

# **Chapter 6 | Safety Element**

# 1.0 INTRODUCTION

The Safety Element of the General Plan addresses natural and human-caused hazards in the City of Glendora and the potential short and long-term risks to human life, property, and economic and social dislocation resulting from fires, floods, droughts, earthquakes, landslides, and other hazards. This is one of seven elements required by State law (Government Code 65302). Since climate change affects and potentially exacerbates the impact of hazards, in accordance with Senate Bill 379, the Safety Element also addresses climate change and resiliency planning.

The Safety Element is organized to include an Existing Conditions section, which outlines each hazard facing Glendora, who these hazards affect, and how the City is currently addressing these hazards. The Safety Element also includes a Goals and Policies section, which provides the City's hazard mitigation and emergency response strategy. Furthermore, the Safety Element

# LOCAL HAZARD MITIGATION PLAN (LHMP)

The Glendora Local Hazard Mitigation Plan was last updated in 2024 in accordance with the Disaster Mitigation Act of 2000. Regular updates to the LHMP ensure access to Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP) funding.

# CLIMATE ADAPTATION AND RESILIENCY STRATEGIES

SB 379 requires cities and counties in California to integrate climate adaptation into their general plans.

incorporates and augments mitigation policies contained in the Glendora Local Hazard Mitigation Plan (LHMP).<sup>1</sup>

The Safety Element directly relates to topics in the Land Use, Circulation, Conservation, and Open Space and Recreation Elements of the General Plan. The Safety Element identifies hazards and hazard abatement provisions to guide land use decisions related to zoning, subdivisions, and entitlement permits. The Safety Element also addresses emergency response and evacuation routes, which informs the Circulation Element to ensure that streets are sized adequately for fire truck access and other needs of first responders.

The Safety Element is a long-term plan that includes policies to mitigate hazards through land use, design measures, and programs. As a part of the General Plan, the Safety Element provides direction that the City will implement through the Zoning Ordinance and other mechanisms. A similar but more nuanced plan is the Local Hazard Mitigation Plan (LHMP). The LHMP is a short-term, five-year strategic plan that also seeks to identify and mitigate natural hazards. The LHMP is distinct from the Safety Element in that it is created to directly respond to the requirements of

<sup>&</sup>lt;sup>1</sup> City of Glendora, 2024 Local Hazard Mitigation Plan, 2024, https://, accessed on April 23, 2024.



the federal Disaster Mitigation Act (DMA) of 2005. By achieving certification from FEMA, the LHMP provides the City with access to two competitive FEMA grant programs: the Hazard Mitigation Grant Program (HMGP) and the Pre-Disaster Mitigation Program (PDM). To maintain eligibility for FEMA funding, the City must update the LHMP a minimum of once every five years. As of May 2024, the LHMP was being updated concurrent with the Safety Element. By integrating the LHMP with the Safety Element, the City will also achieve eligibility for additional post disaster funding from the State of California. Integration also allows the Safety Element's framework of goals and policies to be utilized and built upon by current and future LHMPs. Policy SAF-9.3 states the City's intent to implement the strategies and plans in the Local Hazard Mitigation Plan.





# 1.1 SUMMARY OF FINDINGS

Glendora and its people are susceptible to various hazards, both natural and human-caused. Below is a summary of findings for the main topics presented in this Safety Element.

# **Geologic Hazards**

Glendora is in a seismically active region and has a major fault zone located within the city. The Sierra Madre Fault Zone runs along the southern edge of the San Gabriel Mountains and is related to the Cucamonga Fault and San Fernando Fault Zone. In addition to these faults, several other faults are located within the region that could have an impact on the city, most notably the San Andreas Fault. Buildings are likely to sustain only moderate damage from ground shaking as most of Glendora's structures were built under recent building codes. Liquefaction conditions may occur in areas along the canyon and wash areas located at the base of the foothills and in isolated areas of the city. The foothill areas of the city are considered to have a high potential for landslides.

#### Flood Hazards

The built areas of Glendora are not located within a 100-year flood plain. The city does face a potential hazard from dam inundation resulting from the failure of either of two dams: Big Dalton Dam and San Dimas Dam; however, it is considered unlikely that either dam would fail during a catastrophic event.

#### Wildfire

Glendora's location at the base of the San Gabriel Mountains creates a wildland-urban interface that makes Glendora more susceptible to wildfires than cities that do not border the foothills. Very high risk for wildfire is evident in areas having steep slopes that are covered with chaparral vegetation and where there is limited access for fire control equipment. Low hazard areas are developed urban areas where fire access is readily available and the terrain is relatively flat. Very High Fire Hazard Severity Zones (VHFHSZ) have been mapped within the city.

# **Climate Change**

As a result of climate change, Glendora may experience more frequent and intense heat waves, drought, wildfires, flooding, and more severe storms and extreme weather events. The impacts of climate change pose an increasing and growing challenge to the safety and well-being of Glendora's residents.

# **Emergency Preparedness**

Emergency preparation and response are important components in ensuring residents are ready for hazards and first responders can adequately serve residents in the event of a hazard unfolding. The Los Angeles County Fire Department and Glendora Police Department respond to small- and large-scale hazard events in Glendora. Currently, the City's response capacity meets the needs of the community; however, hard-to-reach populations with functional and medical needs may still face challenges evacuating.



# 2.0 AUTHORITY FOR THE ELEMENT

# 2.1 REGULATORY FRAMEWORK

California Government Code Section 65302(g)(1) requires that a General Plan include:

"A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards."

The following federal and state regulations provide the legal framework to the Safety Element. These programs provide minimum requirements/criteria that must be complied with; however, cities can adopt stricter requirements if desired.

TABLE SAF-1: REGULATORY FRAMEWORK

Federal or State Regulation	Description	
Alquist-Priolo Earthquake Fault Zoning Act (1972)	The intent of the <i>Alquist-Priolo Act</i> is to reduce losses from surface fault rupture. California created this law following the destructive 1971 San Fernando earthquake (magnitude 6.6), which was associated with extensive surface fault ruptures that damaged numerous structures.	
	Alquist-Priolo earthquake fault zones are regulatory zones surrounding the surface traces of active faults in California. A trace is a line on the earth's surface defining a fault. Wherever an active fault exists, if it has the potential for surface rupture, a structure for human occupancy cannot be placed over the fault and must be a minimum distance from the fault (generally fifty feet).	
	An active fault, for the purposes of the Alquist-Priolo Act, is one that has ruptured in the last 11,000 years.	
Seismic Hazards Mapping Act (1990)	The Seismic Hazards Mapping Act addresses non-surface fault rupture earthquake hazards, including strong ground shaking, liquefaction, and seismically induced landslides. The California Geological Survey (CGS) prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. The seismic hazard zones delineated by the CGS are referred to as "Zones of Required Investigation," because	





Federal or State Regulation	Description	
	site-specific geological hazard investigations are required for construction projects located within these areas.	
California Building Standards Code	Every three years, the State adopts new codes (known collectively as the <i>California Building Standards Code</i> ) to establish uniform standards for the construction and maintenance of buildings, electrical systems, plumbing systems, mechanical systems, and fire and life safety systems. Sections 17922, 17958, and 18941.5 of the California Health and Safety Code require that the latest edition of the California Building Standards Code apply to local construction 180 days after publication.	
	The California Building Code (CBC), which is included in the California Building Standards Code, provides "minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures." The most recent version of the California Building Standards Code is the 2022 edition, based on the 1997 edition of the Uniform Building Code. The City of Glendora has adopted the 2022 edition with local amendments.	
Unreinforced Masonry Law (1986)	The <i>Unreinforced Masonry Law</i> requires all cities and counties in Seismic Zone 4 (CBC, 2022) to identify hazardous unreinforced masonry (URM) buildings in their jurisdictions. Owners of such buildings must be notified of the potential earthquake hazard, and mitigation must be performed. The mitigation method, which may include retrofitting or demolition, is left to the local jurisdiction. Chapter 19.03 of the Glendora Municipal Code pertains to seismic strengthening provisions for unreinforced masonry bearing wall buildings. All URM buildings within the city have been identified and upgraded to meet current requirements.	
National Flood Insurance Act (1968)  Flood Disaster Protection Act (1973)	The Federal Emergency Management Agency (FEMA) is mandated by the <i>National Flood Insurance Act</i> and the <i>Flood Disaster Protection Act</i> to evaluate flood hazards and provide Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development. Further, the Flood Disaster Protection Act requires owners of all structures in identified Special Flood Hazard Areas to purchase and maintain flood insurance as a condition of receiving federal or federally related financial assistance, such as mortgage loans from federally insured lending institutions. The National Flood Insurance Reform Act (1994) further strengthened the National Flood Insurance Program (NFIP) by providing a grant program for state and community flood mitigation projects. The NFIP also established a system (Community Rating System – CRS) for crediting communities that implement measures to protect the natural and beneficial functions of their floodplains, as well as managing the erosion hazard. Glendora does not currently participate 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.	





Federal or State Regulation	Description
Fire Regulations	Assembly Bill 337 (1992) established a process to identify Very High Fire Hazard Severity Zones (VHFHSZs). Under Assembly Bill 3819 (1994), "Class A" roofing, minimum clearances of 30 feet around structures, and other fire defense improvements are required in VHFHSZs.
	Assembly Bill 6 (1997) requires that fire hazard areas be disclosed in real estate transactions. Civil Code Section 1103(c)(6) also requires real estate sellers to inform prospective buyers whether a property is located within a wildland area that could contain substantial fire risks and hazards.
	In 2012, the State Legislature adopted Senate Bill 1241 (SB 1241), which requires communities to protect themselves against wildland and urban fires by addressing the fire hazard in areas designated as VHFHSZs. In 2023, the City prepared a Climate Vulnerability Assessment (CVA) to inform City policies, plans, programs, and guidance to promote effective and integrated action to safeguard from conditions that could result from climate change, such as increased frequency and severity of wildland fires. The CVA is attached as Appendix A. Exhibit SAF-6 shows VHFHSZs within Glendora, which primarily cover the northern portion of the city.
	Public Resources Code Section 4290 requires minimum statewide fire safety standards pertaining to:
	<ul> <li>Road standards for fire equipment access;</li> <li>Standards for signs identifying streets, roads, and buildings;</li> <li>Minimum private water supply reserves for emergency fire use; and</li> <li>Fuel breaks and greenbelts</li> </ul>
	Wildland fire areas are also subject to Public Resources Code Sections 4291 through 4299, which require property owners in such areas to conduct maintenance to reduce the fire danger. Section 18.04.010 of the City's Municipal Code adopts by reference the California Fire Code 2022 Edition.
Standardized Emergency Management System (SEMS)	The Standardized Emergency Management System (SEMS) is described by the Petris Bill (SB 1841), and is contained in Chapter 1 of Division 2 of Title 19 of the California Code of Regulations. It requires all jurisdictions within the State of California to participate in the establishment of a standardized statewide emergency management system. The California Emergency Services Act, Section 8568, states that "The State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The act provides the basic authorities for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a city manager.



Federal or State Regulation	Description	
California Environmental Quality Act (CEQA)	The California Environmental Quality Act (1970) insures that local governmental agencies consider and review the environmental impacts of development projects within their jurisdictions. CEQA requires that an Environmental Impact Report (EIR) be prepared for projects that may have significant effects on the environment. EIRs are required to identify geologic and seismic hazards, and to recommend potential mitigation measures, giving the local agency the authority to regulate private development projects in the early stages of planning.	
Hazardous Materials Disclosure Program	In 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA) to help solve the problems of hazardous waste sites. SARA provides California residents with the resources needed to clean up hazardous waste sites, as well as emergency plans to follow in case of a dangerous substance release.	
	Several California statutes require the emergency notification of a hazardous chemical release. These include: Health and Safety Code § 25270.7, § 25270.8, and § 25507; Vehicle Code § 23112.5; Public Utilities Code § 7673; Government Code § 51018 and § 8670.25.5(a); Water Code § 13271 and § 13272; and California Labor Code § 6409.1(b)10. The Safe Drinking Water and Toxic Enforcement Act (1986), better known as Proposition 65, and § 9030 of the California Labor Code also have specific reporting requirements.	
Emergency Planning and Community Right-to-Know Act (EPCRA)	The Emergency Planning and Community Right-to-Know Act (1986) was authorized by Title III of the Superfund Amendments and Reauthorization Act to help communities plan for chemical emergencies. It requires industry to report on the storage, use, and releases of certain chemicals to federal, state, tribal, territorial, and/or local governments. It also requires these reports to be used to prepare for and protect their communities from potential risks.	
Real Estate Disclosure Requirements	Pursuant to the Natural Hazards Disclosure Act (1998), sellers of real property and their agents are required to provide prospective buyers with a "Natural Hazard Disclosure (NHD) Statement" when the property being sold lies within one or more State mapped hazard areas, such as within an Alquist-Priolo Earthquake Fault Zone or a Seismic Hazard Zone.	

# 2.2 CITY PLANS AND PROGRAMS

# 2.2.1 GLENDORA STRATEGIC PLAN

The City of Glendora prepares a multi-year Strategic Plan that builds upon progress made in previous years. The Strategic Plan is a tool to guide the City and community toward an envisioned future for Glendora. It includes setting goals and objectives to manage changes which may include community demographics, state and federal mandates, fiscal constraints, economic conditions, emerging technologies, and other issues that influence the City's service delivery. The Strategic Plan incorporates the City's Mission, Vision, and values which guide the City's planning



efforts toward implementation of the Strategic Plan goals and objectives. Staff and officials consider the Strategic Plan when developing, implementing, or reviewing programs and services, and when considering requests for fiscal resources. As outlined in the *2023-2025 Strategic Plan*, Goal 1, Objective 2 mandates continuing the comprehensive General Plan Update by completing the Safety Element Update during the planning period.

In addition to setting the strategic goals, the City Council adopts the objectives within the Strategic Plan, which represent major initiatives aimed to further the strategic goals. City staff is responsible for the development of the tasks (major milestones) needed to complete these objectives. Periodically, staff reviews the tasks and makes necessary changes where applicable to ensure the objectives are met in a timely manner. Furthermore, changes to the tasks help ensure the process in which to achieve the objectives continues to be clearly articulated to the City Council and greater Glendora community.

# 2.2.2 EMERGENCY OPERATIONS PLAN

The Standardized Emergency Management System (SEMS), California Code of Regulations, Title 19, Division 2, Section 2443, requires compliance with the SEMS to "be documented in the areas of planning, training, exercise, and performance." To comply, emergency plans must address five SEMS functions:

- Management;
- Operations;
- Planning/Intelligence;
- · Logistics; and
- Finance/Administration

Glendora has prepared an Emergency Operations Plan (EOP) for emergency response within the city (revised March 1, 2013). The EOP meets the SEMS requirements of State law and also addresses mutual aid, operational areas, and multi/inter-agency coordination. The City also complies with the LA County Operational Area Emergency Operations Plan (<a href="https://ceo.lacounty.gov/emergencydisaster-plans-and-annexes/">https://ceo.lacounty.gov/emergencydisaster-plans-and-annexes/</a>).

The EOP is divided into five parts:

- Part One Basic Plan, provides the overall organizational and operational concepts relative to response and recovery, as well as an overview of potential hazards and a description of the emergency/disaster response organization.
- Part Two EOC Appendices and Annexes, provides emergency action checklists and supporting documents for each function/position in the organizational structure.
- Part Three Other Annexes, identifies all other hazard specific plans, operational plans, standard operating procedures, etc.



- Part Four Forms
- Part Five Acronyms and Glossary

Emergency response and threats are thoroughly described and outlined in the EOP. Key points of the plan include the identification of critical areas in the city that represent both dangers, as well as areas for meeting and staging in an emergency event, communications, and emergency evacuation.

The EOP addresses the City's planned response to emergencies associated with natural disasters and technological incidents. It provides an overview of operational concepts, identifies components of the City's emergency management organization within the SEMS, and describes the overall responsibilities of federal, state, and county entities and the City for protecting life and property and assuring the overall well-being of the population.

The City maintains an Emergency Operations Center (EOC) at the Bidwell Forum located on the second floor of the Glendora Public Library at 140 South Glendora Avenue and an alternate EOC located at the Youth Center (159 North Cullen Avenue) to coordinate City services during an emergency. During an emergency, the centralized command center houses personnel from the City, emergency responders, and other appropriate agencies.

# 2.2.3 LOCAL HAZARD MITIGATION PLAN

The Safety Element works in conjunction with the City's Local Hazard Mitigation Plan (LHMP), which was developed in accordance with the Disaster Mitigation Act of 2000 (DMA 2000) and followed FEMA's Local Hazard Mitigation Plan guidance. The LHMP incorporates a process where hazards are identified and profiled, the people and facilities at risk are analyzed, and mitigation actions are developed to reduce or eliminate hazard risk. The implementation of these mitigation actions, which include both short and long-term strategies, involve planning, policy changes, programs, projects, and other activities. To latest Local Hazard Mitigation Plan can be accessed by visiting the City's website.

The Local Hazard Mitigation Plan includes resources and information to assist Glendora residents, public and private sector organizations, and others interested in participating in planning for natural hazards. The LHMP provides a list of activities that may assist the City in reducing risk and preventing loss from future natural hazard events. The LHMP addresses multihazard issues, including earthquakes and other seismic events, flooding, wildfires, and windstorms.

The LHMP is organized into various sections and reflects the logical progression of activities undertaken to develop the plan and includes all relevant documentation required to meet the necessary criteria for FEMA approval. Key sections are briefly described below:



- **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 of hazards is also discussed. This section also identifies the vulnerability and risk to the community 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 in order to improve resiliency, and assesses Glendora'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.

#### 2.2.4 GLENDORA CAPITAL IMPROVEMENT PROGRAM

The City of Glendora conducts an annual review and update of its Capital Improvement Program (CIP). The Capital Improvement Program provides the primary planning and budget mechanism for improvement projects throughout the city. The CIP must provide consistency with City policies as set forth in the City's General Plan. Projects within the CIP typically include water, recycled water, sewer, storm drains, and public right-of-way improvements.

# 2.2.5 GLENDORA MUNICIPAL CODE

The Glendora Municipal Code contains all ordinances adopted by the Glendora City Council. Many of these chapters provide direct relevance to policies and programs in the Safety Element. Relevant Code sections include:

- Title 6: Health and Sanitation
- Title 9: Public Peace, Morals and Safety
- Title 11: Emergency Preparedness
- Title 14: Water
- Title 18: Fire
- Title 19: Buildings and Construction



# 3.0 EXISTING CONDITIONS

# 3.1 EXISTING CONDITIONS

The Safety Element addresses both natural and human-made hazards. Specific hazards with the potential to impact Glendora include:

- Geologic hazards fault rupture, ground shaking, liquefaction, landslides, soil instability
- Flood hazards associated with rivers and streams, debris flows, and dam failure
- Wildfire
- Hazardous materials
- Crime
- Aircraft overflight

This section of the Safety Element discusses the existing conditions of these hazards and the programs currently in place to address them.

#### 3.1.1 GEOLOGIC HAZARDS

Geologic, hydrologic, seismic, and soil conditions present in the city have been evaluated to identify potential seismic hazards, such as surface faulting (ground rupture), ground shaking, liquefaction, ground lurching, differential compaction, ground cracking, and seismically induced landslides. These data were used to evaluate potential seismic hazards to existing public and private facilities, and future land development.

# 3.1.1.1 Geology

Glendora is located at the foothills of the San Gabriel Mountains, bounded by the Angeles National Forest to the north, City of Azusa to the west, City of Covina to the south, and the City of San Dimas to the east. 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.

The city is located in the Transverse Range Geomorphic Province of southern California. This province is characterized by an east-west trending mountain range (San Gabriel Mountains), which have been uplifted and folded as a result of compression. This compression is the result of the tectonic movements associated with the San Andreas, Cucamonga, Sierra Madre, and San Fernando Fault Zones. These faults have shaped the landscape of southern California. Within the city, the dominant geologic feature is the Sierra Madre Fault Zone, which has shaped the landscape in the area.



The geologic units underlying the city can be categorized into two general categories: bedrock and alluvium. The bedrock units within the city consist of three main types: (1) sedimentary units of sandstone and siltstone; (2) volcanic units composed of tuff, lava, and mixtures of both; and (3) an igneous-metamorphic complex of crystalline rocks. The alluvium units within the city consist of old and young alluvial deposits that are derived from the surrounding bedrock units. These deposits consist of sand, silt, and gravels, with the youngest deposits located within active drainage courses. Refer to Exhibit SAF-1, Regional Geologic Map.

Groundwater depths within the city range between 100 and 150 feet beneath the surface in the areas underlain by alluvium. The depth to groundwater has lowered over the last few decades due to domestic water production, which relies on pumping groundwater from the Glendora Basin aquifer.

#### 3.1.1.2 Seismic Hazards

The following section describes seismic hazards present in Glendora including earthquake faults, surface rupture, ground shaking, liquefaction, landslides, hazardous buildings, and seismic response.

# 1.0 2.0 - 3.0 4.0 5.0 6.0 7.0 6.0 MICRO MINOR LIGHT MODERATE STRONG MAJOR GREAT

# **EARTHQUAKE MAGNITUDE SCALE**

# **Earthquake Faults**

Southern California is considered a seismically active region that is dominated by earthquake faults. In the Transverse Range Geomorphic Province, these faults typically trend east-west, following the general alignment of the San Gabriel Mountains. One major fault zone is located within the City of Glendora. This zone is known as the Sierra Madre Fault Zone, which runs along the southern margin of the San Gabriel Mountains and is related to the Cucamonga Fault to the east and San Fernando Fault Zone to the west. In addition to these faults, several other faults are located within the region that could have an impact on the city. The San Andreas Fault is approximately 20 miles northeast of the city, and is considered the most seismically active fault in the southern California region. A map illustrating the locations of faults in the vicinity of the city is shown in Exhibit SAF-2, Regional Fault Map.

Earthquakes that could affect the city would most likely originate from the Sierra Madre, Cucamonga, or San Andreas Fault Zones. These faults are close enough in proximity or expected



to generate strong enough shaking that could affect Glendora. Geologic conditions within the foothill portions of Glendora could be impacted more severely due to the steep topography within this portion of the city and the relative instability of some of the geologic units in this portion of the city. The level of seismicity in Glendora, both as to maximum credible earthquake intensity and likely earthquake occurrence, is considered to be approximately the same as for the Los Angeles Basin.

# ALQUIST-PRIOLO EARTHQUAKE FAULT ZONES

The Alquist-Priolo Earthquake Fault Zoning Act defines an active fault as one that has ruptured in the last 11,000 years. The act provides mapping resources for the public to strengthen awareness and prevent unsafe construction in these areas.

# 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 (AP Zone); 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 Mw6.0-7.0.<sup>2</sup> Faults that are associated with this fault system include:

- Cucamonga Fault
- Duarte Fault
- San Fernando Fault

- San Gabriel Fault
- Clamshell-Sawpit Canyon Fault
- Raymond Fault

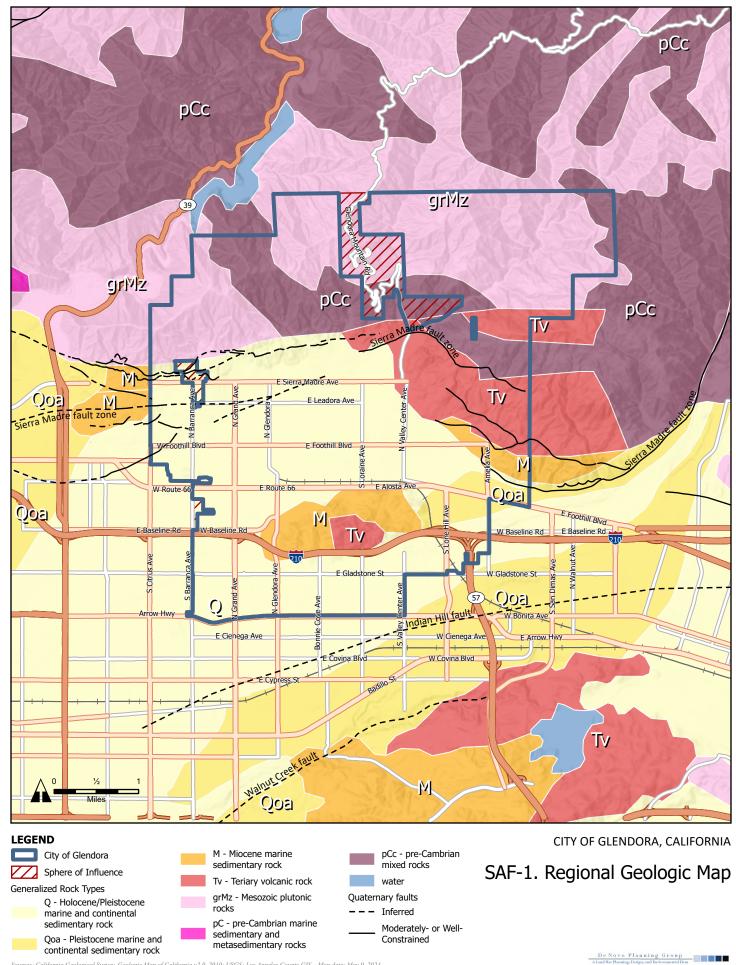
<u>Cucamonga Fault</u>. The Cucamonga fault extends 19 miles from the east side of Dalton Canyon to the San Jacinto fault. The eastern portions of this fault in the vicinity of the communities of Upland and Rancho Cucamonga have been identified within an AP Zone. However, evidence of recent faulting has not been uncovered along the portions of this fault within the City of Glendora. Data gathered on this fault suggests that this fault has a slip rate between 5 and 14 millimeters per year and could generate earthquakes of Mw6.0-7.0.<sup>3</sup>

<u>San Andreas Fault Zone</u>. 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 Mw6.8-8.0.4

Data obtained from the Southern California Earthquake Data Center. https://scedc.caltech.edu/index.html, accessed on April 4, 2024. Data obtained from the Southern California Earthquake Data Center. https://scedc.caltech.edu/index.html, accessed on April 4, 2024. Data California obtained from the Southern Earthquake Data Center, https://scedc.caltech.edu/index.html, accessed on April 4, 2024.

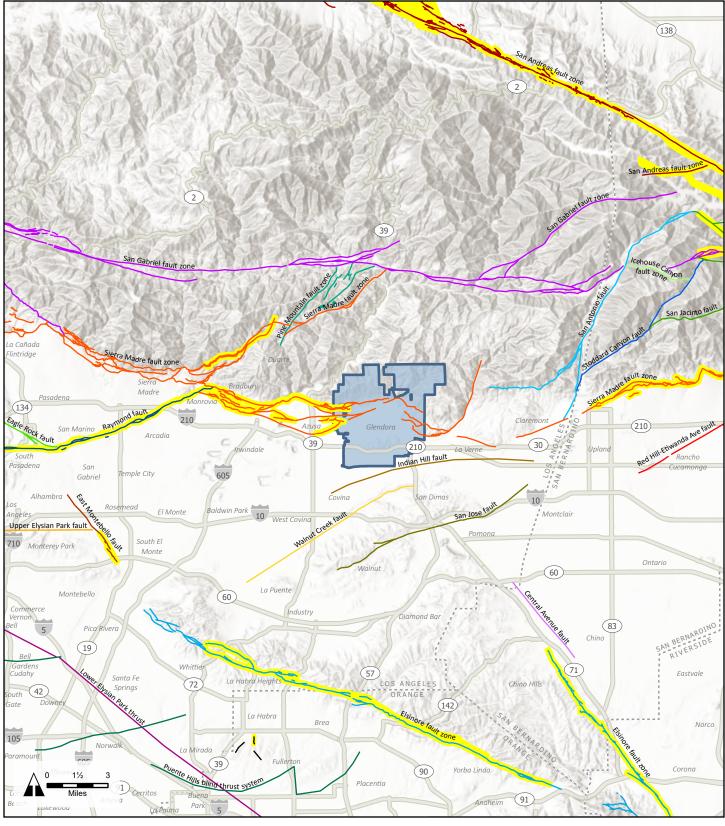


This page intentionally blank.





This page intentionally blank.



**LEGEND** 

CITY OF GLENDORA, CALIFORNIA

City of Glendora

SAF-2. Regional Fault Map

County Boundary

Quaternary Fault (various colors)

Alquist-Priolo Zone of Required Investigation



# **Liquefaction Hazards**

Liquefaction is a phenomenon in which the strength and stiffness of a soil are reduced by earthquake shaking or other events. Liquefaction occurs in saturated soils, which are soils in which the space between individual soil particles is completely filled with water. This water exerts a pressure on the soil particles that influences how tightly the particles themselves are pressed together. Prior to an earthquake, the water pressure is relatively low; however, earthquake shaking can cause the water pressure to increase to the point where the soil particles can readily move with respect to each other. Because liquefaction only occurs in saturated soil, its effects are most commonly observed in low-lying areas. Typically, liquefaction is associated with shallow groundwater, which is less than 50 feet beneath the earth's surface.

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. According to the *Seismic Hazard Zone Maps for the Glendora, Azusa, Baldwin Park, and San Dimas Quadrangles* (March 2024) prepared by the California Geological Survey (CGS), there are several locations within the city that are considered susceptible to liquefaction. The areas identified as prone to liquefaction within the city are shown on <a href="Exhibit SAF-3">Exhibit SAF-3</a>, <a href="Potential Seismic Hazards">Potential Seismic Hazards</a>.

#### Landslide Hazards

A landslide is a phenomenon characterized by the general downslope movement under gravity of masses of soil and rock material. Many factors contribute to these types of earth movements such as: topography, rock/soil type, water saturation, and seismic shaking. According to the *Seismic Hazard Zone Maps for the Glendora, Azusa, Baldwin Park, and San Dimas Quadrangles* (March 2024) prepared by the CGS, the foothill areas of the city are considered to have a high potential for landslides. The areas identified as prone to earthquake induced landslide within Glendora are identified on Exhibit SAF-3, *Potential Seismic Hazards*.

As illustrated on <u>Exhibit SAF-3</u>, several landslides have been mapped within the hillsides located in the northeast portion of the city. These landslides are located within bedrock units that have been severely faulted and broken up. The stresses that have been exerted on these bedrock units have weakened the geologic units allowing surficial failures to occur.

#### Structure Failure

Glendora is fortunate that most of its buildings have been built under recent building codes and design criteria. In fact, a substantial amount of construction has occurred in Glendora under design standards that take into account some of the lessons learned from the 1971 Sylmar earthquake.



# Seismic Response

Since most of the structures and infrastructure in Glendora have recently been built under modern building codes, the city is likely to survive the maximum expected earthquake with relatively moderate losses. Possible geologic effects of a likely major earthquake in Glendora include:

- Rupture of the ground surface associated directly with movement on geologic faults. The
  likelihood of an event such as this is prevalent; however, it would be focused in the foothill
  portions of the city, which are not as densely populated as the alluvial portions.
- Ground failure due to liquefaction (a momentary quick condition, similar to quicksand)
  could occur in Glendora wherever the right combination of perched water and low density,
  sandy material exists. Liquefaction conditions may occur in areas along the canyon and
  wash areas located at the base of the foothills and in isolated areas as identified on <a href="Exhibit SAF-3">Exhibit</a>
  SAF-3.
- Ground shaking with moderate to high lateral accelerations would be the primary seismic effect in the city.
- In general, complete collapse of buildings is not likely to occur and building damage is likely to be only moderate. However, partial to total collapse could occur among the very few pre-1933 buildings still existing, and partial collapse of some tilt-up and concrete block buildings built prior to March 1972 must be counted as a possibility, based on the evidence of the Sylmar earthquake. The majority of construction has been under modern building codes. Where current state-of-the-art seismic evaluations can enter into all future development, and where disaster preparedness is being maintained, it is possible to survive the maximum expected earthquake with relatively moderate losses.

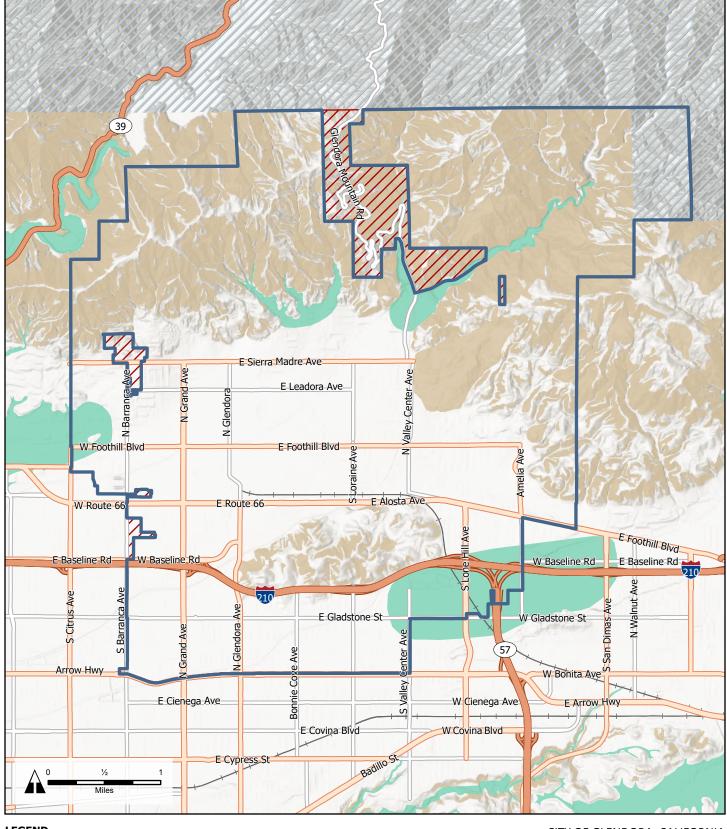
Possible impacts to the city from a major seismic event include:

- Injuries and loss of life
- Property damage
- Economic disruption loss of jobs, loss of productive time, interference with trade, transportation, communication, and other utilities
- Social disruption
- Housing dislocation
- Interference with community activities and services
- Emergency welfare requirements shelter, food, communications, financial assistance
- Psychological trauma especially among young children

However, the full extent of these impacts will be influenced by many factors.



This page intentionally blank.



**LEGEND** 

CITY OF GLENDORA, CALIFORNIA

City of Glendora
Liquefaction Zone

SAF-3. Potential Seismic Hazards

Landslide Zone

Unevaluated Area



#### 3.1.2 FLOODING

# 3.1.2.1 Flooding

According to federal guidelines from the Federal Emergency Management Agency (FEMA), the built areas of Glendora are in Flood Zone X, meaning that the area is <u>not</u> located within a 100-year flood plain. FEMA maps showing areas that require flood insurance are maintained at City Hall.

Three flood channels traverse through the city: Little Dalton Wash, Big Dalton Wash, and San Dimas Wash. All three channels are concrete-lined channels designated as floodways to serve the region. Access to these channels is limited at all times for public safety.

#### 3.1.2.2 Dam Inundation

Dam inundation is flooding that occurs due to structural failure of a dam. Failure of a dam may be caused by seismic activity, severe flooding that causes water to exceed the capacity of the dam, or landslides that flow into a reservoir displacing the water.

The City of Glendora faces a potential hazard from dam inundation resulting from the failure of either of two dams: Big Dalton Dam and San Dimas Dam. It is considered unlikely that either dam would fail during a catastrophic event. The SEMS Emergency Operations Plan prepared by the City of Glendora outlines the City's response for dam failure.

**<u>Big Dalton Dam.</u>** This dam is located in Big Dalton Canyon, four miles northeast of Glendora. Completed in 1929, this dam is owned and operated by the Los Angeles County Flood Control District. This dam stores approximately 960 acre-feet (over 312 million gallons) of water.

Should a breach occur, the water would flow south westerly out of Big Dalton canyon via the Big Dalton Wash. The areas between the South Hills and the San Gabriel foothills surrounding this wash would be inundated by the waters from this flood. The affected area is mostly comprised of residential with some commercial, and industrial uses as well. Exhibit SAF-4, Dam Inundation Areas, shows the area that would be affected by a dam failure.



Big Dalton Dam



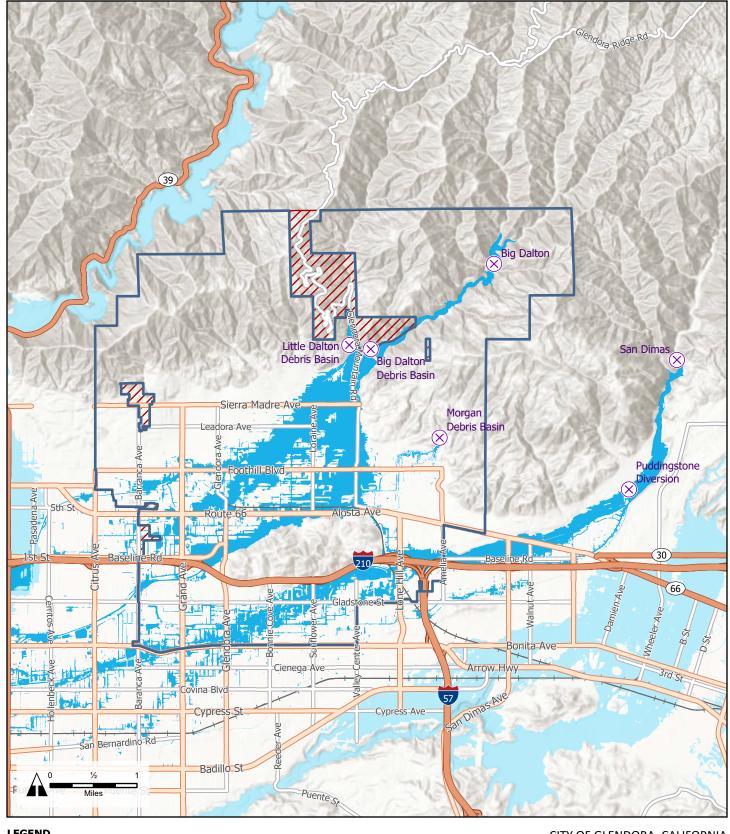


<u>San Dimas Dam</u>. The San Dimas Dam is owned and operated by the Los Angeles County Flood Control District. It is located east of the city in the foothills above the City of San Dimas. Built in 1922, this dam stores approximately 1,500 acre-feet (488 million gallons) of water.

Should a breach occur, the water would flow southwest along the San Dimas Wash inundating the portions of the city located south of the 210 Freeway. Land uses that would be affected by this inundation mainly include residential, commercial, and industrial. <u>Exhibit SAF-4</u>, <u>Dam Inundation Areas</u>, shows the areas that would be affected by a dam failure.



This page intentionally blank.





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

SAF 4. Dam Inundation Areas



# 3.1.3 WILDFIRE

#### 3.1.3.1 Wildfire

Although wildfires can be classified as natural disasters, only 10 to 15% of wildfires are attributed to natural causes. The remaining 85 to 90% of wildfires are a result of human activity. The threat of wildfires in the foothill areas in southern California has been of concern for many years. Very high risk for wildfire is evident in areas having steep slopes that are covered with chaparral vegetation and where there is limited access for fire control equipment. Low hazard areas are developed urban areas where fire access is readily available and the terrain is relatively flat. Industrial areas, hazardous material users, structures with substandard electrical wiring, overhead high voltage power lines, and high pressure gas lines are examples of urban fire hazards.

In order to facilitate immediate firefighting response, the City should have the following standards for areas that are located in High or Very High Fire Hazard Severity Zones (VHFHSZ):

- There should be sufficient access routes and roads for emergency vehicles and for the evacuation of residents from all areas.
- Adequate access should be provided for all developed areas. All roadways to hazard areas should be of sufficient width to accommodate firefighting equipment. Streets should be marked and addresses should be posted in plain view.
- Adequate water supply should be available and sufficient for fire suppression activity.

All development within the VHFHSZ should comply with the standards set forth in Los Angeles County Fire Department's Fuel Modification Plan. The three primary components needed to reduce fire losses are:

- 1. Implementing building construction methods that reduce building fire hazards;
- 2. Providing adequate defensible space around structures to reduce fuel; and
- 3. Identifying areas where there is a significant risk and a history of significant losses.

Public Resources Code (PRC) Section 4291 requires that homeowners provide fuel modification to 100 feet around their buildings to create a defensible space for firefighters and to protect their homes from wildfires. Residents must reduce dry fuel around the perimeter of any structure and comply with the adopted codes that provide standards for mitigating fire hazards. Good defensible space around structures allows adequate area for firefighters to fight a fire and avoid injury to personnel and equipment. Terrain, climate conditions, and vegetation interact to affect fire behavior.

<sup>&</sup>lt;sup>5</sup> Green Matters, "Are Wildfires Considered Natural Disasters, or Are they Chiefly Caused by Humans?" April 29, 2021.



Glendora's location at the base of the San Gabriel Mountains creates a wildland-urban interface (WUI) that makes Glendora more susceptible to wildfires than cities that do not border the foothills.

The U.S. Geological Survey (USGS) in partnership with the U.S. Forest Service (USFS) provides fire danger forecasting tools that utilize a combination of satellite-derived vegetation indices, various biogeophysical variables, and weather information to produce 7-day forecasts. The City may use these tools in coordination with the Los Angeles County Fire Department (LACoFD) to determine fire potential index, large fire probability, and fire spread probability.

#### Historic Wildfires in Glendora

Fortunately, there have been limited wildfire outbreaks within the city, as described below.

**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.



Source: KABC Television, LLC, Colby Fire, January 16, 2014.



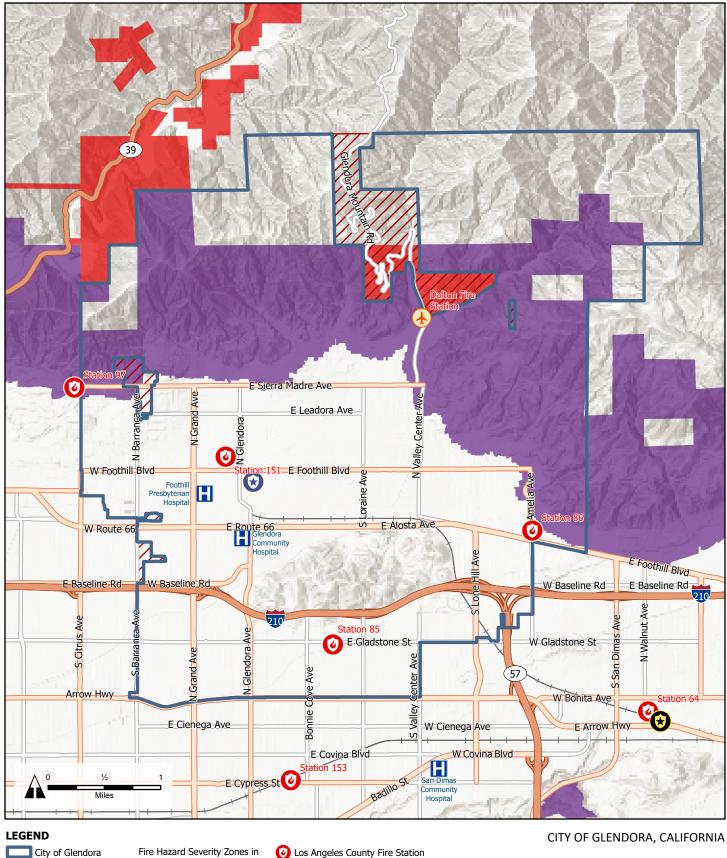
# **Historic Wildfires Near Glendora**

Areas bordering the city are highly prone to wildfires; therefore, Glendora is exposed to a threat from wildfires originating outside the city limits. Below are descriptions of three of the most recent notable fires outside the city.

**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 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 Oct. 2009, the fire extinguished due to a fall rainstorm.

**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 7-10 years old with 6-8 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 Dec. 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 LA County. The fire triggered mandatory evacuation orders in parts of Arcadia and Camp Williams. The cause is still under investigation but is thought to be due to 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 ft. of the observatory as firefighters worked to protect the structure. By Sept. 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.





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 USDA California Hotshots

Hospital

Glendora Police Station

San Dimas Sheriff Station

SAF-5. Fire Hazard Severity **Zones** 



This page intentionally blank.



# 3.1.4 HAZARDOUS MATERIALS

#### 3.1.4.1 Hazardous and Toxic Materials

Hazardous materials are any substance or combination of substances, which because of quantity, concentration, or characteristics, may cause or significantly contribute to an increase in death or serious injury, or pose a substantial hazard to humans and/or the environment. Local governments have little control over the production and use of these materials because they are part of our society. Even household wastes can be hazardous materials.

Emergency response plans are in place with the City per the SEMS Emergency Operations Plan in the case that a hazardous or toxic materials event occurs. In addition, LACoFD provides emergency response to hazardous materials. LACoFD provides two engines, one hazardous materials task force, one squad, and a battalion chief that directly respond to hazardous materials incidents.

# 3.1.4.2 Transport of Hazardous Materials

In Glendora, a hazardous chemical release would most likely occur as a result of either transportation of chemicals by railroad or truck, use of chemicals at a business, or illegal dumping of chemical waste. Interstate 210 is heavily traveled by trucks and thus, represents the most likely location of a release.

<u>Fixed Facility</u>. The second most likely threat from hazardous materials comes from the potential of an accidental spill and/or incident at one of the approximately 150 known facilities that manufacture, warehouse, and process toxic chemicals and/or generate hazardous waste materials within or next to the city. This potential also exists at former facilities, such as abandoned service stations or industrial businesses. The threat is significantly lessened though because of required plan contingency and evacuation plans.

<u>Clandestine Dumping</u>. Clandestine dumping of hazardous materials is a criminal act and could pose a threat. The City anticipates that there will be an increase in dumping as costs to legally dispose of materials at designated hazardous waste disposal sites increase, but cannot anticipate if or when such an act would occur.

<u>Pipelines</u>. Two water pipelines traverse the city. There are no oil or gas lines that carry hazardous materials within Glendora.

<u>Household Hazardous Waste</u>. Household hazardous waste poses a risk to the city. Glendora participates in the Los Angeles County sponsored monthly Household Hazardous Waste Roundups for County residents.



#### 3.1.5 **CRIME**

#### 3.1.5.1 Police Protection

Police protection is provided by the Glendora Police Department located at 150 South Glendora Avenue. The Police Department is led by the Chief of Police and has 51 sworn officers and 52 civilian employees. Sworn officers include:

- Administration Services Division is comprised of two Captains, one Office Coordinator, one Support Services Supervisor, one Business Services Manager, and one Community Services Officer (CSO).
- Patrol Bureau is comprised of four Lieutenants, four Sergeants, four Corporals, 24 sworn
  Officers, one Dispatch Supervisor, 11 full-time and two part-time Dispatchers, five Jailers,
  three part-time Reserve Officers, two Code Enforcement Officers, and four full-time and
  one part-time CSOs.
- Investigations Bureau is comprised of one Lieutenant, one Sergeant, seven full-time and
  two part-time Investigators, one Investigator assigned to the Los Angeles Interagency
  Metropolitan Apprehension Crime Task Force team (LA IMPACT), two full-time
  Community Impact Team (CIT) officers, one Property and Evidence Technician, one Court
  Liaison, one Community Services Officer, and one part-time Police Cadet.
- **Traffic Bureau** is comprised of one Corporal, two Traffic Officers, three full-time contracted Parking Enforcement Officers, and numerous part-time contracted Crossing Guards.

# **Community Relations and Emergency Services**

<u>Community Relations Bureau</u>. A Community Services Officer performs community relations programs, school safety education programs, and conducts Citizen Academy classes. Two full-time Police Officers are assigned as School Resource Officers and provide security and mentoring for students at Glendora High School, Whitcomb High School, and Glendora middle schools.

<u>Emergency Services</u>. Emergency Services is responsible for citywide preparedness and ensuring compliance with local, Homeland Security, State, and FEMA requirements. They also oversee three emergency service volunteer groups: Police Auxiliaries, the Glendora Community Emergency Response Team (CERT) and the Glendora Emergency Amateur Radio Services (GEARS) team. Emergency Services conducts community relations presentations on emergency preparedness and offers yearly Community Emergency Response Team training to residents.

# **Response Times**

Quick and effective response to citizen emergencies and concerns are important to the City. These are measured based on the time the dispatcher receives a call for service from the public to the time the responding officer arrives at the location of the call. Call types are defined below,



and <u>Table SAF-1</u>, <u>Police Response Times</u> illustrates the Police Department's average response times for 2023.

- Emergency: Officer responding with red lights and siren.
- Immediate: Officer needed as soon as possible, obey all traffic laws.
- Alarm: Officer needed to respond to an alarm activation.
- Non-Emergency: Beat officer needed when available.
- Report: Beat officer needed to take a report when available.

#### **TABLE SAF-1: POLICE RESPONSE TIMES**

Call Type	Average Response Time (2023)	Target Response Time
Emergency	00:04:47	00:04:00
Immediate	00:13:14	N/A
Alarm	00:14:16	00:13:00
Non-Emergency	00:22:01	00:19:05
Report	00:35:35	00:27:00

Source: City of Glendora Police Department, May 2024.

# 3.1.5.2 Crime Prevention Through Environmental Design (CPTED)

Crime Prevention Through Environmental Design (CPTED) revolves around restoring public safety and creating "defensible space." The concept of defensible space is applicable to community and site planning, as well as building design. CPTED approaches the problem of creating a defensible environment by addressing both the physical and psychological aspects of design. Security concerns are addressed during the design stage of a project, rather than added after the development is constructed.

# **CPTED Approaches to Security**

<u>Physical Planning Process</u>. Crime prevention is an important consideration in the physical planning process. Conditions for public safety can be enhanced and property loss reduced by utilizing land use planning and site design techniques to deter criminal activity. Carefully planned development can serve to minimize the opportunity for unlawful activity, and thus lower the actual occurrence of crime.

<u>Crime Prevention Through Physical Planning</u>. The use of physical planning may be one of the least costly and most successful means of crime prevention. The key is to establish design criteria that will affect community control by members of the community. Improving the observational capability of residents to visually survey their residential environment through design considerations is aimed at reducing the workload of law enforcement agencies and enhancing community orientation.



Street, Building, and Landscaping Design. The design of streets, buildings, and landscaping can influence the way people regard spatial use. Architectural alteration of entrances can change a space once considered public into a semi-private one that is shared by a limited number of people. In large multi-family complexes with one or two entrances, people can enter the building without notice or challenge. Multi-family buildings designed to provide a separate common entrance for six to eight families allow a higher level of surveillance by the occupants. Families soon become acquainted with their neighbors' normal day-to-day activities and can recognize their most frequent visitors.

Streets are typically designed and considered as public space allowing free and ready access into any neighborhood by anyone. By siting residential structures in relation to their lots and the street, a degree of neighborhood control or territoriality may be established. The designed use of symbolic or psychological barriers through landscaping can have an apparent differentiation to public versus private space. Typical examples of these symbolic barriers are a small hedge, a long walkway, or a set of steps between the public sidewalk and the house. These design features tend to identify the end of the public space and the beginning or a more selective space use.

Landscaping features can also facilitate neighborhood control by providing observable "barriers" beyond which other residents of the area would take note and potentially challenge. Here landscaping can be used to define space use by visually delineating area for the private space use from public space use. An attractively landscaped front yard can be considered the object of the resident's pride of ownership. With neighbors reinforcing this aspect of private domain, they soon develop a sense of identity to and responsibility for others' front yards. Landscaping treatment should be used in a manner that enhances an area's or project's setting without obstructing the visibility of walkways or entrances from the streets or other residences.

<u>Community Identity and Control</u>. The design of physical space can augment community identity and control. Visibility alone is not enough; there must be a reason before a person will challenge inappropriate behavior. If a person feels he/she has a stake in a neighborhood or community, there is ample reason to question the potentially unlawful behavior of others.

The use of design in the physical planning process can encourage residents to assert a psychological identity over their immediate neighborhood, and thus to deter crime by reducing the opportunity for unlawful activity. Strongly defined areas of influence, real and psychological barriers, and improved opportunities for surveillance can assist a community in exerting a meaningful level of crime prevention and control by its residents.

# **CPTED Strategies**

CPTED incorporates several strategies to create a defensible space, such as surveillance, territoriality, natural access control, and physical security.



<u>Surveillance</u>. This concept promotes maximizing the visibility of people, parking areas, and building entrances. Features to implement this concept could include doors and windows that look out onto streets and parking areas, pedestrian-friendly sidewalks and streets, front porches, and adequate nighttime lighting.

<u>Territoriality</u>. Creating gateways to clearly indicate public routes, and using structural or design elements to discourage access to private areas. A sense of territory is important as it encourages individuals to take control of their environment and defend it against becoming a potential target of attack. The concept of territoriality incorporates design features that define property lines and distinguish private spaces from public spaces using landscape plantings, pavement designs, gateway treatments, and fences.

<u>Natural Access Control</u>. This concept clearly distinguishes public areas and private areas, thus reducing access to potential targets and increasing the deterrent to potential offenders. This concept is achieved by designing streets, sidewalks, building entrances, and neighborhood gateways to clearly indicate public routes, and using structural or design elements to discourage access to private areas.

<u>Physical Security</u>. This concept seeks to make it more difficult and time consuming to enter a location, but not make the location a fortress. This concept is achieved by installing window locks, dead bolts for doors, and interior door hinges. For outdoor areas, create an environment where entryways are exposed and well designed, and include landscaping features that deter intruders and increase security around the home.

#### 3.6 AIRCRAFT OVERFLIGHT

While Glendora is not within the direct flight paths of any particular airport, aircraft fly over the city throughout the day and night. Most of these flights are from small private aircraft originating out of local airports. The closest airports in the area are Bracket Airport in Pomona/La Verne and Cable Airport in the City of Upland. The nearest commercial airport is Ontario International Airport located in the City of Ontario, which is approximately 20 miles east of Glendora.

The City of Glendora Emergency Operations Plan provides the policies and procedures addressing emergency response to air disasters. Regardless of where an air crash occurs, the resulting explosions and fires have the potential to cause injuries, fatalities, and the destruction of property at and adjacent to the impact point. The time of day when the crash occurs may also have a profound effect on the number of fatalities or wounded. Damage assessment and disaster relief efforts associated with an air crash incident will require support from other local governments, private organizations, and in certain instances from the state and federal governments.



# 3.2 EMERGENCY PREPARATION AND RESPONSE

Emergency preparation and response are important components in ensuring residents are ready for hazards and first responders can adequately serve residents in the event of a hazard unfolding. The City has an Emergency Operations Plan (EOP) which informed this element and acts as an extension to the State of California Emergency Plan and the Los Angeles County Operational Area Emergency Operations Plan.

# **Preparedness**

The Los Angeles County Fire Department (LACoFD) provides fire response services in Glendora. LACoFD regularly visits schools and provides community-level response education through its Community Emergency Response Team (CERT) training program. CERT programs educate volunteers about disaster preparedness and basic response skills, such as fire safety and medical response.

# Response

The Los Angeles County Fire Department and Glendora Police Department respond to small- and large-scale hazard events in Glendora. Currently, the City's response capacity meets the needs of the community; however, hard-to-reach populations with functional and medical needs may still face challenges evacuating. Regarding mutual aid and coordination, the City of Glendora is located within Cal OES Mutual Aid Region I, and the Cal OES Southern Administrative Region. During local emergencies, mutual aid is requested by the Incident Commander. The City of Glendora's Emergency Operation Plan includes recommended National Incident Management System and Standardized Emergency Management System trainings, which the City of Glendora bases its training decisions on for designated emergency personnel. Another important aspect of emergency response includes having visible and legible addresses present on residences, which allows emergency personnel to respond quickly to calls. Policy SAF-2.18 requires all streets, both public and private, to be marked and visible and all street addresses to be posted in plain view.

The Los Angeles County Fire Protection District has no official adopted standards for response. For the City of Glendora, the average response time is 4.38 minutes.

# **Emergency Response Facilities**

Emergency response facilities are those activated during an emergency and used to respond to the hazard. The City contracts with the Los Angeles County Fire Department for fire protection and other fire-related services. LACoFD is the local responsible agency for fire protection within the city's VHFHSZ. The city also abuts VHFHSZ lands where the responsibility for fire protection lies with the State of California (State Responsibility Areas or SRAs).





LACoFD Station 86 - Glendora

Three fire stations located within the city serve Glendora: Fire Station 85 located at 650 East Gladstone Street, Fire Station 86 located at 520 Amelia Avenue, and Fire Station 151 located at 231 West Mountain View Avenue (refer to Table SAF-2, Fire Stations in Glendora). Water is provided by three different sources: groundwater pumped from the Main San Gabriel Basin; treated, imported surface water purchased from Metropolitan Water District of

Southern California through Three Valleys Municipal Water District; and local treated surface water and/or groundwater purchased from the Covina Irrigating Company (CIC). The City's main source of water supply is groundwater pumped from the Main Basin.<sup>6</sup>

TABLE SAF-2: LACOFD FIRE STATIONS IN GLENDORA

Station No. & Address	Number of Personnel	Equipment
Station 85	17	3 Captains
650 East Gladstone Street		3 Firefighter Specialists
		9 Firefighters
		1 Engine
		1 EST (2 person unit)
Station 86	21	6 Captains
520 Amelia Avenue		3 Firefighter Specialists
		12 Firefighters
		1 Engine
		1 Truck
Station 151	17	3 Captains
231 West Mountain View Avenue		3 Firefighter Specialists
		9 Firefighters/Paramedics
		1 Engine
		1 Nurse Educator

Source: LACoFD, May 2024.

LACoFD provides an Emergency Response Service (EMS). Although none of the stations located within Glendora have this section, it is accessible through other stations in the county. The EMS section is responsible for paramedic training, certification, equipment, and quality improvement.

<sup>&</sup>lt;sup>6</sup> City of Glendora, 2020 Urban Water Management Plan. June, 2021.



However, each station is staffed with qualified emergency medical training (EMT) firefighters. In addition, Station 85 has an Emergency Service Team, which serves similar functions, and Station 151 is equipped with a paramedic unit. This means that the nine firefighters at Station 151 are also trained paramedics.

#### **Critical Facilities**

Critical facilities are places essential to the function of the City or public buildings that can be used to gather people and equipment during hazard response and recovery. According to the LHMP, there are XX critical and essential facilities that are vulnerable to hazards, as shown in LHMP Figure 4-12: Glendora Critical Facilities and Facilities of Concern.

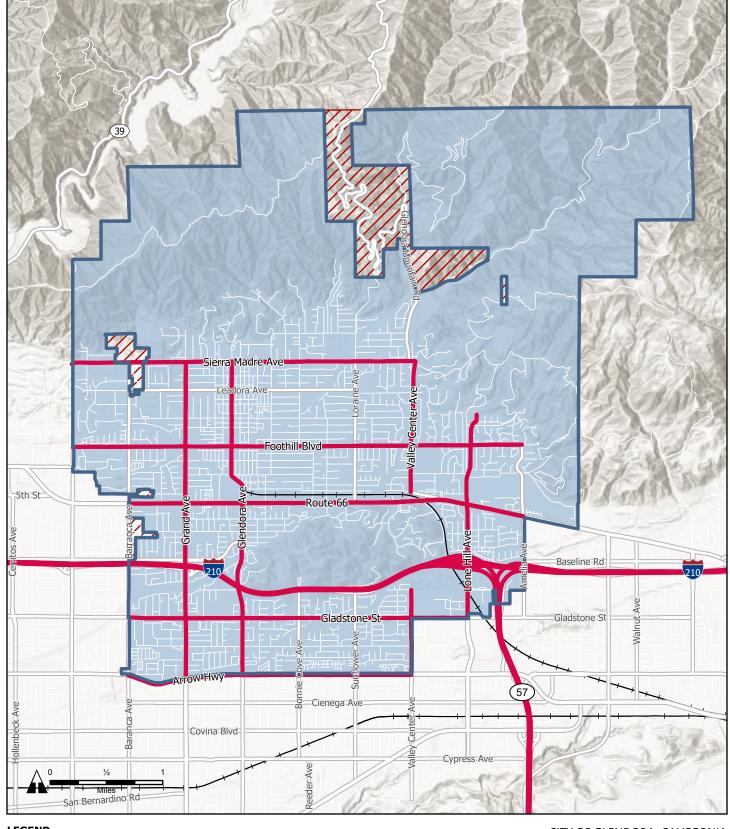
#### **Non-Critical Public Facilities**

Non-critical public facilities are those that can be used for hazard recovery to gather resources, distribute information, or serve as shelters. These are generally flexible facilities that can be activated and would likely not all be used at once during a hazard event. Non-critical facilities can also serve as cooling facilities that provide air conditioning during extreme heat events. Some non-critical public facilities include Glendora's nine schools and its public library.

#### **Evacuation Routes**

In the event of an extreme fire, flood, or other circumstances, evacuation may be necessary. To preserve the lives of Glendora residents, it is important to ensure that the routes used for evacuation are unobstructed and in good condition. Evacuation routes in Glendora include Sierra Madre Avenue, Foothill Boulevard, Route 66, Gladstone Street, and Arrow Highway all running east/west, and Grand Avenue, Glendora Avenue, Valley Center Avenue, and Lone Hill Avenue all running north/south as shown in <a href="Exhibit SAF-6">Exhibit SAF-6</a>, <a href="Emergency Evacuation Routes">Emergency Evacuation Routes</a>. These evacuation routes are largely outside of flood, fire, landslide, and liquefaction hazard areas in the city, and different routes can be activated as necessary to avoid hazards outside Glendora. The City will also continue to coordinate with emergency responders to ensure adequate exit strategies are available for all residential developments.

Furthermore, Senate Bill 99 (2019) requires safety elements to identify residential developments in hazard areas that do not have at least two emergency evacuation routes. The City prepared an analysis consistent with SB 99 in 2023, included as Appendix B to the Safety Element. The analysis identified multiple residential areas of concern in the high hazard zone that warrant further study, and which are located throughout the city as identified in Appendix B.



**LEGEND** 

City of Glendora

Sphere of Influence

**Emergency Evacuation Routes** 

CITY OF GLENDORA, CALIFORNIA

SAF-6. Emergency Evacuation Routes



This page intentionally blank.



### 3.3 CLIMATE CHANGE AND RESILIENCY PLANNING

As a result of climate change, Glendora, like other cities in California, may experience more frequent and intense heat waves, drought, wildfires, flooding, and more severe storms and extreme weather events. The impacts of climate change pose an increasing and growing challenge to the safety and well-being of Glendora's residents. SB 379 is a State law requiring the City to update the Safety Element to address climate change adaptation and resiliency strategies applicable to Glendora. A Climate Vulnerability Assessment (CVA) has been prepared to identify risks that climate change poses to the city and is attached as Appendix A. Relevant goals, policies, objectives, and actions informed by the CVA have been added to the Safety Element, and a high-level overview of the findings is provided below.

- Wildland fires represent the threat most likely to affect Glendora as a result of climate change. While most likely to ignite within the FHSZs and VHFHSZs, the effects of wildfire can adversely impact larger areas, cascading out towards the entirety of Glendora and the surrounding cities, with smoke, ash, and poor air quality.
- The most vulnerable populations are those living in or adjacent to VHFHSZs within the city and its Sphere of Influence (SOI). Other highly vulnerable populations include seniors (approximately 16% of the city population) and people with pre-existing health conditions such as asthma (approximately 18% of the city population).
- The most vulnerable natural areas are the sensitive hillside areas (and wildlife within these environments) located in the northern portion of the city, which are within the VHFHSZs. This largely undeveloped area contains the most open space and natural landscape in the city and consists of high amounts of often dry foliage that is highly susceptible to fires. As prolonged dry spells are predicted to lengthen, plants, animals, and habitats that receive less and less water are more likely to burn from wildfire, leave the area, or die out from lack of resources.
- The most vulnerable infrastructure are homes (and businesses) within and bordering the VHFHSZs, as well as power and energy infrastructure. Closely located infrastructure, i.e., neighborhood homes within and bordering VHFHSZs, can suffer brutal impacts, and possibly even total destruction. Extreme weather and heat conditions can increase the risk of fires, which can lead to the destruction of energy infrastructure such as power lines that are located in more remote (and more fire prone) areas or power infrastructure that is located above ground. Since energy grids are interconnected and provide energy throughout the region, large parts of the southern California population are expected to be impacted by distant fires or power outages.
- Regional drought is also a major hazard to Glendora as the city is served predominately
  by groundwater, and further served by imported water sourced from areas also highly
  susceptible to drought (southern California and the greater southwest region). Drought
  may also result in increased tree and plant mortality, which contributes to higher fuel





loading and wildfire size and severity. As expected with climate change, droughts are expected to increase both in frequency and intensity.

Wildfire and drought aftermath can also lead to larger flooding incidents. As wildfires burn
natural vegetation in the northern hillsides, and drought dries out vegetation and root
systems, soil and sediments become loose, and the water holding capacity of the area
dwindles as there are fewer plants to absorb and regulate the stormwater. When
rainstorms fall on the hillsides, the water easily picks up the loose soil and burnt debris,
gains momentum moving down the hillsides, and causes flooding impacts to intensify in
low-land areas.



# 4.0 GOALS AND POLICIES

# 4.1 FLOOD HAZARDS

<u>Planning Consideration</u>: Glendora is particularly susceptible to flooding due to its location adjacent to the San Gabriel Mountains. Significant flooding events have occurred periodically and have had a demonstrated impact on the safety and property of Glendora residents. To reduce the potential impacts of flooding on the safety and economic integrity of the city's residents, it is important to ensure disaster planning is coordinated with local planning decisions.

Goal	SAF-1	Protection from potential flood hazards, including dam inundation.
Policies	SAF-1.1	Coordinate with the Los Angeles County Flood Control District to ensure that flood control facilities under their jurisdiction are adequately operated and maintained.
	SAF-1.2	Utilize the City's capital improvement process to identify necessary storm drain improvements to minimize potential flood damage.
	SAF-1.3	Provide an annual review of the Standardized Emergency Management System (SEMS) Emergency Operations Plan to ensure evacuation routes are sufficient in the event of flooding.
	SAF-1.4	Continue the maintenance of city-owned flood control facilities within Glendora to ensure their efficient operation and work with Los Angeles County, as needed, to transfer the maintenance of existing and new facilities.
	SAF-1.5	Evaluate new development within the city to assess the development's exposure to potential flooding hazards and ensure that habitable structures and infrastructure are not located within the 100-year flood plain.
	SAF-1.6	Coordinate with Los Angeles County to ensure that storm drain and flood protection facilities built in conjunction with new development are maintained by the County.



### 4.2 FIRE HAZARDS

<u>Planning Consideration</u>: The city's location adjacent to national forest lands and areas of natural open space and vegetation, when combined with long dry seasons, significantly increases the risk of wildland fires and urban fires. The establishment of policies and procedures to mitigate potential impacts of wildfires and urban fires will contribute to the protection of life and property of Glendora's residents.

Goal	SAF-2	Reduced incident of damage to life and property from wildland fires.
Policies	SAF-2.1	Require all proposed developments to prove that the development can adequately be served by fire flows.
	SAF-2.2	Maintain low density/intensity land use designations in the hillside and VHFHSZ areas.
	SAF-2.3	Require fire resistant building materials for structures in the hillside and VHFHSZ areas.
	SAF-2.4	Require proposed developments, especially those within VHFHSZs, to comply with emergency vehicle access requirements of the Los Angeles County Fire Department (LACoFD) and Glendora Police Department.
	SAF-2.5	Continue to implement brush-clearance requirements in areas subject to wildland fire hazards.
	SAF-2.6	Evaluate all new development to be located in or adjacent to wildland areas to assess its vulnerability to fire and its potential as a source of fire.
	SAF-2.7	Require all new development in the city's VHFHSZs to meet the most recent version of the California Fire Code and California Building Code.
	SAF-2.8	As part of the development review process consider fire safe design (i.e., fire-resistant building and site design, materials, and landscaping) for development within VHFHSZs.
	SAF-2.9	Locate, when feasible, new essential public facilities and infrastructure outside of VHFHSZs, including but not limited to, hospitals and healthcare facilities, emergency shelters, emergency command centers, emergency communication facilities, and utilities or identify construction methods or other methods to minimize damage if these facilities must be located in VHFHSZs.





- SAF-2.10 Modify, as feasible, existing non-conforming development to contemporary fire safe standards, including road standards and vegetative hazards.
- SAF-2.11 Coordinate with LACoFD to identify and incorporate fire resistive building and fire safe site design methods to prevent and minimize damage if new structures are proposed in VHFHSZs on undeveloped land and/or when rebuilding after a fire.
- SAF-2.12 Work with CAL FIRE, United States Forest Service, United States Geologic Service, and applicable nongovernmental agencies to create a plan to address post-fire recovery activities and projects that allow burned areas to fully recover and minimize repetitive losses and further damage.
- SAF-2.13 As part of the LACoFD review process, require ongoing brush management, fuel management/modification, defensible space, fire retardant landscaping, and other project design features for new development located in areas of or adjacent to a VHFHSZ.
- SAF-2.14 Require adequate Fire Protection Plans for new development in VHFHSZs.
- SAF-2.15 Work with LACoFD to identify and maintain fire hazard reduction projects, including community fire breaks and vegetation clearance around private and public roads.
- SAF-2.16 Coordinate with LACoFD to define minimum standards for evacuation of residential areas in VHFHSZs. If areas with inadequate access/evacuation routes are identified, develop appropriate mitigation measures, improvement plans, or educational programs to ensure safe evacuation.
- SAF-2.17 Coordinate with the City's water purveyor to ensure necessary water supply systems and fire flow for structural fire suppression are provided and maintained.
- SAF-2.18 Require all streets, both public and private, to be marked and visible and all street addresses to be posted in plain view.
- SAF-2.19 Maintain and regularly update the City's fire hazard overlay map for changes in fire hazard severity districts consistent with changes in hazard designations by CAL FIRE.
- SAF-2.20 Coordinate adequate fire prevention services and facilities to meet the service standards identified by LACoFD.



	SAF-2.21	Require all new development to ensure that fire response times and service standards are maintained, as determined by LACoFD.
Goal	SAF-3	Reduced incident of damage to life and property from urban fires.
Policies	SAF-3.1	Enforce the installation of fire alarm systems, smoke detectors, and/or sprinklers to protect life and property.
	SAF-3.2	Provide education and outreach to residents regarding fire safety and prevention, with an emphasis on protecting vulnerable and at- risk populations such as seniors and those with limited mobility.
	SAF-3.3	Continue to implement and enforce the latest edition of the California Fire Code.

## 4.3 SEISMIC HAZARDS

<u>Planning Consideration</u>: Glendora is located within a highly active seismic region. To ensure the safety of Glendora residents and the city's economic integrity, demonstrated efforts must be undertaken to protect residents from the potential loss of life and property due to seismic events. The City seeks to coordinate citywide planning policies to reduce potential hazards associated with a seismic event.

Goal	SAF-4	Protection from loss of life and property during seismic events.
Policies	SAF-4.1	Require that new development and infrastructure avoid on-site seismic hazards such as faults, liquefaction zones, and landslide areas.
	SAF-4.2	Adopt building regulations that minimize effects from seismic events in building construction.
	SAF-4.3	Provide instructional materials, classes, and other educational resources to ensure residents and the daytime population are knowledgeable of the risks and methods to reduce such risks, as well as involve the residents and community groups in the City's annual emergency preparedness event.
Goal	SAF-5	Protection from landslides.
Policies	SAF-5.1	Ensure that development within landslide prone areas meets the City's Hillside Development Criteria and Hillside Development Strategy.
	SAF-5.2	Require proposed developments located within areas identified by California Department of Conservation Seismic Hazard Zone Maps



(<u>https://maps.conservation.ca.gov/cgs/EQZApp/app/</u>) to prepare a geotechnical investigation report.

### 4.4 POLICE PROTECTION

<u>Planning Consideration</u>: Glendora residents have enjoyed lower incidence of crime and this is reflected in the community's perception that Glendora is a safe place to live. The City of Glendora seeks to maintain and enhance its low crime rates through the coordination of public safety issues and police protection with physical planning.

Goal	SAF-6	Coordinated public safety and community planning.
Policies	SAF-6.1	Consult the Glendora Police Department to identify and address impacts of proposed development on police services.
	SAF-6.2	Ensure police services are not impacted by development, traffic congestion, and other growth-related issues.
Goal	SAF-7	High quality police protection.
Policies	SAF-7.1	Deploy human and financial resources to ensure adequate and equitable distribution of police services.
	SAF-7.2	Conduct periodic reviews of calls for service and response times to ensure adequate emergency response.
	SAF-7.3	Continue to promote citizen involvement in crime prevention and public safety through programs and education.
	SAF-7.4	Continue to support police involvement with youths, youth organizations, and school activities.
Goal	SAF-8	Reduced incidence of crime to persons and property.
Policies	SAF-8.1	Inform and educate Glendora residents and business owners on crime trends within the community and opportunities to increase their safety.
	SAF-8.2	Encourage the organization of neighborhoods and businesses to promote crime prevention through programs such as Neighborhood Watch and Business Watch.



## 4.5 DISASTER PREPAREDNESS

<u>Planning Consideration</u>: Local and regional wildfire and flooding events have demonstrated the need to ensure disaster planning is coordinated with local planning decisions. The concerns over the physical safety of Glendora residents and the potential impacts to life and property should, therefore, be a consideration in all citywide planning decisions.

Goal	SAF-9	Minimized loss of life, injury, or property during disaster events.
Policies	SAF-9.1	Maintain and update the City's adopted Local Hazard Mitigation Plan and Emergency Operations Plan.
	SAF-9.2	Implement the strategies and plans in the City's Emergency Operations Plan.
	SAF-9.3	Implement the strategies and plans in the City's Local Hazard Mitigation Plan.
	SAF-9.4	Require new developments to incorporate appropriate development features and project mitigation measures that avoid natural and human-made hazards.
	SAF-9.5	Prepare for and support multi-jurisdictional emergency response.
	SAF-9.6	Continue to work cooperatively with adjacent jurisdictions and regional agencies to address emergency preparedness.
	SAF-9.7	Ensure compliance with the Los Angeles County Emergency Management Plan.
	SAF-9.8	Coordinate with regional, state, and federal agencies to prepare for and respond to potential terrorist threats.
	SAF-9.9	Ensure the community is aware of home-based emergency preparedness procedures.
	SAF-9.10	Work with LACoFD and the Police Department to define minimum standards for evacuation of residential areas and to maintain, update, and regularly exercise emergency access, protocols, and evacuation routes to assess their effectiveness under a range of emergency scenarios. If areas with inadequate evacuation routes are identified, develop appropriate mitigation measures, improvement plans, and/or education programs to ensure safe evacuation.
	SAF-9.11	Coordinate with LACoFD and the Police Department to proactively develop ongoing emergency services training to stay current with best practices and support community programs that train



		volunteers to assist "First Responders" in the implementation of the Local Hazard Mitigation Plan programs and actions.
Goal	SAF-10	Community outreach for disaster preparedness.
Policies	SAF-10.1	Provide education and outreach to Glendora residents and business owners on the City's emergency plan.
	SAF-10.2	Work in conjunction with neighboring cities and regional jurisdictions to address emergency preparedness.

# 4.6 COMMUNITY SAFETY

<u>Planning Consideration</u>: Overall community safety is a real and perceived issue that relates the physical environment with safety through design of the built environment. The design of physical features of the community, such as roadways, parking areas, and street lighting, can make a significant contribution to safety. Glendora residents seek to establish a real and perceived sense of safety through the incorporation of physical improvements and community participation.

Goal	SAF-11	Reduced traffic safety hazards.
Policies	SAF-11.1	Minimize the potential for accidents involving railways, automobiles, pedestrians, and cyclists by working closely with the Glendora Police Department, Los Angeles County Metropolitan Transportation Authority, California Highway Patrol, and all applicable transportation and/or railroad companies to identify safety problems and implement corrective measures.
	SAF-11.2	Use technology to improve safety at grade crossings that cause the least environmental harm (e.g., automated horn systems).
	SAF-11.3	Ensure new infrastructure and development projects are designed according to accepted traffic engineering principles.
Goal	SAF-12	Improved community safety and reduced opportunities for criminal activity through appropriate physical design.
Goal Policies	<b>SAF-12</b> SAF-12.1	
		criminal activity through appropriate physical design.  Maximize natural surveillance in all new development through



	SAF-12.4	Encourage new developments to incorporate the principles of Crime Prevention Through Environmental Design (CPTED) to create defensible space.
Goal	SAF-13	Community outreach related to safety and crime prevention.
Policies	SAF-13.1	Continue to promote citizen involvement in crime prevention and public safety through programs, education, and other methods.
	SAF-13.2	Maintain community outreach, education, and training programs that raise personal, neighborhood, and community safety awareness.
	SAF-13.3	Support cooperative arrangements between the Glendora Police Department and local organizations, such as schools, business organizations, and other appropriate groups.

## 4.7 TOXIC AND HAZARDOUS MATERIALS

<u>Planning Consideration</u>: Glendora is aware hazardous waste is produced as the by-product of a variety of industrial activities and is present in many common household products. The potential threat to the community by these hazards must be addressed through precautionary actions and contingency plans.

Goal	SAF-14	Safe transport, use, storage, and disposal of toxic and/or hazardous materials.
Policies	SAF-14.1	Encourage the proper disposal of household hazardous waste through the dissemination of information through educational and outreach activities.
	SAF-14.2	Monitor facilities or businesses that utilize, store, or handle hazardous materials to ensure practices and procedures will reduce the threat of damage to life and property.
	SAF-14.3	Enforce federal, state, and local laws and regulations relating to the use, storage, transport, and cleanup of toxic, explosive, and other hazardous materials to prevent unauthorized discharges.
	SAF-14.4	Identify specific routes, both street and railroad systems, for the safe transport of hazardous materials in and through the city.



### 4.8 CLIMATE CHANGE AND RESILIENCY PLANNING

<u>Planning Consideration</u>: Climate change has the potential to increase the severity of various natural hazards and impacts in the City of Glendora. Climate change refers to changes in conditions that result from increased atmospheric greenhouse gas (GHG) concentrations, which are linked to an increase in average global temperature. The increase in global temperature and GHG, among other impacts, results in a series of changes to the global climate. This section focuses on policies Glendora can implement at the local level to help the community adapt to climate change.

Goal	SAF-15	Prevent or minimize personal injury, loss of life, and property damage due to climate hazards and climate-induced secondary impacts.
Policies	SAF-15.1	Promote a well-prepared city that can effectively overcome natural disasters and scarcity of resources due to climate change.
	SAF-15.2	Demonstrate leadership in local climate planning efforts through a range of tangible policies and actions at the municipal operations level.
	SAF-15.3	Collaborate with local, regional, state, and/or federal jurisdictions and agencies on climate resiliency and adaptation strategies.
	SAF-15.4	Reduce communitywide greenhouse gas emissions locally by actively supporting regional efforts to reduce greenhouse gases throughout the county.
	SAF-15.5	Monitor climate change-related effects with local, regional, state, and/or federal partners to provide information on effectiveness of existing infrastructure and programs.
	SAF-15.6	Implement necessary actions and programs to improve drought impact preparation.
	SAF-15.7	Promote plans and programs that support sustainable energy sources.
	SAF-15.8	Promote the use of sustainable and carbon-neutral energy sources in new development.
	SAF-15.9	Explore using renewable energy and clean generation technologies such as solar, wind, biogas, or fuel cells to power city-owned and operated facilities where feasible.



# **APPENDIX A: CLIMATE VULNERABILITY ASSESSMENT**



# **APPENDIX B: RESIDENTIAL EMERGENCY EVACUATION ROUTE ANALYSIS**