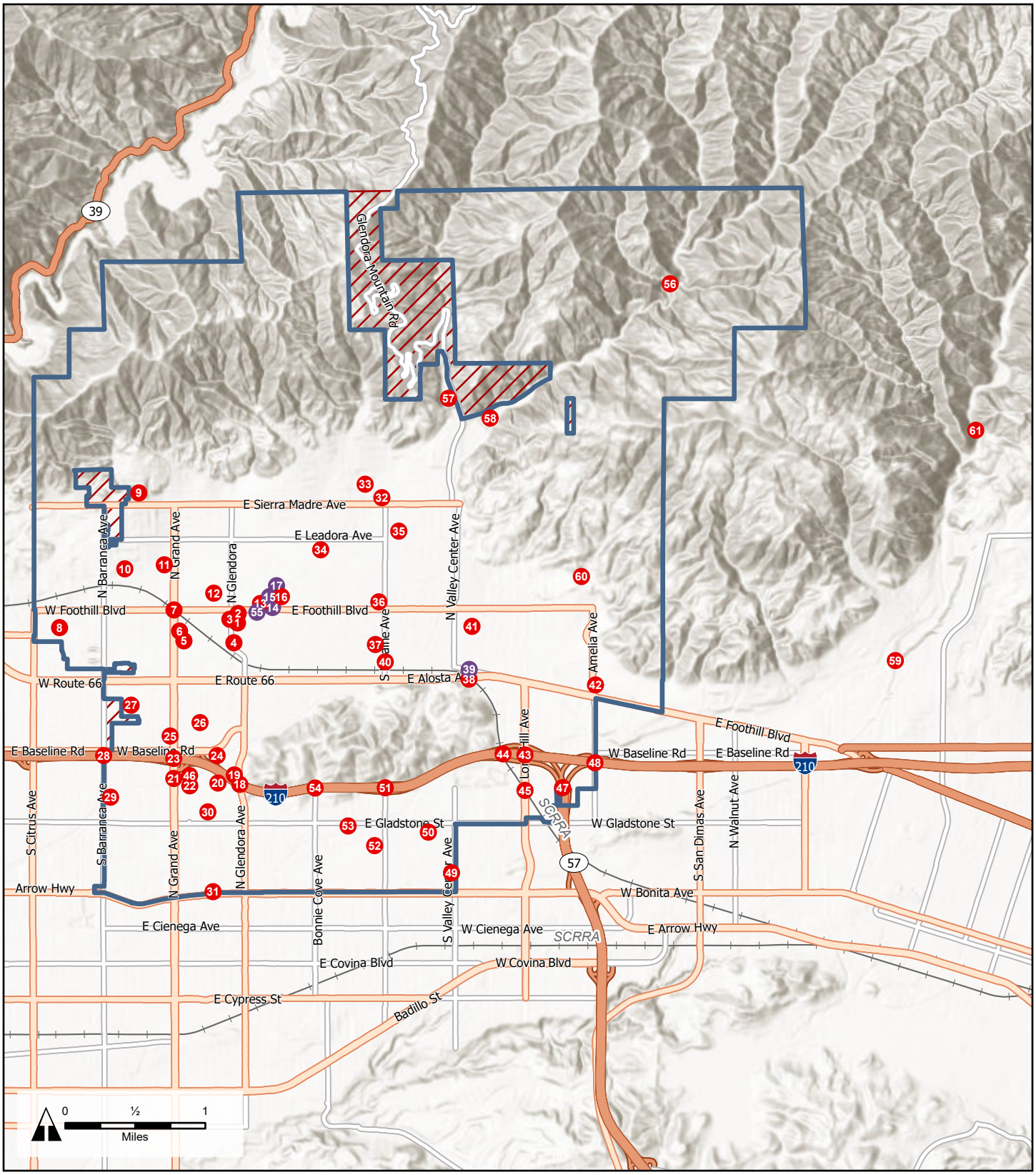
Map ID	Name	Type	Owner/ Responsible Agency	Location	Critical Facility	Facility of Concern
20	Crowther Teen Center	Community		241 W Dawson Avenue	X	
21	SCE Sub-Station	Electrical Infrastructure		Grand Ave / Citrus Edge	X	
22	LA Dept of Water and Power High Voltage Transmission Lines	Electrical Infrastructure	Los Angeles Department of Water and Power	1100 S Grand Avenue east to Glendora Avenue and west to Barranca Avenue	X	
23	I-210 Overcrossing at Grand Ave	Transportation Infrastructure	Caltrans	I-210/ Grand Avenue	X	
24	Foothill Christian School #1	School	Foothill Christian	242 W Baseline Road	X	
25	Foothill Christian School #2	School	Foothill Christian	901 S Grand Avenue	X	
26	Whitcomb High School	School	Glendora Unified School District	350 W Mauna Loa Avenue	X	
27	Stanton Elementary School	School	Glendora Unified School District	725 S Vecino Avenue	X	
28	I-210 Overcrossing at Barranca Ave	Transportation Infrastructure	Caltrans	I-210/Barranca Avenue	X	
29	LA Dept of Water and Power High Voltage Transmission Lines	Electrical Infrastructure	Los Angeles Department of Water and Power	1200 S Barranca Avenue east to Grand Avenue	X	
30	Washington Elementary School	School	Charter Oak Unified School District	325 W Gladstone Avenue	X	
31	Covina Irrigating Company	Water/Wastewater Infrastructure	Covina Irrigating Company	255 W Arrow Highway	X	
32	City of Glendora Water Yard	Water/Wastewater Infrastructure	City of Glendora	1051 E Sierra Madre Avenue	X	
33	Goddard Middle School	School	Glendora Unified School District	859 E Sierra Madre Avenue	X	
34	Cullen Elementary School	School	Glendora Unified School District	440 N Live Oak Avenue	X	
35	Glendora USD Office / Sellers Elementary School	School	Glendora Unified School District	500 N Loraine Avenue	X	
36	Hope Lutheran School	School	Hope Lutheran Church	1041 E Foothill Boulevard	X	
37	Williams Educational Center	School	Glendora Unified School District	301 S Loraine Avenue	X	

Map ID	Name	Type	Owner/ Responsible Agency	Location	Critical Facility	Facility of Concern
38	A Line (Gold Line) / Railroad Overcrossing	Transportation Infrastructure	Los Angeles County Metropolitan Transportation Authority	1400 E Route 66	X	
39	Glendora Community Service Yard	Government	City of Glendora	1626 E Compromise Line Road		X
40	Glendora City Yard	Government	City of Glendora	440 S Loraine Avenue	X	
41	Glendora High School	School	Glendora Unified School District	1600 E Foothill Boulevard	X	
42	LA County Fire Station #86	Government	Los Angeles County Fire Department	520 S Amelia Avenue	X	
43	I-210 Overcrossing at Lone Hill Ave	Transportation Infrastructure	Caltrans	I-210/Lone Hill Avenue	X	
44	I-210 Overcrossing at Railroad tracks	Transportation Infrastructure	Caltrans	I-210/Railroad Tracks (west of Lone Hill Avenue)	X	
45	A Line (Gold Line) Overcrossing at Lone Hill Ave	Transportation Infrastructure	Los Angeles County Metropolitan Transportation Authority	Lone Hill Avenue/ Railroad Tracks (south of Lone Hill Avenue/ Auto Centre Drive)	X	
46	LA Dept. of Water and Power High Voltage Transmission Lines	Electrical Infrastructure	Los Angeles Department of Water and Power	900 S Lone Hill Avenue east to Amelia Avenue and west to Pompei Park	X	
47	I-210/SR-57 Overcrossing at Auto Centre Dr	Transportation Infrastructure	Caltrans	I-210/SR-57	X	
48	I-210 Overcrossing at Amelia	Transportation Infrastructure	Caltrans	I-210/Amelia Avenue	X	
49	Water Storage Facility	Water/Wastewater Infrastructure	Cal Water	Valley Center / Plymouth	X	
50	Willow Elementary School	School	Charter Oak Unified School District	1427 S Willow Avenue	X	
51	I-210 Overcrossing at Sunflower Ave	Transportation Infrastructure	Caltrans	I-210/Sunflower Avenue	X	
52	Sunflower School	School	Charter Oak Unified School District	1505 S Sunflower Avenue	X	

Map ID	Name	Type	Owner/ Responsible Agency	Location	Critical Facility	Facility of Concern
53	LA County Fire Station #85	Government	Los Angeles County Fire Department	650 E Gladstone Street	X	
54	I-210 Overcrossing at Bonnie Cove	Transportation Infrastructure	Caltrans	I-210/Bonnie Cove	X	
55	Angeles National Forest Glendora Ranger Station	Government	U.S. Forest Service	110 N Wabash Avenue		X
56	Big Dalton	Dam	Los Angeles County Department of Public Works	2600 Big Dalton Canyon Road	X	
57	Little Dalton Debris Basin	Dam	Los Angeles County Department of Public Works	Glendora Mountain Road/Big Dalton Canyon Road	X	
58	Big Dalton Debris Basin	Dam	Los Angeles County Department of Public Works	Glendora Mountain Road/Big Dalton Canyon Road	X	
59	Puddingstone Diversion*	Dam	Los Angeles County Department of Public Works	N San Dimas Canyon Road/Terrebonne Avenue	X	
60	Morgan Debris Basin	Dam	Los Angeles County Department of Public Works	Morgan Ranch Road/Valiant Street	X	
61	San Dimas*	Dam	Los Angeles County Department of Public Works	9865 N San Dimas Canyon Road	X	

Source: City of Glendora, 2024.

Note: * These critical facilities are located outside of the Glendora Planning Area, but have dam inundation areas affecting the City.



LEGEND

- Critical Facility
- Facility of Concern
- City of Glendora
- Sphere of Influence

CITY OF GLENDORA, CALIFORNIA

Figure 4-12. Glendora Critical Facilities and Facilities of Concern

Sources: California Geological Survey Regulatory Maps Portal; Los Angeles County GIS. Map date: December 12, 2024.

VULNERABLE POPULATIONS

Factors such as age, socioeconomic status, access to key services, physical and/or mental conditions, and other factors affect the ability of people to prepare for and respond to a hazard event. Even though some hazard events may impact all parts of Glendora with equal severity, different people may experience the impacts to a greater or lesser extent. For example, lower-income households are less likely to have the financial resources to implement mitigation actions in their homes, and less likely to have the financial means to recover as a result of a hazard event. As a result, certain groups are considered to be more vulnerable to specific hazards than other groups.

This assessment includes a social threat analysis that examines how hazard events are likely to impact different populations within Glendora and where these populations live in the City. This includes assessing whether the people in an area of an elevated hazard risk are more likely than the average person to be considered a vulnerable population. The following criteria are used to assess the threat to vulnerable populations:

- Disability status: Persons with disabilities often have reduced mobility and may experience difficulties living independently. As a result, they may rely on the assistance of others to prepare for and mitigate hazard conditions.
- Income levels: Lower-income households are less likely to have the financial resources to implement mitigation activities on their residences. They may also struggle with having the necessary time to find and access educational resources discussing hazard mitigation strategies. Furthermore, lower-income households are less likely to be able to move to safer areas that are less at risk of being impacted by a hazard.
- Age: Seniors (individuals 65 years of age or older) are more likely to have reduced mobility, physical and/or mental disabilities, and lower-income levels, all of which may decrease their ability to prepare for and mitigate a hazard event. Similarly, individuals under 18 years of age may rely on the assistance of their parent(s) or guardian to prepare for and mitigate hazard conditions.
- Other variables: Other demographic and socioeconomic factors may adversely affect communities that encounter hazards. For instance, persons without access to a vehicle or non-English speakers may have greater difficulty during an evacuation event; persons without health insurance may have difficulties recovering from injuries sustained during a hazard event; and unsheltered persons are particularly vulnerable to severe weather events.

Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health, including natural or human-caused hazards. Reducing social vulnerability can decrease both human suffering and economic loss. The CDC SVI uses 16 variables to help local officials identify communities that may need support before, during, or after disasters. These variables are grouped into four themes that cover major areas of social vulnerability: socioeconomic status (e.g., income below 150% of poverty level, unemployed,

housing cost burden, no high school diploma, no health insurance), household characteristics (e.g., 65 years or older, aged 17 years or younger, civilian with a disability, single parent households, English language proficiency), racial and ethnic minority status, and housing type and transportation (e.g., multi-unit structures, mobile homes, crowding, no vehicle, group quarters). The CDC SVI uses Census data to determine the social vulnerability of every census tract. Each tract receives a separate ranking for each of the four themes, as well as an overall ranking. Maps of the four themes are shown in the figures below. The overall SVI map is shown in Figure 4-13; the socioeconomic SVI is shown in Figure 4-14; the household composition SVI is shown in Figure 4-15; the minority and language SVI is shown in Figure 4-16; and the housing and transportation SVI is shown in Figure 4-17.

Table 4-17, *Social Vulnerability Index*, shows the CDC's SVI percentile ranking for each census tract in the City (Statewide comparison). The percentile ranking represents the proportion of tracts that are equal to or lower than a tract of interest in terms of social vulnerability. For example, a CDC SVI ranking of 0.85 signifies that 85% of tracts in the State are less vulnerable than the tract of interest and that 15% of tracts in the State are more vulnerable. Tracts with higher SVI ranking are more likely to contain vulnerable populations.

TABLE 4-17: SOCIAL VULNERABILITY INDEX

Census Tract	Overall SVI	Socioeconomic Status	Household Characteristics	Racial/Ethnic Status	Housing Type & Transportation
4004.02	0.3657	0.448	0.0556	0.3496	0.6819
4004.04	0.0242	0.0528	0.2652	0.1424	0.0253
4005.01	0.185	0.3341	0.1597	0.1016	0.211
4008.01	0.3225	0.1692	0.2198	0.4465	0.6698
4010.01	0.1153	0.1874	0.4831	0.3753	0.0264
4010.02	0.3606	0.3167	0.147	0.3557	0.6797
4011.01	0.6844	0.4295	0.8571	0.4855	0.8436
4011.02	0.6825	0.5007	0.4796	0.4476	0.9589
4012.01	0.1533	0.074	0.5982	0.4365	0.1072
4012.02	0.3915	0.4314	0.7635	0.4507	0.1352
4012.03	0.633	0.4291	0.7069	0.5438	0.8092
4039.01	0.4479	0.4469	0.6415	0.5092	0.284
4039.02	0.5372	0.2531	0.7436	0.554	0.7589

Source: Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, CDC/ATSDR Social Vulnerability Index 2022 database California, accessed July 17, 2024.

As shown, there are four census tracts in the City with an overall SVI that falls within the third quartile (0.5001 to 0.7500), which the CDC categorizes as having "Medium-High" level of vulnerability. These tracts are generally located in the central, south-central, and southwestern areas of the City, whereas the northern and eastern portions of the City contain lower overall SVI. The census tracts with the highest overall SVI (that are thus more likely to contain vulnerable populations) include:

- Tract 4011.01. This census tract is located in the south-central portion of the City, north of I-210, east of Glendora Avenue/Cullen Avenue, west of Loraine Avenue, and south of Foothill Boulevard. This tract is predominantly composed of single-family residential uses, with higher density and multi-family residential, commercial, and light industrial uses located generally along Route 66 and Glendora Avenue. This tract also includes a large portion of the South Hills open space area. Notable residential uses that may contain vulnerable populations include Tropics Park, Western Skies, and Alosta mobile home parks. This tract also contains the Elwood Family Apartments, an affordable housing complex restricted to low-income families; and Heritage Oaks, an affordable housing complex restricted to low-income seniors. The City of Glendora 2021-2029 Housing Element identifies this tract as one of the two census tracts in the City identified as being vulnerable to displacement.
- Tract 4011.02. This census tract is located in the central portion of the City, north of Mauna Loa Avenue, south of Foothill Boulevard, east of Grand Avenue, and generally west of Cullen Avenue. This tract contains a mix of single- and multi-family uses, commercial, and civic uses. Notable residential uses that may contain vulnerable populations include the Park Manor mobile home park and Joy's Mobile Home Park, which is restricted to seniors. Other notable uses with vulnerable populations include Glendora Hospital, Foothill Presbyterian Hospital, and Glendora Canyon Transitional Care Unit. According to U.S. Census data (2017-2021 ACS), this census tract has the highest rate of overcrowding in the City, with 9.6 percent considered overcrowded and 4.9 percent considered severely overcrowded. The City of Glendora 2021-2029 Housing Element identifies this tract as one of the two census tracts in the City identified as being vulnerable to displacement.
- Tract 4012.03. This census tract is located in the southern portion of the City, south of I-210, east of Glendora Avenue, and west of Sunflower Avenue. This tract is predominantly composed of single-family residential uses, with higher density and multi-family residential and commercial uses located generally along Arrow Highway. Notable residential uses that may contain vulnerable populations include the Glenair and Arrowhead mobile home parks.
- Tract 4039.02. This census tract is located in the southwest portion of the City, generally south of Big Dalton Wash and I-210, and west of Glendora Avenue. This tract consists mostly of single-family residential uses, but also includes commercial and multi-family residential uses, located along Gladstone Street, Grand Avenue, and Arrow Highway. Notable residential uses that may contain vulnerable populations include the Rancho Glendora and Bonita Mobile Estates mobile home parks.

While other census tracts within the City had lower overall SVI scores than the four tracts identified above, vulnerable populations may still occur. For instance, persons over the age of 65 and persons with disabilities are located throughout the City. Areas that are less likely to have significant vulnerable populations are largely concentrated in the northern and northeastern portions of the City, generally located north of Foothill Boulevard. This area is predominantly made up of single-family residential uses and open space.

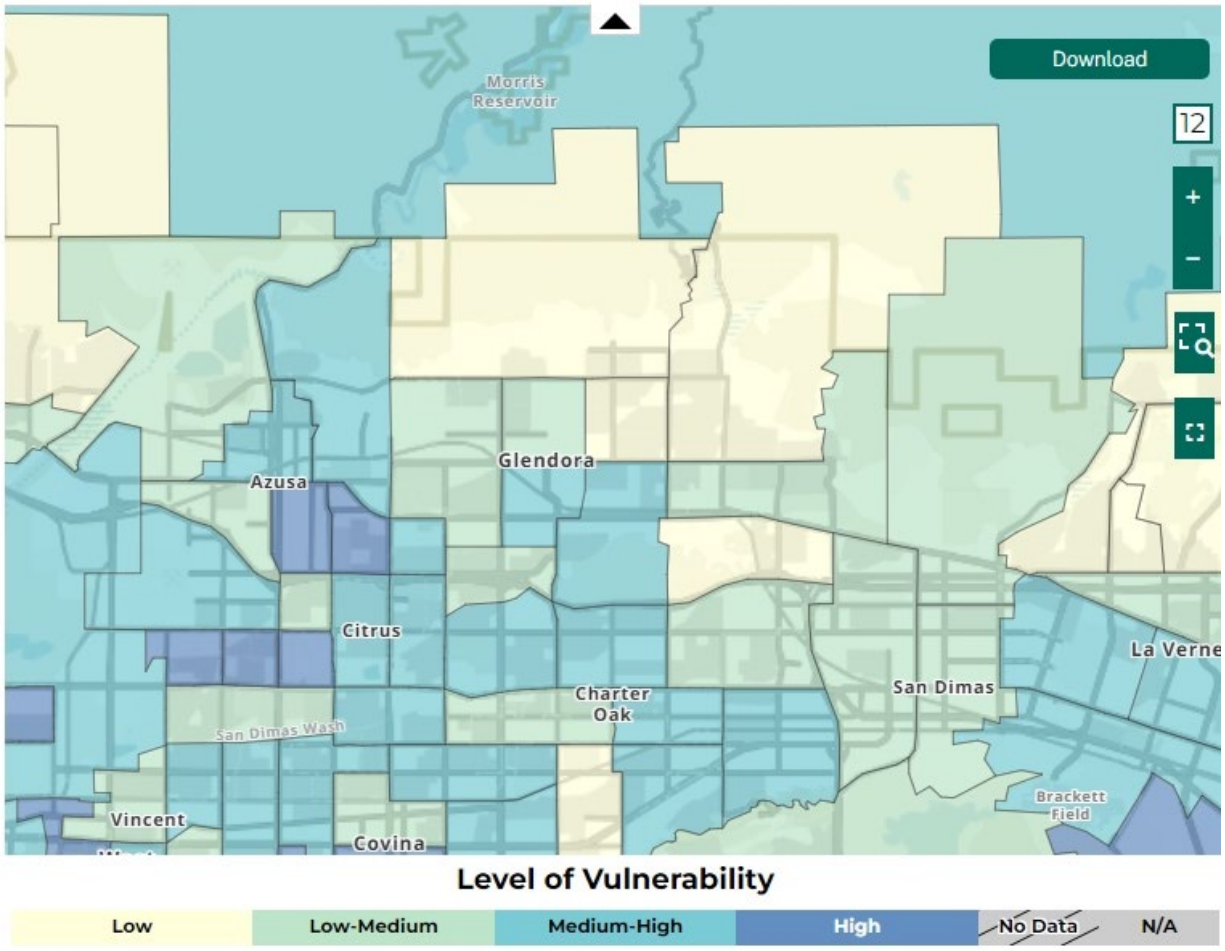
Another indicator of vulnerable populations is the California Environmental Protection Agency (CalEPA) SB 535 Disadvantaged Communities map, which shows geographic areas containing designated disadvantaged communities for the purpose of SB 535. The designation is based in part on census tracts receiving the highest 25 percent of scores according to the Office of Environmental Health Hazard Assessment's CalEnviroScreen tool, which identifies communities experiencing disproportionate amounts of pollution, environmental degradation, and socioeconomic and public health conditions. There are no disadvantaged communities in Glendora according to CalEPA's SB 535 Disadvantaged Communities map.[56]

According to the 2024 Los Angeles County Continuum of Care Point-in-Time, the City has a population of 61 unsheltered people.[57] The 2024 count shows a 32 percent decrease in persons experiencing homeless from 2022. It is assumed that the number of people experiencing homelessness in the City fluctuates and is likely to be higher than reported by the Point-in-Time count due to the often-transient nature of homeless living arrangements and other difficulties in obtaining accurate data. Conversations with local service providers indicate that while persons experiencing homelessness can occur throughout the City, higher concentrations of unsheltered persons can generally be found along flood control channels, within open space areas in the northern and eastern foothills, and within cars and RVs parked along Arrow Highway.

Overall, the data suggest that the more urbanized central, south-central, and southwestern areas of the City contain higher concentrations of vulnerable populations, likely due to the relatively higher incidence of multi-family housing, mobile home parks, and age-restricted and assisted housing developments. Areas that are less likely to have significant vulnerable populations are largely concentrated in the northern and eastern portions of the City, which are predominantly made up of single-family residential uses and open space. These northern and eastern areas of the City are developmentally constrained due to steep hillsides, endangered or protected flora and fauna, and wildfire potential. It is important to note, however, that the absence of data showing concentrations of vulnerable groups within the northern and eastern areas of the City does not mean that vulnerable populations do not exist in these areas. While it is important to identify socially vulnerable groups and develop targeted assistance programs, it is equally important to support broad-based strategies that address the community as a whole.

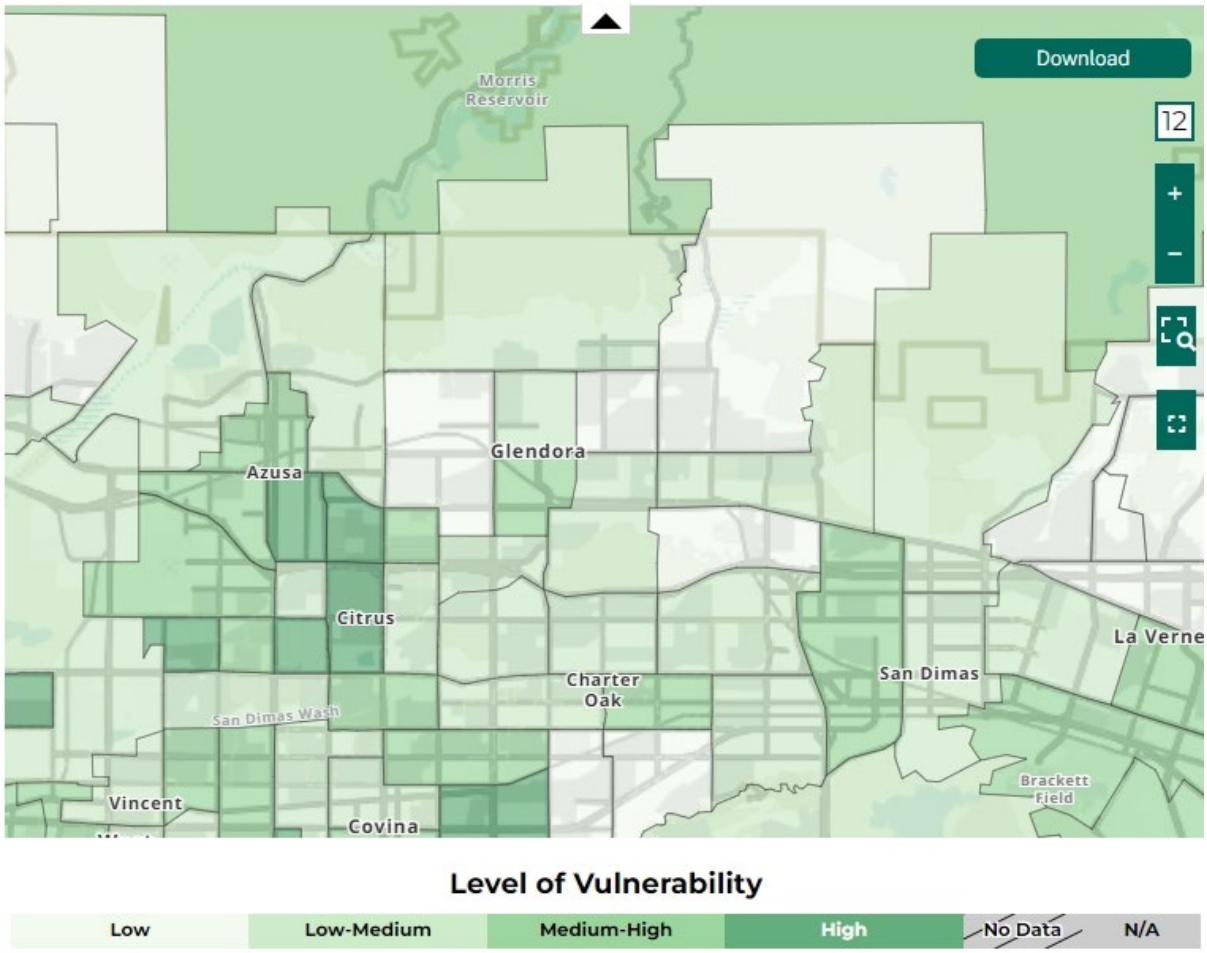
[56] California Environmental Protection Agency, *SB 535 Disadvantaged Communities (2022 Update)*, https://oehha.ca.gov/calenviroscreen/sb535, accessed July 23, 2024.
[57] Los Angeles Homeless Services Authority, *Homeless Count By City in the LA CoC*, https://www.lahsa.org/homeless-count/dashboards/hc24-localities-dashboard, accessed September 10, 2024.

FIGURE 4-13: OVERALL SVI



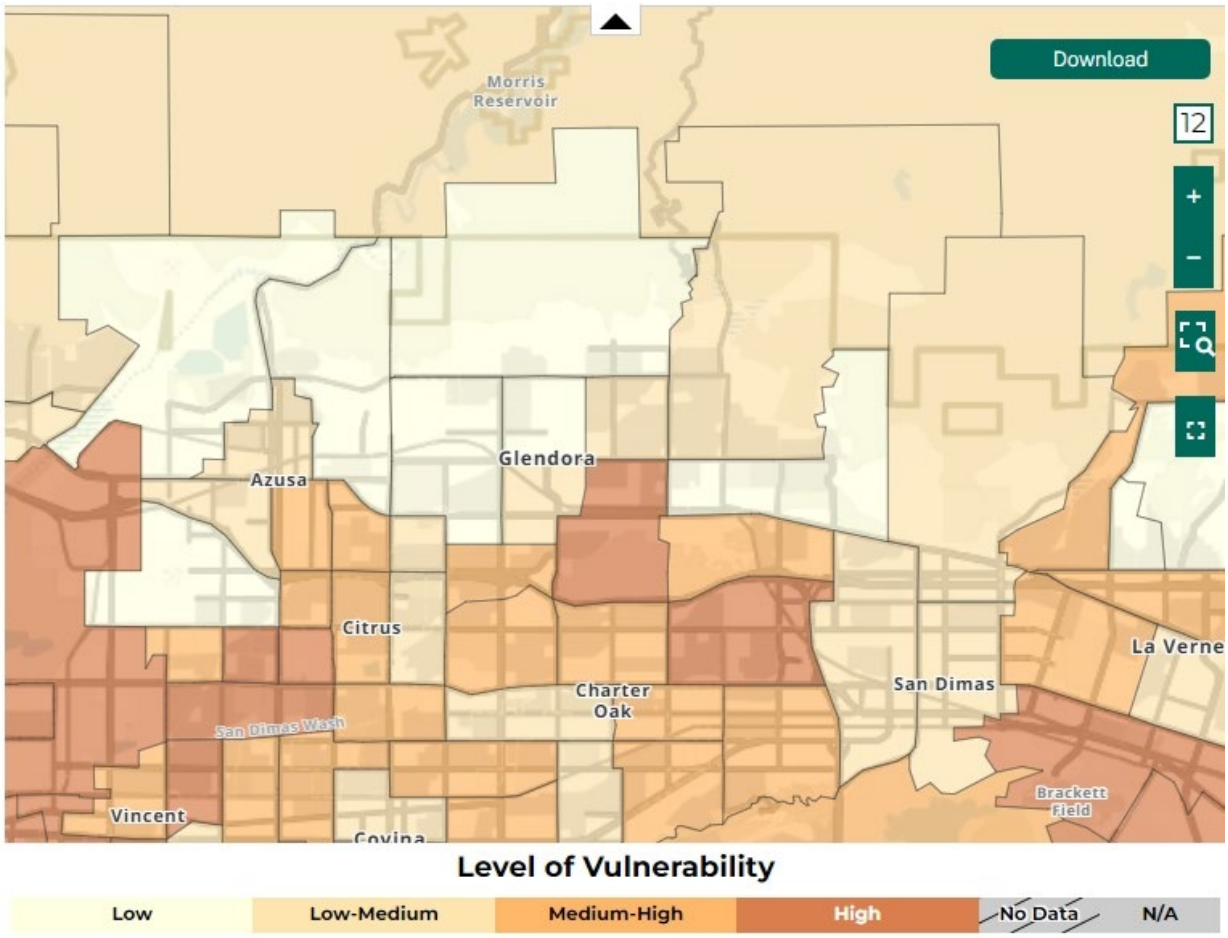
Source: Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, CDC/ATSDR Social Vulnerability Index 2022 database California, accessed July 17, 2024.

FIGURE 4-14: SOCIOECONOMIC SVI



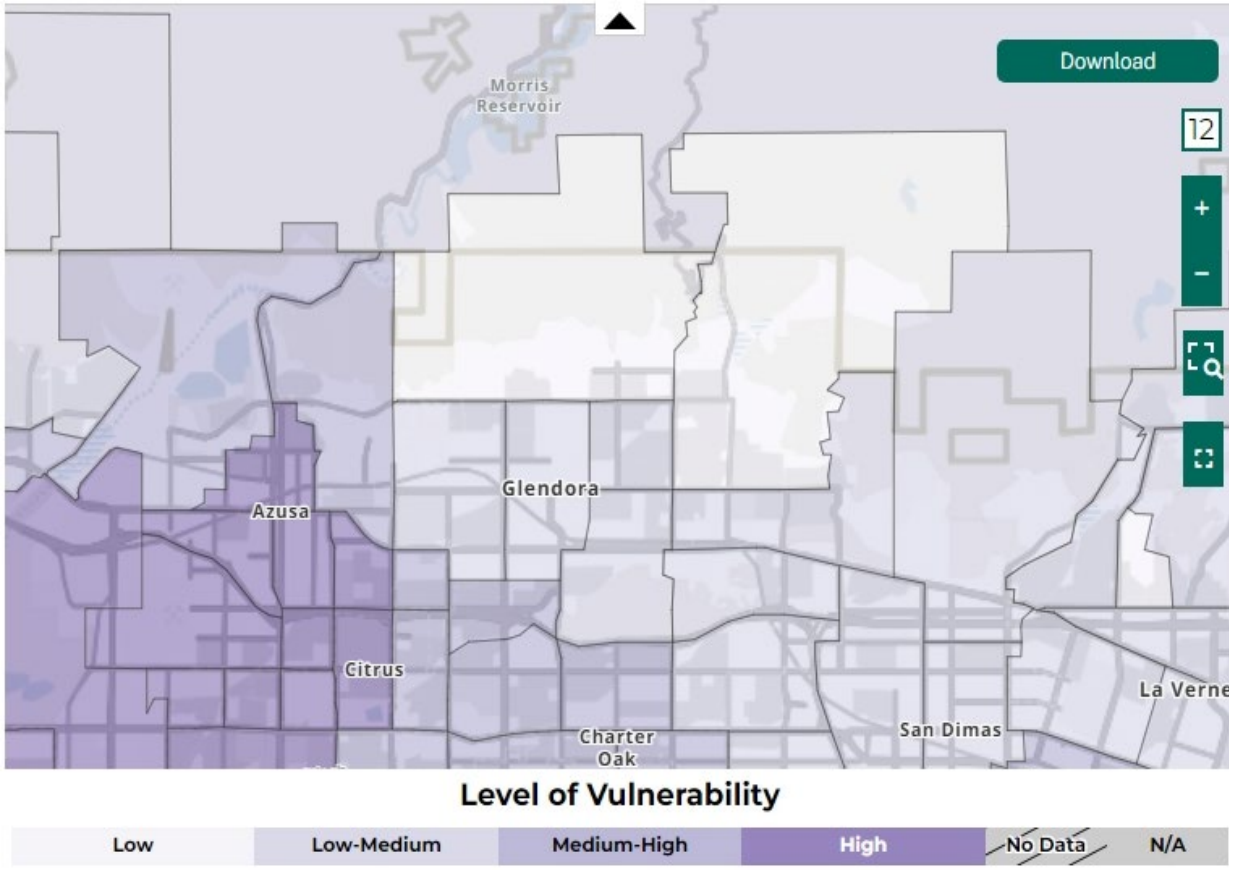
Source: Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, CDC/ATSDR Social Vulnerability Index 2022 database California, accessed July 17, 2024.

FIGURE 4-15: HOUSEHOLD CHARACTERISTICS



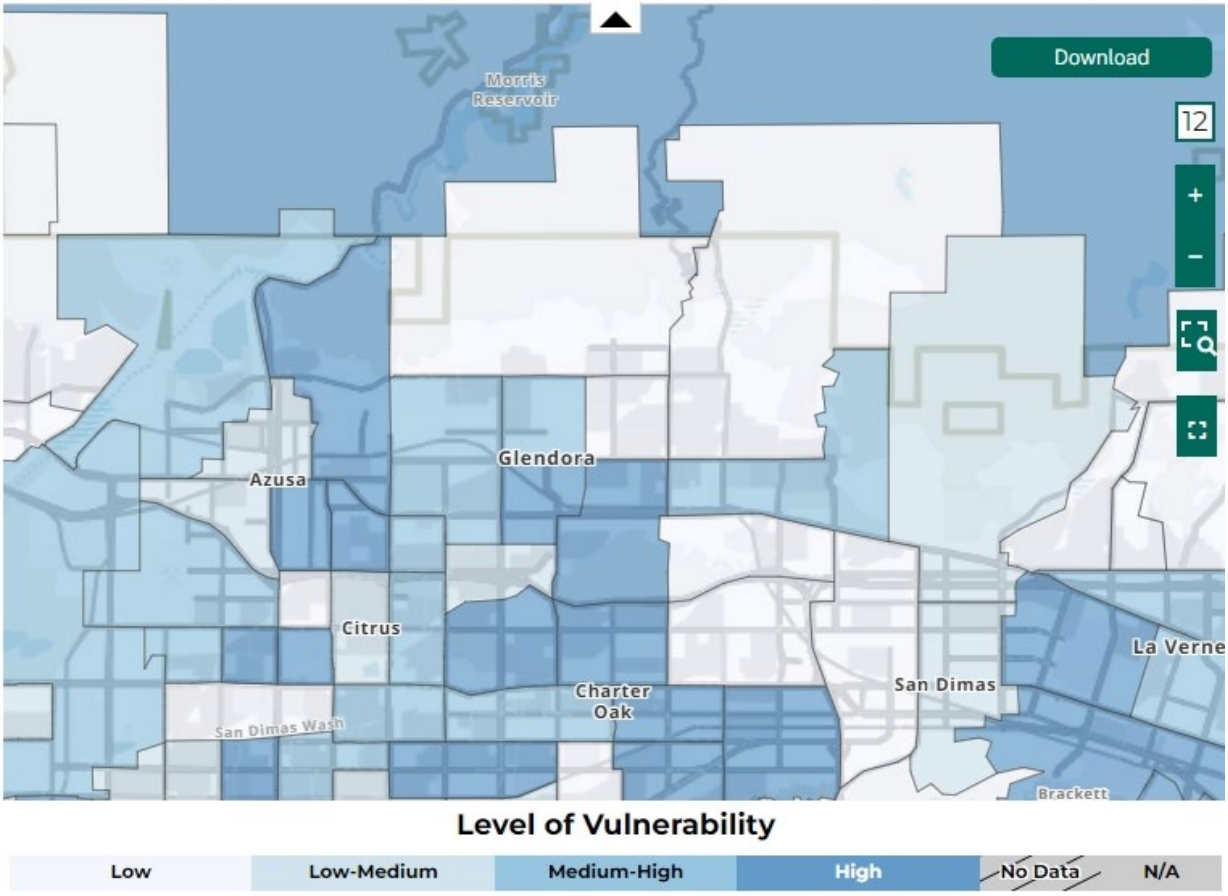
Source: Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, CDC/ATSDR Social Vulnerability Index 2022 database California, accessed July 17, 2024.

FIGURE 4-16: RACIAL AND ETHNIC MINORITY STATUS



Source: Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, CDC/ATSDR Social Vulnerability Index 2022 database California, accessed July 17, 2024.

FIGURE 4-17: HOUSING TYPE/TRANSPORTATION



Source: Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, CDC/ATSDR Social Vulnerability Index 2022 database California, accessed July 17, 2024.

Other Assets

In addition to critical facilities, facilities of concern, and vulnerable populations, other assets could be affected by hazards, including services, cultural resources, or local economic activities. The vulnerability/risk assessment describes the potential harm to these other assets based on available information.

VULNERABILITY ASSESSMENT

Dam/Reservoir Failure

A significant portion of the City is located within dam inundation areas, including the central and southern areas of the City, trending in a southwesterly direction, generally between Little Dalton Wash and Big Dalton Wash, and along San Dimas Wash. As shown in Table 4-18, *Critical Facilities in a Dam Inundation Areas*, 22 critical facilities and four facilities of concern are located with dam inundation areas.

TABLE 4-18: CRITICAL FACILITIES IN A DAM INUNDATION AREAS

Map #	Facility	Type	Owner/Responsible Agency	Total Loss Potential
Critical Facilities				
1	Glendora Police Facility / City Transmitter Site	Government	City of Glendora	$8,704,522
2	Glendora City Hall	Government	City of Glendora	$8,008,112
3	Glendora Library and Cultural Center	Government	City of Glendora	$16,011,728
13	La Fetra Senior Center	Community	City of Glendora	$6,564,780
16	American Legion Building	Community	City of Glendora	$3,059,853
23	I-210 Overcrossing at Grand Ave	Transportation Infrastructure	Caltrans	Not Available
24	Foothill Christian School #1	School	Foothill Christian	Not Available
28	I-210 Overcrossing at Barranca Ave	Transportation Infrastructure	Caltrans	Not Available
29	LA Dept of Water and Power High Voltage Transmission Lines	Electrical Infrastructure	Los Angeles Department of Water and Power	Not Available
31	Covina Irrigating Company	Water/Wastewater Infrastructure	Covina Irrigating Company	Not Available
32	City of Glendora Water Yard	Water/Wastewater Infrastructure	City of Glendora	$3,943,885
34	Cullen Elementary School	School	Glendora Unified School District	Not Available
35	Glendora USD Office / Sellers Elementary School	School	Glendora Unified School District	Not Available
38	A Line (Gold Line) / Railroad Overcrossing	Transportation Infrastructure	Los Angeles County Metropolitan Transportation Authority	Not Available
40	Glendora City Yard	Government	City of Glendora	$2,796,670

Map #	Facility	Type	Owner/Responsible Agency	Total Loss Potential
41	Glendora High School	School	Glendora Unified School District	Not Available
43	I-210 Overcrossing at Lone Hill Ave	Transportation Infrastructure	Caltrans	Not Available
53	LA County Fire Station #85	Government	Los Angeles County Fire Department	Not Available
56	Big Dalton	Dam	Los Angeles County Department of Public Works	Not Available
57	Little Dalton Debris Basin	Dam	Los Angeles County Department of Public Works	Not Available
58	Big Dalton Debris Basin	Dam	Los Angeles County Department of Public Works	Not Available
60	Morgan Debris Basin	Dam	Los Angeles County Department of Public Works	Not Available
Facilities of Concern				
14	City Transportation Center	Government	City of Glendora	$1,064,061
17	Liberty House	Community	City of Glendora	$333,041
39	Glendora Community Service Yard	Government	City of Glendora	$593,712
55	Angeles National Forest Glendora Ranger Station	Government	U.S. Forest Service	Not Available

The areas of the City identified as having the potential for inundation associated with a dam/reservoir failure primarily include, but are not limited to, residential, commercial, and civic uses. Major roadways within inundation areas include Sierra Madre Avenue, Foothill Boulevard, Route 66, Valley Center Avenue, Grand Avenue, Glendora Avenue, Lone Hill Avenue, and Gladstone Street. I-210 is also located within a dam inundation area but is unlikely to be affected as it is elevated above grade; on- and off-ramps connecting to I-210, however, could be impacted. A failure could damage critical facilities and infrastructure (e.g., roads, water, wastewater, electricity, natural gas), resulting in short-term interruption or extended loss of surface, loss of business income, and displacement of individuals and businesses. A catastrophic dam failure, depending on the size of the dam and the population downstream, could exceed the response capability of public safety personnel and resources, or significantly impair their ability to respond.

It is noted that Table 4-18 includes critical facilities and facilities of concern that may only be partially located within dam inundation area boundaries. For instance, some portions of the Glendora Civic Center, which houses the Glendora Police Facility, City Hall, and Library and Cultural Center (map numbers 1, 2, and 3, respectively), are subject to dam inundation at maximum flood depths of 1-2 feet, while other portions of these facilities are located outside of dam inundation areas. The primary Police Facility building is not within an inundation area, but an eastern extension of the building, which currently houses the Glendora IT Department, is subject

to maximum flood depths of 1-2 feet. Similarly, the majority of the City Hall building is not within an inundation area, but the eastern portion of the building, which currently houses the council chambers and other offices, is subject to maximum flood depths of 1-2 feet.

According to U.S. Census ACS estimates (2017-2021), the census tracts containing inundation areas have a mix of median household incomes, ranging from the lowest in the City ($66,740) to the highest in the City ($178,438). Areas of the City with lower median household incomes are generally located in the central, southern, and western portions of Glendora, which are further downstream from dams and generally have lower maximum inundation depths and a longer time of arrival than areas upstream with higher median household incomes. Inundation areas also include census tracts with a mix of percentage of population with a disability, with areas in the northeast and west generally having lower percentages of population with a disability; and a mix of percentage of renter-occupied housing units, with higher proportions of renters generally located in the central portion of the City. All census tracts within inundation areas have a low (less than five percent) percentage of population living alone; and a lower (less than ten percent) percentage of housing units experiencing overcrowding.

There is the potential that lower-income households and households experiencing housing costs as a greater percentage of their income within the City could be susceptible to cost burden with limited income and resources and may experience greater difficulties in the event they need to leave the area for an extended period of time. A dam or reservoir failure could also impact more vulnerable populations, such as senior citizens and persons with disabilities, as they may not have access to transportation to evacuate the area. Additionally, there is the potential for community members to be impacted due to damage to utility transmission lines and infrastructure outside of the immediate hazard area.

Land use and population patterns have not substantially changed within Glendora since preparation of the 2015 Natural Hazards Mitigation Plan. New development in Glendora over the last decade has been minimal; thus, vulnerabilities to land uses and populations related to dam and reservoir failure are similar. As discussed in Section 3.6, *Development Trends and Future Development*, future residential and mixed-use development is anticipated to occur primarily within the Route 66 Corridor Specific Plan, Arrow Highway Specific Plan, and other urbanized areas located in the central, southern, and western portions of the City. While it is unlikely that all anticipated growth would occur within the five-year period of this LHMP, the City anticipates some level of population growth to occur within these areas, some of which are within dam inundation areas. Residential growth is also anticipated throughout the City in the form of new accessory dwelling unit (ADUs). However, future development is not anticipated to significantly increase vulnerabilities associated with dam/reservoir failure. Future development projects would be subject to applicable federal, State, and local laws and regulations, including the latest iteration of the Building Code and City's floodplain management regulations, that would decrease vulnerability associated with dam/reservoir failure. Further, all dams with the potential to inundate parts of Glendora have received a condition assessment rating of "satisfactory" by the DSOD.

Drought

Drought conditions would affect the entire Glendora planning area; therefore, all critical facilities and facilities of concern, businesses, and residents within the City are considered vulnerable to drought hazards. Droughts do not typically result in physical damage to buildings and infrastructure, thus critical facilities and facilities of concern are not at risk of destruction or structural failure.

Prolonged drought conditions often result in stricter conservation measures, such as targeted reduction percentages or penalties for using potable water above a specific threshold. Higher rates or penalties could disproportionately impact lower-income households or residents on a fixed income. Water service providers in the City (i.e., Glendora Water Division, Suburban Water Systems, and City of Azusa Light & Water Department) are required to prepare and adopt Water Shortage Contingency Plans (WSCP) to prepare for and respond to water shortages. A water shortage, when water supply available is insufficient to meet the normally expected customer water use at a given point in time, may occur due to several reasons, such as drought, climate change, and catastrophic events. The WSCP serves as an operating manual to prevent catastrophic service disruptions through proactive, rather than reactive, management.

Vulnerabilities to drought conditions within Glendora are typically associated with drought conservation measures, which may include targeted reduction percentages and higher rates or penalties. Higher water rates or penalties could disproportionately impact lower-income households or residents on a fixed income residing within the City. Households that earn 30 percent or less than the County's median income (up to $41,600 for a family of four in 2024, based on HCD Income Limits) are considered "extremely low-income." Extremely low-income (ELI) households are more likely to contain seniors on fixed incomes, persons with disabilities, and other special-needs groups such as large families, families with female heads of households, and persons in need of emergency shelter. Within Glendora, approximately 11.7 percent of the total number of households are ELI households.[58] ELI households represent a smaller percentage of households in Glendora when compared to the County as a whole (21.0 percent of County households are ELI households). ELI households in Glendora are more likely to be renters than homeowners. Based on 2016-2020 Comprehensive Housing Affordability Strategy (CHAS) data, ELI households comprise 9.2 percent of owner-occupied households compared to 17.7 percent of renter-occupied households. ELI households are particularly susceptible to cost burden, or paying at least 30 percent of gross monthly income toward housing-related costs, reducing the ability for households to have money available for other necessities and emergency expenditures.

Some businesses, such as restaurants, can also be vulnerable to drought and water conservation measures. The City does not have a significant share of industries typically known to utilize large amounts of water, such as farming and manufacturing.

[58] U.S. Department of Housing and Urban Development, Consolidated Planning/CHAS Data 2016-2020, https://www.huduser.gov/portal/datasets/cp.html, accessed September 10, 2024.

Prolonged drought conditions can also cause impacts to the environment, resulting in dead or dried vegetation, dry soils, damage to wildlife habitat, and degradation of landscape quality. These conditions can increase the vulnerability of other hazards within the community, such as wildfires.

Minimal new development has occurred in the City since the adoption of the 2015 Natural Hazards Mitigation Plan; thus, vulnerabilities to drought related to development have remained similar over that time period. As discussed in Section 3.6, the 2021-2029 Housing Element accommodates the City's RHNA allocation of 2,276 housing units. While it is unlikely that all anticipated growth would occur within the five-year period of this LHMP, the City anticipates some level of population growth to occur, resulting in additional residential and mixed-use development. However, future growth within the City is not expected to substantially increase vulnerabilities associated with drought. New development would be required to install water efficient fixtures and landscaping pursuant to requirements of the City's Municipal Code. Additionally, water suppliers take growth projections into account when planning for future water supply and have accounted for population growth in the City. UWMPs are required to be updated every five years to ensure that adequate water supplies are available to meet existing and future water needs. As part of the UWMPs, a drought risk assessment assesses the reliability of water supplies by comparing projected future water demands with expected available water supplies under normal year, single dry year, and multiple dry year conditions. Because of the history of droughts within California, UWMPs are required to address reliability and provide for contingency plans in the event of drought or other water interruptions.

Flood

According to FEMA FIRMs, there are no mapped 100-year flood or regulatory floodways within the City. A small portion of the northwestern portion of the City, generally along Sierra Madre Avenue, is located within the 500-year floodplain. Additionally, the northern and eastern foothills of the City have not been mapped for flood hazards by FEMA. These unmapped areas generally consist of open space and low-density residential uses. There are no critical facilities or facilities of concern in Glendora located within the 100- or 500-year floodplain.

The majority of developed areas in Glendora are identified by FEMA as Zone X, meaning that the area has minimal risk of flood hazard. A relatively small number of single-family residential uses located near Sierra Madre Avenue in the western portion of the City are located within the FEMA-identified 500-year floodplain. Waterways in the City include three concreted-lined flood control channels, which are designed to manage floodwater flows. However, infrastructure and flood control facilities could be overwhelmed during a large storm event, resulting in flooding not limited to the FEMA flood zones. A significant flood resulting in damage to critical transportation facilities could interfere with the ability to evacuate specific areas of the community or to provide emergency response and equipment to an area. Similarly, localized flooding of roadways can strand motorists and hinder access to and from an area.

Residents with mobility challenges and those without access to reliable transportation may have difficulty evacuating during a flood event. Vulnerable populations with regards to flooding include seniors, persons with disabilities, and lower-income households, as these populations may experience greater mobility challenges or access limitations to personal transportation. According to U.S. Census ACS estimates (2017-2021), approximately 15.6 percent of the City's population is 65 years of age or older. While the City's median household income of $103,159 is relatively high compared to the County's median household income of $76,367, approximately 11.7 percent of the total number of households in Glendora are ELI households, meaning they earn 30 percent or less than the County's median income. Areas of Glendora with lower median incomes are concentrated in the central and southwestern areas of the City, which are correlated with a higher proportion of multi-family residential units, mobile home parks, and seniors.

Land use and population patterns have not substantially changed within the City's Planning Area since preparation of the 2015 Natural Hazards Mitigation Plan; thus, vulnerabilities to land uses and populations related to flood hazards are similar. As discussed in Section 3.0, future residential and mixed-use development is anticipated to occur primarily within the Route 66 Corridor Specific Plan, Arrow Highway Specific Plan, and other urbanized areas located in the central, southern, and western portions of the City. While it is unlikely that all anticipated growth would occur within the five-year period of this LHMP, the City anticipates some level of population growth to occur within these areas. These areas are not located within FEMA-designated flood hazard zones and future growth is not anticipated to increase vulnerabilities to flooding. Minimal residential growth is also anticipated throughout the City in the form of new ADUs, which could be built in the area of undetermined flood levels. Future development projects would be subject to applicable federal, State, and local laws and regulations, including the latest iteration of the Building Code and City's floodplain management regulations, that would decrease vulnerability associated with flood hazards.

Repetitive Loss and Severe Repetitive Loss

Addressing risk to repetitive loss and severe repetitive loss structures is an important step in reducing the financial impact of flooding as repetitive losses require extensive disaster management resources and high NFIP claims.

FEMA defines a repetitive loss as any NFIP-insured structure that has had at least two paid flood losses of more than $1,000 each in any 10-year period since 1978. FEMA defines a severe repetitive loss as any NFIP-insured structure that has met one of the following paid flood loss criteria since 1978:

- Four or more separate claim payments of more than $5,000 each (Including building and contents payments); or
- Two or more separate claim payments (building payments only) where the total of the payments exceeds the current value of the property.

The City of Glendora is not a participant in the NFIP since the City is located within Zone X, as identified on the FIRM. Zone X is an area of moderate or minimal hazard from the principal source of flood in the area. Glendora does not have any repetitive loss or severe repetitive loss properties.

Seismic and Geologic Hazards

The entire Glendora Planning Area is at risk of experiencing strong ground shaking as a result of an earthquake. During a seismic event, critical facilities and facilities of concern as well as residences, businesses, and infrastructure could be damaged. The extent of damage would depend upon the location and magnitude of the earthquake. Depending upon the damage, emergency services, communication systems, and utility services may all be hindered. Senior citizens and persons with disabilities that have limited mobility may be harmed if they are unable to react quickly and seek out areas of safety from falling debris. As previously stated, 15.6 percent of the City's population is 65 years of age or older. According to CHAS data, over 48 percent of all senior households had extremely low, very low, or low incomes. Approximately 10.0 percent of Glendora residents reported having one or more disabilities.

In addition to mobility limitations and the potential to be harmed during an earthquake, some populations may experience significant challenges in the event their homes are damaged and require repairs or displacement due to the extent of damages. Approximately 77.7 percent of the City's housing stock was constructed prior to 1980. Although a majority of the City's housing stock is not considered substandard or in need of rehabilitation or replacement, there is the potential for large portions of the housing stock to be susceptible to damage associated with a more significant earthquake. Additionally, approximately 11.7 percent of the total number of households in Glendora are ELI households. ELI households are particularly susceptible to cost burden, or paying at least 30 percent of gross monthly income toward housing-related costs, reducing the ability for households to have money available for other necessities and emergency expenditures, including structural repairs are relocation funding in the event their home becomes unlivable.

Further, extended interruptions in services, including power outages, would disproportionately affect people with medical conditions requiring power for medical equipment. Depending upon the extent of damage, businesses could be closed and experience economic losses.

Portions of the City are also at risk for seismic-induced landslides and liquefaction. Table 4-19, *Critical Facilities in a Landslide Zone* and Table 4-20, *Critical Facilities in a Liquefaction Zone*, identify the critical facilities located within landslide and liquefaction zones, respectively.

TABLE 4-19: CRITICAL FACILITIES IN A LANDSLIDE ZONE

Map #	Facility	Type	Owner/Responsible Agency	Total Loss Potential
Critical Facilities				
56	Big Dalton	Dam	Los Angeles County Department of Public Works	Not Available
61	San Dimas	Dam	Los Angeles County Department of Public Works	Not Available

TABLE 4-20: CRITICAL FACILITIES IN A LIQUEFACTION ZONE

Map #	Facility	Type	Owner/Responsible Agency	Total Loss Potential
Critical Facilities				
44	I-210 Overcrossing at Railroad tracks	Transportation Infrastructure	Caltrans	Not Available
45	A Line (Gold Line) Overcrossing at Lone Hill Ave	Transportation Infrastructure	Los Angeles County Metropolitan Transportation Authority	Not Available
47	I-210/SR-57 Overcrossing at Auto Centre Dr	Transportation Infrastructure	Caltrans	Not Available
48	I-210 Overcrossing at Amelia	Transportation Infrastructure	Caltrans	Not Available
57	Little Dalton Debris Basin	Dam	Los Angeles County Department of Public Works	Not Available
58	Big Dalton Debris Basin	Dam	Los Angeles County Department of Public Works	Not Available

Landslides can damage structures and block roadways causing long-term disruptions to the roadway network, infrastructure systems and City capabilities. Utility lines in slide-prone areas can be damaged in a landslide, causing service outages. Liquefaction can also damage buildings and infrastructure, including pipelines within soils subject to liquefaction. Damage to transportation infrastructure can impede access and hinder emergency response and evacuation. Damaged utilities can result in service interruptions or complete outages. Lower income households, those on fixed incomes, and those with mobility challenges or no access to transportation may have difficulty evacuating an area and may have more difficulty in the event of displacement.

The areas identified as having the potential for landslide susceptibility primarily occur within the northern and eastern foothills, as well as the “South Hills” located in the southern portion of the City. These areas have not been identified as having significant concentrations of socially vulnerable populations; however, socially vulnerable persons may reside in these areas. Areas with the potential for liquefaction hazards within the City primarily occur within the northern

foothills, a western portion of the City along Foothill Boulevard, and the southeastern portion of the City along I-210. These areas are shown to have households with incomes near or above the HCD State Median Income of $111,300, and a relatively high percentage of homeowners; however, between 40 and 60 percent of homeowners in these areas pay more than 30 percent of their household income on their mortgage. Thus, vulnerable populations within these areas may include low-income households experiencing housing costs as a greater percentage of their income. These households could be susceptible to cost burden with limited income and resources and may experience greater difficulties in the event they need to leave the area for an extended period in the event their residence experiences damage associated with landslide or liquefaction activity.

Minimal new development has occurred in the City since development of the 2015 Natural Hazards Mitigation Plan; thus, vulnerabilities to seismic and geologic hazards have remained similar over that time period. Construction within the City has taken geologic conditions, including landslide- and liquefaction-susceptibility into consideration. Future residential and mixed-use development is anticipated to occur primarily within the Route 66 Corridor Specific Plan, Arrow Highway Specific Plan, and other urbanized areas located in the central, southern, and western portions of the City. While it is unlikely that all anticipated growth would occur within the five-year period of this LHMP, the City anticipates some level of population growth to occur within these areas, including residential and non-residential development. However, future growth within these areas is not expected to substantially increase vulnerabilities associated with seismic and geologic hazards, as future development projects would be subject to applicable federal, State, and local laws and regulations, including the Building Code, which would reduce vulnerabilities associated with these hazards.

Severe Weather

A severe weather event, such as heavy rains, Santa Ana winds, and extreme heat conditions, could affect the entire City; therefore, all critical facilities and facilities of concern, business, and residents within the area are considered vulnerable to severe weather hazards. Heavy rain can damage structures if the roof is compromised, or drainage systems overflow and cause flooding. Landslides, slope instability, and mudflows can also occur along slopes and along creeks and channels. Flooding of roadways can also occur, stranding vehicles and limiting emergency access and response. Santa Ana wind events can damage structures, particularly from falling trees or branches or potential debris that is carried by the wind. Extreme heat events do not typically result in damage to structures. However, these events can place greater demand on the power system and result in power outages that can impact residents and businesses. Young children, the elderly, or people suffering from serious medical conditions are physiologically more vulnerable to heatstroke. People requiring the use of medical equipment with a power source could be impacted. Additionally, people experiencing homelessness are also at higher risk of health complications during an extreme heat event. Lower-income households or those with limited mobility may be unable to acquire or seek out cooling devices without significant advance preparations. This can be further compounded by the threat of Public Safety Power Shutoff

events. During these events, extreme heat impacts may affect larger portions of the City and populations that would not be viewed as vulnerable under normal circumstances.

The impact on socially vulnerable populations would be dependent upon the event and what types of facilities, services, and operations are impacted. There is the potential that if some services, such as medical, public transit, and social services are impacted to the extent that they could not operate, that the elderly, persons with disabilities, and lower-income households reliant on these services would experience significant challenges. These populations would also be more vulnerable to extreme heat events, as they may not have access to air conditioning or the financial means to provide air conditioning for extended periods of time. Some people may be required to work outside or travel via walking or public transit which could increase their exposure to the elements. Extended exposure to extreme heat could result in severe medical conditions.

As described above, 15.6 percent of the City's population is 65 years of age or older. Approximately 10.0 percent of Glendora residents reported having one or more disabilities. Households that earn 30 percent or less than the County's median income (up to $41,600 for a family of four in 2024) are considered ELI households. Within Glendora, approximately 11.7 percent of the total number of households are ELI households. ELI households are particularly susceptible to cost burden and therefore may not have the financial means or the existing resources to alleviate extreme heat conditions, or address damage that could occur from significant rain and Santa Ana wind events.

Minimal new development has occurred in the City since development of the 2015 Natural Hazards Mitigation Plan and has not exacerbated vulnerabilities related to severe weather. While it is unlikely that all anticipated growth would occur within the five-year period of this LHMP, the City anticipates some level of population growth to occur, resulting in additional residential and mixed-use development. Future growth in the City is not expected to substantially increase vulnerabilities associated with severe weather.

Wildfire

A significant portion of the City is located within a fire hazard zone. Table 4-21, *Critical Facilities in a Fire Hazard Zone*, identifies the critical facilities and facilities of concern located within fire hazard zones. These include dams/reservoirs.

TABLE 4-21: CRITICAL FACILITIES IN A FIRE HAZARD ZONE

Map #	Facility	Type	Owner/Responsible Agency	Total Loss Potential
Critical Facilities				
56	Big Dalton	Dam	Los Angeles County Department of Public Works	Not Available
57	Little Dalton Debris Basin	Dam	Los Angeles County Department of Public Works	Not Available
58	Big Dalton Debris Basin	Dam	Los Angeles County Department of Public Works	Not Available
60	Morgan Debris Basin	Dam	Los Angeles County Department of Public Works	Not Available
61	San Dimas	Dam	Los Angeles County Department of Public Works	Not Available

FHSZ areas are located in the northern and eastern foothills of the City and include single-family residential and open space uses. Wildfires can impact structures and also impact people, especially in the event of an evacuation. Seniors and persons with disabilities may have limited mobility and therefore evacuation may be a greater challenge. Persons with disabilities may require special mobility devices or caregiver assistance to evacuate. Other groups with increased threat levels include people with lower-incomes, renters, and persons experiencing homelessness. These groups may not possess enough financial resources to rebuild their homes or search for new homes in the event of evacuation or damage resulting from a wildfire.

Depending upon the location and extent of the fire, transportation routes could be impaired or inaccessible, which could impede evacuation and hinder emergency response. Evacuation and shelter areas may not be available to evacuees depending upon the location of the wildfire. Wildfires within the area, even if not within the City, can also impact people's health due to the poor air quality. Senior citizens, youth, and people with preexisting medical conditions are most at risk. Utility systems could be damaged or interrupted. Controlled and proactive power outages are highly likely during a wildfire event to reduce the risk for additional fires to be initiated. These power outages can extend beyond the area of the fire.

Similar to severe weather conditions, the impact on socially vulnerable populations within Glendora would be dependent upon the event, location, and severity. A wildfire could directly damage residences, businesses, service providers, transportation and utility infrastructure, or cause services to be impacted. Direct impacts to these facilities would greatly impact those that may not have the financial means to address the damage, cannot relocate to other areas, do not have alternative transportation options, or have medical conditions that limit their mobility and could result in greater health-related impacts. Within Glendora, this would include the elderly, persons with disabilities, and those households with lower incomes, as previously described.

Minimal new development has occurred in the City since development of the 2015 Natural Hazards Mitigation Plan. This development has occurred primarily as infill in existing urbanized areas; thus, vulnerabilities to wildfire have remained similar over that time period. Future residential and mixed-use development is anticipated to occur primarily within the Route 66 Corridor Specific Plan, Arrow Highway Specific Plan, and other urbanized areas located in the central, southern, and western portions of the City. These areas are not identified as very high or high fire hazard severity zones. Additionally, these areas are developed with existing urban uses and not located adjacent to wildland urban interface areas. While it is unlikely that all anticipated growth would occur within the five-year period of this LHMP, the City anticipates some level of population growth to occur within these areas, including residential and non-residential development. However, future growth within these areas is not expected to substantially increase vulnerabilities associated with wildfire, as future development projects would be subject to applicable federal, State, and local laws and regulations, including the Fire Code, which would reduce vulnerabilities.

Summary of Vulnerability

Overall, FEMA's National Risk Index identifies Los Angeles County as having a Risk Index rating of "Very High" when compared to the rest of the United States. The Risk Index components for the County include a rating of very high for expected annual loss; very high for social vulnerability; and very low for community resilience.

For the census tracts comprising Glendora, the Risk Index rating ranges from "Relatively Low" to "Relatively High." Expected annual losses range from "Relatively Low" to "Relatively High," with the highest losses throughout the City attributed to earthquakes and wildfire.

Table 4-22, *Risk Assessment Summary*, shows a summary of critical facilities and facilities of concern that intersect with hazard areas in the City. Those facilities that intersect with a hazard area are indicated with a "Y" and a red-shaded cell. Critical facilities and facilities of concern that do not fall within the hazard area are designated with an "N" and a green-shaded cell. The risks of drought, ground shaking, and severe weather are considered to have the potential to impact the entire community.

TABLE 4-22: RISK ASSESSMENT SUMMARY

Map ID	Name	Dam/ Reservoir Failure	Drought	Flood	Ground Shaking	Landslides	Liquefaction	Severe Weather	Wildfire
1	Glendora Police Facility / City Transmitter Site	N	Y	N	Y	N	N	Y	N
2	Glendora City Hall	N	Y	N	Y	N	N	Y	N
3	Glendora Library and Cultural Center	Y	Y	N	Y	N	N	Y	N
4	Frontier Telephone Center	N		N	Y	N	N	Y	N
5	Foothill Presbyterian Hospital	N	Y	N	Y	N	N	Y	N
6	Foothill Medical Arts Building	N	Y	N	Y	N	N	Y	N
7	A Line (Gold Line) Overcrossing	N		N	Y	N	N	Y	N
8	Citrus College	N		N	Y	N	N	Y	N
9	St. Lucy's Priory High School	N		N	Y	N	N	Y	N
10	Sandburg Middle School	N	Y	N	Y	N	N	Y	N
11	La Fetra Elementary School	N	Y	N	Y	N	N	Y	N
12	LA County Fire Station #151	N	Y	N	Y	N	N	Y	N
13	La Fetra Senior Center	Y	Y	N	Y	N	N	Y	N
14	City Transportation Center	Y	Y	N	Y	N	N	Y	N
15	Glendora Youth Center	N	Y	N	Y	N	N	Y	N
16	American Legion Building	Y	Y	N	Y	N	N	Y	N
17	Liberty House	Y	Y	N	Y	N	N	Y	N
18	I-210 Overcrossing at Glendora Ave	N	Y	N	Y	N	N	Y	N
19	LA Dept of Water and Power High Voltage Transmission Lines	N	Y	N	Y	N	N	Y	N
20	Crowther Teen Center	N	Y	N	Y	N	N	Y	N
21	SCE Sub-Station	N	Y	N	Y	N	N	Y	N
22	LA Dept of Water and Power High Voltage Transmission Lines	N	Y	N	Y	N	N	Y	N
23	I-210 Overcrossing at Grand Ave	Y	Y	N	Y	N	N	Y	N
24	Foothill Christian School #1	Y	Y	N	Y	N	N	Y	N
25	Foothill Christian School #2	N	Y	N	Y	N	N	Y	N
26	Whitcomb High School	N	Y	N	Y	N	N	Y	N
27	Stanton Elementary School	N	Y	N	Y	N	N	Y	N
28	I-210 Overcrossing at Barranca Ave	Y	Y	N	Y	N	N	Y	N
29	LA Dept of Water and Power High Voltage Transmission Lines	Y	Y	N	Y	N	N	Y	N
30	Washington Elementary School	N		N	Y	N	N	Y	N
31	Covina Irrigating Company	Y	Y	N	Y	N	N	Y	N
32	City of Glendora Water Yard	Y	Y	N	Y	N	N	Y	N
33	Goddard Middle School	N	Y	N	Y	N	N	Y	N
34	Cullen Elementary School	Y	Y	N	Y	N	N	Y	N
35	Glendora USD Office / Sellers Elementary School	Y	Y	N	Y	N	N	Y	N
36	Hope Lutheran School	N	Y	N	Y	N	N	Y	N

Map ID	Name	Dam/ Reservoir Failure	Drought	Flood	Ground Shaking	Landslides	Liquefaction	Severe Weather	Wildfire
37	Williams Educational Center	N	Y	N	Y	N	N	Y	N
38	A Line (Gold Line) / Railroad Overcrossing	Y	Y	N	Y	N	N	Y	N
39	Glendora Community Service Yard	Y	Y	N	Y	N	N	Y	N
40	Glendora City Yard	Y	Y	N	Y	N	N	Y	N
41	Glendora High School	Y	Y	N	Y	N	N	Y	N
42	LA County Fire Station #86	N	Y	N	Y	N	N	Y	N
43	I-210 Overcrossing at Lone Hill Ave	Y	Y	N	Y	N	N	Y	N
44	I-210 Overcrossing at Railroad tracks	N	Y	N	Y	N	Y	Y	N
45	A Line (Gold Line) Overcrossing at Lone Hill Ave	N	Y	N	Y	N	Y	Y	N
46	LA Dept. of Water and Power High Voltage Transmission Lines	N	Y	N	Y	N	N	Y	N
47	I-210/SR-57 Overcrossing at Auto Centre Dr	N	Y	N	Y	N	Y	Y	N
48	I-210 Overcrossing at Amelia	N	Y	N	Y	N	Y	Y	N
49	Water Storage Facility	N	Y	N	Y	N	N	Y	N
50	Willow Elementary School	N	Y	N	Y	N	N	Y	N
51	I-210 Overcrossing at Sunflower Ave	N	Y	N	Y	N	N	Y	N
52	Sunflower School	N	Y	N	Y	N	N	Y	N
53	LA County Fire Station #85	Y	Y	N	Y	N	N	Y	N
54	I-210 Overcrossing at Bonnie Cove	N	Y	N	Y	N	N	Y	N
55	Angeles National Forest Glendora Ranger Station	Y	Y	N	Y	N	N	Y	N
56	Big Dalton	Y	Y	N	Y	Y	N	Y	Y
57	Little Dalton Debris Basin	Y	Y	N	Y	N	Y	Y	Y
58	Big Dalton Debris Basin	Y	Y	N	Y	N	Y	Y	Y
59	Puddingstone Diversion*	Y	Y	N	Y	N	N	Y	N
60	Morgan Debris Basin	Y	Y	N	Y	N	N	Y	Y
61	San Dimas*	Y	Y	N	Y	Y	N	Y	Y

Note: * These critical facilities are located outside of the Glendora Planning Area but have dam inundation areas affecting the City.

Section 5.0 | Hazard Mitigation Strategy

Hazard mitigation strategies are used to reduce hazard impacts on residents, public infrastructure, and critical facilities. The hazard mitigation actions will help to protect the safety and well-being of residents and visitors, critical facilities, facilities of concern, other buildings and structures, key services, the local economy, and other important community assets. Some actions will also help with emergency preparedness, allowing for a more effective community response to hazard events. Preparedness actions are not a required component of an LHMP, but they support and complement mitigation activities, and the Planning Team chose to include them as part of the overall hazard mitigation strategy.

This section of the LHMP is derived from an in-depth review of the vulnerabilities and capabilities described in this plan. Overall, the actions represent the City's risk-based approach for reducing and/or eliminating the potential losses as identified in the Vulnerability/Risk Assessment section.

5.1 CAPABILITIES ASSESSMENT

This capabilities assessment has been designed to identify existing local agencies, personnel, planning tools, public policy and programs, technology, and funds that have the capability to support hazard mitigation activities and strategies outlined in this plan. The Planning Team collaborated to identify capabilities and mechanisms available to the City and partner agencies for reducing damage from future hazard events. After initial identification, the capabilities were reviewed again and updated in the context of developing the mitigation actions.

The capabilities assessment considered the following types of resources:

- Planning and regulatory capabilities are based on the implementation of ordinances, policies, local laws and State statutes, and plans and programs that relate to guiding and managing growth and development.
- Administrative and technical capabilities refer to the community's staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. It also refers to the ability to access and coordinate these resources effectively.
- Financial capabilities are the resources that a jurisdiction has access to or is eligible to use to fund mitigation actions.
- Education and outreach capabilities are programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Table 5-1, *Capabilities Assessment*, summarizes the capabilities assessment for Glendora.

TABLE 5-1: CAPABILITIES ASSESSMENT

Resources	Description of Ability to Support Mitigation
Planning & Regulatory	
General Plan Responsible Department: Community Development Department	The Glendora General Plan establishes the overall vision for future growth and development. As a blueprint for the future, the plan contains policies and programs designed to provide a solid basis for decisions related to land use and development. The General Plan provides the framework for the implementation of the LHMP mitigation actions. The Safety Element identifies hazards that could impact the community and establishes policy for the preparation and update of the LHMP. The City is updating the General Plan Safety Element concurrent with the LHMP and will incorporate the LHMP into its Safety Element to ensure compliance with AB 2140, making the City eligible for additional funding under the California Disaster Assistance Act (CDAA). As future General Plan Updates occur, hazard information will be updated to reflect current conditions, including updated mapping and assessments of hazards to be considered when determining the placement and development of land uses.
Zoning Ordinance Responsible Department: Community Development Department	The Glendora Zoning Ordinance implements the General Plan by establishing regulations for land use control within the City, including where and how development occurs. Zoning is used to protect the public health, safety and welfare of a community. The City can use the Zoning Ordinance to implement mitigation actions to reduce risks associated with future development. The Zoning Ordinance is incorporated into Municipal Code as Title 21.
Subdivision Ordinance Responsible Department: Community Development Department	The City's Subdivision Ordinance regulates development of housing, commercial, industrial, or other uses, including associated public infrastructure, as land is subdivided into buildable lots. The Subdivision Ordinance can ensure future subdivisions account for the risk of hazards on future development. The Subdivision Ordinance is included as Title 20 of the Municipal Code.
Building Code Responsible Department: Community Development Department	The Building Code regulates how buildings are constructed. The City adopts the State Building Code with amendments, as applicable. Mitigation actions to construct buildings to safer standards to better resist damage during a hazard event could be considered as part of future building code updates. The Building Code is incorporated as Chapter 19.02 of the Municipal Code.
Capital Improvement Program Responsible Department: Public Works Department	The Capital Improvement Program (CIP) is established to provide for the planning, funding, design, construction, maintenance and repair of City facilities and infrastructure. The CIP is a "roadmap" that provides direction and guidance to the City to carefully plan and manage its capital and infrastructure assets. Typical improvement and maintenance projects included within the CIP include streets, signals, and lighting; flood control and water quality; parks; and public facilities. The City can use the CIP to identify priority projects for hazard mitigation.
Los Angeles County Flood Control District Responsible Agency:	The Los Angeles County Flood Control District (LACFCD) was established in 1915 and provides flood risk management and water conservation to the entire County except the Antelope Valley. The LACFD Flood Maintenance Division operates and maintains dams, open channels, storm drains, debris basins, and pumping plants,

Resources	Description of Ability to Support Mitigation
County of Los Angeles, Los Angeles County Flood Control District	while the Watershed Management Division handles the National Pollutant Discharge Elimination System (NPDES) Permit Program, which controls water pollution by issuing permits to industrial, municipal, or other facilities that discharge pollutants into surface water.
Upper San Gabriel River Enhanced Watershed Management Program Responsible Agencies: County of Los Angeles, Los Angeles County Flood Control District and City of Glendora	The Upper San Gabriel River Enhanced Watershed Management Program (EWMP) fulfills the requirements of the NPDES Municipal Separate Storm Sewer System (MS4) Permit Order No. R4-2012-0175. The EWMP contains strategies, watershed control measures, and best management practices (BMPs), including multi-benefit regional projects that retain and infiltrate stormwater runoff from the 85th-percentile, 24-hour storm event for the upper portion of the San Gabriel River Watershed, to which the City contributes runoff.
Urban Water Management Plan Responsible Agencies: City of Glendora Public Works Department, Suburban Water Systems, and City of Azusa Light & Water Department	Urban Water Management Plans (UWMP) are prepared every five years. An UWMP provides long-term resource planning to ensure that adequate water supplies are available to meet existing and future water needs. The UWMP addresses drought conditions and the ability to provide water to its customers. The UWMP can be used to coordinate and implement mitigation actions associated with drought and water supply reliability.
Water Shortage Contingency Plan Responsible Agency: City of Glendora Public Works Department, Suburban Water Systems, and City of Azusa Light & Water Department	The Water Shortage Contingency Plan (WSCP) is a strategic planning document designed to prepare for and respond to water shortages. This plan is used to prevent catastrophic service disruptions through proactive, rather than reactive, management. This WSCP provides a structured guide for the District to deal with water shortages, incorporating prescriptive information and standardized action levels, along with implementation actions in the event of a catastrophic supply interruption.
Greater Los Angeles County Region Integrated Regional Water Management Plan Responsible Agencies: County of Los Angeles, Los Angeles County Flood Control District	The purpose of the Greater Los Angeles County Region Integrated Regional Water Management Plan (IRWMP) is to define a clear vision and direction for the sustainable management of water resources in the Greater Los Angeles County. The IRWMP identifies a comprehensive set of solutions to reduce the region's reliance on imported water; comply with water quality regulations by improving the quality of urban runoff, stormwater and wastewater; protect, restore and enhance natural processes and habitats; increase watershed friendly recreational space for all communities; reduce flood risk in flood prone areas by either increasing protection or decreasing needs using integrated flood management approaches; and adapt to and mitigate against climate change vulnerabilities. The IRWMP can be used to coordinate and implement mitigation actions associated with drought and water supply reliability.
Los Angeles County Water Plan Responsible Agencies: County of Los Angeles, Public Works Department	The Los Angeles County Water Plan (CWP) focuses on achieving regional water resilience through a framework of targets and strategies organized around four key focal areas: improving regional water supply reliability by better leveraging our collective local and imported water resources and infrastructure; realizing our shared groundwater management opportunities by sharing expertise and resources to overcome challenges; ensuring a consistently high standard of water service for everyone in Los Angeles County by providing regional support for small systems, with focused attention

Resources	Description of Ability to Support Mitigation
	to under-resourced communities; and mitigating the impacts of wildfire on our water supplies through coordinated efforts between land and water managers. The CWP can be used to coordinate and implement mitigation actions associated with drought and water supply reliability.
Mutual Aid Agreements Responsible Agencies: City of Glendora Police Department, City of Glendora, Los Angeles County Fire Department (LACoFD), Los Angeles County Sheriff's Department (LASD)	The City and its public safety providers maintain agreements with emergency responders to lend assistance across jurisdictional boundaries when an emergency response exceeds local resources. Access to these resources provides opportunities to implement mitigation actions to reduce damage and risk of injury during an event. It also provides for collaboration and sharing of information specific to hazards. • Fire – Federal, State, and local agreements • Police – State and local agreements • City – State and County agreements
Los Angeles County/Operational Area Emergency Operations Center Responsible Agency: County of Los Angeles	The Los Angeles County/Operational Area Emergency Operations Center (EOC) is the central coordination point that provides for multi-agency emergency coordination and support to agencies/jurisdictions within the Operational Area during an emergency or disaster. It also assists in coordination and communication between Mutual Aid Coordinators and the California Governor's Office of Emergency Services during County-wide and State-wide emergency response and recovery operations. The EOC can be used to gather and process information to and from the County, cities, school and special districts, business and industry, volunteer organizations, individuals, and State and federal government agencies. It has the ability to function as a virtual EOC so that Operational Area Members may communicate even if the primary EOC is inaccessible or otherwise unavailable. Accurate and timely communication is critical during a hazard event and can reduce more significant damage and injury. Mitigation actions specific to communications and information can be implemented through the communication systems and response efforts to reduce risk of injury and damage.
2020 County of Los Angeles All-Hazards Mitigation Plan Responsible Agencies: County of Los Angeles	The 2020 County of Los Angeles All-Hazards Mitigation Plan (AHMP) assesses risks posed by natural hazards and establishes a mitigation action plan to protect residents, critical facilities infrastructure, private property, and the environment from hazards in the unincorporated areas of the County and County-owned facilities. The AHMP ensures the County's continued eligibility for disaster relief funds from the federal and State governments.
Los Angeles County Fire Department Strategic Fire Plan Responsibly Agency: LACoFD	The LACoFD Strategic Fire Plan focuses on enhancing the protection of lives, property, and natural resources from wildland fire, as well as improving environmental resilience to wildland fires. The plan identifies and prioritizes pre-fire and post-fire management strategies and tactics meant to reduce the loss of values at risk within the operational area.
Weed Abatement Program Responsible Agencies:	The County performs weed abatement services designed to reduce fire hazards during the fire season. The weed abatement program is operated pursuant to the California Health & Safety Code sections 13879 - 14922 and Title 32 of the Los Angeles County Code, also

Resources	Description of Ability to Support Mitigation
County of Los Angeles Departments of Fire and the Agricultural Commissioner/Weights and Measures	known as the Los Angeles County Fire Code. Assessment and integration can be tailored to address localized conditions, such as drought conditions and increased wildfire threat.
Wildfire Mitigation Plan Update Responsible Agencies: Southern California Edison	Electrical corporations are required to prepare and submit Wildfire Mitigation Plans (WMPs) to the Office of Energy Infrastructure Safety for review and approval. WMPs describe how the electrical corporation is constructing, maintaining, and operating its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire.
Administrative & Technical	
Community Development Department	The Community Development Department provides services for long-range land planning, land development, economic development, affordable housing, and transportation. Services include zoning review, building permits, dial-a-ride and affordable housing. The department is organized into the following four divisions: Building and Safey, Housing and Economic Development, Planning, and Transportation.
Building & Safety Division	The Building and Safety Division is responsible for the building and safety standards for the design, construction, use, and occupancy, of all buildings and structures within the City. The Building and Safety Division serves as a contact point for the permit and inspection process, which may involve other departments and agencies. Services include those operations relating to development, plan review, inspection, and enforcement of the adopted building codes and applicable codes within the City in order to ensure the safety of occupants and the general public.
Public Works Department	The Public Works Department is responsible for the design, construction, and maintenance of public facilities including public streets, traffic signals, storm drains, parks, and landscaping. The Public Works Department deals with mitigation actions pertaining to public facilities, maintenance of transportation systems, maintenance of local storm drain systems, and maintenance and removal of tree limbs or debris.
Finance Department	The Finance Department manages the financial operation of the City in conformity with generally accepted accounting standards and principles, and in compliance with federal and State laws. The department accounts for all City revenues and expenditures, monitors internal controls over a variety of transactions, administers water utility collections, cashiering and public counter services, payroll, accounts payable and receivable, manages several competitive grants, prepares payment of all obligations for review and approval by the City Council.
Computer Services	The MyGlendora Geographic Information System (GIS) hub is an interactive portal featuring community maps and information about programs and services offered by the City. The application is accessible on the City's website and provides the public with property specific information, including fire hazard severity zones,

Resources	Description of Ability to Support Mitigation
	fault zones, liquefaction zones, landslide zones, evacuation zones, and cooling center locations.
Glendora Police Department	The Glendora Police Department's primary mission is to enhance the safety and security of the community by providing professional, frontline law enforcement services. Services include Patrol, Community Preservation, Investigations, Traffic, Jail, as well as the K-9 Program, and Emergency Services.
Glendora Police Department; Emergency Services	Emergency Services is responsible for City-wide, local homeland security requirements, and conducts community relations presentations regarding emergency preparedness. Members who work and assist in the area of Emergency Services also may coordinate volunteer services such as Police Auxiliary members, Community Emergency Response Team (CERT), and Glendora Emergency Amateur Radio Services (GEARS).
Glendora Emergency Alert Program	The Glendora Emergency Alert system enables the City to provide community members with critical information quickly in a variety of situations, such as severe weather, unexpected road closures, missing persons, and evacuations of buildings or neighborhoods.
City of Glendora Public Works Department, Suburban Water Systems, and City of Azusa Light & Water Department	Water services in the City are provided by the City of Glendora Public Works Department, Suburban Water Systems, and City of Azusa Light & Water Department. Mitigation actions related to water conservation and hardening of critical facilities specific to water and wastewater will be implemented in coordination with these service providers.
Los Angeles County Sanitation Districts	Within the Sanitation Districts' service area, there are approximately 9,500 miles of sewers that are owned and operated by the cities and County that are tributary to the Sanitation Districts' wastewater collection system. The Sanitation Districts own, operate, and maintain approximately 1,400 miles of sewers, ranging from 8 to 144 inches in diameter, that convey approximately 500 million gallons per day of wastewater to 11 wastewater treatment plants.
Consolidated Sewer Maintenance District of Los Angeles County	The Consolidated Sewer Maintenance District of Los Angeles County (CSMD) system includes over 4,600 miles of sanitary sewers, 155 pump stations, and 4 wastewater treatment plants.
California Department of Transportation	The California Department of Transportation (Caltrans) has jurisdiction, owns, operates, and maintains several of the roadways/bridges within Glendora. Mitigation actions related to ensuring emergency transportation routes are maintained, repaired, and strengthened will require coordination and implementation by Caltrans.
Southern California Edison	Southern California Edison (SCE) provides electrical service to Glendora. These providers own and maintain electrical conveyance infrastructure. Mitigation actions specific to the provision of these services will be implemented in coordination with SCE.
Southern California Gas Company	Southern California Gas Company (SoCalGas) provides natural gas service to Glendora. SoCalGas owns and maintains natural gas conveyance infrastructure. Mitigation actions specific to the provision of these services will be implemented in coordination with the SoCalGas.
Wireless Facilities	A variety of service providers provide communication services within Glendora. Mitigation actions specific to the provision of these

Resources	Description of Ability to Support Mitigation
	services will be implemented in coordination with these service providers.
Partnering Arrangements or Intergovernmental Agreements	The Glendora Police Department and LACoFD have memorandums of understanding with other fire and law enforcement agencies to provide services in emergency events.
American Red Cross	The American Red Cross office in Arcadia serves the San Gabriel/Pomona Valley area. The Red Cross provides both technical and education/outreach support in the implementation of mitigation actions.
Financial	
Federal Emergency Management Agency	FEMA is the federal agency responsible for hazard mitigation, emergency preparedness, and emergency response and recovery activities. It provides guidance to State and local governments on hazard mitigation activities, including best practices and how to comply with federal requirements. FEMA also provides funding for hazard mitigation actions through three grant programs: Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) Grant, and Building Resilient Infrastructure and Communities (BRIC). The HMGP requires a presidential hazard declaration before funding is available; after a hazard is declared, grant applications can be submitted on a rotating basis. Both BRIC and FMA applications typically open during the fall. Outside of the Hazard Mitigation Assistance Grants, FEMA also administers Preparedness Grants and Resilience Grants that may be applicable to future City projects.
California Governor's Office of Emergency Services	Cal OES is responsible for overseeing and coordinating emergency preparedness, response, recovery and homeland security activities within California. Cal OES regularly dispatches team members to join first responders, emergency leaders and those affected by disasters that threaten public safety, to provide information essential to the public. Cal OES can assist in obtaining funding for mitigation actions identified in the plan and providing guidance on future plan updates. Additionally, Cal OES is responsible for administration and distribution of federal grant funding for the FEMA grant programs listed above.
Emergency Reserve Fund	The City maintains an emergency reserve fund for emergency needs in an amount equal to the cost to fund operations for a six-month period.
EOC Activation	When the City's EOC is activated, costs are tracked for eligible reimbursement.
Education & Outreach	
Alert LA County	Alert LA is an opt-in mass notification program utilized by the County of Los Angeles that allows individuals to receive emergency alerts by text, email and/or phone call. Alert LA County has accessibility features for people with disabilities and others with access and functional needs. This system can be used to implement mitigation actions pertaining to public outreach and dissemination of accurate and timely information during a hazard event.
Community Emergency Response Team	The Community Emergency Response Team (CERT) program was developed by the Los Angeles County Fire Department to provide basic training in safety and lifesaving skills for the general public. Upon completion of the course, CERT members can assist others in

Resources	Description of Ability to Support Mitigation
	their neighborhood or workplace following an event when professional responders are not immediately available to help. The City also offers a CERT course, at minimum annually, for its residents.
Glendora Police Auxiliary	The Glendora Police Auxiliary is group of trained, informed volunteers who could be called upon during emergency situations or in the event of a disaster. The Auxiliary may participate in Special Details which could range from appearances at community events, parades, and check-points or emergency response in times of disaster.
Glendora Police Department; Community Academy	The Community Academy is an outreach program to demystify the workings of the Glendora Police Department. Participants learn about the various duties and activities of the police department and criminal justice system.
Glendora Safe Schools	The Glendora Police Department partners with the Glendora Unified School District, the Charter Oak Unified School District, and the Azusa Unified School District to work together to maintain a safe school environment. In addition to on-site patrols and traffic enforcement, the Police Department communicates and meets regularly with school staff and committees and attends PTA meetings. The Police Department can help to implement mitigation actions through the distribution of information through these communication channels.
Neighborhood Watch Program	Neighborhood Watch is a crime prevention program which enlists the active participation of residents in cooperation with law enforcement to reduce crime in their communities. It involves neighbors getting to know each other and working together in a program of mutual assistance. Residents become trained to recognize and report suspicious activities, and can then implement crime prevention techniques such as residential and vehicle security, and personal safety into their neighborhoods.
Los Angeles County Fire Department Education and Outreach Programs	The LACoFD hosts a series of education and outreach programs including the *Ready! Set! Go!* guide, which provides residents with critical information on creating defensible space around their home, retrofitting their home with fire-resistant materials, and preparing them to safely evacuate well ahead of a wildfire; and the *Family Instructions for Rapid Escape* (F.I.R.E.) guide so families can make their homes F.I.R.E. ready and learn how to safely escape in an emergency event.
Emergency Preparedness Outreach	Disasters cannot be prevented; however, the community can reduce the effects of disasters before they occur, prepare for what could happen, and improve response and recovery. Several mitigation actions pertain to outreach and information to the community and can be implemented through a variety of programs and events in coordination with the City and other partner agencies and stakeholders.
Police/Fire Community Awareness Events	Events provide an opportunity to implement mitigation actions specific to educating and informing the community regarding hazards and ways to reduce impacts from the hazards and what to do during an emergency.

Resources	Description of Ability to Support Mitigation
Homeowner Associations	Several Homeowners Associations exist in the City of Glendora. The associations can help to implement mitigation actions through the distribution of information to their residents.
City Website, E-Newsletter, Social Media, Brochures and Pamphlets	These various forms of communication provide an opportunity to convey information and implement mitigation actions specific to educating and informing the community regarding all hazards and ways to reduce impacts from the hazards.

How can these capabilities be expanded upon and improved to reduce risk?

Several mitigation actions provide opportunities to expand upon the City's capabilities to reduce risk. Examples of these opportunities include:

Planning/Regulatory: Adopt the LHMP Update into the General Plan Safety Element (Mitigation Action 1). Monitor and update building and fire codes (Mitigation Action 32). Review information from dam inspections and Emergency Action Plans and implement physical improvements as needed (Mitigation Actions 14 and 15). Maintain flood control facilities in coordination with LACFCD (Mitigation Action 20). Perform mechanical thinning, weed abatement, and other wildfire mitigation activities to reduce wildfire risk (Mitigation Action 30 and 31). Review Wildfire Mitigation Plans prepared by the electric utility provider and coordinate opportunities to implement measures to reduce fire caused by electric infrastructure (Mitigation Action 34).

Administrative/Technical: Work with partners and vulnerable populations to identify opportunities to mitigate impacts (Mitigation Actions 9, 10, and 11). Identify organizations to assist property owners and renters with simple earthquake mitigation activities and small project-based structural improvements (Mitigation Action 22). Provide water conservation resources and strategies to reduce water usage and opportunities for cost savings (Mitigation Actions 17 and 18).

Financial: Funding resources for housing/shelter (Mitigation Action 9) and to mitigate impacts to vulnerable populations (Mitigation Action 11). Funding resources for seismic hazard mitigation activities (Mitigation Action 21, 22, and 23). Funding resources to mitigate potential damages associated with heavy rains or Santa Ana wind events (Mitigation Action 25).

Education/Outreach: Education and dissemination of information aimed at mitigating natural hazards and reducing risk (Mitigation Actions 3, 5, and 6). Education about the dangers of extreme heat, particularly to vulnerable populations (Mitigation Action 27). Outreach and education related to wildfires, including mitigation activities such as home hardening and vegetation management to address wildfire risk (Mitigation Actions 28 and 33).

5.2 HAZARD MITIGATION OVERVIEW

FEMA'S NATIONAL FLOOD INSURANCE PROGRAM

The National Flood Insurance Program (NFIP) provides affordable insurance to property owners, renters and businesses by encouraging communities to adopt and enforce floodplain management regulations. Participation in the NFIP is optional; however, property owners who live in a non-participating community with flood-prone areas are not able to buy flood insurance through the program. Communities with mapped floodplains cannot receive federal grants or loans for development activities in flood-prone areas and cannot receive federal disaster assistance to repair flood damaged buildings in mapped floodplains if they are not participants of the NFIP.

The City of Glendora is a participant in the NFIP and manages its flood-prone areas through Glendora Municipal Code Chapter 9.58, *Floodplain Management*, effective 2007. Chapter 9.58 applies to all areas identified as flood-prone within the jurisdiction of the City of Glendora. Pursuant to Section 9.58.060, *Compliance*, no structure or land can be constructed, located, extended, converted, or altered without full compliance with the term of this chapter and other applicable regulations.

Glendora Municipal Code Section 9.58.110, *Designation of the floodplain administrator*, appoints the Director of Public Works as the Floodplain Administrator. Pursuant to Section 9.58.120, *Duties and responsibilities of the floodplain administrator*, the floodplain administrator reviews all development permit applications to determine permit requirements have been satisfied; all other related State and federal permits have been obtained; and the site is reasonably safe from flooding. The floodplain administrator also obtains, reviews, and utilizes any base flood data available from other federal or State agency or other source. Municipal Code Section 9.58.130, *Standards of construction*, identifies the required standards of construction in all flood-prone areas, including for all new construction and substantial improvements. Other standards are addressed in Section 9.58.140, *Standards for subdivisions or other proposed new development*, and Section 9.58.150, *Standards for utilities*.

As part of the City's concurrent General Plan Safety Element update, current floodplain information has been incorporated and the goals and policies adequately respond to floodplain conditions within the City to reduce vulnerability to flood hazards. Implementation of LHMP update Mitigation Actions 1, 19, and 20 would continue to assist with compliance. Mitigation Action 1 addresses adoption of the LHMP into the City's General Plan Safety Element, including any future updates. Mitigation Action 19 encourages property owners to improve drainage on their properties through low-impact development features. Mitigation Action 20 directs the City to maintain flood control facilities, in coordination with LACFCD. Additionally, it should be noted that the City's General Plan Land Use map identifies where a specific land use is allowed within the City. The

City's Utility and Flood Control Right-of-Way (ROW) designation is applied to areas in the City that are developed for utility and flood control use.

HAZARD MITIGATION GOALS

The mitigation goals, presented in Section 1.0, serve as the basis for direction to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from hazards. The plan's goals guide the direction of future activities aimed at reducing risk and preventing loss from hazards. The goals also serve as checkpoints as agencies and organizations begin implementing mitigation action items.

The hazard mitigation actions identified below list those activities that the City will use to reduce their risk of potential hazards. These mitigation actions were identified through discussions and collaboration with the LHMP Planning Team. All the mitigation actions that were discussed have been included within the plan. Some of these actions may be eligible for funding through federal and State grant programs and other funding sources as made available to the City. The mitigation actions are intended to address the comprehensive range of identified hazards. Some actions may address risk reduction from multiple hazards.

HAZARD MITIGATION PRIORITIZATION

The Planning Team prioritized the mitigation actions using the following as guidance:

- High Priority: Top organizational priority and is generally a well-detailed project idea. Protects population, resources or properties at high risk. Uses feasible methods, techniques or technology.
- Medium Priority: A good idea that needs more information or is an action that addresses a moderate hazard.
- Low Priority: An idea that needs a lot more information or will take a lot of preliminary action to build support.

Some actions, although possibly in need of more information, were identified as a high priority due to current conditions, the risk of the hazard, and the probability of its occurrence. The Planning Team considered the frequency and severity of the hazard; the vulnerability of the community; the impacts the mitigation action would avoid or reduce; the benefits of the action on the community; the critical facilities that would benefit; the environmental benefits of the action; and the capability of the City and its partner agencies to implement the action.

The Planning Team reviewed the STAPLE/E (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) criteria, as described in Table 5-2, *STAPLE/E Review and Selection Criteria*, when considering and prioritizing the mitigation actions. This methodology, as

endorsed by FEMA, requires that social, technical, administrative, political, legal, economic, and environmental factors are considered when reviewing potential actions.

TABLE 5-2: STAPLE/E REVIEW AND SELECTION CRITERIA

STAPLE/E Review	Selection Criteria
Social	▪ Is the proposed action socially acceptable to the jurisdiction and surrounding community? ▪ Are there equity issues involved that would mean that one segment of the jurisdiction and/or community is treated unfairly? ▪ Will the action cause social disruption?
Technical	▪ Will the proposed action work? ▪ Will it create more problems than it solves? ▪ Does it solve a problem or only a symptom? ▪ Is it the most useful action in light of other jurisdiction goals?
Administrative	▪ Can the jurisdiction implement the action? ▪ Is there someone to coordinate and lead the effort? ▪ Is there sufficient funding, staff, and technical support available? ▪ Are there ongoing administrative requirements that need to be met?
Political	▪ Is the action politically acceptable? ▪ Is there public support both to implement and to maintain the project?
Legal	▪ Is the jurisdiction authorized to implement the proposed action? ▪ Are there legal side effects? Could the activity be construed as a taking? ▪ Will the jurisdiction be liable for action or lack of action? ▪ Will the activity be challenged?
Economic	▪ What are the costs and benefits of this action? ▪ Do the benefits exceed the costs? ▪ Are initial, maintenance, and administrative costs considered? ▪ Has funding been secured for the proposed action? If not, what are the potential funding sources (public, nonprofit, and private)? ▪ How will this action affect the fiscal capability of the jurisdiction? ▪ What burden will this action place on the tax base or local economy? ▪ What are the budget and revenue effects of this activity? ▪ Does the action contribute to other jurisdiction goals? ▪ What benefits will the action provide?
Environmental	▪ How will the action affect the environment? ▪ Will the action need environmental regulatory approvals? ▪ Will it meet local and State regulatory requirements? ▪ Are endangered or threatened species likely to be affected?

HAZARD MITIGATION BENEFIT-COST REVIEW

FEMA requires local governments to analyze the benefits and costs of a range of mitigation actions that can reduce the effects of each hazard within their communities. Benefit-cost analysis is used in hazard mitigation to show if the benefits to life and property protected through mitigation efforts exceed the cost of the mitigation activity. Conducting benefit-cost analysis for a mitigation activity can assist communities in determining whether a project is worth undertaking now to avoid disaster-related damages later. The analysis is based on calculating the frequency and severity of a hazard, avoiding future damage, and risk.

A hazard mitigation plan must demonstrate that a process was employed which emphasized a review of benefits and costs when prioritizing the mitigation actions. The benefit-cost review must be comprehensive to the extent that it can evaluate the monetary as well as the nonmonetary benefits and costs associated with each action. The benefit-cost review should at least consider the following questions:

- How many people will benefit from the action?
- How large an area is impacted?
- How critical are the facilities that benefit from the action (e.g., which is more beneficial to protect, the fire station or the administrative building)?
- Environmentally, does it make sense to do this project for the overall community?

These questions were considered to help determine the appropriateness of mitigation actions. Those actions that did not have adequate benefits were excluded from the list of mitigation actions.

5.3 HAZARD MITIGATION ACTIONS

PREVIOUS HAZARD MITIGATION ACTIONS

The 2015 LHMP identified 27 mitigation actions. The Planning Team has reviewed the mitigation actions and documented their status.

The Planning Team considered the following in their review:

- Is the mitigation action still relevant?
- What steps/actions are you aware of that have been taken to address the specific mitigation action?

Table 5-3, *Status of Previous Plan Mitigation Actions*, provides a consolidated summary of the status of each action.

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TABLE 5-3: STATUS OF PREVIOUS PLAN HAZARD MITIGATION ACTIONS

Mitigation Reference Number	2015 Mitigation Action	Completed	Removed; No Longer Necessary or Feasible	Carried Into Plan Update	Status
Multi-Hazard #1	Integrate the goals and action items from the City of Glendora Natural Hazard Mitigation Plan into existing regulatory documents and programs, where appropriate.			X	The City implemented this mitigation action. As an ongoing opportunity, this mitigation action will be revised and carried into the plan update.
Multi-Hazard #2	Identify and pursue funding opportunities to develop and implement local and city mitigation activities.			X	This mitigation action is on-going.
Multi-Hazard #4	Identify, improve, and sustain collaborative programs focusing on the real estate and insurance industries, public and private sector organizations, and individuals to avoid activity that increases risk to natural hazards.		X		The City continues to conduct education and outreach regarding natural hazards. New mitigation actions related to education and outreach included in the plan update will supersede this mitigation action.
Multi-Hazard #5	Develop public and private partnerships to foster natural hazard mitigation program coordination and collaboration in City of Glendora.			X	The City continues to do this and the mitigation action is on-going.
Multi-Hazard #6	Develop inventories of at-risk critical facilities (buildings and infrastructure).			X	The Glendora Public Works Department has a Facility Condition Assessment that is continually updated/considered to identify at-risk critical facilities. This mitigation action will be revised and carried into the plan update.
Multi-Hazard #7	Strengthen emergency services preparedness and response by linking emergency services with natural hazard mitigation programs, and enhancing public education on a regional scale.			X	The City and partner agencies continue to conduct education and outreach regarding preparedness and response. For instance, the City offers Community Emergency Response Team (CERT) basic training to residents and has hosted a Prepare Fair. This mitigation action will be carried into the plan update.
Multi-Hazard #8	Develop, enhance, and implement education programs aimed at mitigating natural hazards, and reducing the risk to citizens, public agencies, private property owners, businesses, and schools.			X	The City and partner agencies continue to conduct education and outreach regarding hazard mitigation. For instance, the City hosts a Prepare Fair. This mitigation action will be carried into the plan update.
Multi-Hazard #9	Review ordinances that protect natural systems and resources to mitigate for natural hazards for possible enhancements.	X			The City implemented this mitigation action. The City reviews qualifying development projects for compliance with existing ordinances, including the Model Water Efficient Landscaping Ordinance and Storm Water and Runoff Pollution Control Ordinance. Applicable projects are also subject to the California Environmental Quality Act (CEQA), which may include mitigation measures related to natural hazards.
Earthquake #1	Integrate new earthquake hazard mapping data for the City of Glendora and improve technical analysis of earthquake hazards.	X			The City implemented this mitigation action through this plan update and the General Plan Safety Element update.
Earthquake #2	Review, update, and incorporate the Evacuation Routes into appropriate planning documents.	X			The City implemented this mitigation action through the General Plan Safety Element update.
Earthquake #3	Identify funding sources for structural and nonstructural retrofitting of City-owned structures that are identified as seismically vulnerable.			X	The City continues to identify funding sources. This mitigation action will be revised and carried into the plan update.
Earthquake #4	Encourage purchase of earthquake hazard insurance.		X		The City continues to conduct education and outreach regarding seismic hazards. New mitigation actions related to education and outreach included in the plan update will supersede this mitigation action.
Earthquake #5	Encourage seismic strength evaluations of critical facilities in the City of Glendora to identify vulnerabilities for mitigation of schools and universities, public infrastructure, and critical facilities to meet current seismic standards.	X			Public Works conducts a Facility Condition Assessment that is ongoing to continue to identify at-risk critical facilities. A revised mitigation action related to critical facilities evacuations is included in the plan update and will supersede this mitigation action.
Earthquake #6	Encourage reduction of nonstructural and structural earthquake hazards in homes, schools, businesses, and government offices.			X	The City and partner agencies continue to conduct education and outreach related to seismic hazards. A revised mitigation action related to critical facilities evacuations is included in the plan update and will supersede this mitigation action.

Mitigation Reference Number	2015 Mitigation Action	Completed	Removed; No Longer Necessary or Feasible	Carried Into Plan Update	Status
Flood #4	Develop a storm drain clean out program for areas prone to urban flooding.	X			LACFCD cleans and maintains a majority of the City's storm drain system. LACFCD inspects and/or cleans all catch basins annually.
Wildfire #1	Educate agency personnel on federal cost-share and grant programs, Fire Protection Agreements and other related federal programs so the full array of assistance available to local agencies is understood.		X		The City continues to educate staff on grant programs and cooperative agreements. New mitigation actions related to wildfire support programs such as funding and mutual aid included in the plan update will supersede this mitigation action.
Wildfire #2	Encourage development and dissemination of maps relating to the fire hazard to help educate and assist builders and homeowners in being engaged in wildfire mitigation activities and to help guide emergency services during response.	X			The California Department of Forestry and Fire Protection (CAL FIRE) prepares and periodically updates wildfire hazard severity maps. The City reviews development projects within designated fire hazard severity zones and continues to conduct education and outreach regarding wildfire hazards. A revised mitigation action related to wildfire hazards education and outreach is included in the plan update and will supersede this mitigation action.
Wildfire #3	Enhance outreach and education programs aimed at mitigating wildfire hazards and reducing or preventing the exposure of citizens, public agencies, private property owners and businesses to natural hazards.			X	The City and partner agencies continue to conduct education and outreach related to wildfire hazards. This mitigation action will be carried into the plan update.
Wildfire #4	Increase communication, coordination and collaboration between wildland/urban interface property owners, local and county planners and fire prevention crews and officials to address risks, existing mitigation measures and federal assistance programs.			X	The City reviews development projects within designated fire hazard severity zones and continues to conduct education and outreach regarding wildfire hazards. New development is required to comply with existing regulations to reduce wildfire risk, including the Fire Code. This mitigation action will be carried into the plan update.
Wildfire #5	Encourage implementation of wildfire mitigation activities.			X	Mechanical thinning is regularly conducted as required by law in areas of the City's responsibility. This mitigation action will be revised and carried into the plan update.
Wildfire #6	Clear trimmings, trees, brush and other debris completely from sites when performing routine maintenance and landscaping to reduce fire risk.			X	These efforts are ongoing with the City's landscaping and tree maintenance contracts. This mitigation action will be revised and carried into the plan update.
Windstorm #1	Public Awareness Campaign: To provide public education materials to City of Glendora residents and all School District staff, parents and age-appropriate students with mitigation materials pertaining to the protection of life and property before, during, and after a windstorm.			X	The City and partner agencies continue to conduct education and outreach related to severe weather, including Santa Ana winds. This mitigation action will be revised and carried into the plan update.
Windstorm #2	Create local City and utility awareness of tree pruning and Fire Code Sections relevant to wind-resistant utility operations.		X		This action is not necessary; tree trimming related to the electric grid and infrastructure is handled by the service provider, Southern California Edison.
Windstorm #3	Encourage Critical City Facilities to purchase and/or test backup power facilities for use during a power failure. Create an equipment testing log to ensure backup power equipment is in working service.			X	The Glendora Police Department tests backup command post. The Glendora Public Works Department tests backup generator for radio communications. This mitigation action will be revised and carried into the plan update.
Landslide #2	Public awareness regarding hillside ground cover and erosion control.			X	The City and partner agencies continue to conduct education and outreach related to seismic and geologic hazards. This mitigation action will be revised and carried into the plan update.
Dam Failure #1	Produce Dam Inundation Maps	X			Inundation maps approved by the Division of Safety of Dams have been prepared for all dams with the potential to inundate portions of Glendora.
Dam Failure #2	Review Emergency Action Plans (EAP) as they relate to the warning, evacuation, and post-flood actions.			X	The Glendora Police Department reviewed Los Angeles County's EAP's for Big Dalton and Puddingstone. This mitigation action will be revised and carried into the plan update.

2025 HAZARD MITIGATION ACTIONS

The hazard mitigation actions identified below list those activities that the City will use to reduce their risk of potential hazards. These mitigation actions were reviewed and updated in the context of the updated hazards and vulnerability assessment, community outreach, discussions and collaboration with the LHMP Planning Team, and review and status of the previous plan's mitigation actions. All the mitigation actions that were discussed have been included within the plan. Some of these actions may be eligible for funding through federal and State grant programs and other funding sources as made available to the City. The mitigation actions are intended to address the comprehensive range of identified hazards and associated risks and vulnerabilities. Some actions may address risk reduction from multiple hazards.

The process used to update the hazard mitigation actions for this plan included the following:

- Review of the vulnerability and risk assessment presented in Section 4.0;
- Review of the capabilities assessment presented in Subsection 5.1;
- Review of the City's previously approved hazard mitigation plan mitigation actions;
- Review of the results of the community survey, and feedback received as part of the community outreach and focus outreach meetings; and
- The Planning Team's discussion of concerns/issues that need to be addressed to reduce hazards to critical facilities and the community.

Table 5-4, *Hazard Mitigation Actions*, identifies the mitigation action, hazard(s) it addresses, City Department and/or partner agency/stakeholder responsible for implementation, priority, and the timeline for implementation. The timeline for implementation is defined as follows:

- Ongoing: 1-2 years and ongoing thereafter
- Short-Term: 1 to 2 years
- Medium-Term: 3 years
- Long-Term: 4 to 5 years

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TABLE 5-4: HAZARD MITIGATION ACTIONS

Mitigation Reference Number	Mitigation Action	Hazard(s) Identified	Responsible Departments	Potential Funding Sources	Priority	Timeline
1	The City will incorporate the approved Local Hazard Mitigation Plan into its General Plan Safety Element, including any future updates, to ensure compliance with AB 2140, making the City eligible for additional funding under the California Disaster Assistance Act (CDAA).	Multiple Hazards	Community Development	General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC)	High	Short-Term
2	Identify and pursue funding opportunities to develop and implement local and city mitigation activities.	Multiple Hazards	Community Development	Staff time/General Fund	Medium to High	Long-Term
3	Develop public and private partnerships to foster natural hazard mitigation program coordination and collaboration and to enhance outreach and education programs aimed at protection of life and property before, during, and after an event.	Multiple Hazards	Public Information Officer; Public Works; Police; Community Development	Staff time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC); FEMA Hazard Mitigation Grant Program (HMGP)	Low	Long-Term
4	Continue to assess and inventory at-risk critical facilities (buildings and infrastructure) through the Facility Condition Assessment. If vulnerabilities or deficiencies are identified, document a retrofit plan, schedule, and funding source.	Multiple Hazards	Public Works	Staff time/General Fund	Low	Ongoing
5	Strengthen emergency services preparedness and response by linking emergency services with natural hazard mitigation programs and enhancing public education on a regional scale.	Multiple Hazards	Community Development; Police; Public Works	Staff time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC)	High	Long-Term
6	Develop, enhance, and implement education programs aimed at mitigating natural hazards, and reducing the risk to citizens, public agencies, private property owners, businesses, and schools.	Multiple Hazards	Community Development; Police; Public Works	Staff time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC)	High	Long-Term
7	Conduct a feasibility assessment of installation of backup energy systems (solar, battery, fuel cell, natural gas generator) at key critical facilities within the City. Maintain an equipment testing log to ensure backup power equipment is in working service.	Multiple Hazards	Public Works	Staff time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC)	Low	Medium-Term
8	At all City-sponsored communitywide events, advertise and inform residents/business owners of the City's alert notification system and assist people in registering for notifications, if requested.	Multiple Hazards	Police	Staff Time/General Fund	High	Ongoing
9	Partner with the County, neighboring cities, and local nonprofits to identify potential housing/shelter opportunities, including funding resources, for vulnerable populations in the event of a hazard resulting in displacement.	Multiple Hazards	Police, Community Development	Staff Time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC); FEMA Hazard Mitigation Grant Program (HMGP)	Medium to High	Medium- to Long-Term
10	Partner with local nonprofits to identify and implement targeted mitigation actions to support vulnerable or underserved populations.	Multiple Hazards	Police, Community Development	Staff Time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC); LUCI Extreme Heat and Community Resilience Program	High	Ongoing
11	Partner with the local community and other organizations, such as L.A. CADA, the American Red Cross, religious organizations, non-profits, and partner agencies to work directly with vulnerable populations (elderly, homeless, low income, special needs, etc.) to	Multiple Hazards	Police, Public Works, Community Development	Staff Time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC);	High	Ongoing

Mitigation Reference Number	Mitigation Action	Hazard(s) Identified	Responsible Departments	Potential Funding Sources	Priority	Timeline
	identify opportunities to mitigate impacts in the event of a natural disaster, including the identification of available resources and how to access and implement those resources.			LUCI Extreme Heat and Community Resilience Program		
12	Consider developing pre-established contracts/ memorandums of understanding (MOUs) with outside entities to ensure availability of equipment to assist with hazard mitigation.	Multiple Hazards	Public Works, Community Development	Staff Time/General Fund; LUCI Regional Resilience Planning and Implementation Grant Program	Medium	Medium-Term
13	Avoid locating new critical facilities within or immediately adjacent to mapped hazard zones, where feasible. If no feasible alternative exists, integrate best-practices into the development to reduce vulnerability and risk to the maximum extent.	Multiple Hazards	Public Works, Community Development	Staff Time/General Fund	Medium	Ongoing
14	Review Emergency Action Plans (EAP) as they relate to the warning, evacuation, and post-flood actions.	Dam/Reservoir Failure	Police	Staff time/General Fund	Medium	Ongoing
15	Continue to monitor and review the results of the annual dam inspections conducted by the Division of Safety of Dams. If the inspections determine physical improvements are required, coordinate with the owners to document a plan to implement the necessary improvements, including a schedule and provide assistance to identify opportunities for funding.	Dam/Reservoir Failure	Public Works, Community Development	Staff time/General Fund	Medium	Ongoing
16	Proactively monitor and communicate drought conditions or water conservation warnings issued by State and Federal agencies.	Drought	Public Works (Water Division)	Staff time/General Fund	High	Ongoing
17	Educate residents and business owners on water conservation, the availability of financial incentives and programs to conserve water and encourage implementation of water-saving measures.	Drought	Public Works (Water Division)	Staff time/General Fund	Medium	Ongoing
18	Continue to offer information and services that reduce water usage, are cost-effective, and provide cost savings for both the property owner and tenants. Water conservation resources can include, but are not limited to, low-cost or free water audits, rebate programs, and pilot programs.	Drought	Public Works (Water Division)	Staff time/General Fund; California DWR Watershed Resilience Program	Medium	Ongoing
19	Encourage property owners to improve drainage on their properties through low-impact development features.	Flood	Public Works	Staff Time/General Fund	Medium	Ongoing
20	In coordination with LACFCD, maintain flood control facilities. Develop and implement a storm drain clean out program for areas prone to urban flooding.	Flood	Public Works, in coordination with LACFCD	Staff Time/General Fund	Medium	Medium-Term
21	Work with owners of critical facilities to ensure facilities are evaluated for seismic safety. If any critical facilities are determined to be seismically vulnerable, work with the owner to identify a plan for implementation of seismic retrofit, including schedule and assist to identify potential funding sources.	Seismic and Geologic Hazards	Community Development; Public Works	Staff Time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC); FEMA Pre-disaster Mitigation Program (PDM)	Medium	Long-Term
22	Coordinate with property owners and other community partners to identify funding and in-kind resources and develop a small project-based seismic retrofit program to educate and directly assist property owners and renters with simple earthquake mitigation activities to reduce the potential for injury and damage and the strain on City resources during an event. Examples include anchoring bookcases, dressers, and file cabinets, installing latches on drawers and cabinet doors, securing desktop computers and appliances, using flexible	Seismic and Geologic Hazards	Community Development; Public Works	Staff Time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC); FEMA Pre-disaster Mitigation Program (PDM)	High	Short-Term

Mitigation Reference Number	Mitigation Action	Hazard(s) Identified	Responsible Departments	Potential Funding Sources	Priority	Timeline
	connections on gas water lines, and securely mounting framed pictures and mirrors.					
23	Identify and seek funding opportunities for low- to moderate-income homeowners to identify the need for and to implement seismic retrofit projects.	Seismic and Geologic Hazards	Community Development; Public Works	Staff Time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC); FEMA Pre-disaster Mitigation Program (PDM)	High	Short- to Medium Term
24	Monitor conditions during a high wind event to ensure fallen tree limbs or debris do not block roadways or the storm drain system.	Severe Weather	Public Works	Staff Time/General Fund	High	Ongoing
25	Coordinate with property owners and other community partners to identify funding and in-kind resources for low- to moderate-income homeowners to implement small project-based structural improvements to mitigate potential damage associated with heavy rains or Santa Ana wind events. Examples include roof repair/ replacement, rain gutter repair/cleanout, tree trimming/ removal, downspouts, rain barrels, or other drainage improvements.	Severe Weather	Community Development; Public Works	Staff Time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC); FEMA Pre-disaster Mitigation Program (PDM); LUCI Adaptation Planning Grant Program	High	Short- to Medium- Term
26	Monitor trees, limbs, and other vegetation near power lines, and promptly inform Southern California Edison of the need for any tree trimming.	Severe Weather	Public Works	Staff Time/General Fund	High	Ongoing
27	Provide education, particularly to vulnerable populations, about the dangers of extreme heat and ways to stay safe when extreme heat events occur. Continue to publicize the locations of cooling centers in the community. Explore opportunities to further support vulnerable populations and underserved communities during extreme heat events.	Severe Weather	Community Development	Staff Time/General Fund	High	Ongoing
28	Partner with agency partners, including the electric utility provider, to enhance outreach and education programs designed to increase awareness about fires, identify potential vulnerabilities, and implement fire mitigation techniques. Develop communication methods and approaches that include underserved or vulnerable populations, who may be uniquely impacted by wildfire risk.	Wildfire	Community Development, in coordination with LACoFD	Staff time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC)	High	Long-Term
29	Reduce wildfire risks by enforcing fire-related requirements pertaining to evacuation routes, minimum road widths, clearances around structures, and peak load water supply for fire response.	Wildfire	Community Development, Public Works, in coordination with LACoFD	Staff time/General Fund	High	Ongoing
30	Perform mechanical thinning, weed abatement, and other wildfire mitigation activities, both independently and in coordination with LACoFD.	Wildfire	Public Works, in coordination with LACoFD	Staff time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC)	High	Ongoing
31	Clear trimmings, trees, brush and other debris completely from sites when performing routine maintenance and landscaping to reduce fire risk.	Wildfire	Public Works, in coordination with LACoFD	Staff time/General Fund	High	Ongoing
32	Adopt and enforce the most up-to-date California Building Code and California Fire Code, with local amendments as appropriate.	Wildfire	Community Development	Staff time/General Fund	High	Ongoing
33	Coordinate with LACoFD to educate homeowners on opportunities for home hardening and vegetation management to address wildfire risk.	Wildfire	Community Development, in coordination with LACoFD	Staff time/General Fund; FEMA Building Resilient Infrastructure and	High	Long-Term

Mitigation Reference Number	Mitigation Action	Hazard(s) Identified	Responsible Departments	Potential Funding Sources	Priority	Timeline
				Communities (BRIC); Cal OES/CAL FIRE California Wildfire Mitigation Program (CWMP)		
34	Continue to review Wildfire Mitigation Plans prepared by the electric utility provider and coordinate opportunities to implement measures to reduce fire caused by electric infrastructure.	Wildfire	Community Development, Public Works	Staff time/General Fund; FEMA Building Resilient Infrastructure and Communities (BRIC); FEMA Pre-disaster Mitigation Program (PDM)	High	Long-Term

Ongoing: 1-2 years and ongoing thereafter
Short-Term: 1 to 2 years
Medium-Term: 3 years
Long-Term: 4 to 5 years
Note: *The Potential Funding Sources column identifies potential grant programs for the City to pursue. No award has been made at this time, and other grant programs may apply.

Section 6.0 | Plan Maintenance

This section outlines the formal process for maintaining the LHMP as an active and relevant document. It includes a schedule for annual monitoring and evaluation, along with a five-year update cycle, to ensure the City remains eligible for federal and State hazard mitigation funding. Additionally, the section details how the City will integrate public participation into the plan's maintenance and implementation, and how it will incorporate the mitigation actions outlined in the plan into existing planning mechanisms and programs. The plan's format also allows for easy updates when new data becomes available, ensuring it remains current and effective.

6.1 METHOD AND SCHEDULE FOR MAINTAINING AND UPDATING THE PLAN

PURPOSE AND AUTHORITY

Section 201.6.(d)(3) of Title 44 of the Code of Federal Regulations requires that local hazard mitigation plans be reviewed, revised if appropriate, and resubmitted for approval to remain eligible for benefits awarded under the DMA. As described below, monitoring the progress of the mitigation actions will be on-going throughout the five-year period between the adoption of the LHMP and the next update effort. The LHMP Planning Team will meet on an annual basis to monitor the status of the implementation of mitigation actions and develop updates as necessary.

The City intends to update the plan on a five-year cycle from the date of initial plan adoption. It is anticipated that this update process will be initiated 18 months prior to expiration of the existing plan. The cycle may be accelerated to less than five years based on the following triggers:

- A presidential disaster declaration that impacts the City.
- A hazard event that causes loss of life.

Under the direction of the City's Project Management Team, which is comprised of designees from the Police Department and Community Development Department, the LHMP Planning Team (identified in Section 2.0, *Planning Process*) will be responsible for the on-going maintenance and five-year update of this LHMP. The Police Department designee will take the primary lead in the LHMP maintenance by coordinating maintenance of this plan with the Planning Team, including undertaking the formal review process and updating the plan. Key City departments who should have an active role in maintenance and future updates are identified below.

- Police Department
- Community Development
- Public Works
- Risk Management
- Human Resources

In addition to City staff, the following partner agencies, organization, and stakeholders who were invited to and/or participated on the Planning Team during preparation of the plan should be included in the maintenance and future update activities:

- Azusa Pacific University
- City of Azusa
- City of Covina
- City of San Dimas
- Charter Oak Unified School District
- Citrus College
- Emanate Health
- Foothill Gold Line
- Glendora Unified School District
- Los Angeles County Area D Disaster Management
- Los Angeles County Fire
- Los Angeles County Public Works (Flood)
- Pomona Valley Hospital
- Red Cross
- Southern California Edison
- Southern California Gas Company
- St. Lucy's Priory High School
- U.S. Forest Service

The composition of the Planning Team may change over time, but key City staff positions, departments, and partner agencies should remain integral to the plan's ongoing implementation and maintenance. Opportunities to expand the Planning Team should also be considered, particularly by including stakeholders who are outside the core team. This should include community partners, service agencies, and organizations that directly engage with the community, with particular focus on underserved and vulnerable populations.

The Project Management Team, led by designees from the Police Department and Community Development Department, will facilitate the Planning Team meetings and assign tasks related to plan updates, presentations, and coordination with other departments, stakeholder groups, or elected officials. This ensures the plan is communicated and integrated across various sectors of the City.

The Planning Team will be responsible for maintaining, updating, and implementing the plan through their respective departments and agencies. Plan implementation and evaluation will be a shared responsibility among all team members, requiring close coordination to ensure that the goals and strategies outlined in the plan are effectively achieved.

ANNUAL PLAN MONITORING AND MAINTENANCE

It will be important to monitor the progress of the mitigation actions throughout the five-year period between adoption and the next required update. At a minimum, designees from the Police Department and Community Development Department, representatives from each City Department, and Planning Team members should meet annually to monitor implementation of the LHMP. However, in the event a significant disaster occurs within Glendora, the Police Department designee, Community Development Department designee, and City Department representatives will convene within 30 days of the disaster to review and update the LHMP as needed. In addition to City staff, partner agencies, organizations, and stakeholders, may be identified for participation, as appropriate.

Designees from the Police Department and Community Development Department will coordinate with responsible City departments and agencies/organizations identified for each mitigation action. These responsible departments and agencies/organizations will monitor and evaluate the progress made on the implementation of mitigation actions and report to the LHMP Planning Team on an annual basis. Working with the LHMP Planning Team, these responsible departments and agencies/organizations will be asked to assess the effectiveness of the mitigation actions and modify the mitigation actions as appropriate. A LHMP Mitigation Action Progress Report worksheet or tracking mechanism will assist departments and agencies/organization responsible for implementing mitigation actions in reporting on the status and assessing the effectiveness of the mitigation actions.

Information from the departments and agencies/organizations will be used to monitor mitigation actions and inform the annual evaluation of the LHMP. The following questions will be considered as criteria for evaluating the plan's effectiveness:

- Has the nature or magnitude of hazards affecting the City changed?
- Are there new hazards that have the potential to impact the City?
- Do the identified goals and actions address current and expected conditions?
- Have mitigation actions been implemented or completed?
- Has the implementation of identified mitigation actions resulted in expected outcomes?
- Are current resources adequate to implement the LHMP?
- Can additional local resources be committed to address identified hazards?

As part of the annual meeting, the progress of implementing the mitigation actions will be documented and opportunities to incorporate the actions into other planning documents will be identified. This review will include the following:

- Summary of any hazard events that occurred during the prior year and their impacts on the community.
- Review of successful mitigation initiatives identified in the plan.
- Discussion about why targeted mitigation actions were not completed.
- Reevaluation of the mitigation actions to determine if the timeline for identified projects needs to be amended (such as changing a long-term project to a short-term project due to funding availability).
- Recommendations for new mitigation actions.
- Changes in, or potential for, new funding options/grant opportunities.
- Integration of new data and maps that can be used to inform the plan.
- Evaluation of any other planning programs or initiatives within the City that involve hazard mitigation.

The purpose of the annual evaluation will be to ensure consideration and implementation of the LHMP and document progress to inform future LHMP updates. Future updates to the LHMP will account for any new hazard vulnerabilities, special circumstances, or new information that becomes available. Issues that arise during the annual LHMP evaluation that require changes to the risk assessment, mitigation strategy, and other components of the plan, will be incorporated into the next update of the LHMP in 2030. The questions identified above would remain valid during the preparation of the 2030 plan update.

FIVE-YEAR UPDATE

The intent of the five-year update process will be to add new planning process methods, community profile data, hazard data and events, vulnerability analyses, mitigation actions, and goals to the adopted plan so that the LHMP will always be current and up to date. Based on the needs identified by the Planning Team and incorporating information from the annual monitoring and maintenance activities, the update will, at a minimum, include the elements below:

- The update process will be convened 18 months prior to expiration of the existing plan through a Planning Team identified by the City's Project Management Team.
- The hazard risk assessment will be reviewed and updated using the best available information and technologies.
- Based on new/updated information provided by facility owners and available funding, the evaluation of critical facilities and mapping will be updated and improved.
- The mitigation actions will be reviewed and revised to account for any actions completed, deferred, or changed to account for changes in the risk assessment or new City policies identified under other planning mechanisms, as appropriate (such as the City's General Plan).
- The draft update will be sent to appropriate agencies for comment.
- The public will be given an opportunity to comment prior to adoption.
- The City Council will adopt the updated LHMP.

6.2 ADOPTION

The LHMP update will be presented to both the Glendora Planning Commission and the City Council prior to transmittal to Cal OES and FEMA for review. The Glendora City Council is responsible for adopting the LHMP. This formal adoption should take place every five years. Once the plan has received FEMA Approval Pending Adoption, the City Council will be requested to adopt the plan. Upon adoption, the Project Management Team will transmit the adopted plan and resolution to Cal OES.

6.3 INCORPORATION INTO EXISTING PROGRAMS AND PLANNING MECHANISMS

The effectiveness of the nonregulatory LHMP depends on the implementation of the plan and incorporation of the mitigation action items into City plans, policies, and programs. The City's General Plan is an integral part of this plan. The City, through updating the General Plan Safety Element concurrent with the LHMP, has planned for the impact of hazards. The LHMP process has allowed the City to review the goals and policies contained in the General Plan Safety Element and identified mitigation actions that will further implement these policies. The City views the

General Plan and the LHMP as complementary planning documents that work together to achieve the goal of risk and vulnerability reduction to Glendora citizens and property. Many of the ongoing recommendations identified in the mitigation strategy further the goals and policies of the General Plan and other adopted plans. Further, as part of the Safety Element update, the City will acknowledge the LHMP and will continue to incorporate it by reference.

The plan includes a range of action items that, if implemented, would reduce loss from hazard events in the City. Together, the mitigation action items in the LHMP provide the framework for activities that the City may choose to implement over the next five years. The City has prioritized the plan's goals and identified actions that will be implemented (resources permitting) through existing plans, policies, and programs. In addition to the General Plan, the City will coordinate the recommendations of the LHMP with other existing plans and programs, which include, but are not limited to:

- Glendora General Plan Updates
- County of Los Angeles All-Hazards Mitigation Plan
- Capital Improvement Program
- Glendora Municipal Code
- California Environmental Quality Act Review

As a guidance document, implementation of the mitigation actions can be accomplished most effectively by integrating the LHMP into ongoing programs, policies, and practices. Additional opportunities to integrate the mitigation actions include the following:

- Integration of mitigation actions in emergency response and post-disaster recovery planning.
- Ongoing education and outreach programs to increase staff, residents, business owners, employees, and overall community awareness of the risks and opportunities to implement mitigation actions associated with natural hazards.
- Continued coordination with the City and other partner agencies and organizations on emergency operations and training opportunities.
- Continued consideration of hazard implications and opportunities to implement hazard mitigation as City plans, policies, procedures, and practices are prepared and updated.

The LHMP Project Managers (Public Safety Management Analyst and Principal Planner) are responsible for overseeing the plan's implementation and maintenance through the City's existing programs. The Public Safety Management Analyst, Principal Planner, or designated appointee will assume lead responsibility for facilitating LHMP implementation and maintenance meetings. Although the Police Department will have primary responsibility for review, coordination, and promotion, plan implementation and evaluation will be a shared responsibility among all

departments identified as lead departments in the mitigation action plan. The City will reference and incorporate this LHMP into all relevant planning documents, programs, decisions, processes, and regulations. The LHMP will be reviewed and considered by internal City departments, as applicable plans or programs are drafted or updated in the future. Opportunities to integrate the mitigation action plan into other planning mechanisms and documents will be identified as part of the annual plan monitoring and maintenance described in Section 6.1.

2015 NATURAL HAZARD MITIGATION PLAN PAST INCORPORATION EFFORTS

The hazard mitigation actions identified in the City's previously adopted 2015 Natural Hazard Mitigation Plan were incorporated into existing programs and other planning mechanisms when appropriate. Several successful integrations of the 2015 LHMP are outlined in Table 5-3, as previous mitigation actions marked "completed." For example, the City implemented Mitigation Reference Number Earthquake 1 and 2 by including seismic hazard mapping data and evacuation information into the LHMP Update and General Plan Safety Element update, as required by State law. Mitigation Reference Number Dam Failure 1 was implemented by including the new dam inundation maps approved by the Division of Safety of Dams into the into the LHMP Update and General Plan Safety Element update. Additionally, the City implemented Mitigation Reference Number Multi-Hazard 9 by reviewing applicable development projects for compliance with existing ordinances, including the Model Water Efficient Landscaping Ordinance and Storm Water and Runoff Pollution Control Ordinance.

6.4 CONTINUED PUBLIC INVOLVEMENT

The City recognizes the need for continued public involvement throughout the five-year planning period to keep community members and partner agencies updated on the LHMP, including socially vulnerable populations. The public will continue to be informed on LHMP actions through regular updates to the City websites and through annual progress reports. The adopted LHMP will remain permanently available for review on the City's website, with contact information for interested parties to direct comments and concerns. Additionally, the City will ensure continued public involvement through the promotion of hazard and emergency preparedness education, interagency coordinated outreach efforts, public disaster fairs, drills and other hazard awareness campaigns as included in applicable Mitigation Actions in Section 5.0, Hazard Mitigation Strategy. These mitigation actions include outreach and communication methods designed to appeal to the entire community, including targeted outreach to socially vulnerable populations. All public feedback will be reviewed and considered for incorporation (if deemed appropriate) into the next LHMP update. Additionally, coordination and implementation of individual mitigation actions will involve direct coordination and interaction with the public, such as those involving targeted support to vulnerable or underserved populations, programs to assist property owners and renters to implement risk reduction improvements, and working with Homeowners Associations, property managers, and property owners. Implementation of these mitigation actions will provide additional opportunities for continued public involvement and assist in determining how best to implement

mitigation actions, assess the effectiveness of the mitigation actions, and identify additional opportunities for mitigation actions to be considered in the next update. Upon initiation of the LHMP update, the Planning Team will review feedback and outreach efforts, which will be analyzed and incorporated into a new public involvement strategy based on the needs and capabilities of the City at the time of the update. At a minimum, this strategy will include the use of the City website, email distribution lists, and social media, as well as coordination with partner agencies and organizations, and will include specific outreach to vulnerable populations.

6.5 POINT OF CONTACT

Primary point of contact for the LHMP:

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Section 7.0 | References

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APPENDIX A
City Adoption Resolution

PLACEHOLDER FOR RESOLUTION

APPENDIX B
Planning Process Documentation

[redacted]

From: Linger, Julie <JLinger@cityofglendora.org>
Sent: Monday, May 15, 2023 9:05 AM
To: [redacted]
Cc:
Subject:

Good Morning,

The City of Glendora is initiating preparation of a Local Hazard Mitigation Plan (LHMP). Mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage. It is the City's intent to obtain a FEMA-approved LHMP.

As part of the planning process, we are assembling a team of partners to participate on the planning team. The Planning Team will be the core group responsible for making decisions, guiding the planning process, and agreeing upon the final contents of the plan.

We would like to invite you to be part of the Planning Team. There will be four planning team meetings held the fourth Wednesday of the month, beginning June 28, 2023, at the Glendora Police Department (150 S. Glendora Avenue). The meetings will be for two hours, from 10:00 a.m. to 12:00 p.m. The remaining Planning Team meetings are tentatively scheduled for July 26, August 23, and October 25. We understand the importance of your time and the meetings will be structured to maximize results.

Please let me know if you (or a designee) can participate on the Planning Team. We appreciate your time and commitment. Your involvement will ensure a comprehensive and robust plan that meets FEMA's requirement of incorporating a whole community approach in the development process.

For planning purposes, please provide a response regarding your participation by May 26, 2023. If you have any questions regarding development of the LHMP and your involvement, please contact me.

Thank you,
Julie

Julie Linger | Public Safety Management Analyst
Glendora Police Department | City of Glendora
150 S. Glendora Ave. | Glendora, CA 91741
jlinger@glendorapd.org

[redacted]

[redacted]

From: [redacted]
Sent: Tuesday, June 27, 2023 7:31 AM
To: 'Linger, Julie'; 'HFriedel@cityofglendora.org'; [redacted]
Subject: Glendora LHMP - Planning Team Meeting #1 - June 28
Attachments: Glendora LHMP Update_Planning Team Mtg #1_Agenda.pdf

Good morning Planning Team,

Thank you again for participating on the Planning Team for the City of Glendora's update to their Local Hazard Mitigation Plan. We are looking forward to seeing you tomorrow and/or at our future meetings. Attached is the Agenda for the first meeting. Tomorrow will serve partly as an introduction to the team and the process, as well as starting to identify key information and input for the plan update. There is no preparation required; we ask that you bring your knowledge and understanding of the community and specific expertise and be prepared to discuss and share information. It is not necessary, but if you would like to review the City's 2015 plan prior to the meeting, it can be downloaded at the dropbox link below. Since we will be updating the plan, we will revisit the 2015 document as part of our process.

https://www.dropbox.com/t/EkYsykPDxLJ2oOqF

If you have any questions prior to the meeting, please reach out to Julie Linger or myself.

Thank you,
[redacted]

[redacted]

GLENDORA
LOCAL HAZARD MITIGATION PLAN UPDATE

HAZARD MITIGATION PLANNING TEAM MEETING #1

Wednesday, June 28, 2023
10:00 am – 12:00 pm

AGENDA

1. Introductions

2. Roles and Responsibilities
    a. Data needs
    b. Planning Team meetings

3. Project and LHMP Goals

4. Purpose and Requirements of the LHMP
    a. What is Hazard Mitigation and a Hazard Mitigation Plan?
    b. Plan requirements
    c. LHMP process
    d. LHMP process – risk assessment

5. Confirm Hazards and Identify Community Assets
    a. 2015 LHMP hazards
    b. Identify community assets

6. Next Steps
    a. Planning Team
    b. Plan development

7. Questions/Additional Discussion

Planning Team Meetings:

- July 26, 2023; 10:00 am – 12:00 pm
- August 23, 2023; 10:00 am – 12:00 pm
- October 25, 2023; 10:00 am – 12:00 pm

Local Hazard Mitigation Plan

Planning Team Meeting #1

June 28, 2023

CityOfGlendora.org

AGENDA

- Introductions
- Roles and responsibilities
- Project and LHMP goals
- Purpose and requirements of the LHMP
- LHMP Process
- Confirm hazards and identify community assets
- Next steps

ROLES AND RESPONSIBILITIES

- Our Job
  - Facilitate the process
  - Provide LHMP technical expertise
  - Maintain schedule
  - Do the heavy work
  - Ensure FEMA-compliant plan
- What We Ask of You
  - Participate
  - Assist with outreach
  - Provide agency-specific information, local insight and expertise
  - Meet internal deadlines
  - Ensure plan is feasible and meets needs

ROLES AND RESPONSIBILITIES

- Data Needs
  - Plans/studies
  - Policies/programs
  - Technical data
  - Intrinsic/historic knowledge
  - Photos
  - Asset inventory for loss estimates
  - Any additional relevant information

ROLES AND RESPONSIBILITIES

- Planning Team Meetings
  - Meeting #1 – June 28: process; confirm hazards and identify community assets
  - Meeting #2 – July 26: hazard profiles & mapping; risk assessment
  - Meeting #3 – August 23: capabilities assessment; mitigation goals and actions
  - Meeting #4 – October 25: refine mitigation actions and prioritization

PROJECT AND LHMP GOALS

- Update plan with current and relevant information
- Achieve certification by FEMA for mitigation funding
- Establish framework to review and update plan
- Useful and implementable
- Others?

Disaster Mitigation Act (DMA) of 2000 requires states and local governments prepare a hazard mitigation plan as a precondition for receiving FEMA mitigation project grants.

PROJECT AND LHMP GOALS

- 2015 LHMP Mitigation Goals
  - Protect life and property
  - Enhance public awareness
  - Preserve natural systems
  - Encourage partnerships and implementation
  - Strengthen emergency services
- Any revisions/modifications? Other goals?

PURPOSE AND REQUIREMENTS OF THE LHMP

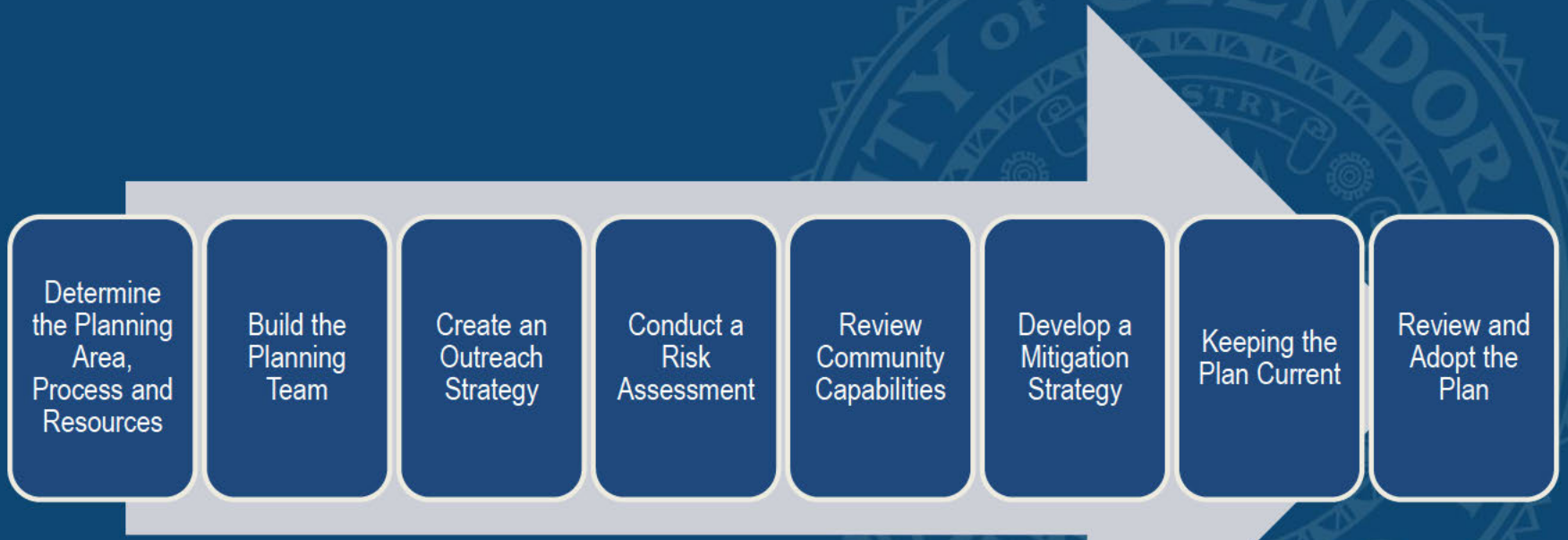
What is Hazard Mitigation?

- Sustained actions taken to reduce or eliminate long-term risk to life and property from hazards

PURPOSE AND REQUIREMENTS OF THE LHMP

- Provide and document the planning process, including opportunities for stakeholder and public involvement
- Review and incorporate new plans, studies, reports and technical information; address changes in development and priorities
- Validate/update hazards and hazard profiles since last plan
- Validate/update community assets and capabilities
- Update risk assessment and mitigation strategy
- Identify how the plan will be monitored, evaluated, and updated within a five-year cycle

LHMP PROCESS



LHMP PROCESS – RISK ASSESSMENT

Identify & Describe Hazards

CONFIRM HAZARDS

- 2015 LHMP Hazards
  - Earthquakes
  - Flood
  - Wildfire
  - Landslide
  - Dam Failure
  - Windstorm

Climate change and risks will need to be integrated into the update

IDENTIFY COMMUNITY ASSETS

- Assets are anything important to the character and function of a community
  - People, including underserved communities and socially vulnerable populations
  - Structures, including new and existing buildings
  - Community lifelines and other critical facilities
  - Natural, historic and cultural resources
  - Economy and other activities that have value to the community

IDENTIFY COMMUNITY ASSETS

For each community asset category:

- Identify **2-3 assets at risk to hazards**
- Write 1 asset on each post-it
- Place post-its on sheet by community asset category

NEXT STEPS

- Planning Team
  - Provide any information or resources to Julie Linger by July 14
    - Plans/studies
    - Policies/programs
    - Technical data
    - Intrinsic/historic knowledge
    - Photos
    - Assets
  - Attend Meeting #2 – July 26, 2023

NEXT STEPS

- Plan Development
  - Confirm LHMP template
  - Update community profile
  - Update/prepare hazard profiles and mapping
  - Confirm outreach strategy

Questions/Additional Discussion?

Avalanche	Flood	Sea level rise
Climate change	Geological hazards	Seismic hazards
Coastal erosion	Hailstorm	Severe winter storm
Coastal storm	Hazardous materials	Tornado
Dam/reservoir failure	Human-caused hazards	Tsunami
Disease/pest management	Hurricane	Volcano
Drought	Land subsidence	Wildfire
Earthquake fault rupture	Landslide and mudflow	Wind
Expansive soils	Lightning	Windstorm
Extreme heat	Liquefaction	

Glendora
Local Hazard Mitigation Plan
Planning Team Meeting #1
June 28, 2023

Last and First Name	Title	Organization/Department	E-Mail Address	Phone Number	Initials
Anderson, Erik	Assistant Planner	De Novo Planning Group	[redacted]		[redacted]
Barker, Starla	Principal Planner	De Novo Planning Group	[redacted]		
Clark, Jessica	Business Services Mgr.	City of Glendora, Public Works	[redacted]		
Chan, Ryan	Disaster Program Manager	Red Cross	[redacted]		
Diaz, George	Corporate Director of Safety and Security	Emanate Health			
Egan, Matt	Police Chief	City of Glendora, Police Department			
Friedel, Hans	Principal Planner	City of Glendora, Planning Division			
Fry, Tamra	Safety/Risk Compliance Officer	Glendora Unified School District			
Inman, Mike	Assistant Fire Chief	Los Angeles County Fire			

Glendora
Local Hazard Mitigation Plan
Planning Team Meeting #1
June 28, 2023

Last and First Name	Title	Organization/Department	E-Mail Address	Phone Number	Initials
Lind, Bob	Director of Maintenance and Operations	Charter Oak Unified School District	[redacted]		
Linger, Julie	Public Safety Management Analyst	City of Glendora, Police Department			
Livas, Anissa	Senior Administrative Analyst	City of San Dimas			
Macias, Ben	Director of Campus Safety	Citrus College			
O'Shields	Public Affairs Mgmr.	Southern California Gas Company			
Pankratz, Dain	Safety Manager	Foothill Gold Line			
Randazzo, Mike	Police Captain	City of Glendora, Police Department			
Ricci, Marie	Administrative Services Director	City of Glendora, Risk Management			
Rodriquez, Nahomi	AmeriCorps ~~VISTA~~	Red Cross			

Glendora
Local Hazard Mitigation Plan
Planning Team Meeting #1
June 28, 2023

Last and First Name	Title	Organization/Department	E-Mail Address	Phone Number	Initials
Sharma, Angela	Assistant Director, Environment of Care and Emergency Management	Emanate Health	[redacted]	[redacted]	[redacted]
Stabio, Chris	Police Captain	City of Glendora, Police Department			
Storbakken, Steven	Pomona Valley Hospital				
Watson, Adriana	Community Services Liaison	Los Angeles County Fire			
Wendling, Rita	Interim Assistant Director	City of Glendora, Human Resources			
Wu, Jennifer	Emergency Manager	City of Azusa			
Robinson, Noble	LACo FD Battalion Chief	Los Angeles County Fire Dept			

Local Hazard Mitigation Plan

Planning Team Meeting #2

July 26, 2023

CityOfGlendora.org

AGENDA

- Hazards to be Profiled
- Critical Facilities
- Problem/Issue Statements
- Capabilities Assessment
- Review Existing Mitigation Actions
- Public Involvement Update
- Next Steps

LHMP PROCESS – RISK ASSESSMENT

Identify & Describe Hazards

- Location
- Extent
- Previous occurrence
- Probability of future events

Identify Community Assets

- People
- Structures
- Community lifelines and critical facilities
- Natural, historic and cultural resources
- Economy/activities that have value to the community

Analyze Impacts

- Identify risks – exposure analysis
- Describe asset vulnerabilities
- Describe potential impacts
- Estimated losses
- Repetitive and severe repetitive loss properties

Summarize Vulnerability

- Structures
- Systems
- Populations

HAZARDS TO BE PROFILED

- Seismic
  - Earthquake, surface faulting, liquefaction, landslide
- Flood
- Wildfire
- Landslide (existing) and mudflow (new)
- Dam failure
  - Add reservoirs?
- Severe weather
  - Santa Ana winds, heavy rain storms, add extreme heat?
- Drought (new)

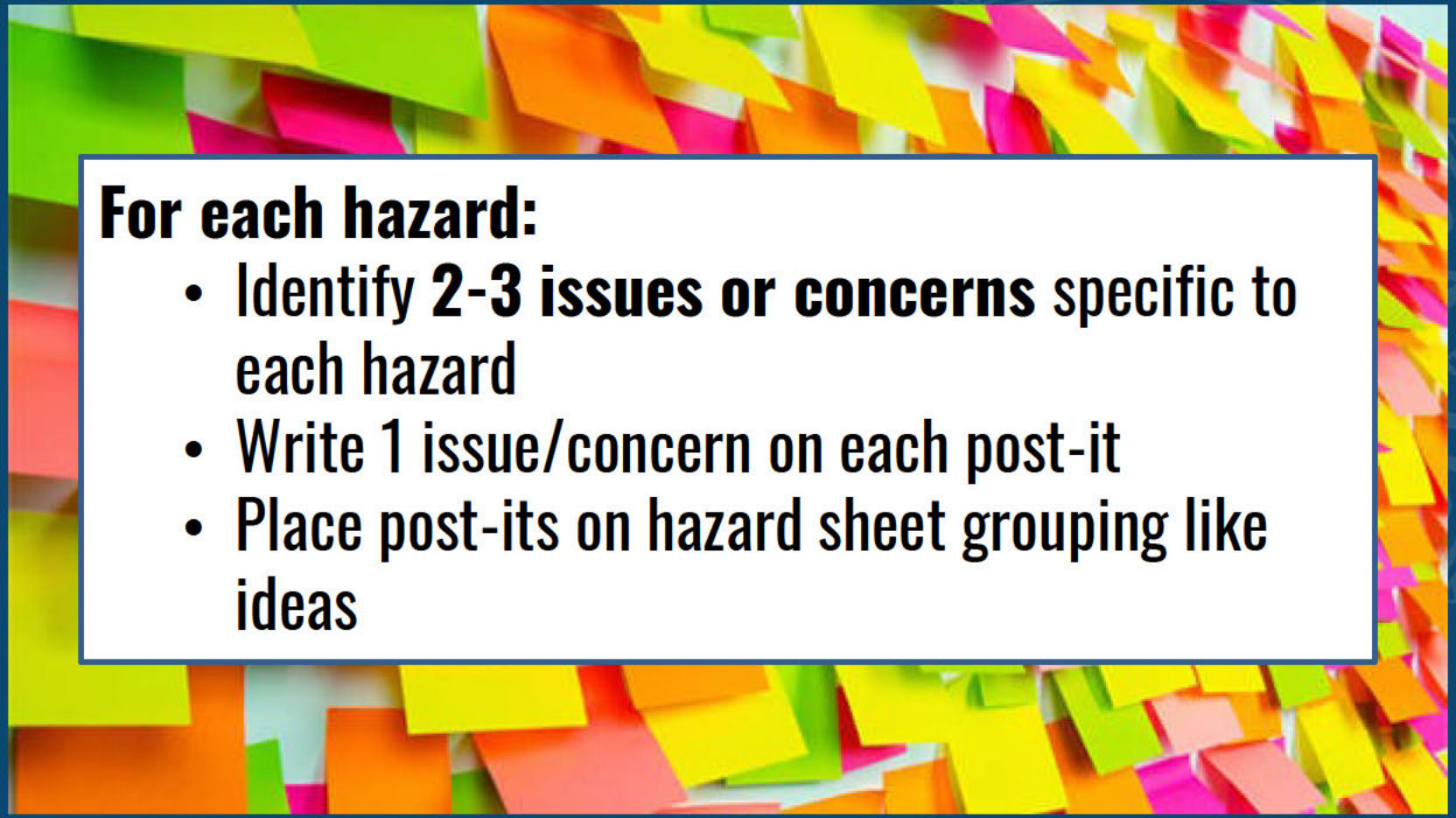
CRITICAL FACILITIES

- Risk assessment will look at what facilities are in hazard zones
  - Considers their replacement cost and value to the community
- Mitigation strategies reflect vulnerabilities of critical facilities
  - Strengthen existing vulnerable facilities
  - Avoid building new ones in at-risk areas

Critical Facilities

- Current Plan
  - City Hall
  - Police Department
  - Fire Station No. 85
  - Fire Station No. 86
  - Fire Station No. 151
- Additions/Revisions
  - Schools
  - Hospitals - dialysis centers, urgent care
  - Community Facilities
    - La Fetra
    - Teen Center
    - Library
    - Legion building
  - Infrastructure – water/wastewater
  - Others?

PROBLEM/ISSUE STATEMENTS



For each hazard:

- Identify **2-3 issues or concerns** specific to each hazard
- Write 1 issue/concern on each post-it
- Place post-its on hazard sheet grouping like ideas

CAPABILITIES ASSESSMENT

- Two components
  - Inventory of existing resources and tools to accomplish mitigation and reduce long-term vulnerability, and understanding of ability to use them effectively
  - Identification of gaps, conflicts, and/or weaknesses that may need to be addressed through mitigation
- Types of capabilities
  - Planning and regulatory
  - Administrative and technical
  - Financiald
  - Education and outreach

CAPABILITIES ASSESSMENT

- Planning and regulatory
  - Ordinances
  - Policies
  - Local laws and state statutes
  - Plans and program that guide and manage growth
- Questions to consider:
  - Does the plan address hazards?
  - Does the plan identify projects to include in the mitigation strategy?
  - Can the plan be used to implement mitigation actions?
  - How can the capabilities be expanded and improved to reduce risk?

CAPABILITIES ASSESSMENT

- Administrative and technical
  - City staff – skills/tools and capacity
  - Public and private resources
  - Ability to access and coordinate resources effectively
- Questions to consider:
  - Is coordination effective?
  - Is staffing adequate to enforce regulations?
  - Is staff trained on hazards and mitigation?
  - Is coordination between agencies and staff effective?
  - Has the capability been used to assess/mitigate risk in the past?
  - How can the capabilities be expanded and improved to reduce risk?

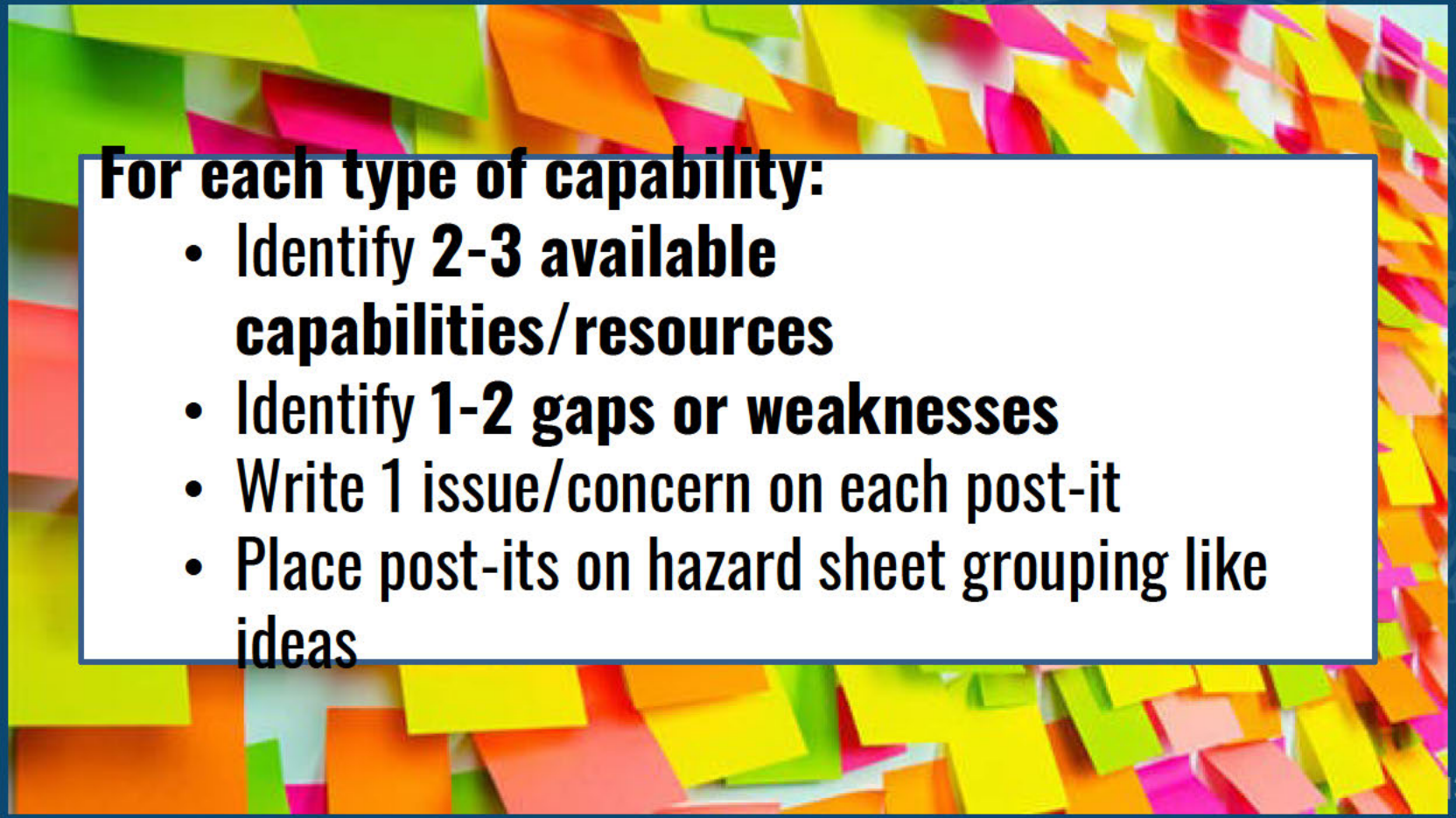
CAPABILITIES ASSESSMENT

- Financial
  - Resources have or eligible to use to fund mitigation
  - Staff time, existing operating budgets, impact fees
  - Local, state and federal funding sources
- Questions to consider:
  - Has the funding resource been used in the past and for what types of activities?
  - Could the resource be used to fund future mitigation actions?
  - How can the capabilities be expanded and improved to reduce risk?

CAPABILITIES ASSESSMENT

- Education and outreach
  - Programs and methods in place to implement mitigation actions and communicate hazard-related information
    - Fire safety programs, education programs
    - Public information or communication activities
- Questions to consider:
  - Could the program/organization help to implement future mitigation activities?
  - How can the capabilities be expanded and improved to reduce risk?

PROBLEM/ISSUE STATEMENTS



For each type of capability:

- Identify **2-3 available capabilities/resources**
- Identify **1-2 gaps or weaknesses**
- Write 1 issue/concern on each post-it
- Place post-its on hazard sheet grouping like ideas

REVIEW EXISTING MITIGATION ACTIONS

- Mitigation actions – reduce or eliminate long-term risk
- Different from actions to prepare or respond to an event
- Mitigation activities lessen or eliminate the need for preparedness or response resources
- Emphasis on the impact or vulnerabilities – not on the hazard itself

PUBLIC INVOLVEMENT UPDATE

- Survey – anticipated in next 2 weeks
- The Prepare Fair – September 14

  Focused Outreach Meetings
  - Seniors
  - Youth
  - Chamber of Commerce
  - Others?

NEXT STEPS

- Planning Team
  - Provide any information or resources to Julie Linger
  - Distribute/Advertise Survey and The Prepare Fair
    - Send links or screenshots to Julie and/or Starla
  - Attend Meeting #3 August 23, 2023

NEXT STEPS

- Plan Development
  - Finalize draft hazard profiles and mapping
  - Prepare and conduct outreach
  - Initiate risk assessment
  - Complete capabilities assessment

Questions/Additional Discussion?

Glendora
Local Hazard Mitigation Plan
Planning Team Meeting #2
July 26, 2023

Last and First Name	Title	Organization/Department	E-Mail Address	Phone Number	Initials
Anderson, Erik	Assistant Planner	De Novo Planning Group	[redacted]	[redacted]	[redacted]
Barker, Starla	Principal Planner	De Novo Planning Group			
Clark, Jessica	Business Services Manager	City of Glendora, Public Works			
Chan, Ryan	Disaster Program Manager	Red Cross			
Diaz, George	Corporate Director of Safety and Security	Emanate Health			
Egan, Matt	Police Chief	City of Glendora, Police Department			
Friedel, Hans	Principal Planner	City of Glendora, Planning Division			
Fry, Tamra	Safety/Risk Compliance Officer	Glendora Unified School District			
Inman, Mike	Assistant Fire Chief	Los Angeles County Fire			

Glendora
Local Hazard Mitigation Plan
Planning Team Meeting #2
July 26, 2023

Last and First Name	Title	Organization/Department	E-Mail Address	Phone Number	Initials
Lind, Bob	Director of Maintenance and Operations	Charter Oak Unified School District	[redacted]		
Linger, Julie	Public Safety Management Analyst	City of Glendora, Police Department			
Livas, Anissa	Senior Administrative Analyst	City of San Dimas			
Macias, Ben	Director of Campus Safety	Citrus College			
Lanae O'Shields	Public Affairs Manager	Southern California Gas Company			
Pankratz, Dain	Safety Manager	Foothill Gold Line			
Randazzo, Mike	Police Captain	City of Glendora, Police Department			
Ricci, Marie	Administrative Services Director	City of Glendora, Risk Management			
Robinson, Noble	Battalion Chief	LACoFD			

Glendora
Local Hazard Mitigation Plan
Planning Team Meeting #2
July 26, 2023

Last and First Name	Title	Organization/Department	E-Mail Address	Phone Number	Initials
Rodriquez, Nahomi	AmeriCorps	Red Cross	[redacted]		
Sharma, Angela	Assistant Director, Environment of Care and Emergency Management	Emanate Health			
Stabio, Chris	Police Captain	City of Glendora, Police Department			
Storbakken, Steven		Pomona Valley Hospital			
Watson, Adriana	Community Services Liaison	Los Angeles County Fire			
Wendling, Rita	Interim Assistant Director	City of Glendora, Human Resources			
Wu, Jennifer	Emergency Manager	City of Azusa			
NATE CABIBIL	MAINT. SUPERVISOR	COUSD			

City of Glendora

Planning Updates

Here are a few plans the City is working on this year...

LOCAL HAZARD MITIGATION PLAN

This plan will identify and assess the City's vulnerability to natural and manmade hazards such as floods, drought, wildfires and severe weather, and will identify specific actions that can be taken to reduce the risk from the hazards.

SAFETY ELEMENT

The Safety Element of the General Plan will be updated to include goals and policies to reduce the potential short and long-term risk of loss of life, personal injury, property damage and economic and social dislocation resulting from fire, floods, earthquakes and other hazards.

ENVIRONMENTAL JUSTICE

The General Plan will be updated to include goals and policies that address:

- Pollution Exposure and Air Quality
- Access to Public Facilities and Physical Activity
- Healthy Food Access
- Safe and Sanitary Homes
- Meaningful Community Engagement Opportunities

To learn more and share your input, visit:

https://www.cityofglendora.org/departments/community-development/advanced-planning-community-engagement

City of Glendora

PLANNING UPDATES

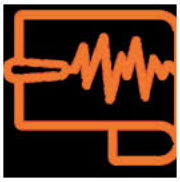
The City is updating the

Safety Element

and

Local Hazard Mitigation Plan

The City's Safety Element and Local Hazard Mitigation Plan (LHMP) work together to identify Glendora's vulnerability to natural and manmade hazards and include specific actions that can be taken to reduce the risk from those hazards such as:



Earthquakes

Floods

Fires

Severe Weather

Visit the Police Department's LHMP booth or project website to share any concerns, ideas, or suggestions related to hazards in Glendora.

Learn More

To learn more, visit the City's website at:

https://www.cityofglendora.org/departments/community-development/advanced-planning-community-engagement

Advanced Planning & Community Engagement

What's New

Your input is important to us! Please take a few minutes to complete a short survey and share your thoughts on (1) Safety and Hazard Mitigation Planning and on (2) Environmental Justice.

SAFETY, HAZARD MITIGATION & ENVIRONMENTAL JUSTICE

The City of Glendora is preparing an update to the General Plan Safety Element and Local Hazard Mitigation Plan (LHMP). The project will address Federal and State requirements to identify hazards and vulnerabilities associated with natural disasters and develop long-term strategies for protecting people and property from future hazard events. Federal law mandates that all state, tribal, and local governments prepare hazard mitigation plans to maintain eligibility for certain funding programs. State law requires local governments to update their safety elements to address fire hazard planning, climate change, and resiliency planning. Glendora will address these Federal and State requirements together with a joint Safety Element/LHMP update process.

In conjunction with the updates to the Safety Element and LHMP, the City will amend the General Plan to include goals and policies that address Environmental Justice, which is defined by the State of California as "the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."

Safety Element

The State of California has long recognized the need for local governments to conduct their planning with an awareness of hazards that could affect the people and property within their jurisdictions. Accordingly, State Planning Law requires that all local government general plans include "safety elements" that contain documentation of such hazards and goals, policies, and programs to protect against their impacts. Following the institution of Federal requirements for the preparation of mitigation plans, the California Legislature established a series of requirements to strengthen the linkage between safety elements and LHMPs. This includes substantive requirements that are triggered by the preparation or update of a mitigation plan, most recently through Senate Bill 379, which requires safety elements to include climate adaptation and resiliency content, including a vulnerability assessment, adaptation and resilience goals, policies, and objectives, and feasible implementation measures.

Local Hazard Mitigation Plan

Hazard mitigation is the implementation of sustained actions to reduce or eliminate long-term risk to people and property from natural or human-caused hazards and their effects. Mitigation planning is the collaborative process of determining what actions are appropriate and responsive to local conditions. Consistent with Federal and State requirements and in line with the priorities of the California Office of Emergency Services (Cal OES) and the Federal Emergency Management Agency (FEMA), the mitigation planning process will be documented in a new LHMP that contributes to achieving the following objectives:

- Protection of public safety and prevention of loss of life and injury.
- Reduction of harm to existing and future development.
- Prevention of damage to unique economic, cultural, and environmental assets.

- Minimization of operational downtime and acceleration of restoration of government and business after disasters.
- Reduction of disaster response and recovery costs and exposure to risk for first responders.
- Accomplishment of other community objectives, such as leveraging capital improvements, in ture protection, open space preservation, and economic resiliency.
- Reduction of exposure for public assets.
- Assistance to the public in becoming more aware of local hazards and their implications.
- Presentation of information to enhance eligibility for Federal and State funding programs.
- Alignment with other planning initiatives.
- Identification of targeted capital improvements focused on risk reduction.

To advance these objectives, the LHMP will identify a combination of physical improvements and emergency management activities that serve to mitigate the impacts of locally relevant hazards. Recognizing that successful mitigation planning efforts must be communicated and understood by the public, the City will include opportunities for local stakeholder participation and input, including through the use of GIS technology to map and update the hazard information for each hazard profiled.

Environmental Justice

In 2016, the State Legislature passed Senate Bill 1000 (SB 1000), also known as "The Planning for Healthy Communities Act", to address the inequitable distribution of pollution and associated health effects in low-income communities and communities of color. SB 1000 requires local governments to identify environmental justice communities (called "disadvantaged communities") in their jurisdictions and address environmental justice in their general plans.

Although Glendora does not have any census tracts that are considered disadvantaged communities (based on findings using CalEnviroScreen 4.0), the City will focus its environmental justice efforts on strategies to reduce pollution exposure and environmental burdens affecting low-income and minority populations within Glendora.

SB 1000 specifies seven topics that need to be integrated into environmental justice-related goals, policies, and implementation programs:

1. Pollution Exposure and Air Quality
2. Public Facilities
3. Food Access
4. Safe and Sanitary Homes
5. Physical Activity
6. Community Engagement
7. Prioritize the Needs of Disadvantaged Communities

How to Get Involved

There are many ways that the public can get involved and provide input. The success of the project depends on residents giving input and insight. It is important that the Safety Element, Local Hazard Mitigation Plan, and Environmental Justice goals and policies reflect Glendora's values and priorities. The community can get involved by:

- Joining the email list to stay informed HFriedel@cityofglendora.org
- Participating in the project outreach events (to be announced)
- Completing an online survey (coming soon)

Documents Available for Viewing

- Current Safety Element

Contacts

For general inquiries regarding the Safety Element and Environmental Justice Project, please contact the Planning Division at (626) 914-8214 or email HFriedel@cityofglendora.org.

For general inquiries about Hazard Mitigation, please contact the Police Department at (626) 914-8250 or email jlinger@glendorapd.org.

Safety Element and LHMP Survey Social Media Posts

Twitter:

Glendora is updating its Local Hazard Mitigation Plan and Safety Element! The City is hosting an online survey to understand the community's concerns on natural and human-made hazards. Please visit https://www.surveymonkey.com/r/FPNX2TK to take the survey and help the community prepare and respond to those hazards.

Facebook:

The Local Hazard Mitigation Plan (LHMP) and Safety Element Updates are currently underway! We want the community's perspective on hazards that could impact Glendora. We are hosting an online survey through Friday, September 22, 2023. Please visit https://www.surveymonkey.com/r/FPNX2TK to get involved. Your input will help the Planning Team understand the community's concerns and will guide development of the LHMP and Safety Element.

Instagram:

We are hard at work at the City of Glendora updating our Local Hazard Mitigation Plan (LHMP) and Safety Element. The LHMP provides a framework for the community to reduce its vulnerability to the impacts of natural hazard events such as earthquakes, flooding, and wildfires, while the Safety Element provides goals, policies, and programs to protect against their impacts. We'd like to know your thoughts on Hazard Mitigation Planning. Please visit https://www.surveymonkey.com/r/FPNX2TK to take a brief survey to help the community prepare and respond to those hazards.

NextDoor:

The City of Glendora is in the process of updating our Local Hazard Mitigation Plan (LHMP) and Safety Element and we want to hear from community members like you about your Hazard Mitigation Planning priorities. We invite you to take an online survey by Friday, September 22nd to provide input that will help the Planning Team understand the community's concerns and

guide development of the LHMP and Safety Element. Please visit https://www.cityofglendora.org/departments/community-development/advanced-planning-community-engagement to learn more and to take the survey.

Nixle:

Glendora is updating its Local Hazard Mitigation Plan and Safety Element! The City has an online survey to understand the community's concerns on natural hazard events such as earthquakes and wildfires, and human-caused events such as hazardous spills. Please visit https://www.surveymonkey.com/r/FPNX2TK to take the survey and help the community prepare and respond to those hazards.

City of Glendora

Senior Digital Media Specialist Greg Morton • 6 days ago

City staff is hard at work updating our Local Hazard Mitigation Plan (LHMP) and Safety Element.

The LHMP provides a framework for the community to reduce its vulnerability to the impacts of natural hazard events such as earthquakes, flooding, and wildfires, while the Safety Element provides goals, policies, and programs to protect against their impacts.

We'd like to know your thoughts on Hazard Mitigation Planning. Please visit https://www.surveymonkey.com/r/FPNX2TK to take a brief survey to help the community prepare and respond to those hazards. Survey ends September 22nd.

City of Glendora Local Hazard Mitigation Plan & Safety Eleme...

surveymonkey.com

Posted to **Subscribers of City of Glendora**

213 Impressions

Like Comment Share

- City Mission, Vision and Values
- City Operating Hours
- City Updates
  - City of Glendora RSS Feeds
- Contact Us
- Demographics and Statistics
- Economic Development
- Glendora Centennial Celebration
- Glendora Documents
- Glendora Military Memorial
- Glendora Strategic Plan
- Job Openings
- Map of Glendora Facilities
- Municipal Code
- Press Releases
- Social Media
- Transparency
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CITY UPDATES

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Hazard Mitigation Plan Survey

Post Date: 08/17/2023 11:10 AM

What has been your experience with weather or other hazards in Glendora? Let us know!

The City of Glendora is in the process of updating its Local Hazard Mitigation Plan (LHMP) and Safety Element and we want to hear from community members about their planning priorities. The LHMP provides a framework for the community to reduce its vulnerability to the impacts of natural hazard events such as earthquakes, flooding, and wildfires, while the Safety Element provides goals, policies, and programs to protect against their impacts.

Hurry, the survey ends on Friday, September 22nd!

- Please visit https://www.surveymonkey.com/r/FPNX2TK to take a brief survey to help the community prepare and respond to those hazards.
- Please visit https://www.cityofglendora.org/departments/community-development/advanced-planning-community-engagement to learn more and to take the survey.

Return to full list >>

Free viewers are required for some of the attached documents.
They can be downloaded by clicking on the icons below.

116 E. Foothill Blvd., Glendora, CA 91741-3380 | Phone: 626.914.8200 Fax: 626.914.8221
Website Design by Granicus - Connecting People and Government

City of Glendora - Local Government is in **Glendora**.
Published by Greg Morton · 5d ·

🚨 🚒 We are in the process of updating our Local Hazard Mitigation Plan (LHMP) and Safety Element. Help us better prepare by taking this survey
https://www.surveymonkey.com/r/FPNX2TK

🚨 We'd like to know your thoughts on Hazard Mitigation Planning.

🚨 The LHMP provides a framework for the community to reduce its vulnerability to the impacts of natural hazard events such as earthquakes, flooding, and wildfires, while the Safety Element provides goals, policies, and programs to protect against their impacts.

#Emergencypreparedness #glendora #localgovernment

See insights and ads

Boost post

16

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cityofglendora
Glendora, California

cityofglendora 🚨🚒 We are in the process of updating our Local Hazard Mitigation Plan (LHMP) and Safety Element. Help us better prepare by taking a quick survey in our 🔗. We'd like to know your thoughts on Hazard Mitigation Planning!

🚨 The LHMP provides a framework for the community to reduce its vulnerability to the impacts of natural hazard events such as earthquakes, flooding, and wildfires, while the Safety Element provides goals, policies, and programs to protect against their impacts.

#Emergencypreparedness #glendora #localgovernment

Edited · 5d

robert.andnicola ❤️❤️❤️❤️❤️❤️❤️❤️❤️❤️❤️❤️❤️❤️❤️

5d 1 like Reply

View insights Boost post

Liked by **glendorachamber** and **505 others**

5 DAYS AGO

Add a comment... Post

City of Glendora
@CityofGlendora

We are in the process of updating our Local Hazard Mitigation Plan (LHMP) & Safety Element. Help us better prepare by taking this survey surveymonkey.com/r/FPNX2TK
We'd like to know your thoughts on Hazard Mitigation Planning!
#Emergencypreparedness #glendora #localgovernment

4:47 PM · Aug 17, 2023 from Glendora, CA · **337** Views

View post analytics

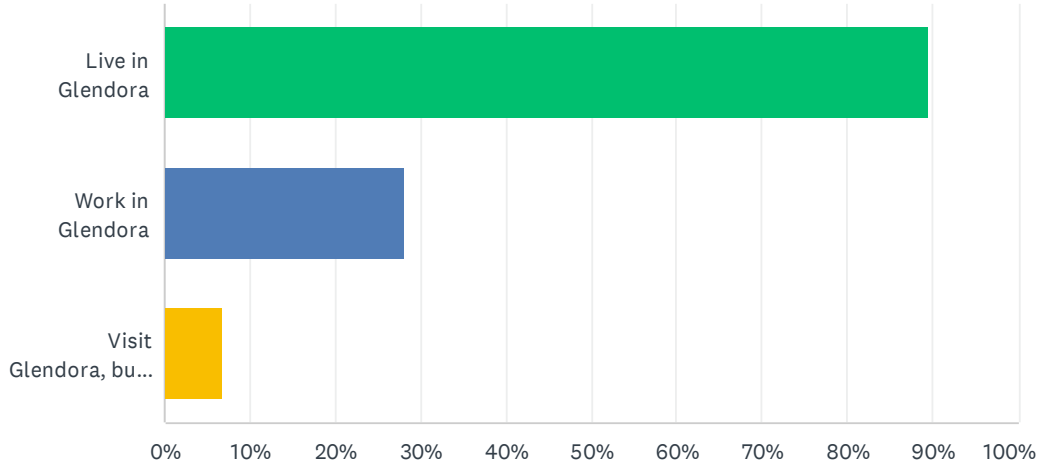
1 Like **1** Bookmark

Post your reply!

Reply

Q1 Do you... (Check all that apply)

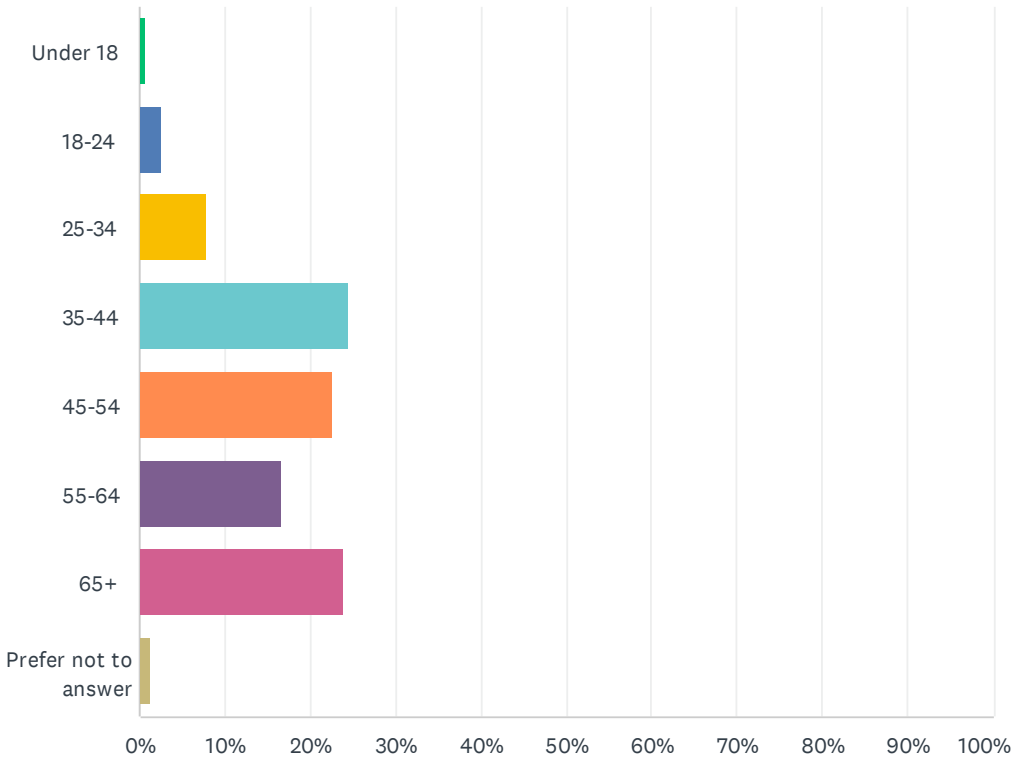
Answered: 163 Skipped: 1



ANSWER CHOICES	RESPONSES	
Live in Glendora	89.57%	146
Work in Glendora	28.22%	46
Visit Glendora, but live and work elsewhere	6.75%	11
Total Respondents: 163		

Q2 What is your age group?

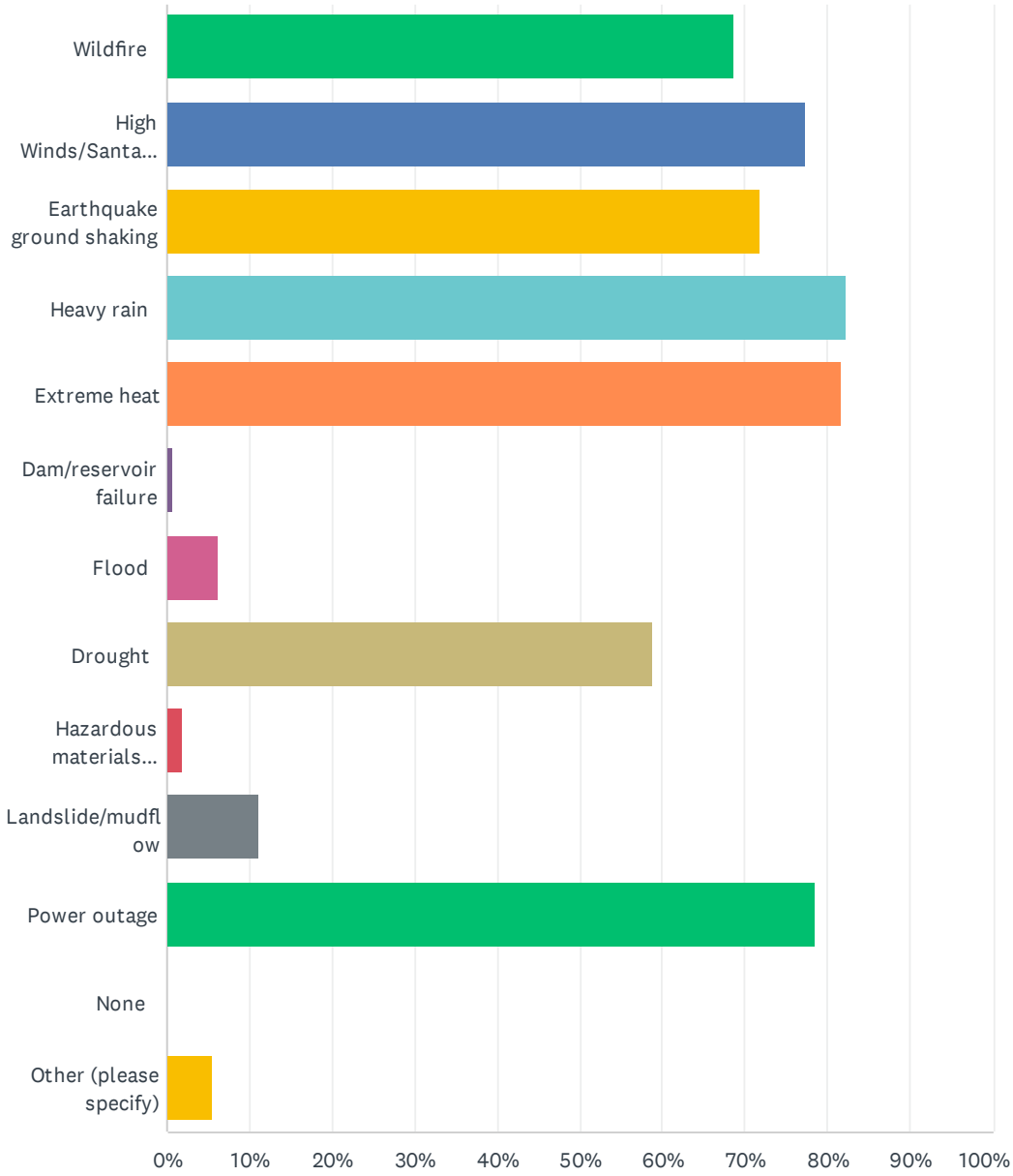
Answered: 163 Skipped: 1



ANSWER CHOICES	RESPONSES	
Under 18	0.61%	1
18-24	2.45%	4
25-34	7.98%	13
35-44	24.54%	40
45-54	22.70%	37
55-64	16.56%	27
65+	23.93%	39
Prefer not to answer	1.23%	2
TOTAL		163

Q3 Which of the following types of hazards have you or someone in your household experienced while residing and/or working in Glendora?

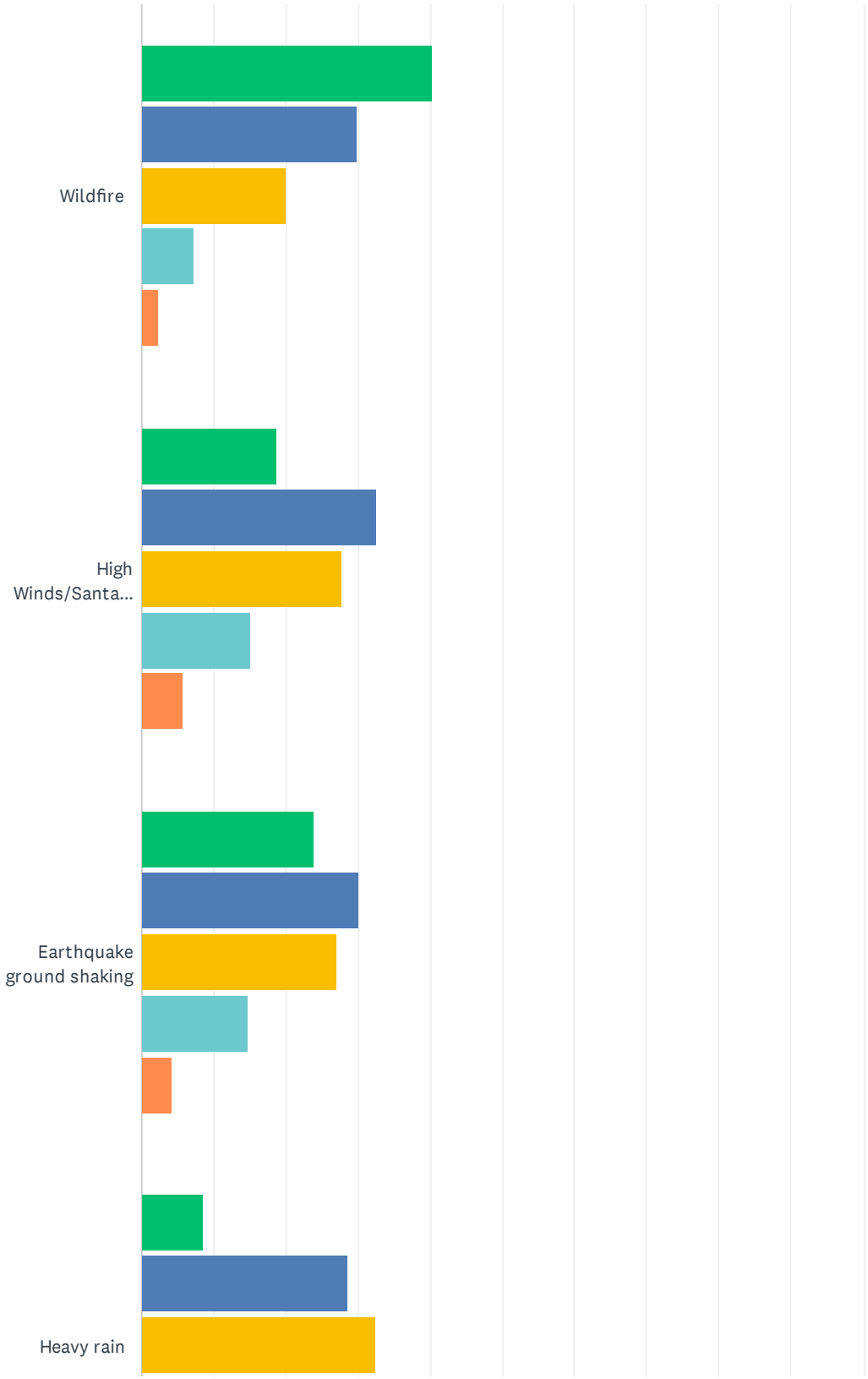
Answered: 163 Skipped: 1

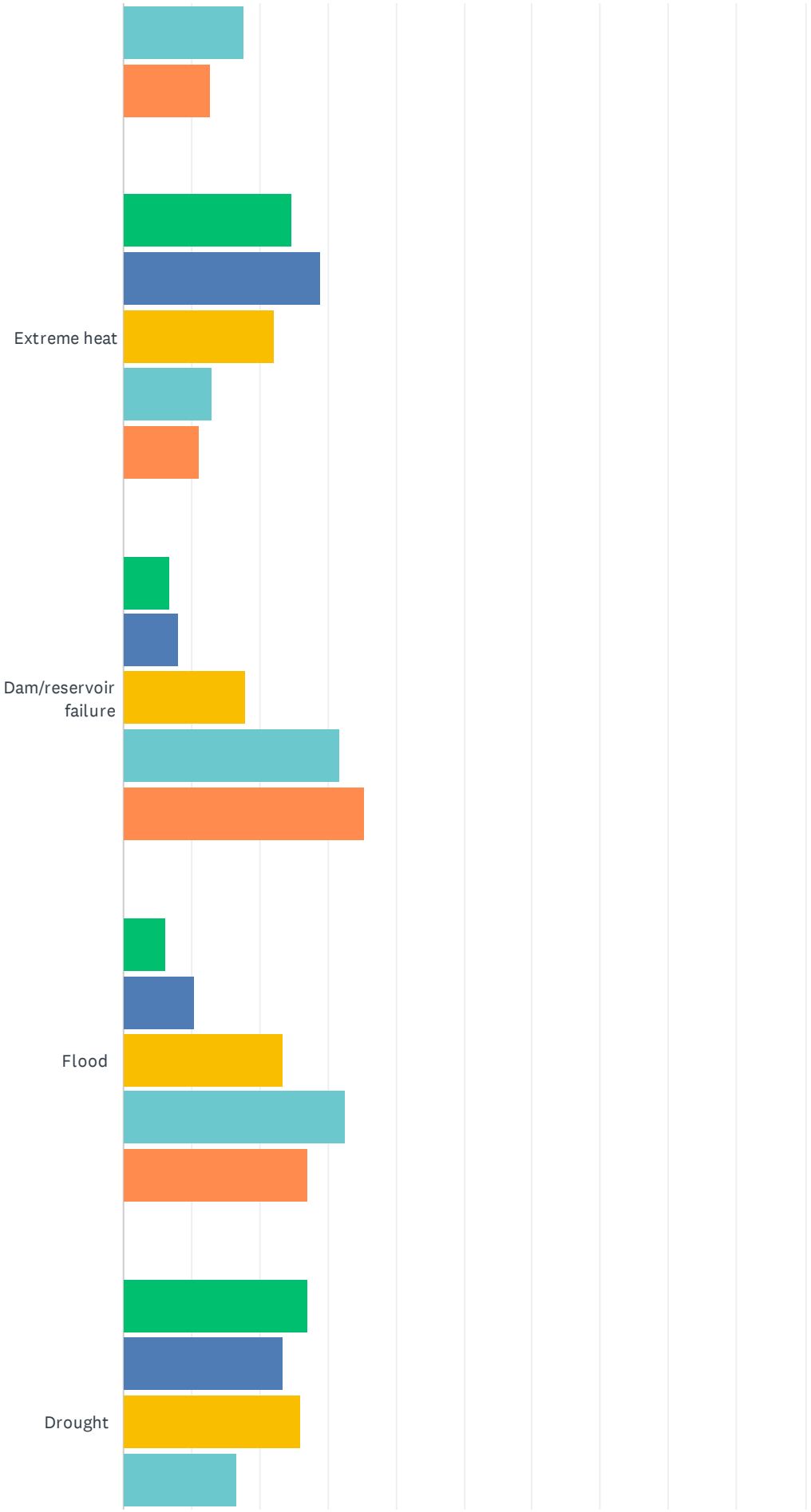


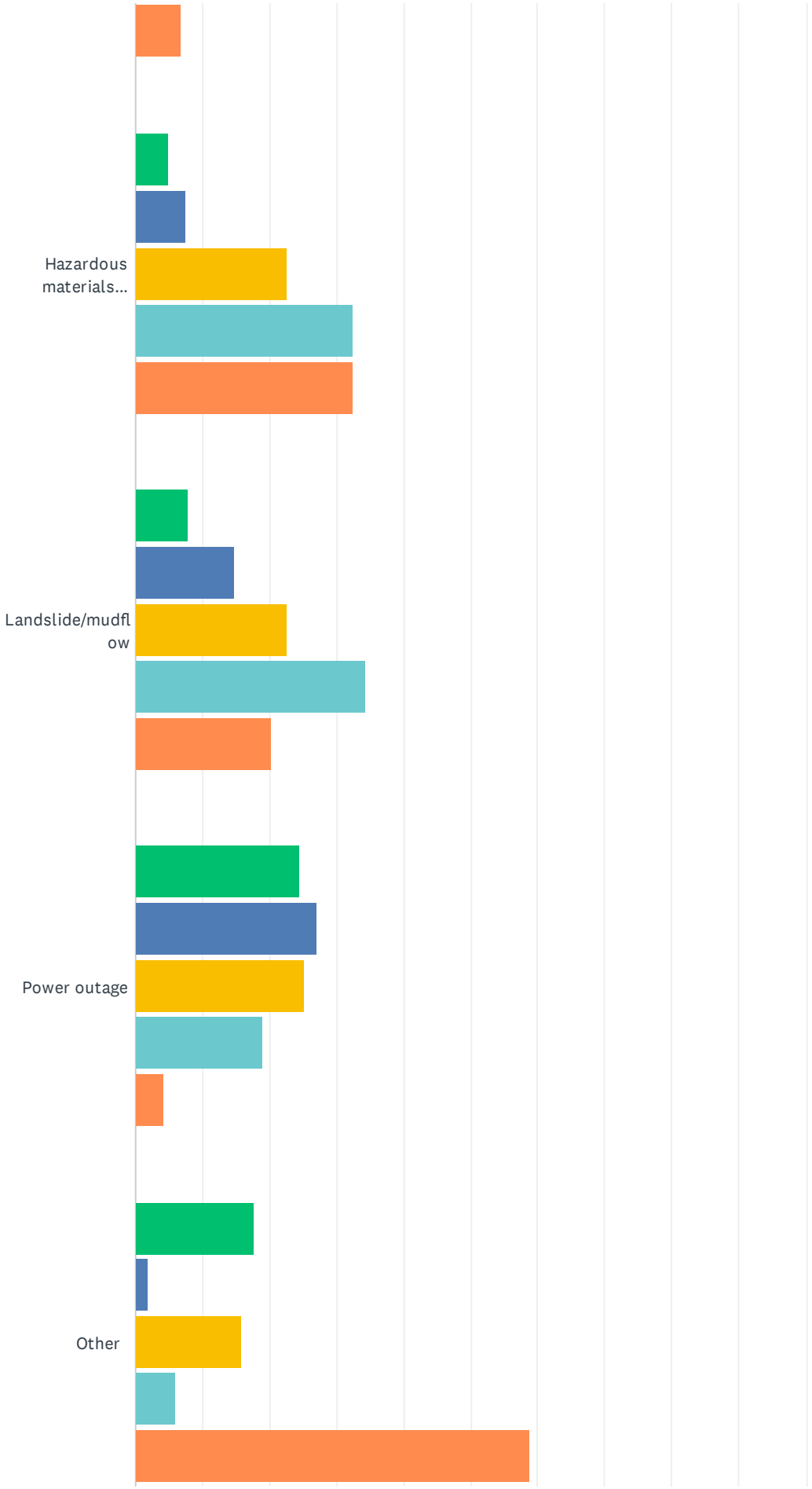
ANSWER CHOICES	RESPONSES	
Wildfire	68.71%	112
High Winds/Santa Anas	77.30%	126
Earthquake ground shaking	71.78%	117
Heavy rain	82.21%	134
Extreme heat	81.60%	133
Dam/reservoir failure	0.61%	1
Flood	6.13%	10
Drought	58.90%	96
Hazardous materials incidents/spills	1.84%	3
Landslide/mudflow	11.04%	18
Power outage	78.53%	128
None	0.00%	0
Other (please specify)	5.52%	9
Total Respondents: 163		

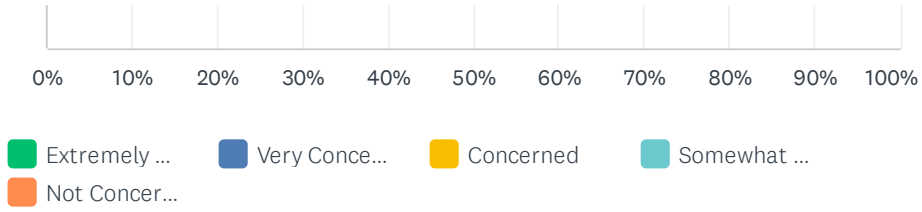
Q4 How concerned are you that the following hazards will happen in or impact Glendora? Please check ONE response for each hazard.

Answered: 164 Skipped: 0




Extreme heat
Dam/reservoir failure
Flood
Drought

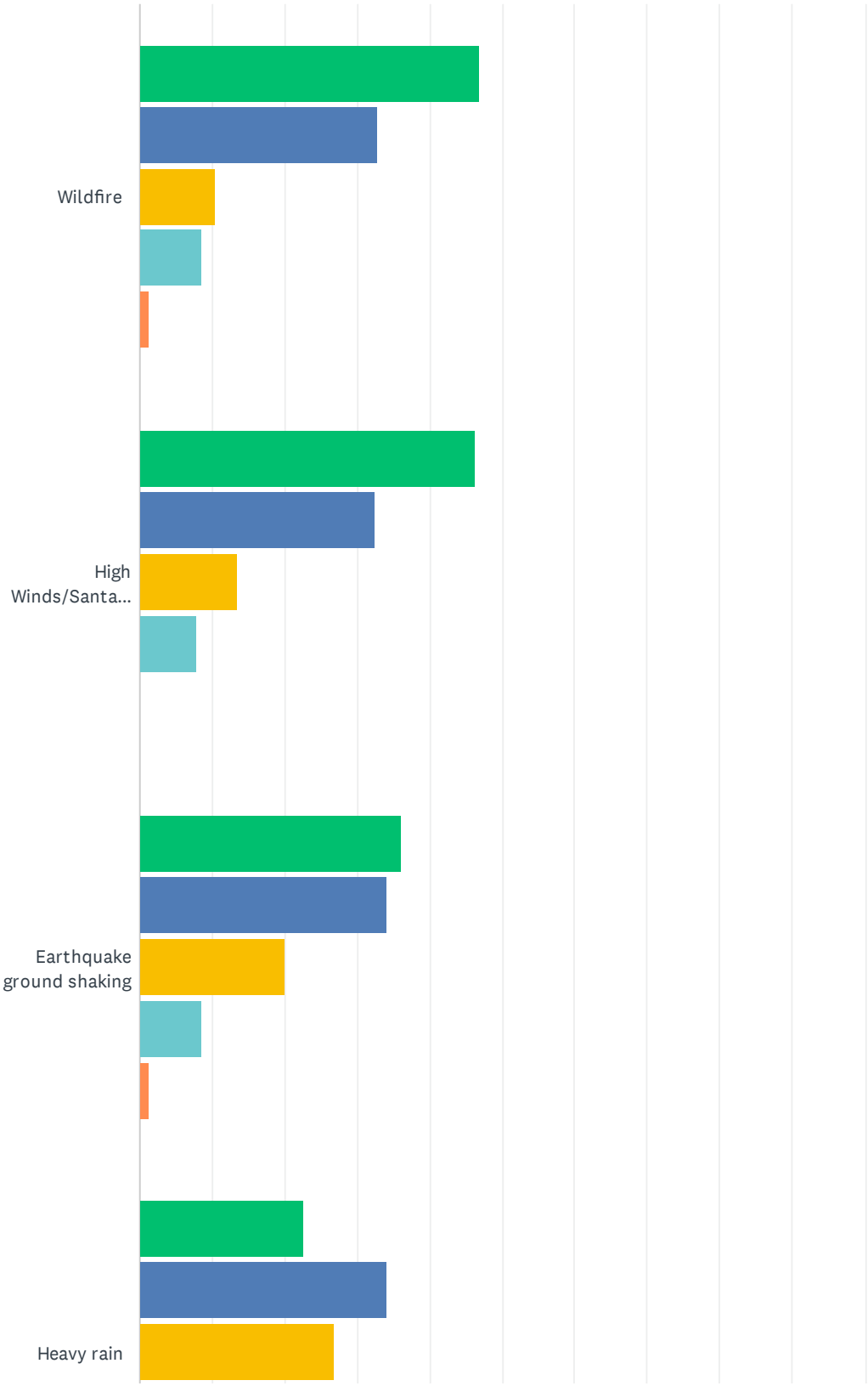

Hazardous materials...
Landslide/mudflow
Power outage
Other

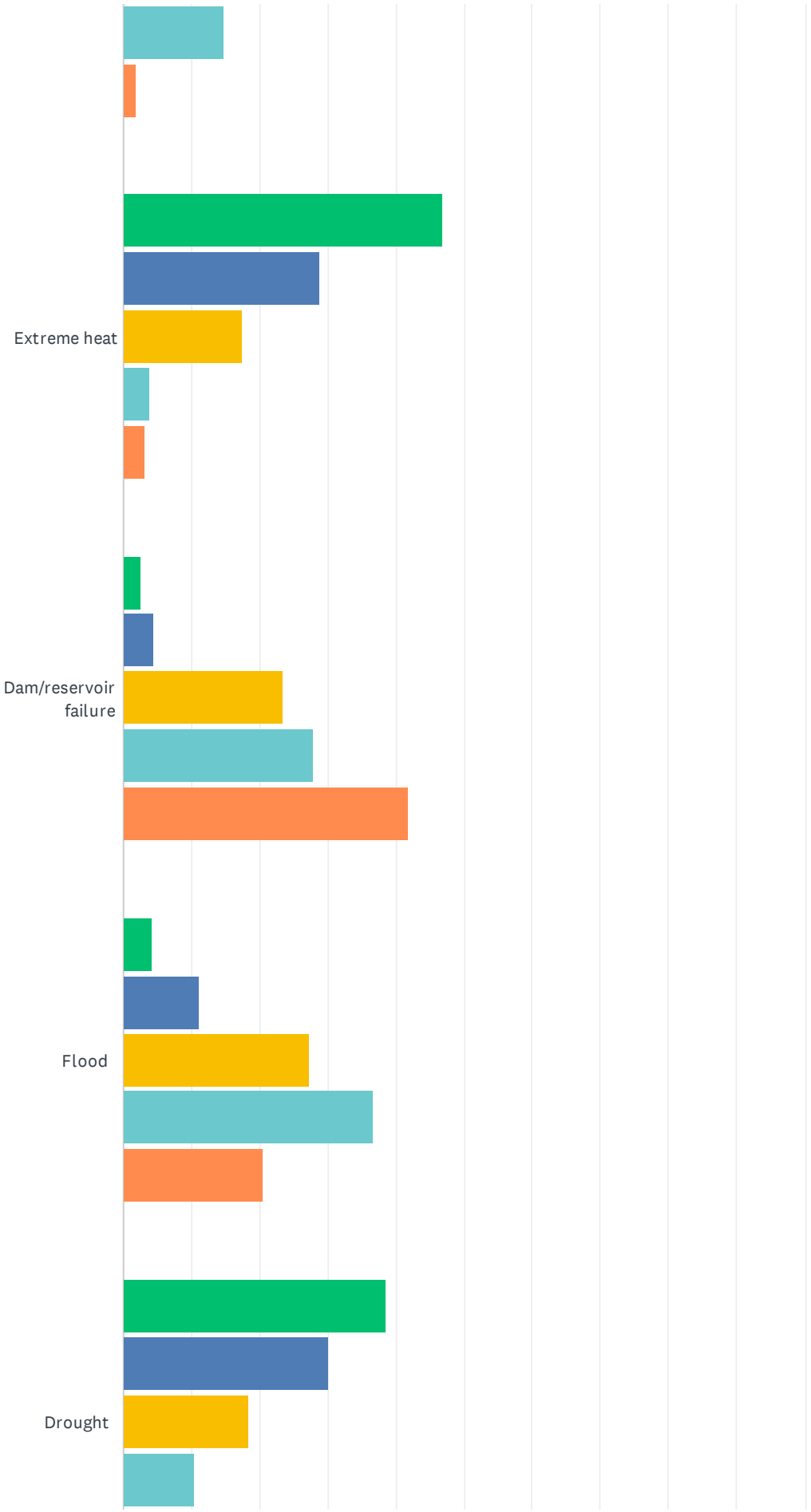


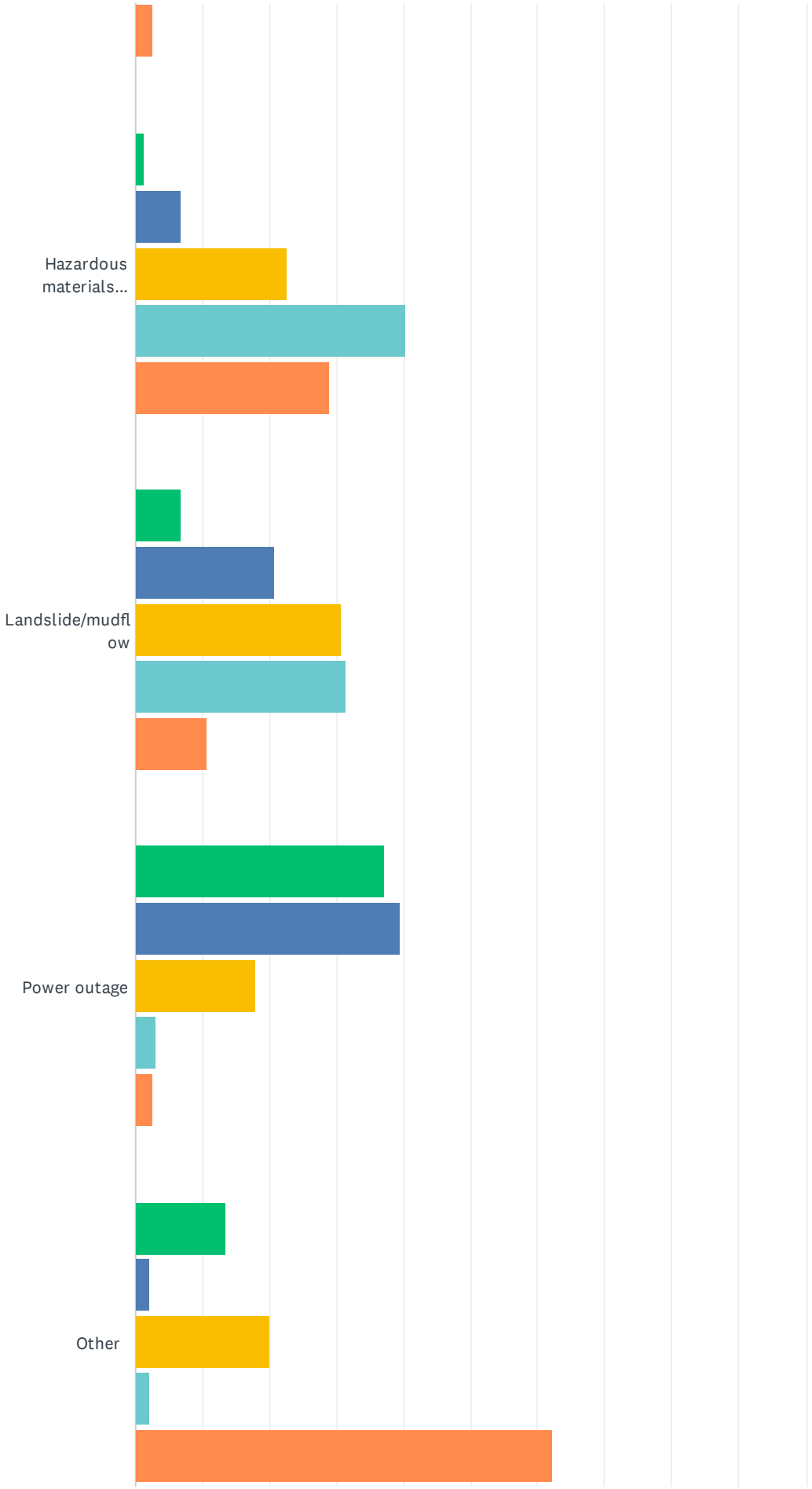
	EXTREMELY CONCERNED	VERY CONCERNED	CONCERNED	SOMEWHAT CONCERNED	NOT CONCERNED	TOTAL	WEIGHTED AVERAGE
Wildfire	40.24% 66	29.88% 49	20.12% 33	7.32% 12	2.44% 4	164	3.98
High Winds/Santa Anas	18.87% 30	32.70% 52	27.67% 44	15.09% 24	5.66% 9	159	3.44
Earthquake ground shaking	23.93% 39	30.06% 49	26.99% 44	14.72% 24	4.29% 7	163	3.55
Heavy rain	8.54% 14	28.66% 47	32.32% 53	17.68% 29	12.80% 21	164	3.02
Extreme heat	24.69% 40	29.01% 47	22.22% 36	12.96% 21	11.11% 18	162	3.43
Dam/reservoir failure	6.83% 11	8.07% 13	18.01% 29	31.68% 51	35.40% 57	161	2.19
Flood	6.17% 10	10.49% 17	23.46% 38	32.72% 53	27.16% 44	162	2.36
Drought	27.16% 44	23.46% 38	25.93% 42	16.67% 27	6.79% 11	162	3.48
Hazardous materials incidents/spills	5.00% 8	7.50% 12	22.50% 36	32.50% 52	32.50% 52	160	2.20
Landslide/mudflow	7.98% 13	14.72% 24	22.70% 37	34.36% 56	20.25% 33	163	2.56
Power outage	24.54% 40	26.99% 44	25.15% 41	19.02% 31	4.29% 7	163	3.48
Other	17.65% 9	1.96% 1	15.69% 8	5.88% 3	58.82% 30	51	2.14

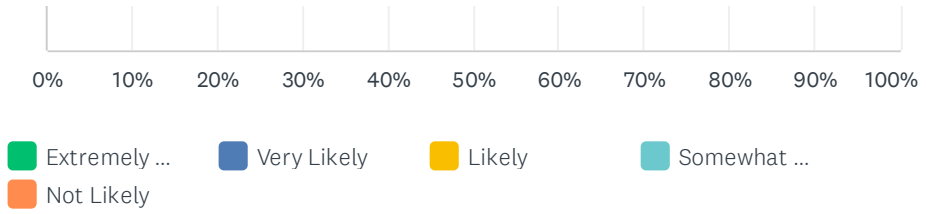
Q5 What do you believe is the likelihood that these hazards will occur in or impact the City of Glendora? Please check ONE for each hazard.

Answered: 164 Skipped: 0




Extreme heat
Dam/reservoir failure
Flood
Drought

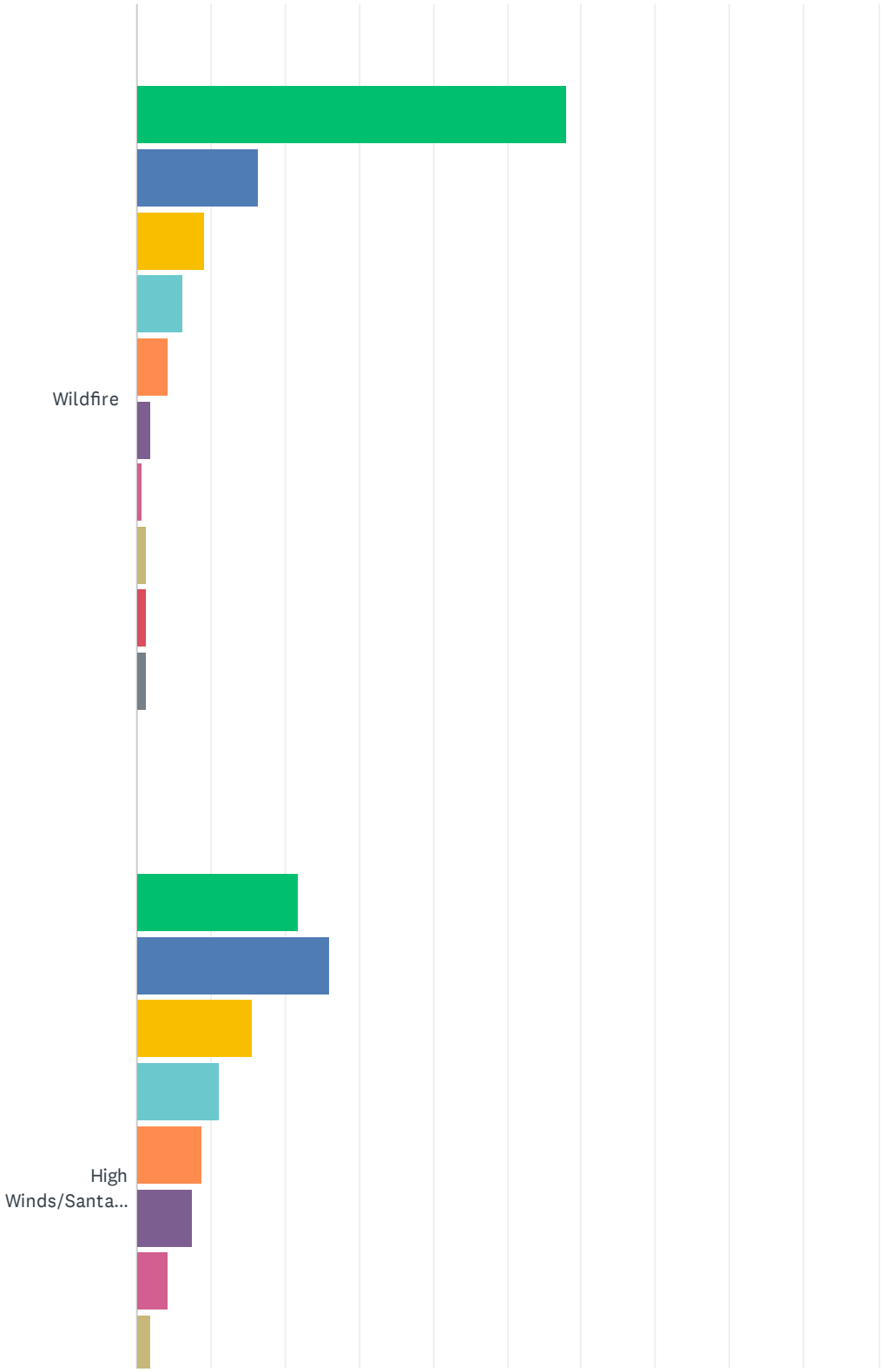

Hazardous materials...
Landslide/mudflow
Power outage
Other

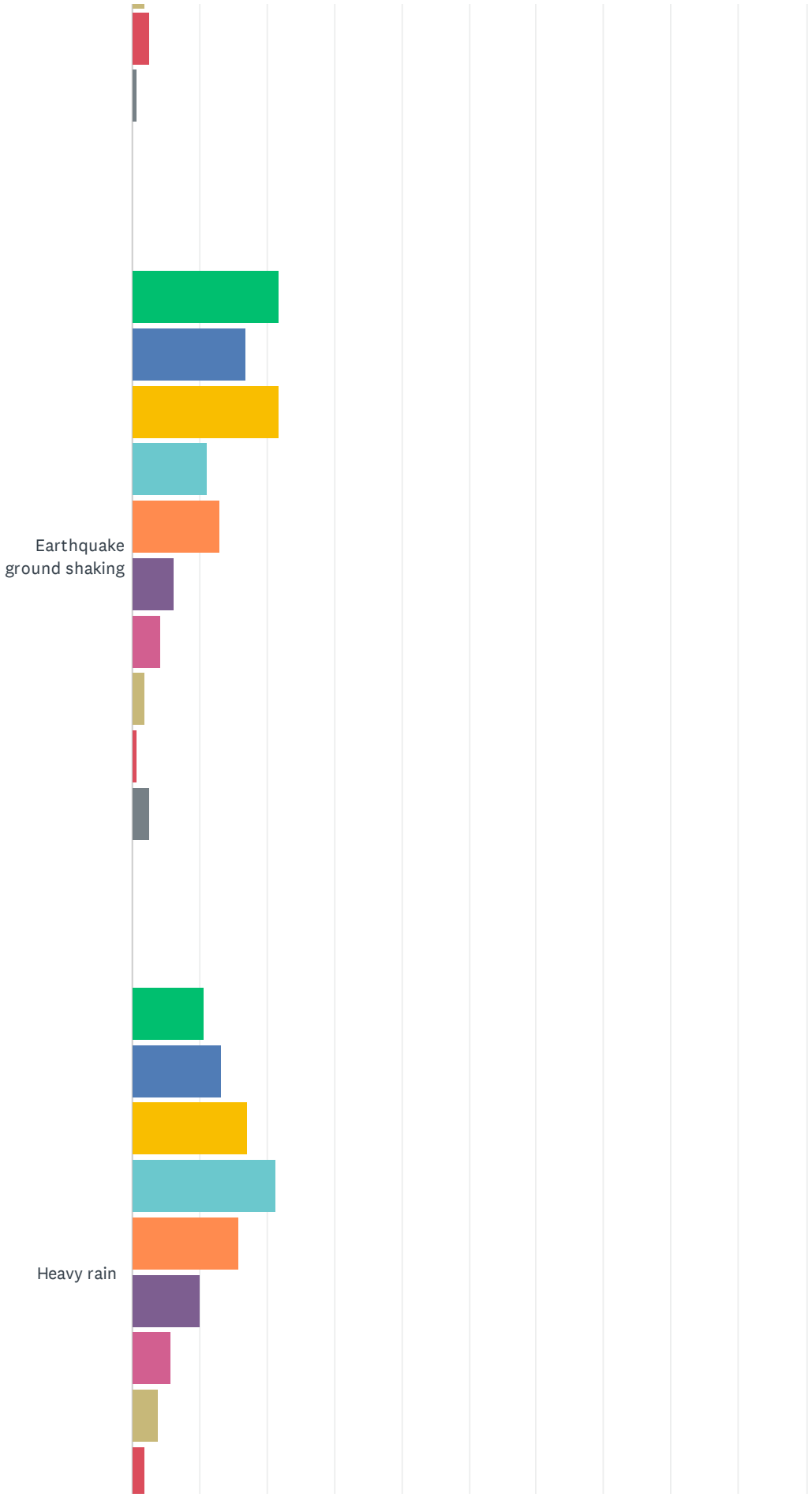


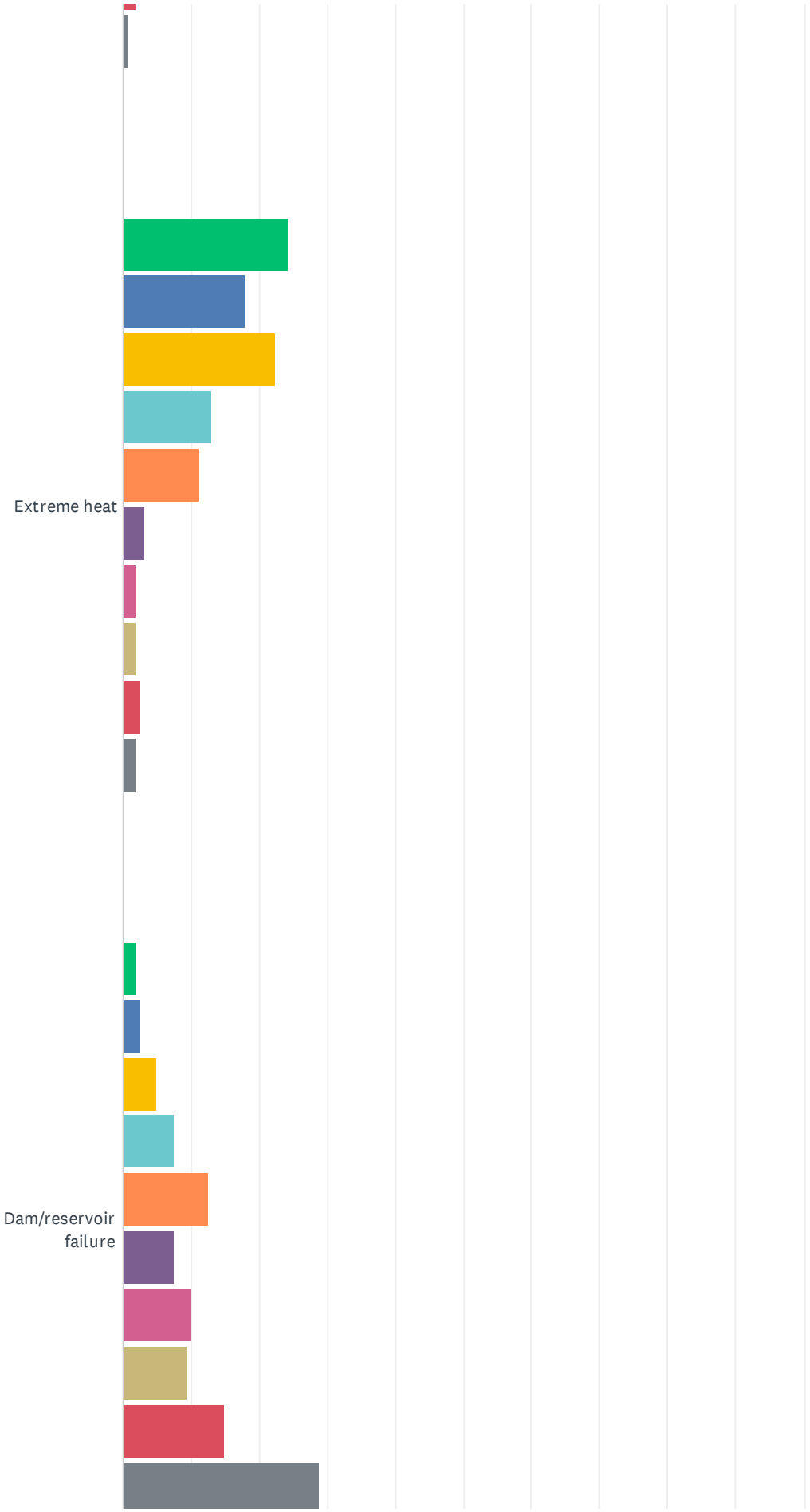
	EXTREMELY LIKELY	VERY LIKELY	LIKELY	SOMEWHAT LIKELY	NOT LIKELY	TOTAL	WEIGHTED AVERAGE
Wildfire	46.95% 77	32.93% 54	10.37% 17	8.54% 14	1.22% 2	164	4.38
High Winds/Santa Anas	46.34% 76	32.32% 53	13.41% 22	7.93% 13	0.00% 0	164	4.33
Earthquake ground shaking	35.98% 59	34.15% 56	20.12% 33	8.54% 14	1.22% 2	164	4.17
Heavy rain	22.56% 37	34.15% 56	26.83% 44	14.63% 24	1.83% 3	164	3.98
Extreme heat	46.88% 75	28.75% 46	17.50% 28	3.75% 6	3.13% 5	160	4.33
Dam/reservoir failure	2.53% 4	4.43% 7	23.42% 37	27.85% 44	41.77% 66	158	4.21
Flood	4.35% 7	11.18% 18	27.33% 44	36.65% 59	20.50% 33	161	3.98
Drought	38.65% 63	30.06% 49	18.40% 30	10.43% 17	2.45% 4	163	4.23
Hazardous materials incidents/spills	1.26% 2	6.92% 11	22.64% 36	40.25% 64	28.93% 46	159	4.08
Landslide/mudflow	6.88% 11	20.63% 33	30.63% 49	31.25% 50	10.63% 17	160	3.87
Power outage	37.04% 60	39.51% 64	17.90% 29	3.09% 5	2.47% 4	162	4.22
Other	13.33% 6	2.22% 1	20.00% 9	2.22% 1	62.22% 28	45	4.56

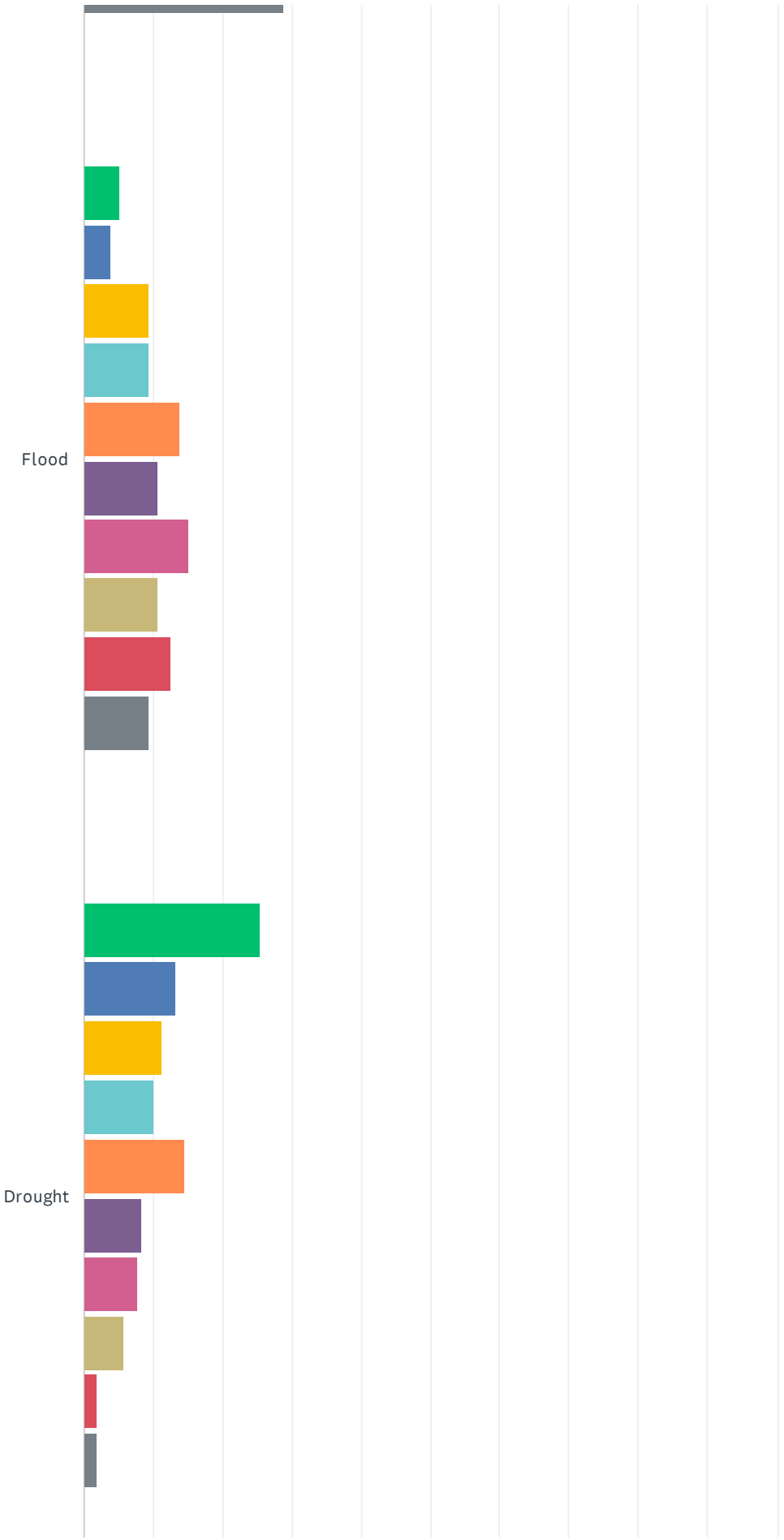
Q6 Rank the hazards based on the likelihood of potential threat to Glendora with 1 being the HIGHEST threat and 10 being the LOWEST threat.

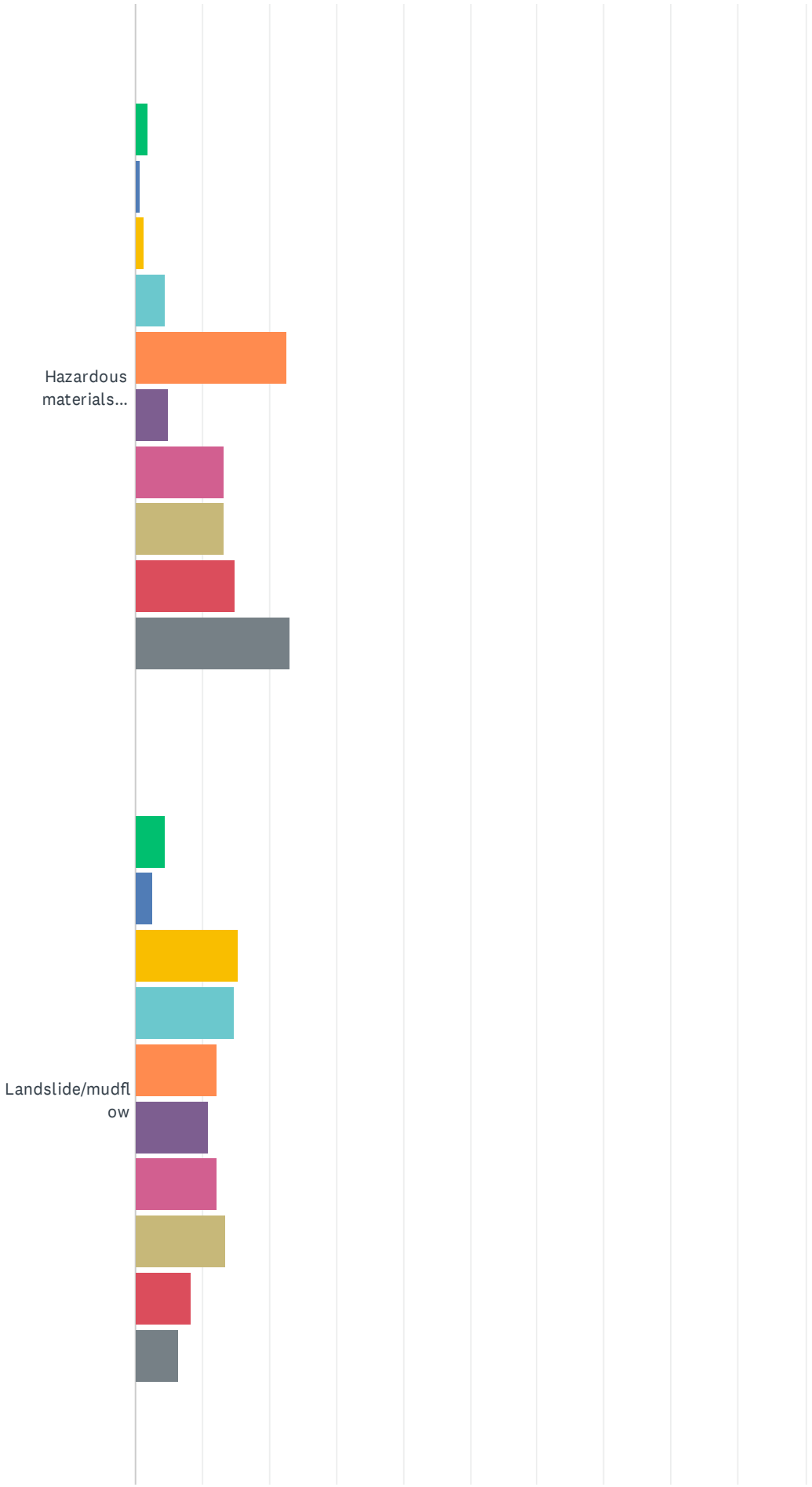
Answered: 164 Skipped: 0

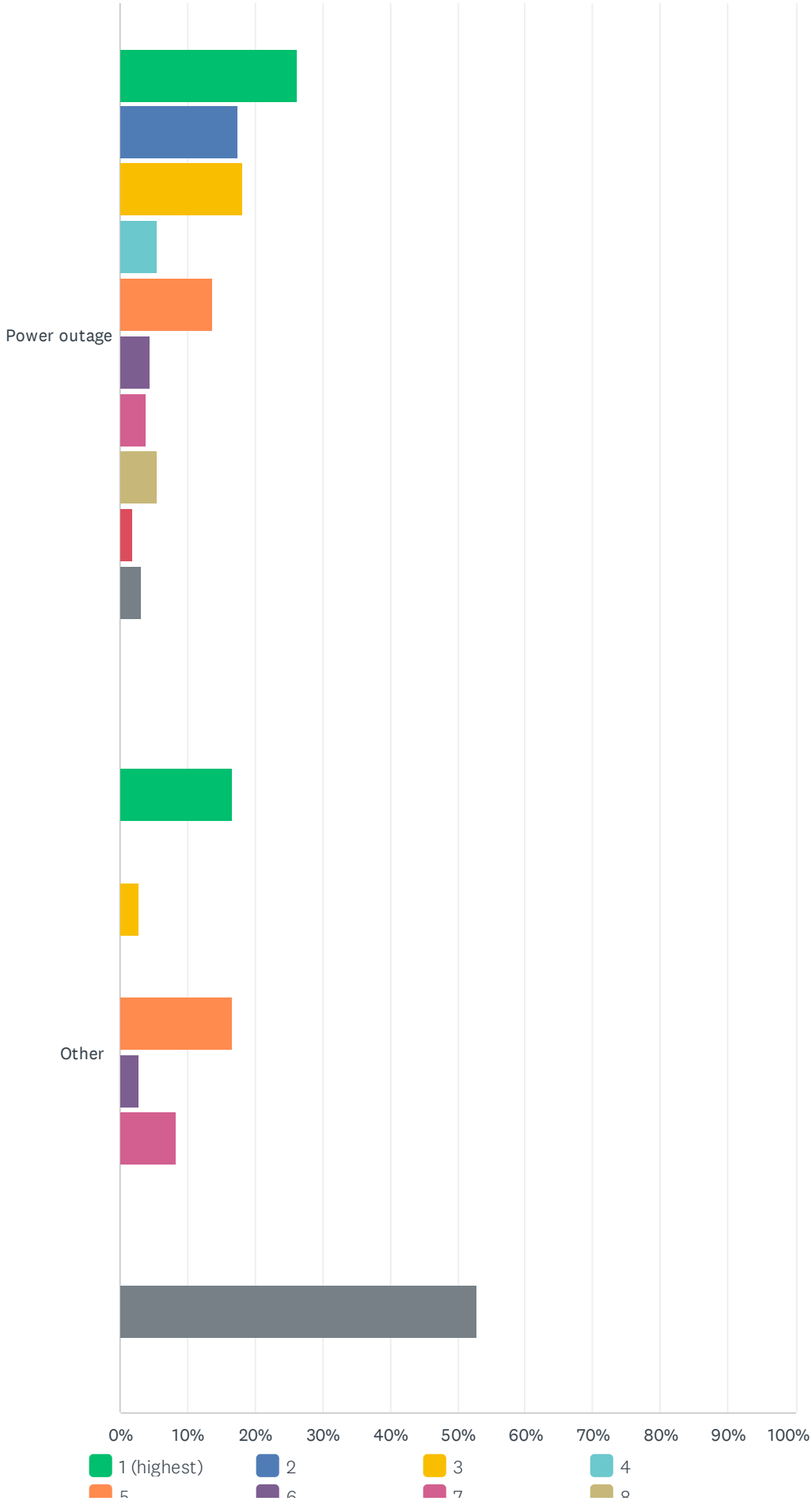



Earthquake ground shaking
Heavy rain


Extreme heat
Dam/reservoir failure


Flood
Drought

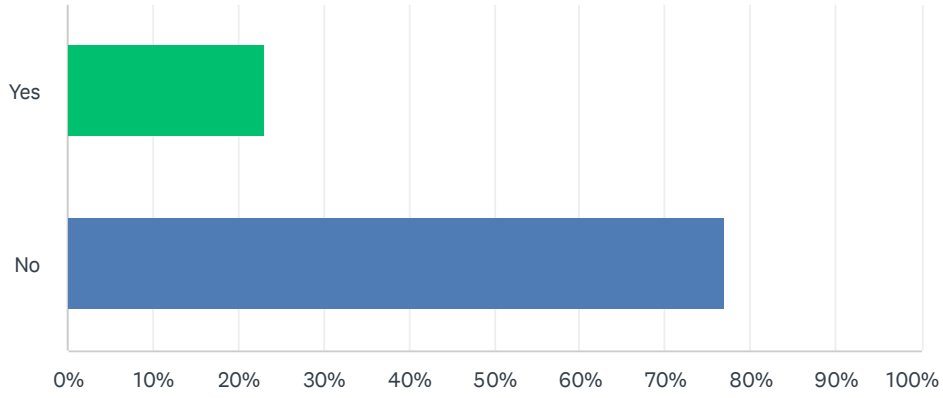

Hazardous materials...
Landslide/mudflow


Power outage
Other
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
1 (highest)
2
3
4
5
6
7
8

	1 (HIGHEST)	2	3	4	5	6	7	8	9	10 (LOWEST)
Wildfire	57.93% 95	16.46% 27	9.15% 15	6.10% 10	4.27% 7	1.83% 3	0.61% 1	1.22% 2	1.22% 2	1.22% 2
High Winds/Santa Anas	21.74% 35	26.09% 42	15.53% 25	11.18% 18	8.70% 14	7.45% 12	4.35% 7	1.86% 3	2.48% 4	0.62% 1
Earthquake ground shaking	21.74% 35	16.77% 27	21.74% 35	11.18% 18	13.04% 21	6.21% 10	4.35% 7	1.86% 3	0.62% 1	2.48% 4
Heavy rain	10.69% 17	13.21% 21	16.98% 27	21.38% 34	15.72% 25	10.06% 16	5.66% 9	3.77% 6	1.89% 3	0.63% 1
Extreme heat	24.22% 39	18.01% 29	22.36% 36	13.04% 21	11.18% 18	3.11% 5	1.86% 3	1.86% 3	2.48% 4	1.86% 3
Dam/reservoir failure	1.88% 3	2.50% 4	5.00% 8	7.50% 12	12.50% 20	7.50% 12	10.00% 16	9.38% 15	15.00% 24	28.75% 46
Flood	5.03% 8	3.77% 6	9.43% 15	9.43% 15	13.84% 22	10.69% 17	15.09% 24	10.69% 17	12.58% 20	9.43% 15
Drought	25.32% 40	13.29% 21	11.39% 18	10.13% 16	14.56% 23	8.23% 13	7.59% 12	5.70% 9	1.90% 3	1.90% 3
Hazardous materials incidents/spills	1.88% 3	0.63% 1	1.25% 2	4.38% 7	22.50% 36	5.00% 8	13.13% 21	13.13% 21	15.00% 24	23.13% 37
Landslide/mudflow	4.46% 7	2.55% 4	15.29% 24	14.65% 23	12.10% 19	10.83% 17	12.10% 19	13.38% 21	8.28% 13	6.37% 10
Power outage	26.25% 42	17.50% 28	18.13% 29	5.63% 9	13.75% 22	4.38% 7	3.75% 6	5.63% 9	1.88% 3	3.13% 5
Other	16.67% 6	0.00% 0	2.78% 1	0.00% 0	16.67% 6	2.78% 1	8.33% 3	0.00% 0	0.00% 0	52.78% 19

Q7 Is there a hazard not listed above that you think is a wide scale threat to Glendora?

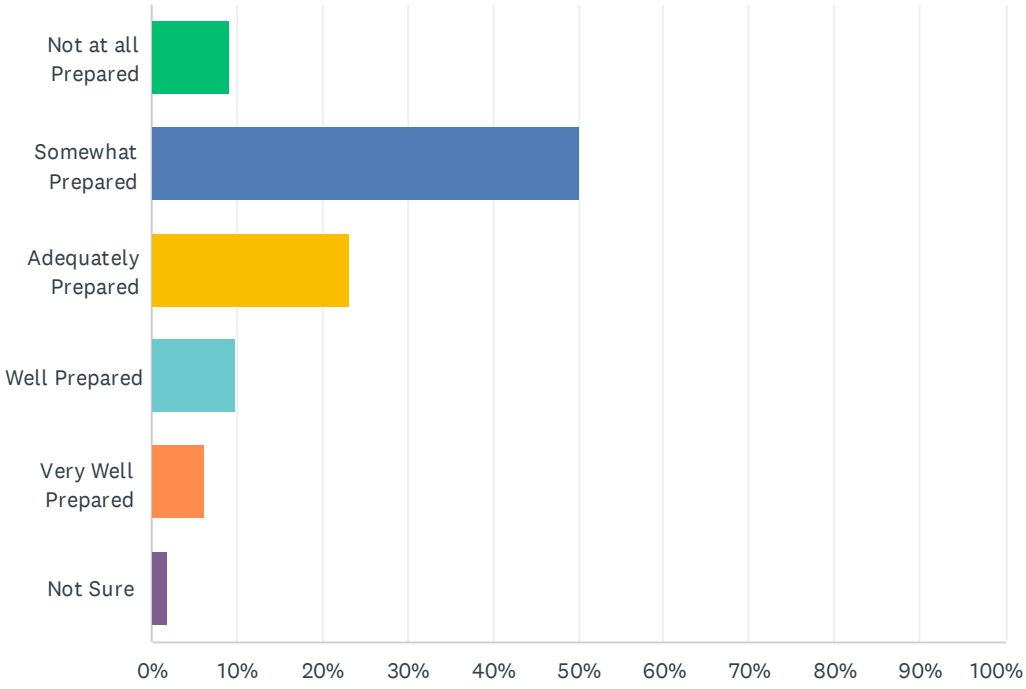
Answered: 148 Skipped: 16



ANSWER CHOICES	RESPONSES	
Yes	22.97%	34
No	77.03%	114
TOTAL		148

Q8 How prepared is your household to deal with a hazard event likely to occur in Glendora?

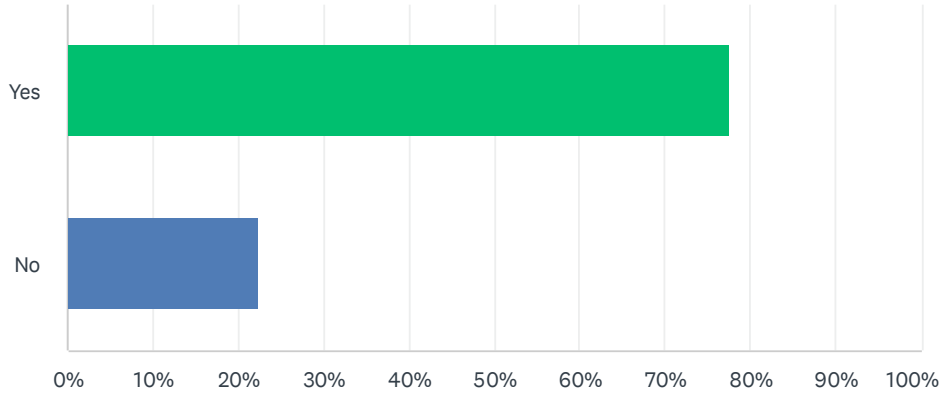
Answered: 164 Skipped: 0



ANSWER CHOICES	RESPONSES	
Not at all Prepared	9.15%	15
Somewhat Prepared	50.00%	82
Adequately Prepared	23.17%	38
Well Prepared	9.76%	16
Very Well Prepared	6.10%	10
Not Sure	1.83%	3
TOTAL		164

Q9 Have you taken actions to make your home, business, or neighborhood more resistant to hazards (such as anchored furniture and service utilities, maintain functioning smoke detectors, regularly trimmed trees, annually cut-down dry weeds to reduce fire hazards, etc.)?

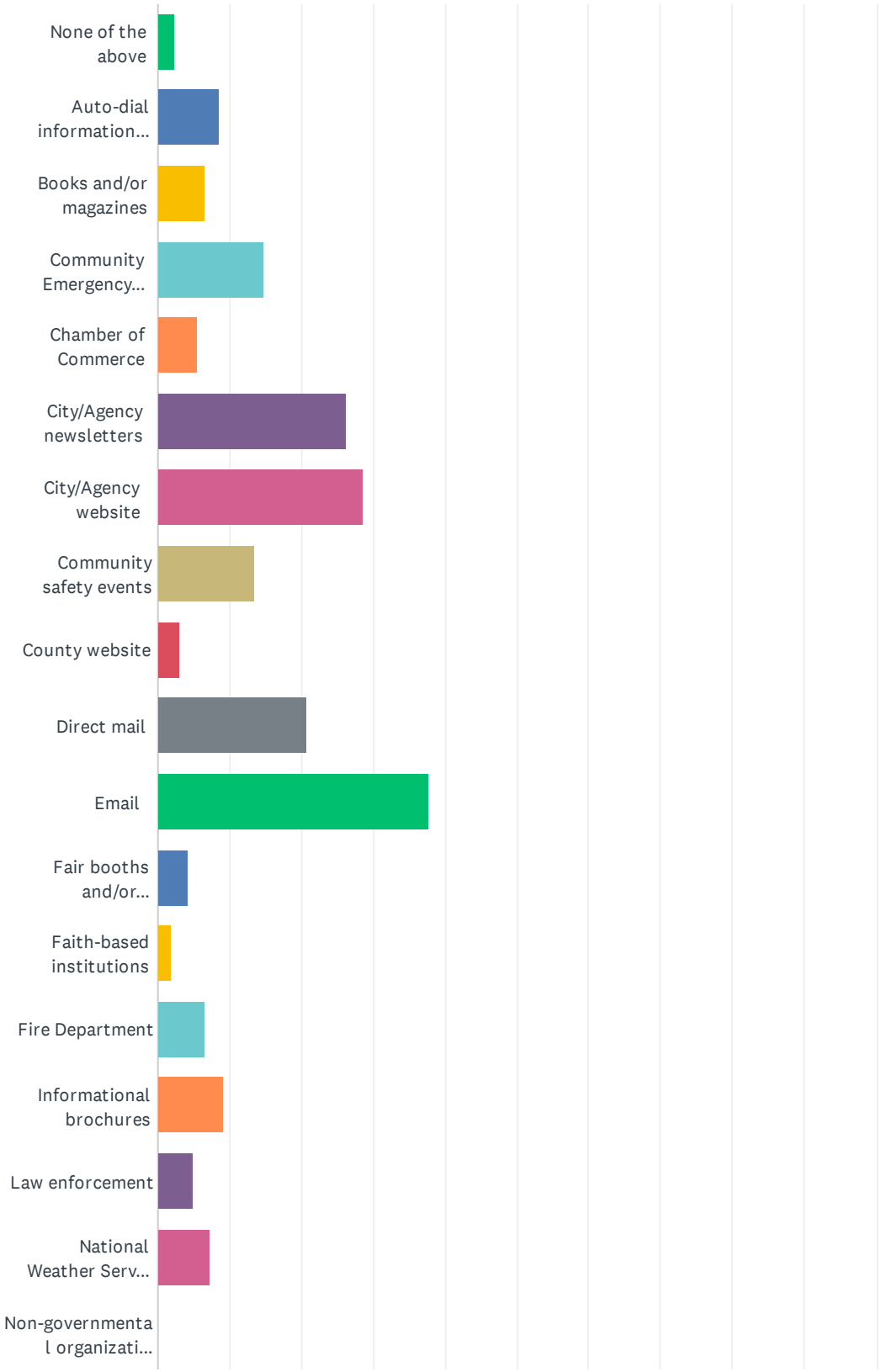
Answered: 161 Skipped: 3

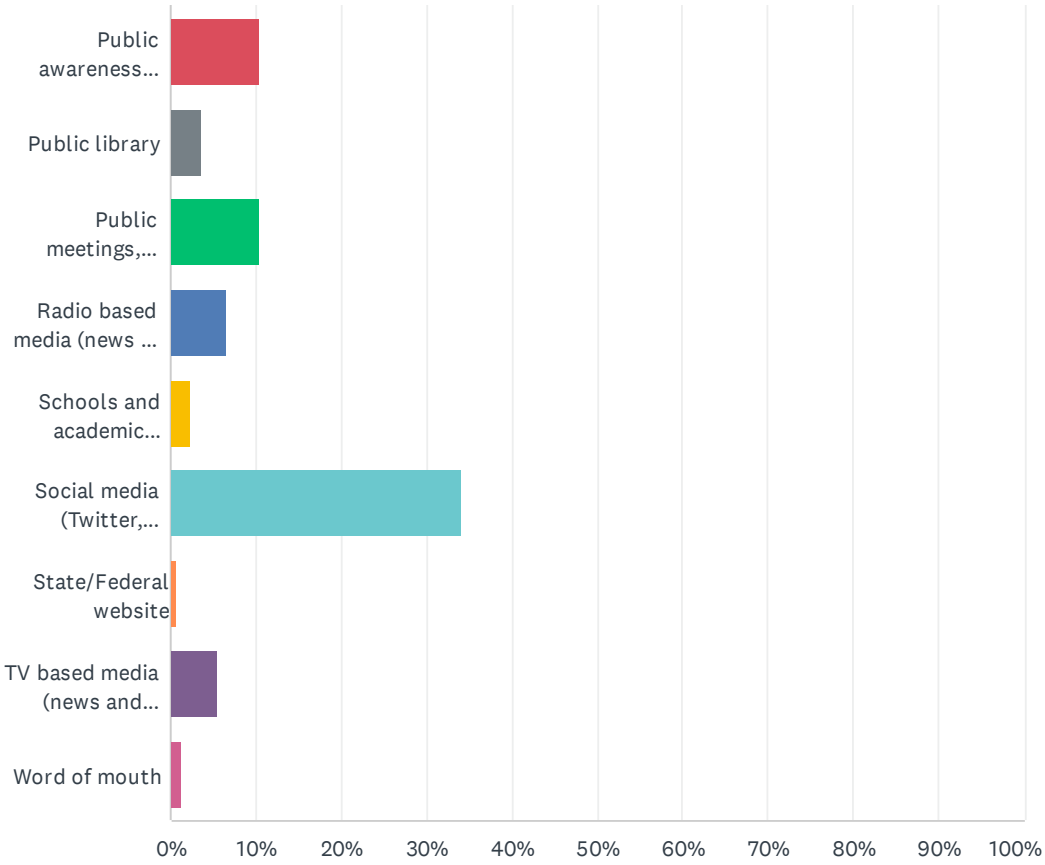


ANSWER CHOICES	RESPONSES	
Yes	77.64%	125
No	22.36%	36
TOTAL		161

Q10 Choose the top 3 ways you prefer to receive information about how to make your home and neighborhood more resistant to hazards?

Answered: 164 Skipped: 0

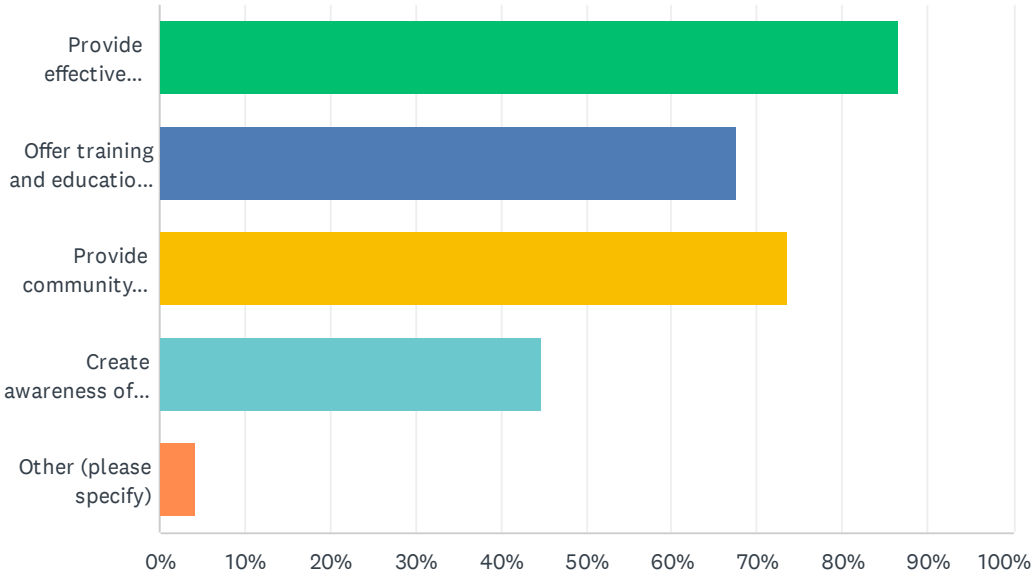



Public awareness...
Public library
Public meetings,...
Radio based media (news ...
Schools and academic...
Social media (Twitter,...
State/Federal website
TV based media (news and...
Word of mouth
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

ANSWER CHOICES	RESPONSES	
None of the above	2.44%	4
Auto-dial information from “911” center	8.54%	14
Books and/or magazines	6.71%	11
Community Emergency Response Training (CERT) classes	14.63%	24
Chamber of Commerce	5.49%	9
City/Agency newsletters	26.22%	43
City/Agency website	28.66%	47
Community safety events	13.41%	22
County website	3.05%	5
Direct mail	20.73%	34
Email	37.80%	62
Fair booths and/or festivals	4.27%	7
Faith-based institutions	1.83%	3
Fire Department	6.71%	11
Informational brochures	9.15%	15
Law enforcement	4.88%	8
National Weather Service website	7.32%	12
Non-governmental organizations (Red Cross)	0.00%	0
Public awareness campaigns (Flood Awareness Week; the Great Shakeout)	10.37%	17
Public library	3.66%	6
Public meetings, workshops, and/or classes	10.37%	17
Radio based media (news and public service announcements)	6.71%	11
Schools and academic institutions	2.44%	4
Social media (Twitter, Facebook, LinkedIn, Instagram)	34.15%	56
State/Federal website	0.61%	1
TV based media (news and public service announcements)	5.49%	9
Word of mouth	1.22%	2
Total Respondents: 164		

Q11 How can your City, County or other Agencies help you become better prepared for disaster? Choose all that apply.

Answered: 163 Skipped: 1



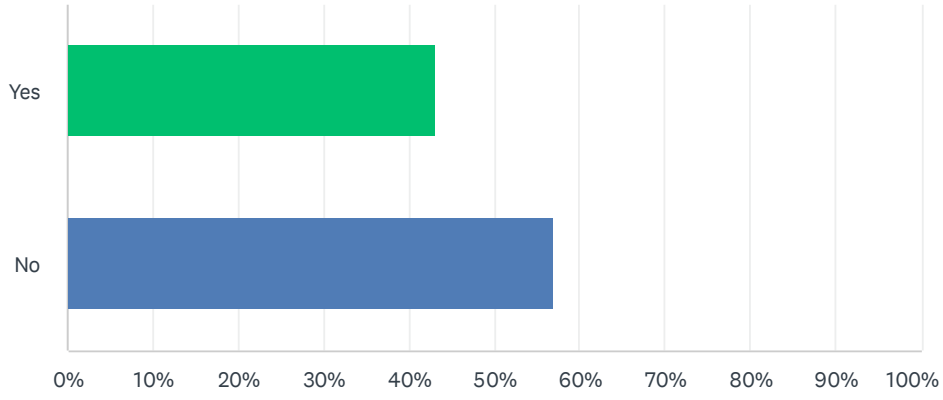
ANSWER CHOICES	RESPONSES	
Provide effective emergency notifications and communications in a disaster	86.50%	141
Offer training and education to residents and business owners on how to reduce risk	67.48%	110
Provide community outreach regarding emergency preparedness and evacuation procedures	73.62%	120
Create awareness of special needs and vulnerable populations	44.79%	73
Other (please specify)	4.29%	7
Total Respondents: 163		

Q12 Please utilize the space below to provide any additional comments regarding local hazards, disasters, and preparedness.

Answered: 21 Skipped: 143

Q13 Would you like to review and comment on the drafts of the Glendora Local Hazard Mitigation Plan and Safety Element?

Answered: 158 Skipped: 6



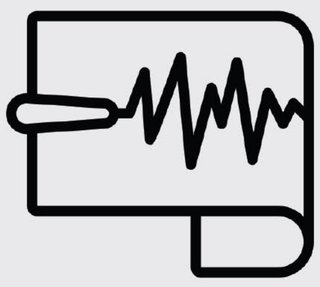
ANSWER CHOICES	RESPONSES	
Yes	43.04%	68
No	56.96%	90
TOTAL		158

TAKE THE SURVEY HERE:

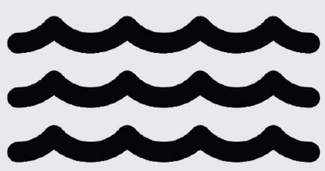
HTTPS://WWW.SURVEYMONKEY.COM/R/FPNX2TK

SAFETY ELEMENT UPDATE AND LOCAL HAZARD MITIGATION PLAN

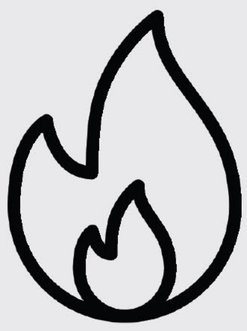
THE CITY IS ASSESSING ITS VULNERABILITY TO NATURAL AND MANMADE HAZARDS AND NEEDS YOUR INPUT ON TOPICS SUCH AS:



SEISMIC HAZARDS

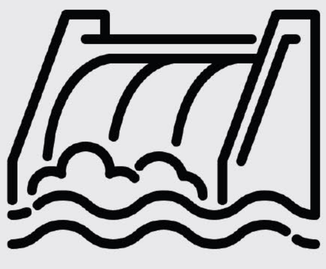


FLOOD & DROUGHT

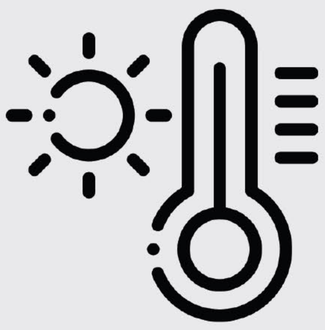


WILDFIRE

LANDSLIDE & MUDFLOW



DAM/RESERVOIR FAILURE



SEVERE WEATHER

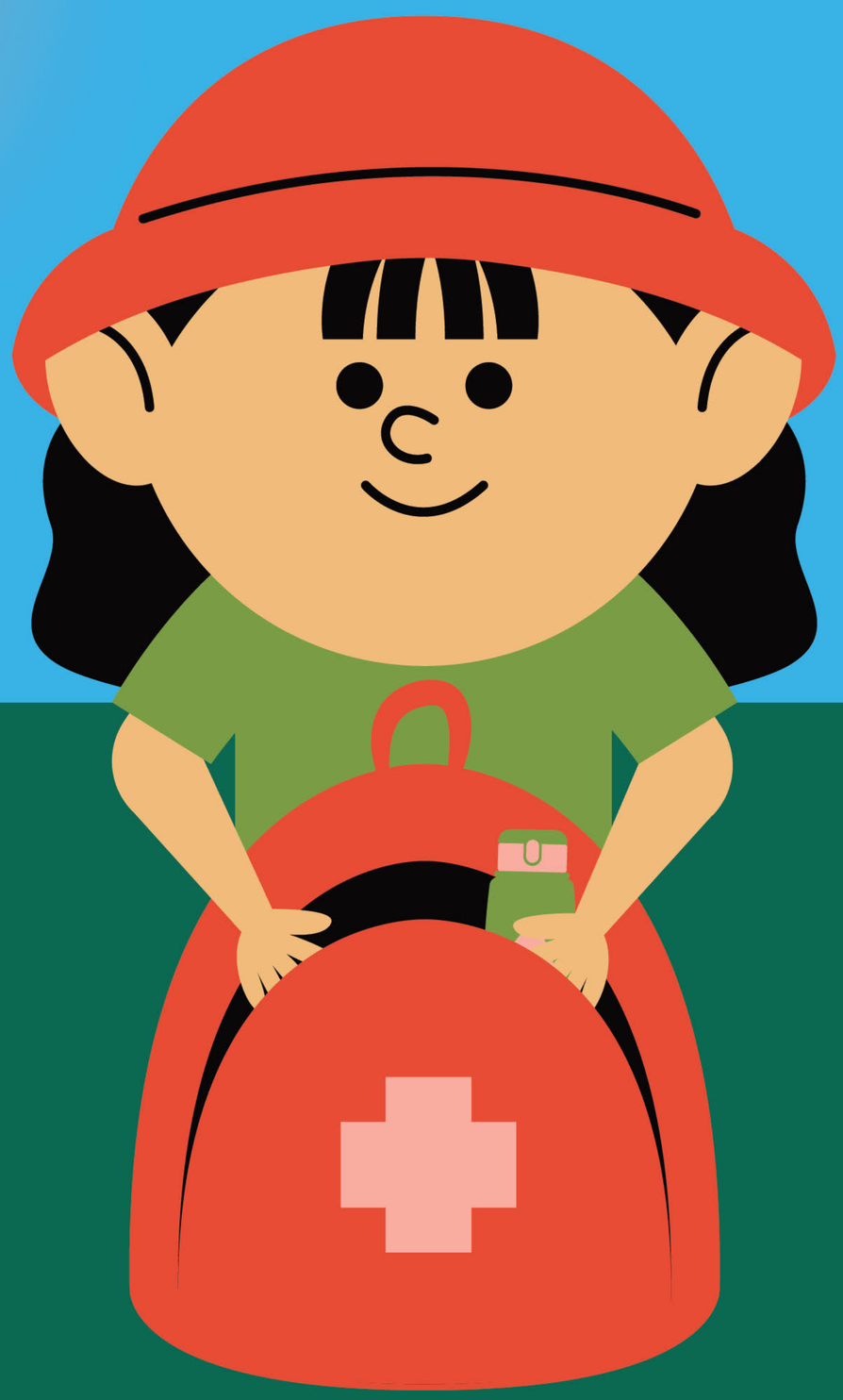
TO LEARN MORE AND SHARE YOUR INPUT, VISIT:
HTTPS://WWW.CITYOFGLENDORA.ORG/DEPARTMENTS/COMMUNITY-DEVELOPMENT/ADVANCED-PLANNING-COMMUNITY-ENGAGEMENT

EMERGENCY KIT

RAFFLE

Enter Now!

Supplies!
Gift card!

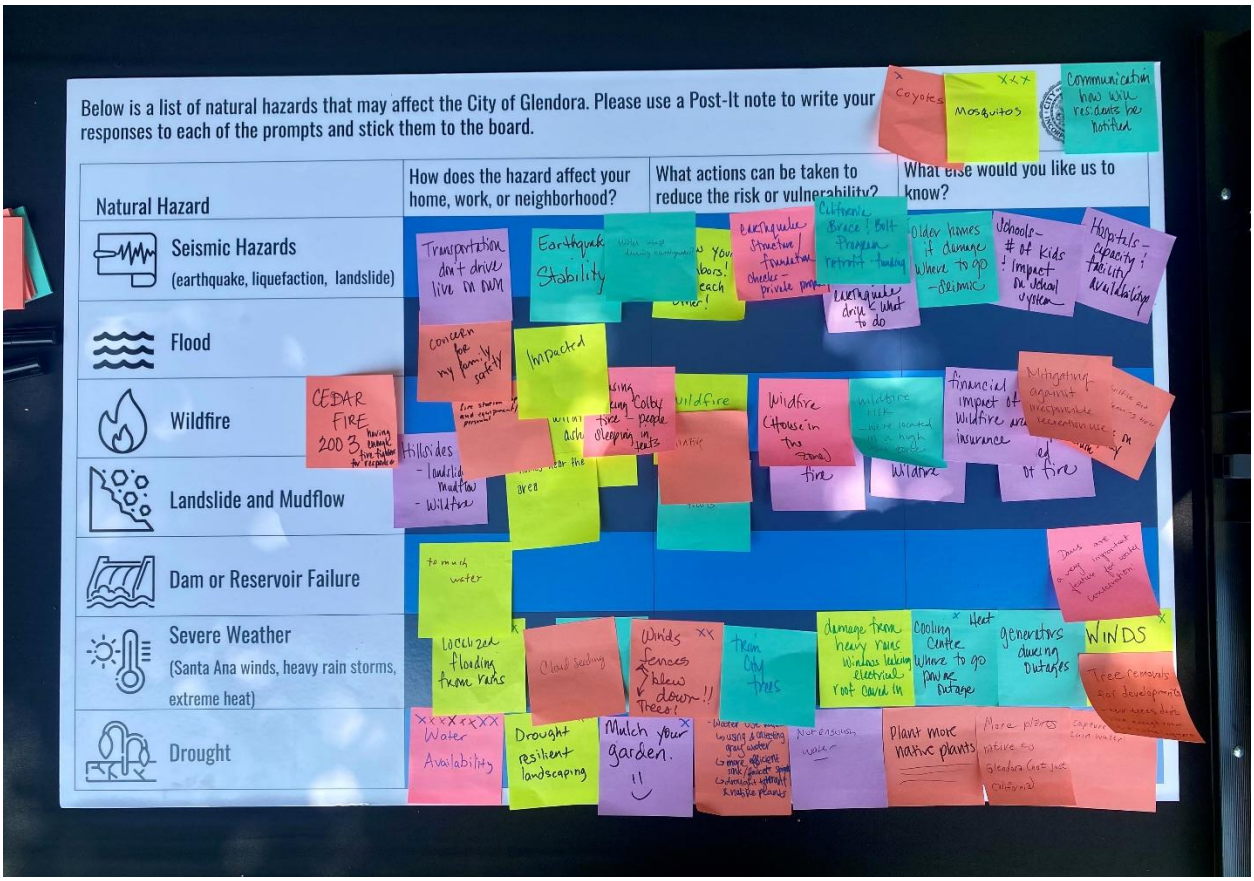


Below is a list of natural hazards that may affect the City of Glendora. Please use a Post-It note to write your responses to each of the prompts and stick them to the board.

Natural Hazard	How does the hazard affect your home, work, or neighborhood?	What actions can be taken to reduce the risk or vulnerability?	What else would you like us to know?
Seismic Hazards (earthquake, liquefaction, landslide)			
Flood			
Wildfire			
Landslide and Mudflow			
Dam or Reservoir Failure			
Severe Weather (Santa Ana winds, heavy rain storms, extreme heat)			
Drought			

EMERGENCY KIT
RAFFLE
Enter Now!

READYWISE
EMERGENCY
FOOD SUPPLY
SAFETY LIGHT STICK
Booda Brand
10 PACK
Anti Tip Metal
Furniture Anchor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Natural Hazard
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What else would you like us to know?
Seismic Hazards
(earthquake, liquefaction, landslide)
Flood
Wildfire
Landslide and Mudflow
Dam or Reservoir Failure
Severe Weather
(Santa Ana winds, heavy rain storms, extreme heat)
Drought
Coyotes
Mosquitos
Communication how will residents be notified
Transportation don't drive live in DVN
Earthquake Stability
Older homes if damage where to go -Seismic
Schools - # of kids ! Impact on school system
Hospitals - capacity ; facility availability
Concern for my family safety
Impacted
CEDAR FIRE 2003
Hillsides - landslide mudflow - wildfire
Wildfire
Financial impact of wildfire insurance
Mitigating against irresponsible recreation use
Dams are very important to water conservation
too much water
Localized flooding from rains
Cloud seeding
Winds fences blew down!! Trees!
Trim Old trees
damage from heavy rains Windows leaking electrical roof caved in
Cooling Centers Where to go power outage
generators during Outages
WINDS
Tree removals
Water Availability
Drought resilient landscaping
Mulch your garden.
Plant more native plants

RAFFLE

DISASTER HAPPENS ARE YOU READY?

THE PREPARE FAIR

GLENDORA EMERGENCY PREPAREDNESS DAY | THURSDAY, SEPTEMBER 14TH | 3PM - 7PM

PREPAREDNESS TIPS

EMERGENCY VEHICLES • PET PREPAREDNESS • HAM RADIOS • FIRE ALARMS
KNOW YOUR EVACUATION ZONE • HANDS ONLY CPR • UTILITIES & MORE!

FEATURED

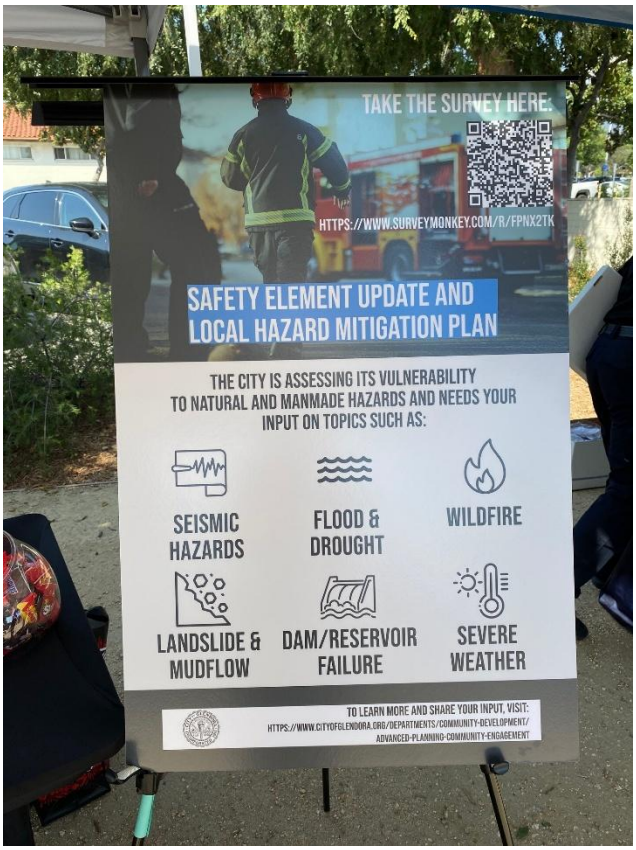
Glendora Police Dept. • SCE • Falck Ambulance LA County Fire Dept • CERT • Red Cross • CA Dept. of Forestry • GEARS• Inland Valley Humane Society • Emanate Health • Glendora Library • LA County Dept of Health • Dept. of Insurance

PRESENTATIONS

3:30 - 4:30 Pillowcase Project (Elementary Kids) by Red Cross
4:45 - 5:15 Fire Safety by LA County Forestry
5:30 - 6:00 Basic Emergency Preparedness by Glendora CERT
6:15 - 6:45 Safer from Wildfires by Dept. of Insurance

SEPTEMBER 14TH | 3PM - 7PM

JOIN US! CIVIC CENTER PARKING LOT116 E. FOOTHILL BLVD (BEHIND CITY HALL)


TAKE THE SURVEY HERE:
HTTPS://WWW.SURVEYMONKEY.COM/R/FPNX2TK
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THE PREPARE FAIR
PRESENTATIONS in BIDWELL FORUM
3:30pm - 4:30pm
Pillowcase Project (Elementary Kids) by Red Cross
4:45pm - 5:15pm
Fire Safety by LA County Fire Department
5:30pm - 6:00pm
Basic Emergency Preparedness by Glendora CERT
6:15pm - 6:45pm
Safer from Wildfires by Dept. of Insurance
GLENDORA EMERGENCY PREPAREDNESS DAY | THURSDAY, SEPTEMBER 14TH | 3PM - 7PM
Restrooms Available in the Library Lobby

WATER CONSERVATION
EDISON

COMMUNITY EMERGENCY RESPONSE TEAM
CERT
COMMUNITY EMERGENCY RESPONSE TEAM

FALCK
FALCK

City of Glendora

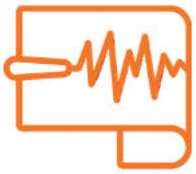
COMMUNITY MEETING

The City is preparing an update to their **Local Hazard Mitigation Plan** and needs your input!

APRIL 17, 2024
10:30 AM

CHARTER OAK UNIFIED SCHOOL DISTRICT
STUDENT AND FAMILY RESOURCE CENTER
303 S. Glendora Ave.
Covina, CA 91724

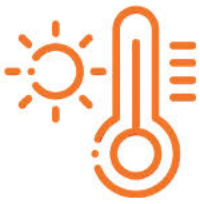
The Local Hazard Mitigation Plan will identify and assess the City's vulnerability to natural and manmade hazards such as:



Seismic

Flood & Drought

Wildfire



Severe Weather

and will identify specific actions that can be taken to reduce the risk from the hazards. At the meeting, you'll have the opportunity to share your concerns, ideas, and suggestions related to hazards in the City.

Learn More

To learn more, visit the City's website at:
https://www.cityofglendora.org

Ciudad de Glendora

JUNTA COMUNITARIA

¡El Ayuntamiento está preparando la actualización de su **Plan Local de Mitigación de Peligros** y necesita su opinión!

17 DE ABRIL, 2024
10:30 AM

DISTRITO ESCOLAR UNIFICADO DE CHARTER OAK
CENTRO DE RECURSOS PARA ESTUDIANTES Y FAMILIAS
303 S. Glendora Ave.
Covina, CA 91724

El Plan Local de Mitigación de Peligros identificará y evaluará la vulnerabilidad de la Ciudad a peligros naturales y los causados por el hombre tales como:

- **Sísmos**
- **Inundaciones y sequías**
- **Incendios forestales**
- **Clima severo**

e identificará las medidas específicas que pueden tomarse para reducir el riesgo de estos peligros. En la junta, tendrá la oportunidad de compartir sus preocupaciones, ideas y sugerencias relacionadas con los peligros que ponen en riesgo a la ciudad.

Más información

Para obtener más información, visite el sitio web de la Ciudad en:

https://www.cityofglendora.org

Hazard Planning in Glendora

Focus Group Meetings

April 2024

CityOfGlendora.org

Agenda

- Introductions
- Meeting Purpose
- What is a LHMP?
- Discussion
- How You Can Help

Introductions

Name

Fun Fact

Purpose of Our Meeting Today

We want to know YOUR experience with and thoughts about hazards in Glendora

Hazard Examples

Earthquakes

Lighting Storms

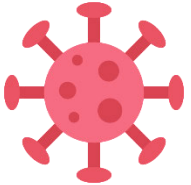
Wildfires

Pests

Landslides

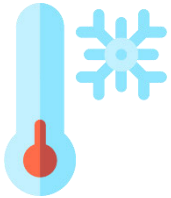
Extreme Heat

Windstorms

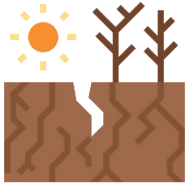


Disease

Floods



Extreme Cold



Drought

Cyber Attacks

What is a LHMP?

Local:	Specifically for the City of Glendora
Hazard:	Identifies hazards, likelihood of occurring, and community's risk/vulnerability to the hazard
Mitigation:	Finds ways to lessen the risks/vulnerabilities and make the hazards less harmful
Plan:	Identify long-term policies and actions to increase resilience and reduce vulnerabilities

Why is the City Preparing a LHMP?

01

Make the community more “disaster resistant”

02

Understand threats and hazards, including risks and community’s vulnerability to risks

03

Maintain eligibility for federal emergency funds

Discussion

Hazards Identified

Earthquakes

Heavy Rain Storms

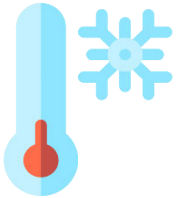
Wildfires

Landslides/Mudflow

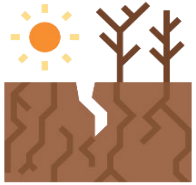
Extreme Heat

Santa Ana Winds

Floods & Dam Failure



Extreme Cold



Drought

Discussion Questions

Do you have any personal experiences with these hazards in Glendora?

What are the most likely types of hazards that could affect you and do you feel prepared for them?

Do you know where to go and what to do in an emergency?

Do you know where to find information about hazards and emergencies in Glendora?

What is your biggest concern about any of these hazards or in an emergency?

Are there any hazards missing from the list that we should consider in Glendora?

How You Can Help

By participating today!

Provide feedback on the Draft Plan:

https://www.cityofglendora.org/departments/community-development/advanced-planning-community-engagement

Send comments and questions to:

Julie Linger

jlinger@glendorapd.org

How We Use Your Input

1. Input from today's meeting helps us inform and create the Draft Plan

2. We share the Draft Plan with you for additional input

3. We revise the Draft Plan based on your feedback and share it with:
   - ✓ California Governor's Office of Emergency Services
   - ✓ Federal Emergency Management Agency
   - ✓ Glendora City Council

Timeline

- Draft Plan for Public Review
  - Anticipated late Summer/early Fall
- Revise Draft Plan and submit to Cal OES/FEMA
  - Anticipated late Fall/early 2025
- Final Plan for City Council Adoption
  - Anticipated Spring/Summer 2025

Thank You!

For additional information and updates:

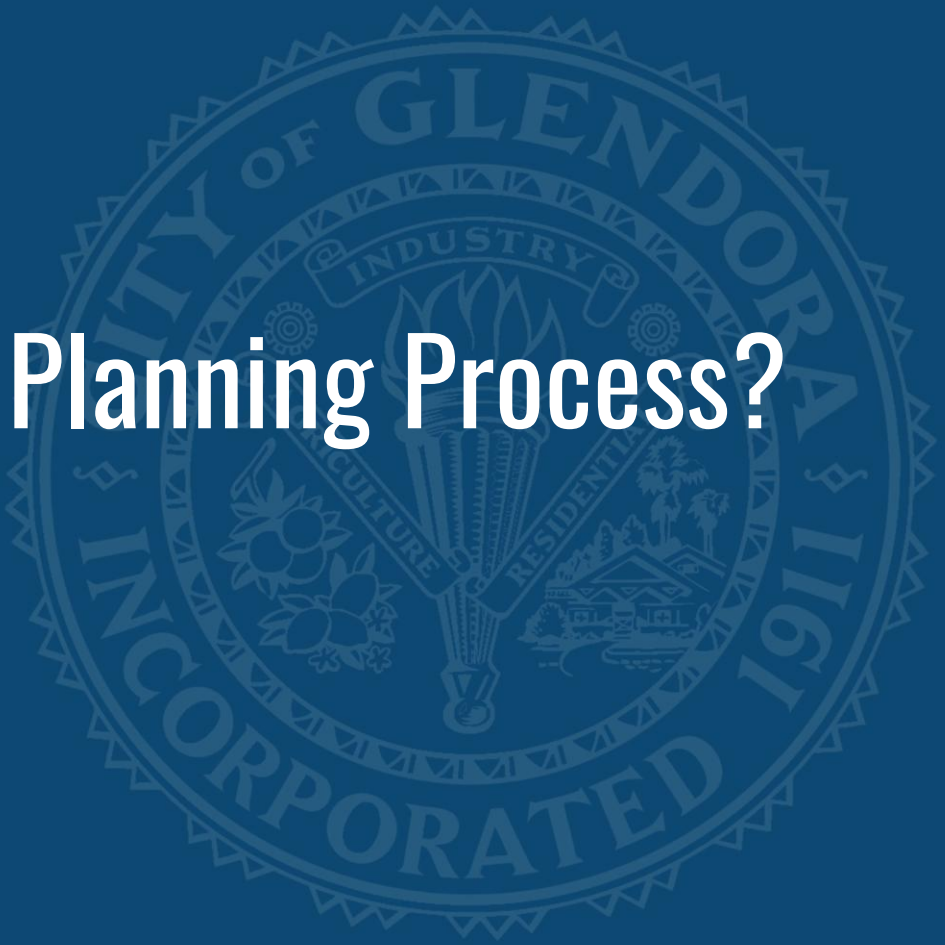
https://www.cityofglendora.org/departments/community-development/advanced-planning-community-engagement

Emergency preparedness website:

https://www.cityofglendora.org/departments-services/police/emergency-preparedness

Smart911: Create a profile at
https://www.smart911.com/smart911/ref/reg.action?pa=glendorapd

What is the LHMP Planning Process?



LHMP PROCESS

LHMP PROCESS – RISK ASSESSMENT

Identify & Describe Hazards

- Location
- Extent
- Previous occurrence
- Probability of future events

Identify Community Assets

- People
- Structures
- Community lifelines and critical facilities
- Natural, historic and cultural resources
- Economy/activities that have value to the community

Analyze Impacts

- Identify risks – exposure analysis
- Describe asset vulnerabilities
- Describe potential impacts
- Estimated losses
- Repetitive and severe repetitive loss properties

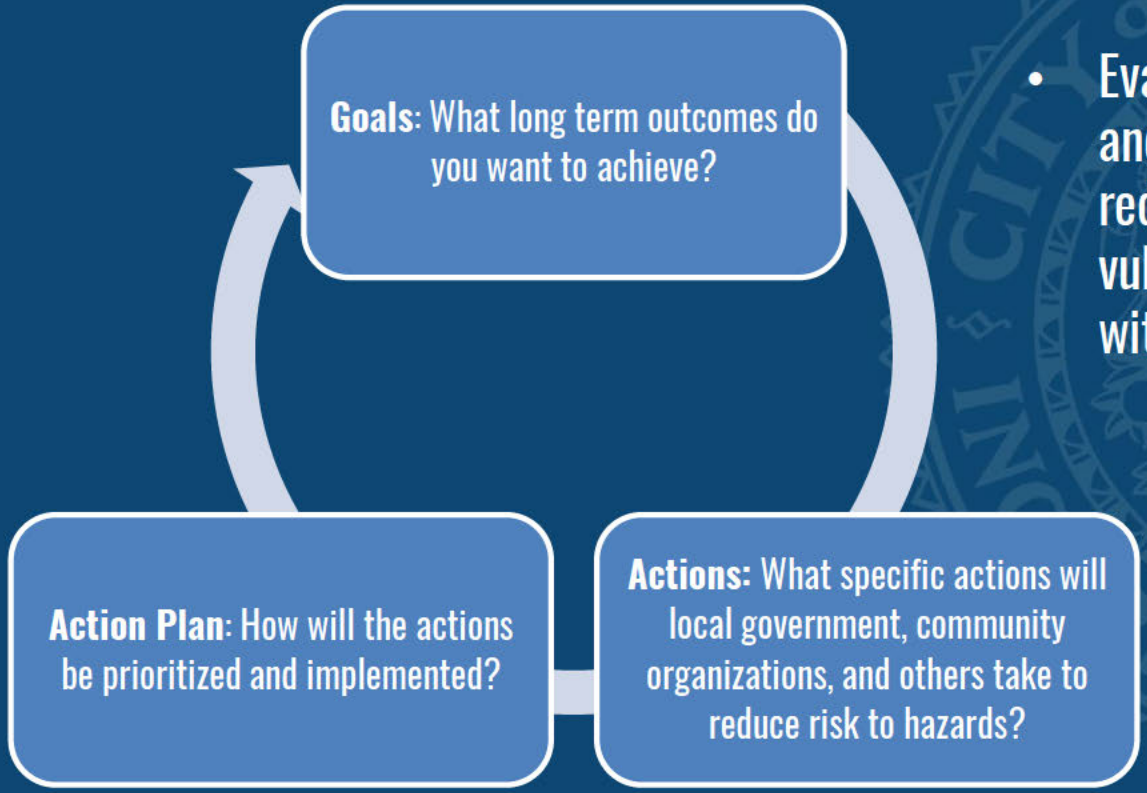
Summarize Vulnerability

- Structures
- Systems
- Populations

IDENTIFY COMMUNITY ASSETS

- Assets are anything important to the character and function of a community
  - People, including underserved communities and socially vulnerable populations
  - Structures, including new and existing buildings
  - Community lifelines and other critical facilities
  - Natural, historic and cultural resources
  - Economy and other activities that have value to the community

Mitigation Strategy



- Evaluate and prioritize goals and mitigation actions to reduce or avoid long-term vulnerabilities associated with each hazard

Mitigation Examples 1

- Local plans and regulations
  - General Plan
  - Zoning ordinances
  - Subdivision regulations
  - Building codes
  - Capital improvement programs
- Structure and infrastructure projects
  - Acquisition, relocation, elevation of flood-prone structures
  - Levees and floodwalls
  - Seismic retrofitting
  - Strengthening critical facilities
  - Burying utility lines
  - Stormwater diversion, retention, or detention

Mitigation Examples 2

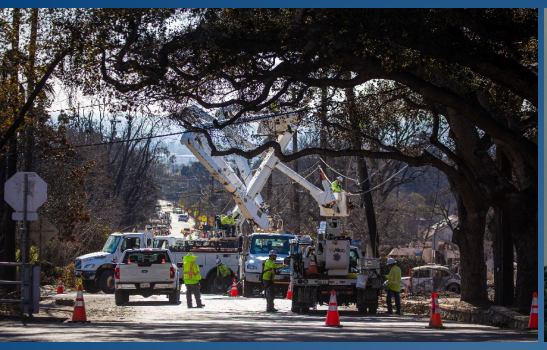
- Natural Systems Protection
  - Floodplain protection
  - Wetlands preservation
  - Coastal or riverine setbacks
  - Sediment and erosion control
  - Forest and vegetative management
- Education and Awareness Programs
  - Risk communication
  - Community events
  - Brochures/written materials
  - Website with maps/information
  - Educational programs

APPENDIX E

COUNTY OF LOS ANGELES' ALL-HAZARDS MITIGATION PLAN

2025 County of Los Angeles All-Hazards Mitigation Plan

Chief Executive Office - Office of Emergency Management



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
	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

County of Los Angeles
All-Hazards Mitigation Plan

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.

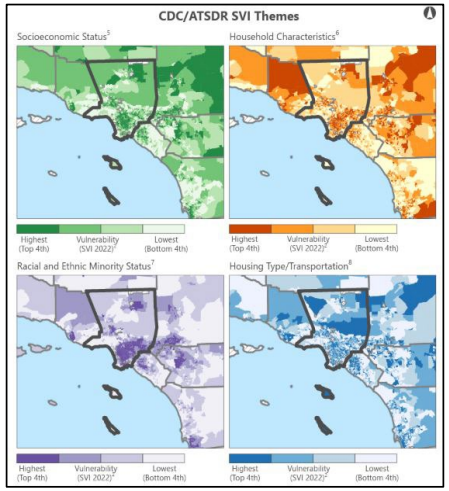


Figure 3.1 CDC Social Vulnerability Index (CDC 2022)

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.

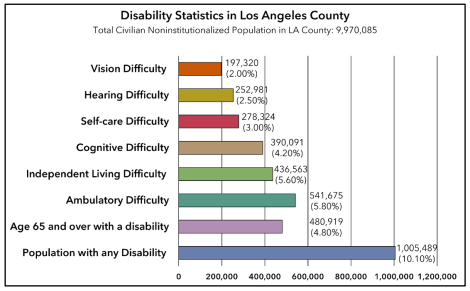


Figure 3.2 Disability Statistics in Los Angeles County (OAEOP 2023)

- **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.

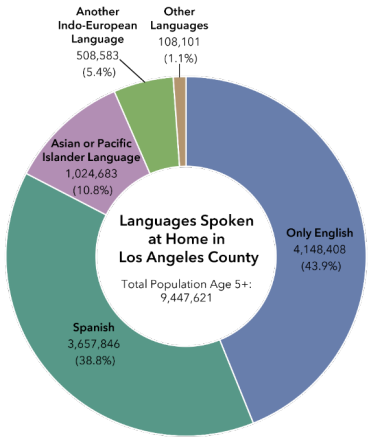


Figure 3. 3 Breakdown of Language at Home in Los Angeles County (OAEOP 2023)

- **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.

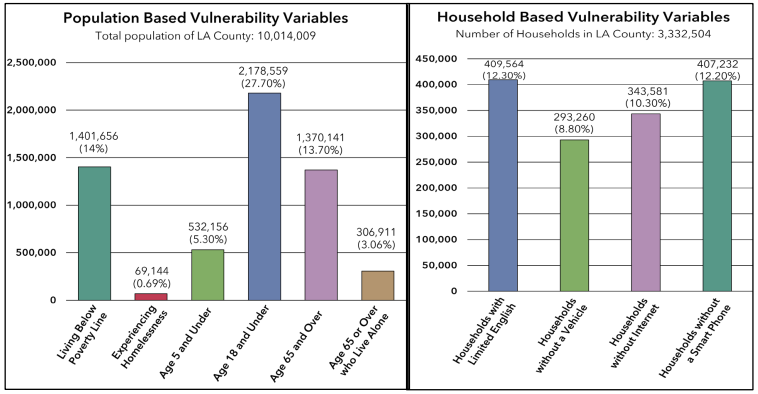


Figure 3.4 Los Angeles County Vulnerability Variables (OAEOP 2023)

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.

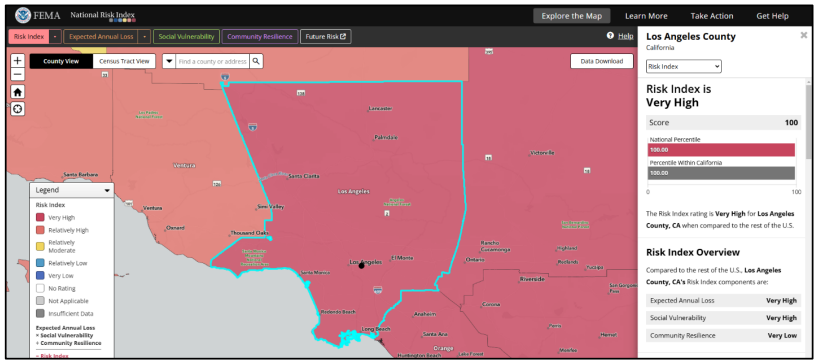


Figure 3.5 FEMA National Risk Index (2025)

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

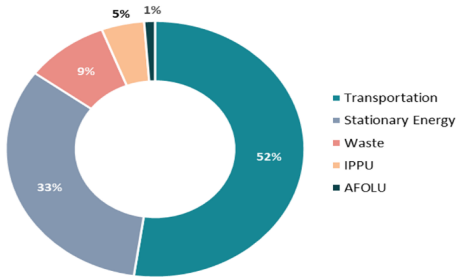
Climate change refers to the changing effect of the Earth's climate system over time, including changes in temperature, precipitation, and wind patterns. Climate change had significant impacts on Los Angeles County, affecting various aspects of life, environment, infrastructure, and sustainable development, 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.



Abbreviations: AFOLU = agriculture, forestry, and other land use; IPPU = industrial processes and product use

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.

WILDFIRE
KEY POINTS

1. **Nature**
Wildfires are fast-moving, climate-exacerbated hazards driven by dry vegetation, wind, and terrain, often ignited by lightning or human activity.

2. **Location**
High-risk wildfire areas are concentrated in the foothill areas and along the wildland-urban interface (WUI) in both SRA and LRA zones.

3. **Extent**
Over 1,000 square miles in Los Angeles County are classified as Very High Fire Hazard Severity Zones, with wildfires causing widespread secondary hazards.

4. **Vulnerability**
More than 1.2 million residents—especially in WUI communities with limited evacuation routes—face increased wildfire risk, particularly vulnerable populations.

5. **Mitigation and Preparedness**
Key strategies include defensible space enforcement, fire-resistant construction, CWPPs, vegetation management, and coordinated evacuation planning.

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.

EARTHQUAKE KEY POINTS

1. **Nature**
   Earthquakes occur when there is a sudden release of energy from the Earth's crust, creating seismic waves.
2. **Location**
   Los Angeles County is in one of the most highly active seismic regions, having multiple active faults.
3. **Extent**
   The San Andreas Fault remains the greatest threat, with a high chance of an M 6.7+ occurring.
4. **Vulnerability**
   Residents in high-risk seismic zones could be extremely impacted, along with people experiencing homelessness, low income, and the access and functional needs community.
5. **Mitigation and Preparedness**
   Efforts include strengthening building codes, upgrading critical infrastructure, expanding public education, and enhancing emergency response planning.

- 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.

EXTREME HEAT KEY POINTS

1. **Nature**
   Prolonged periods of high temperatures pose significant health risks such as heat exhaustion and heat stroke. Urban heat island (UHI) is rampant in Los Angeles County.
2. **Location**
   Los Angeles County is vulnerable to extreme heat because of its diverse landscape and urban density.
3. **Extent**
   Predictions show a significant rise in frequency and intensity of heat waves, with inland areas being more susceptible.
4. **Vulnerability**
   Populations most vulnerable to extreme heat are elderly individuals, low-income communities, outdoor workers, people experiencing homelessness, and the access and functional needs community.
5. **Mitigation and Preparedness**
   To manage extreme heat, Los Angeles County has implemented cooling centers, urban greening initiatives, public awareness campaigns, and building codes and regulations.

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.

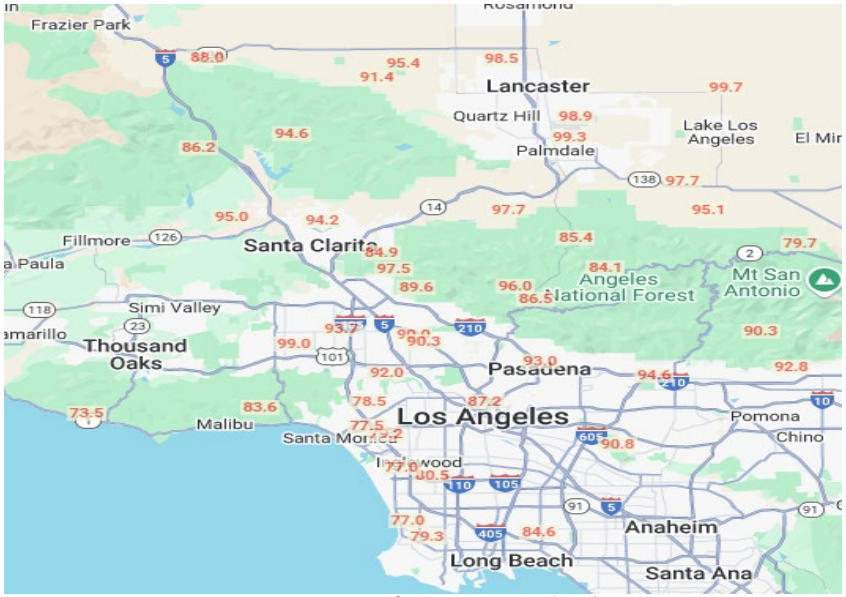


Figure 6.4.2, Mean Max Temperature for August 2024, National Weather Service

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.

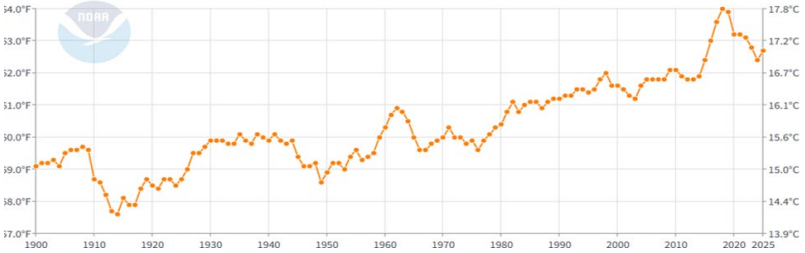


Figure 6.4.3, Average Temperature 1900-2025, NOAA, NCEI, 2025.

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.

DROUGHT KEY POINTS

1. **Nature**
   Drought is a slow-developing hazard worsened by climate change, leading to hotter, drier conditions and water shortages.
2. **Location**
   L.A. County's drought risk is high due to its arid climate and dependence on imported water sources.
3. **Extent**
   Droughts are classified into five levels; L.A. experienced drought conditions for 376 straight weeks from 2011–2019.
4. **Vulnerability**
   All residents are affected by dought, especially vulnerable groups, face risks from water shortages, wildfires, and health impacts.
5. **Mitigation and Preparedness**
   The County is expanding recycling, stormwater capture, and conservation programs to improve drought resilience.

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.

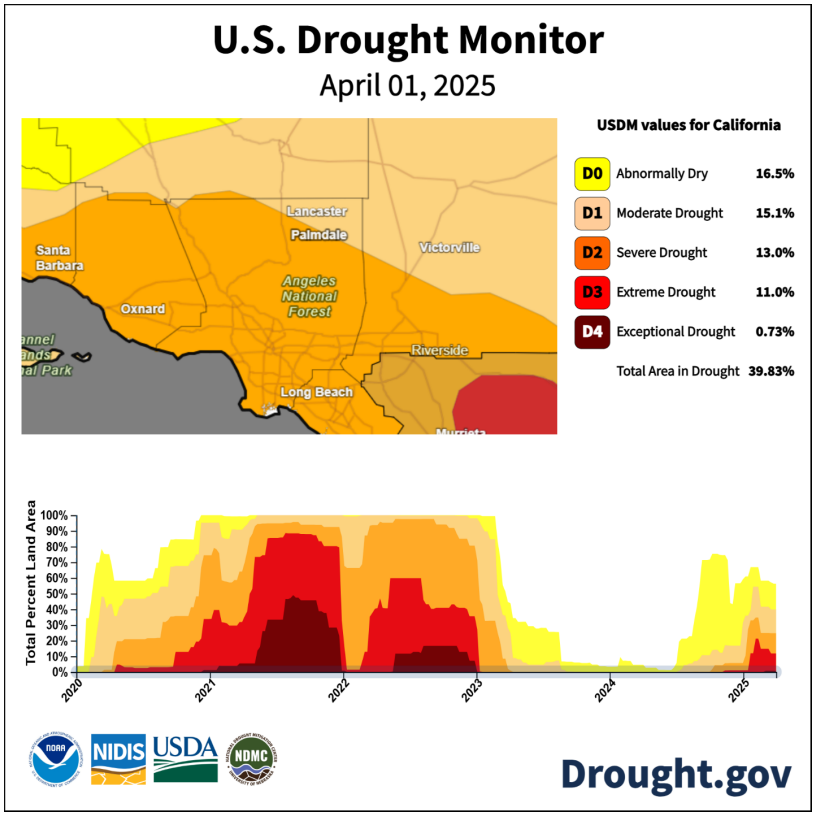


Figure 6.5.2, U.S. Drought Monitor, 2025

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.

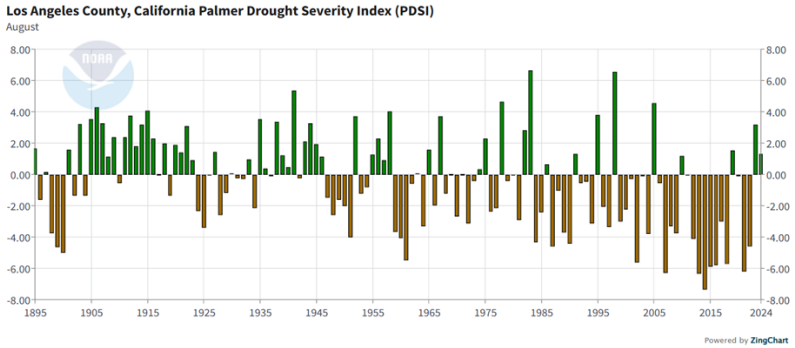


Figure 6.5.3, NOAA Drought Severity Index, 2024

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.

FLOODING KEY POINTS

1. **Nature**
   Flooding in Los Angeles County is driven by heavy rainfall, storm surge, stormwater drainage, and rising sea levels.
2. **Location**
   Areas at risk of flooding include communities near rivers, foothills, valleys, coastlines, and recent burn scars.
3. **Extent**
   Approximately 243.32 square miles of Los Angeles County are in a 500-year floodplain.
4. **Vulnerability**
   Residents within floodplains or people experiencing homelessness living near rivers are especially vulnerable to floods.
5. **Mitigation and Preparedness**
   Actions focus on floodplain land use regulations, stormwater management and drainage, and maintaining flood control measures.

- 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.

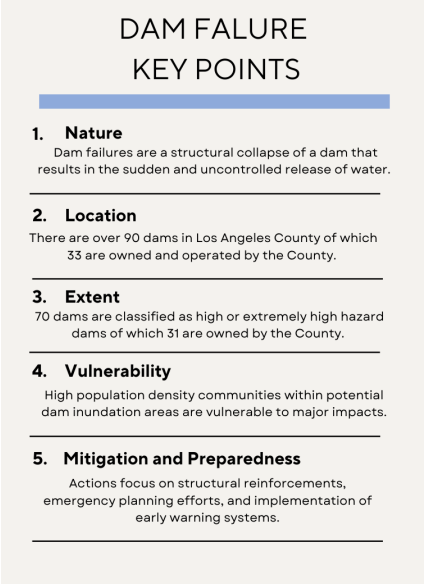
6.6.10 National Flood Insurance Program (NFIP) Repetitive Loss (RL)

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.

LAND MOVEMENT KEY POINTS

1. **Nature**
   Land movement is the downward movement of rock, soil, or debris due to gravity.
2. **Location**
   Hillside, canyon, and coastal bluff communities along with areas near recent burn scars are at particular risk.
3. **Extent**
   Approximately 750 square miles (15.75%) of Los Angeles County are within high-risk landslide zones.
4. **Vulnerability**
   Approximately 1.2 million residents in Los Angeles County could be affected by land movement.
5. **Mitigation and Preparedness**
   Actions focus on regulating land use and strengthening infrastructure resilience.

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

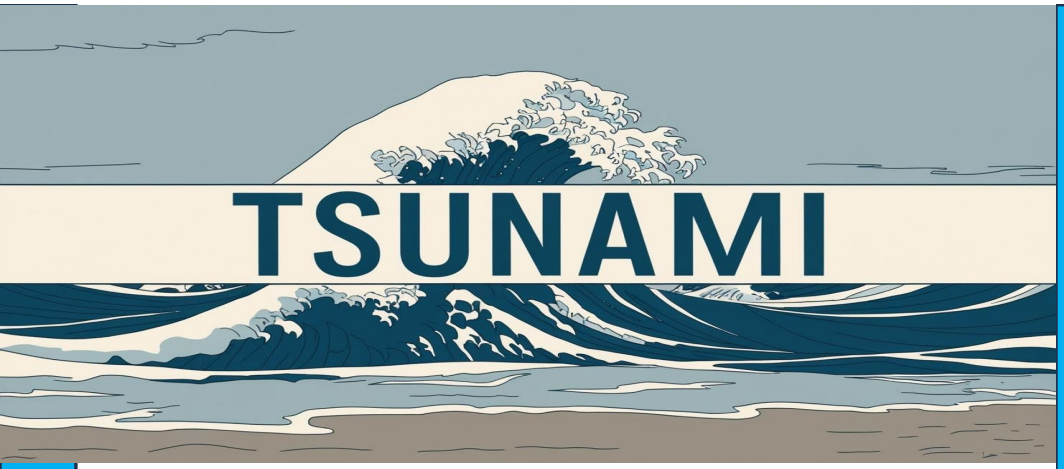
To reduce the impact of land movement, Los Angeles County has implemented several mitigation and preparedness strategies, including:

- **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.

TSUNAMI KEY POINTS

1. **Impact**
   Tsunamis are rare but high-impact events that can cause rapid and deep coastal flooding in Los Angeles County.
2. **History**
   Though infrequent, past tsunami events and the region's tectonic setting highlight the need for preparedness.
3. **Extent**
   New modeling shows tsunami waves could reach several feet in depth and extend inland depending on local topography.
4. **Updated Mapping**
   Updated hazard maps identify vulnerable coastal communities and critical infrastructure at risk of inundation.
5. **Vulnerability**
   High population density, aging infrastructure, and social vulnerabilities increase the potential for severe impacts and economic disruption

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.

WIND & TORNADO KEY POINTS

1. **Nature**
   Severe wind events such as Santa Ana winds and occasional tornadoes can cause widespread disruption, infrastructure damage, and increased wildfire risk
2. **Location**
   High-wind zones are common in canyon passes, valleys, and coastal regions, while tornadoes may occur sporadically throughout the county during severe storm activity.
3. **Extent**
   Santa Ana and storm-driven winds can exceed 80 mph; tornadoes in the area typically range from EF-0 to EF-1, with limited but impactful damage.
4. **Vulnerability**
   Critical infrastructure, older or poorly constructed buildings, wildfire burn scars, and residents with limited mobility are most at risk from high wind and tornado events.
5. **Mitigation and Preparedness**
   Strengthening building codes, retrofitting infrastructure, vegetation management, tornado-resistant construction, early warning systems, and public education.

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.

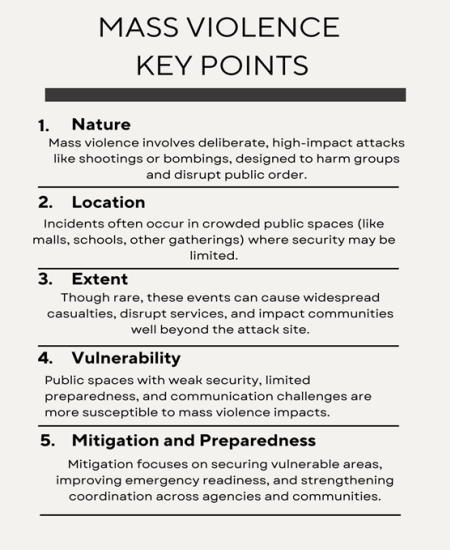
6.10.9 Summary

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.

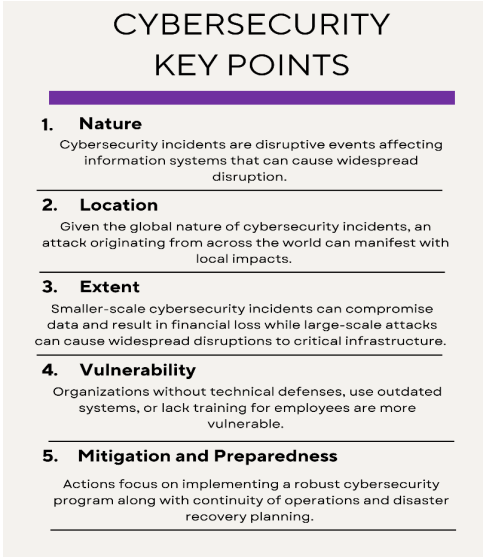
- Mitigation strategies include physical security enhancements (e.g., barriers and surveillance), regular active shooter drills, improved emergency communication systems, and coordinated law enforcement and public health responses.
- Investment in resilience-building measures and community outreach helps 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)

PUBLIC HEALTH KEY POINTS

1. **Nature**
   Public health emergencies include pandemics, disease outbreaks, bioterrorism, and environmental hazards.
2. **Location**
   Highly populated counties face unique public health vulnerabilities.
3. **Extent**
   Public Health Emergencies can derive from local, regional, national, or global sources, affecting various communities.
4. **Vulnerability**
   Older adults, individuals with chronic health conditions, those with low income or experiencing homelessness, and others within the Access and Functional Needs (AFN) community face increased risks during public health emergencies
5. **Mitigation and Preparedness**
   Efforts include vaccinations, disease tracking, healthcare support, public education, emergency supplies, and agency coordination.

- 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 Management Plan (2021)	Reviews existing floodplain management programs in the County and recommends enhancements to them through 35 mitigation actions. This plan is currently being reviewed and updated with completion targeted for early 2026.	Flood Land Movement	Yes
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

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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				
		*S****evere 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

APPENDIX F

WATER RATES

City of Glendora

Water Rates for Calendar Year 2026

Your Water System

The City of Glendora owns and operates a potable water system which includes 210 miles of water mains, 29 reservoirs, 20 pump stations, 8 active wells, and 13,500 water meters. The City serves an area of approximately 11 square miles and provides water service to a population of about 45,550. The water system consists of 17 pressure zones, which is categorized into 4 main zone classes, as illustrated in the following table.

Zone Class	Hydraulic Zones
A	1, 1RB, 1RA
B	2, 1A, 1B
C	3, 1BH1, 2H1, 2H2
D	3A, 3B, 3C, 3C1, 3D, 4, 4A

The City provides reliable water service 24 hours a day, 7 days a week. To ensure continuous high-quality service, Glendora has developed a water rate structure that is fair, equitable, and promotes water conservation in compliance with State mandates. The primary source of water supply is local groundwater from the Main San Gabriel Groundwater Basin (Main Basin). The water supply is supplemented with imported water from Three Valleys Municipal Water District through three (3) connections.

In April 2023, the Water Master Plan was finalized by AKM Consulting Engineers. The document is a comprehensive planning guide for the improvement and upgrade of the water system. Some of the wells and pipes are over 100 years old, and there are many facilities that have reached the end of their useful lives. The Water Master Plan recommended a Capital Improvement Plan (CIP) to improve wells, reservoirs, and pump stations based upon asset condition assessments and operational needs. With an average of 265 pipe breaks per year, the Water Master Plan developed pipe improvement projects by conducting a risk-based pipe condition assessment.

Additionally, projects were recommended to ensure that the system is capable of providing adequate supply, storage, pressure, and water flow for normal system operations and standard fire flow events. The Water Master Plan identified $350M in needed upgrades, with budgeted CIP totals of $30M budgeted for the first five (5) years.

Rate Structure

The water rate structure was developed to ensure that there is sufficient revenue to fund the safe and reliable delivery of water to customers, the completion of infrastructure projects over the next five (5) years and maintain an emergency reserve fund.

In compliance with Proposition 218, the City Council approved a water rate structure on November 28, 2023. The rate structure implemented in January 2024, consists of a fixed meter connection charge, tiered consumption rates, and elevation charges for pumping expenses in hydraulic zones at higher elevations. In subsequent calendar years, the water rates are adjusted by the Consumer Price Index for all urban consumers (CPI-U) for Los Angeles-Long Beach-Anaheim published by the U.S. Department of Labor. The CPI-U adjustment is based on the percentage change between October of the prior year and October of the current year, not to exceed a total increase of five percent (5%) for each year.

The Rate Schedule for 2026 reflects the 3.45%* increase in the CPI-U for Los Angeles-Long Beach-Anaheim from October 2024 to October 2025. (**Due to the federal government shutdown, the October 2025 CPI-U is not available. The average of the CPI-U from September and November 2025 was used to estimate the October 2025 value and calculate the new rates.)*

Bi-Monthly Fixed Meter Connection Charges

The Meter Connection Charge is a fixed fee that varies according to the customer's water meter size. The bi-monthly fixed charge components increase as the meter size increases due to the affect that a large meter has on the overall water system infrastructure. The revenue generated for the meter connection charge was developed to fund fixed expenditures, which include existing debt service, future debt service (covering 50% of the capital improvement projects), and 50% of the operation and maintenance related expenditures (tools, equipment, meters, pipes, salaries, benefits, customer service, etc.).

Consumption Rates

Consumption Rates include components for four (4) consumption Tiered Rates and Elevation Rates. The revenue generated will fund the expenditures for groundwater, purchased water, the production of water, water conservation programming, and 50% of the capital improvement projects. The allowable usage in each tier is takes into consideration the California Assembly Bill 1668 indoor water use goal, minimum usage by meter size, and the existing rate structure's Baseline Allocation Threshold Units.

The Elevation Rate component is broken up by four (4) zone classes, which were established as part of this study to assign the costs fairly and equitably. The revenue generated will fund the energy and pumping facilities expenditures that are required to pump water to the higher zone elevations and 50% of the operation and maintenance expenditures (tools, equipment, pumps, pipes, salaries, benefits, customer service, etc.).

Your water rates pay for:

- Groundwater and imported water supply
- 24/7 Operations
- Routine maintenance and emergency repairs
- Strategic waterline upgrades and replacement
- Supply reliability, via Main San Gabriel Watermaster
- Community programs
- Conservation programs

City of Glendora

Water Rates for Calendar Year 2026

Consumption Threshold (CCF)*				
Meter Size (inches)	Tier 1	Tier 2	Tier 3	Tier 4
5/8 & 3/4	1-12	13-38	39-76	77+
1	1-18	19-67	68-134	135+
1 ½	1-42	43-134	135-268	269+
2	1-64	65-220	221-440	441+
3	1-181	182-419	420-838	839+
4	1-181	182-658	659-1,316	1,317+
6 & 8	1-328	329-2,341	2,342-4,682	4,683+

*Billing Units are measured in hundred cubic feet, CCF or HCF. (1 CCF = 748 gallons)

Bi-Monthly Meter Connection Charge	
Meter Size (inches)	Meter Connection Charge
5/8 & 3/4	$90.96
1	$143.01
1 ½	$273.89
2	$440.74
3	$1,048.71
4	$1,048.71
6	$2,301.98
8	$2,301.98

Consumption Rates					
Zone	Tier 1	Tier 2	Tier 3	Tier 4	Elevation
A	$1.86	$2.86	$3.85	$4.84	$0.24
B	$1.86	$2.86	$3.85	$4.84	$1.09
C	$1.86	$2.86	$3.85	$4.84	$2.19
D	$1.86	$2.86	$3.85	$4.84	$3.63

Example: A typical residential customer with a ¾” meter using 38 billing units will see an average increase of $6.73 per billing period.

FOR QUESTIONS, CONCERNS, OR MORE INFORMATION:

Water Billing:

Phone: (626) 914-8239

Email: wbilling@cityofglendora.gov

Website: cityofglendora.gov/waterbilling

Conservation:

Phone: (626) 852-5205

Email: waterconservation@cityofglendora.gov

Website: cityofglendora.gov/waterconservation