October 20, 2025 | Hazard Mitigation Plan





CITY OF SIERRA MADRE





Credits

Hazard Mitigation Planning Team

Name	*Department - Division*	*Position (*also a resident)*
City of Sierra Madre		
Brent Bartlett, Planning Team Chair	Fire Department	Fire Chief
Laura Aguilar	City Manager's Office	Deputy City Manager / City Clerk
Gustavo Barrientos	Police Department	Police Chief
Michael Bruckner	City Manager's Office	City Manager
James Carlson	Public Works Department	Management Analyst
Miguel Hernandez	City Manager's Office	Assistant City Manager
Amy Hsu	Fire Department	Administrative Analyst
Clare Lin	Planning & Community Preservation Department	Director of Planning & Community Preservation
Anthony Rainey	Finance Department	Finance Director
Leila Regan	Library	City Librarian
Jose Reynoso	City Manager's Office	City Manager (former)
Bob Spears	Fire Department	Emergency Services Manager*
Arnulfo Yanez	Public Works Department	Director of Public Works
Emergency Planning Consultants		
Carolyn J. Harshman	Emergency Planning Consultants	Planning Director
Jill Caputi	Independent Contractor	Planning Associate and Mapping Analyst
Megan Fritzler	Independent Contractor	Planning Assistant

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Consulting Services

Emergency Planning Consultants

- ✓ Planning Director: Carolyn J. Harshman, MPA, CEM
- ✓ Planning Associate and Mapping Analyst: Jill Caputi, MS, CEM
- ✓ Planning Assistant: Megan R. Fritzler, BA

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Acknowledgements

City Council

- ✓ Robert Parkhurst, Mayor
- ✓ Kristine Lowe, Mayor Pro Tem
- ✓ Edward Garcia, Council Member
- ✓ Gene Goss, Council Member
- ✓ Kelly Kriebs, Council Member

Mapping

The maps in this plan were provided by the City of Sierra Madre, County of Los Angeles, Federal Emergency Management Agency (FEMA), or were acquired from public sources. Care was taken in the creation of the maps contained in this plan, however they are provided "as is". The City of Sierra Madre cannot accept any responsibility for any errors, omissions or positional accuracy, and therefore, there are no warranties that accompany these products (the maps). Although information from land surveys may have been used in the creation of these products, in no way does this product represent or constitute a land survey. Users are cautioned to field-verify information on this product before making any decisions.

Mandated Content

In an effort to assist the readers and reviewers of this document, the jurisdiction has inserted "markers" emphasizing mandated content as identified in the Disaster Mitigation Act of 2000 (Public Law – 390). The following is a sample marker:

EXAMPLE

Q&A | ELEMENT A: PLANNING PROCESS | A1-a.
Q Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan's development, as well as who was involved? (Requirement 44 CFR § 201.6(c)(1)) **A:**

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Executive Summary

The City of Sierra Madre's Hazard Mitigation Plan (HMP) is a strategic framework designed to reduce the loss of life and property by lessening the impact of disasters. The primary goal of the HMP is to identify potential hazards, assess their risks, and implement long-term strategies to mitigate their effects on a community. This comprehensive plan involves a systematic process of identifying hazards, evaluating vulnerabilities, and developing actions to minimize the damage and disruption caused by natural hazard events.

Before we go into the details of the planning process, it's important to define hazard mitigation as actions taken to minimize or eliminate threats associated with hazards.

In 2019, the National Institute of Building Sciences issued an update to its landmark report "Natural Hazard Mitigation Saves". The study analyzed the benefit cost ratio of a range of mitigation activities including mitigation planning and building retrofits. The findings revealed a dramatic return on investment. For mitigation activities**,** every dollar spent yielded a six dollar return on avoided losses in the future. For building retrofits, every dollar spent yielded a four dollar return on avoided losses in the future.



FEMA's mitigation website recommends 4 steps in the overall planning process: Step #1 is to organize the planning process and resources. Step #2 is to assess risks and capabilities. Step #3 is to develop a Mitigation Strategy. Step #4 is to Adopt and Implement the Plan.

FEMA's April 11, 2025, Local Mitigation Planning Policy Guide divides requirements into seven elements including A - Planning Process, B - Risk Assessment, C - Mitigation Strategy, D - Plan Maintenance, E - Plan Update, F - Plan Adoption, G - High Hazard Potential Dams.

Element A: Planning Process lays out how the plan was developed, who was involved and what data and information were used to build the plan. Much of the content focuses on the robust community outreach process. In developing the HMP, a Planning Team was formed to undertake a detailed analysis of the City's unique risks and challenges. The Team included department representatives from the Fire, City Manager, Police, Public Works, Planning and Community Preservation, Water, IT, and Finance. The Team met five times with the consultant, contributing to the Initial Draft Plan. In addition to the planning document itself, the Team developed and was actively involved in a community outreach strategy.

The planning process involved collaboration among adjoining local governments and special districts, businesses organization, residents, and other stakeholders to gather data, assess vulnerabilities, and prioritize mitigation actions. The process ensured that the City is better prepared to respond to and recover from disasters, while enhancing overall resilience.

Throughout the entire planning process, the Planning Team kept the public stakeholders informed of the Team's progress and opportunities to provide input. These outreach activities began with a project briefing to the City Council on November 12, 2024, followed by press releases, social media postings, solicitations to participate in a mitigation survey, and to provide input to the First Draft Plan.

Once public and stakeholder input are incorporated, the Second Draft Plan will be submitted for a formal review by Cal OES and FEMA. That process will result in FEMA's issuance of Approvable Pending Adoption. Next, the plan will need to be adopted by the City Council. Following submission of the resolution to adopt the plan, FEMA will issue a Letter of Approval which will grant eligibility for mitigation-related grants for a period of five years. The Planning Team will immediately begin the process of plan implementation which will continue with the tradition of sharing and incorporating input from customers and stakeholders.

The ability to communicate with others during a disaster is imperative for residents to be able to take the necessary precautions related to the disaster. When individuals do not speak the language in which emergency information is presented, it can negatively influence the individual's ability to comprehend the situation and take appropriate action.

Element B: Risk Assessment is divided into three sub-sections: the City Profile, the Hazard Assessment, and the Vulnerability and Impacts. The City Profile describes the features of the planning area as a medium sized local government serving a predominately single-family community with neighborhood commercial.

The Hazard Analysis sub-section includes a comprehensive evaluation of the hazard events that could result in significant losses. In the case of Sierra Madre, the profiled hazards include earthquake, wildfire, power outage, windstorm, landslide, flood, and drought. The sub-section on Vulnerability and Impacts focuses on the City's assets including people, structures, economy, natural, historic, and cultural resources, and activities that bring value to the community.

Element C: Mitigation Strategy includes a discussion on the plan's goals as well as the jurisdiction's existing capabilities to conduct mitigation activities. Also, the Mitigation Actions Matrix identifies more than 50 projects and policies that will create a more resilient community.

Element D: Plan Maintenance describes a planning process for the Planning Team to use once the plan is adopted and approved. Implementation of the mitigation action items, gathering updates on hazards, and keeping the public and stakeholders involved are the priorities for the 5-year life of the plan.

Element E: Plan Update content is applicable only to plans that are being updated from a previous FEMA-approved version. Required information would include significant changes in the jurisdiction's built environment as well as changes in the jurisdiction's priorities since the last version of the plan.

Element F: Plan Adoption identifies the process and documentation involved in the plan's adoption by the City Council.

Element G: High Hazard Potential Dams is an optional section of the plan for those jurisdictions with critical infrastructure like dams and levees. This Element is required if a jurisdiction seeks funding from the High Hazard Potential Dams (HHPD) Grant Program. *Since the City is not planning to seek monies through HHPD, Element G is not included.*

Element A: Planning Process

Q&A | ELEMENT A: PLANNING PROCESS | A1-a.
Q: Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1)) **A:** See **Graphic A.1, Credits, Tables A.1-4, Plan Writing** below.
Q&A | ELEMENT A: PLANNING PROCESS | A1-b.
Q: Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process? (Requirement 44 CFR § 201.6(c)(1)) **A:** See **Planning Process** below.
Q&A | ELEMENT A: PLANNING PROCESS | A2-a.
Q: Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity? (Requirement 44 CFR § 201.6(b)(2)) **A:** See **Table A.1, Stakeholder Outreach, Stakeholder Opportunities for Input by Category, Table A.3, Table A.4** below.
Q&A | ELEMENT A: PLANNING PROCESS | A3-a.
Q: Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan? (Requirement 44 CFR § 201.6(b)(1)) **A:** See **Public Outreach, Table A.3, Table A.4** below.

Q&A | ELEMENT A: PLANNING PROCESS | A4-a.
Q: Does the plan document what existing plans, studies, reports, and technical information were reviewed for the development of the plan, as well as how they were 44 CFR § 201.6(b)(3)) incorporated into the document? (Requirement **A:** See **Use of Existing Data** below.

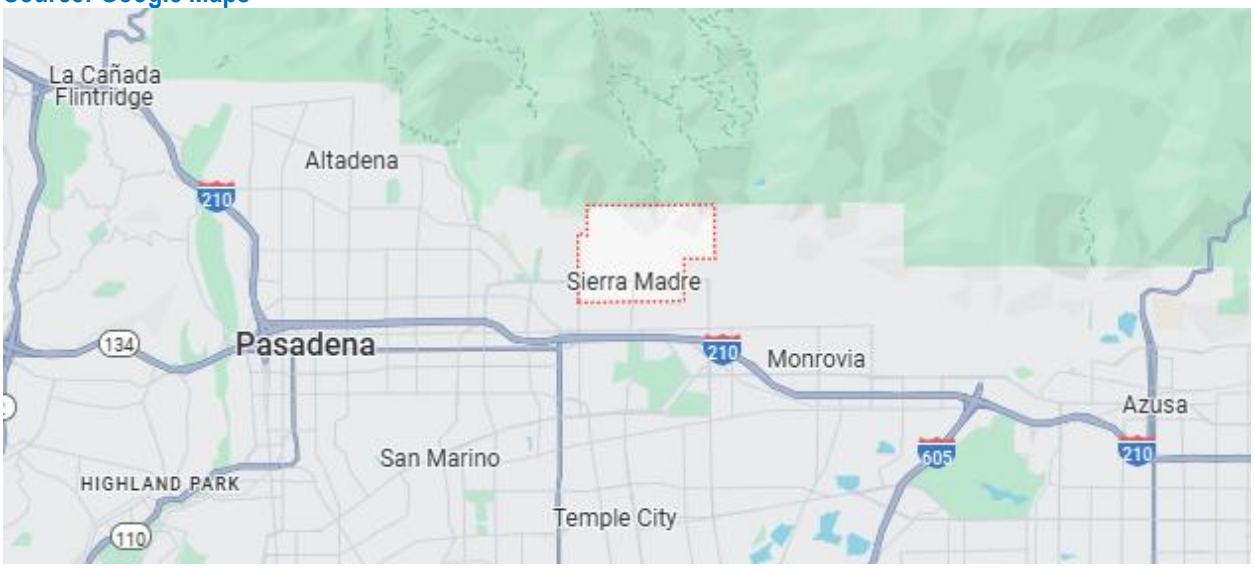
Introduction

This Hazard Mitigation (HMP) update was prepared in response to the Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 (also known as Public Law 106-390) since 2005 has required state and local governments (including special districts and joint powers authorities) to prepare mitigation plans to document their mitigation planning process, and identify hazards, potential losses, mitigation needs, goals, and strategies. This type of planning supplements the City of Sierra Madre's comprehensive land use planning and emergency management planning programs. The jurisdiction's most recent HMP was approved by FEMA in 2020. Once adopted by the City Council and approved by FEMA, the Plan will ensure eligibility for Hazard Mitigation Grant Program (HMGP) and other funding requiring hazard mitigation plans.

Planning Area

The boundary of the City of Sierra Madre constitutes the planning area and the city government served as what FEMA refers to as the "planning participant." Therefore, this is a single-jurisdiction plan.

Map A.1: Map of Planning Area
Source: Google Maps



Regulations and Guidance

DMA 2000 was designed to establish a national program for pre-disaster mitigation, streamline disaster relief at the federal and state levels, and control federal disaster assistance costs. Congress believed these requirements would produce the following benefits:

- ✓ Reduce loss of life and property, human suffering, economic disruption, and disaster costs.
- ✓ Prioritize hazard mitigation at the local level with increased emphasis on planning and public involvement, assessing risks, implementing loss reduction measures, and ensuring critical facilities/services survive a disaster.
- ✓ Promote education and economic incentives to form community-based partnerships and leverage non-federal resources to commit to and implement long-term hazard mitigation activities.

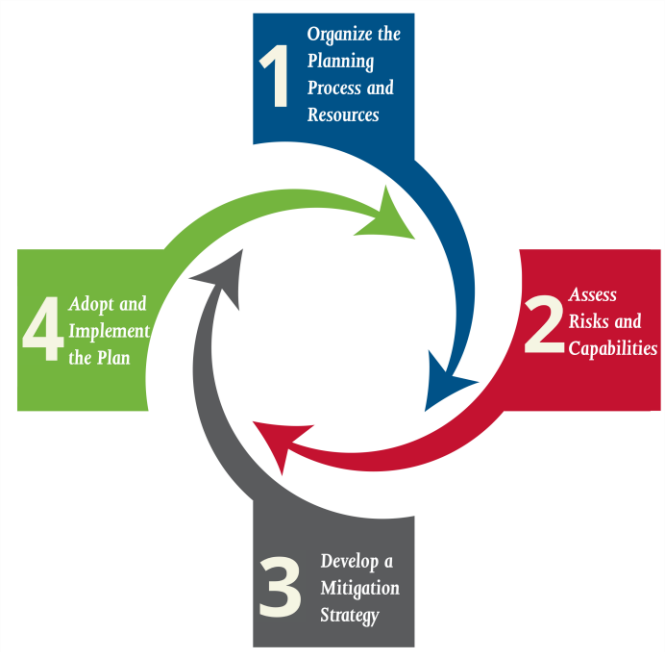
Planning Approach

The four-step planning approach outlined below is from FEMA. It is the approach used by the Planning Team during the plan update.

Step 1: Organize the Planning Process and Resources

At the start, a state, local, tribal nation, or territorial government should focus on assembling the resources needed for a successful mitigation planning process. This includes securing technical expertise, defining the planning area, and identifying key individuals, agencies, neighboring jurisdictions, businesses, and/or other stakeholders to participate in the process. The planning process for local governments and tribal nations must include opportunities for the public to comment on the plan.

Graphic A.1: Planning Approach
Source: FEMA's Hazard Mitigation Planning Website



Step 2: Assess Risks and Capabilities
Next, the state, local, tribal nation, or territorial government needs to identify the characteristics and potential consequences of hazards. It is important to understand what geographic areas the hazards might impact and how people, property, or other assets might be vulnerable. The four basic components of a risk assessment are:

- Hazard identification
- Profiling of hazard events
- Inventory of assets
- Estimation of potential human and economic losses based on the exposure and vulnerability of people, buildings, and infrastructure

Step 3: Develop a Mitigation Strategy
The state, local, tribal nation, or territorial government then sets priorities and develops long-term strategies for avoiding or minimizing the undesired effects of disasters. The strategy is based on an assessment of the unique set of regulatory, administrative, and financial capabilities to undertake mitigation. The mitigation strategy also includes a description of how the mitigation actions will be implemented and administered.

Step 4: Adopt and Implement the Plan
Once FEMA has received proof of adoption from the governing body, the plan will be approved by FEMA. Next, the state, local, tribal nation, or territorial government can bring the mitigation plan to life in a variety of ways, ranging from implementing specific mitigation actions to changing aspects of day-to-day organizational operations. To ensure success, the plan must remain a relevant, living document through routine maintenance. The state, local, tribal nation needs to conduct periodic evaluations to assess changing risks and priorities and make revisions as needed.

Planning Process

Planning Team

Throughout the entire planning process, the departments represented on the Planning Team served as stakeholders while also making a concerted effort to gather input and ideas from other stakeholders and the public.

The City's Hazard Mitigation Planning Team was the core group of people responsible for:

- Developing and reviewing drafts of the plan
- Informing the risk assessment
- Developing the mitigation goals and strategy
- Submitting the plan for local adoption
- Promoting the project through various community outreach venues

The City of Sierra Madre chose to build a Planning Team from city departments with expertise about the community's assets as defined by FEMA to include people, structures (including community lifelines), economy, and other assets. Other assets include natural, historic, and cultural resources as well as activities bringing value to the community. Represented departments included the City Manager's Office, Finance, Fire, IT, Planning and Community Preservation, Police, Public Works, and Water Departments.

The Planning Team worked with Emergency Planning Consultants to create the updated plan. Planning Team members were sent email invitations on January 30, 2025, announcing the purpose of the Team and overall schedule and expectations. The department representatives on the Planning Team served as active stakeholders and contributors to the plan's update. Throughout the plan development process, the Team confirmed the planning approach, drafted and reviewed content, made revisions, and engaged members of the public. As indicated below, the meetings were designed to maximize contributions from the Team. Insights, opinions, and facts were gathered ranging from hazard history and rankings, capabilities, ongoing and future mitigation activities, and opportunities to engage the public through existing venues and meetings. See **Attachments** for Planning Team Meeting Minutes.

Table A.1: Planning Team Level of Participation

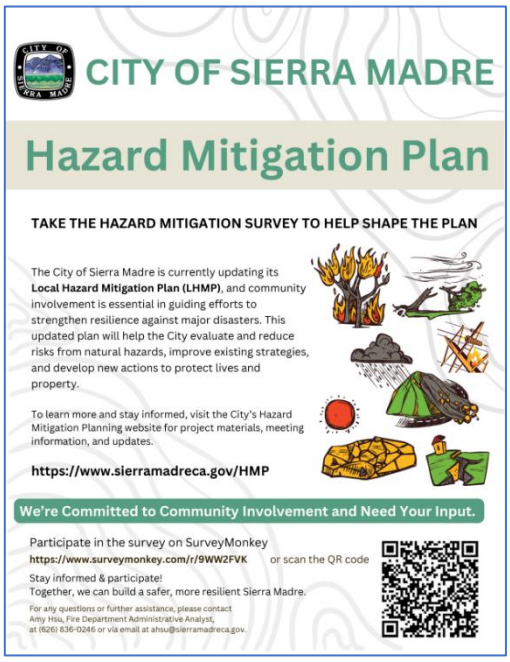
	City of Sierra Madre	Brent Bartlett, Planning Team Chair	Laura Aguilar	Gustavo Barrientos	Michael Bruckner	James Carlson	Miguel Hernandez	Amy Hsu	Clare Lin	Anthony Rainey	Leila Regan	Jose Reynoso	Bob Spears	Arnulfo Yanez	**Emergency Planning Consultants**	Carolyn Harshman	Jill Caputi	Megan Fritzler
Outreach – Announce Upcoming Planning Process at City Council		X																
Research and Writing of Plan		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
Planning Team Meeting #1		X	X				X		X	X			X			X		
Outreach – Inform Public and Stakeholders of Planning Process and Encourage Participation in Mitigation Survey and Video		X						X										
Planning Team Meeting #2		X		X		X	X	X	X	X		X				X		
Planning Team Meeting #3		X				X	X	X	X	X			X			X		
Planning Team Meeting #4		X		X	X		X	X	X		X		X	X		X		
Outreach – Inform Public and Stakeholders of Opportunity to Provide Input to the First Draft Plan																		
Submit Second Draft Plan to Cal OES and FEMA. Revise as mandated																		
FEMA Issues Approvable Pending Adoption																		
Outreach – Invite Public and Stakeholders to Adoption Meeting.																		
Post Final Draft Plan for City Council meeting																		
Submit Resolution to FEMA																		
FEMA Issues Letter of Approval																		
Incorporate Letter of Approval into Final Plan																		

Table A.2: Project Timeline

Tasks	November 12, 2024	December 2025	January 2025	February 12, 2025 Planning Team #1	February 19, 2025 Planning Team #2	March 12, 2025	March 26, 2025 Planning Team #3	August 13, 2025 Planning Team #4	September 23, 2025							
Outreach - Announce Planning Process at City Council																
Research and Writing of Plan			X													
Planning Team Meeting #1 – Discuss Outreach Strategy				X												
Planning Team Meeting #2 – Risk Assessment					X											
Outreach – Inform Public and Stakeholders of Planning Process and Encourage Participation in Mitigation Survey and Video						X										
Planning Team Meeting #3 – Mitigation Action Items							X									
Planning Team Meeting #4 – Review Initial Draft Plan								X								
Outreach – Inform Public and Stakeholders of Opportunity to Provide Input to First Draft Plan									X							
Submit Second Draft Plan to Cal OES and FEMA. Revise as mandated																
FEMA Issues Approvable Pending Adoption																
Outreach – Invite Public and Stakeholders to Adoption Meeting																
Post Final Draft Plan for City Council Meeting																
Submit Resolution to FEMA																
FEMA Issues Letter of Approval																
Incorporate Resolution and Letter of Approval into Final Plan																

Plan Writing

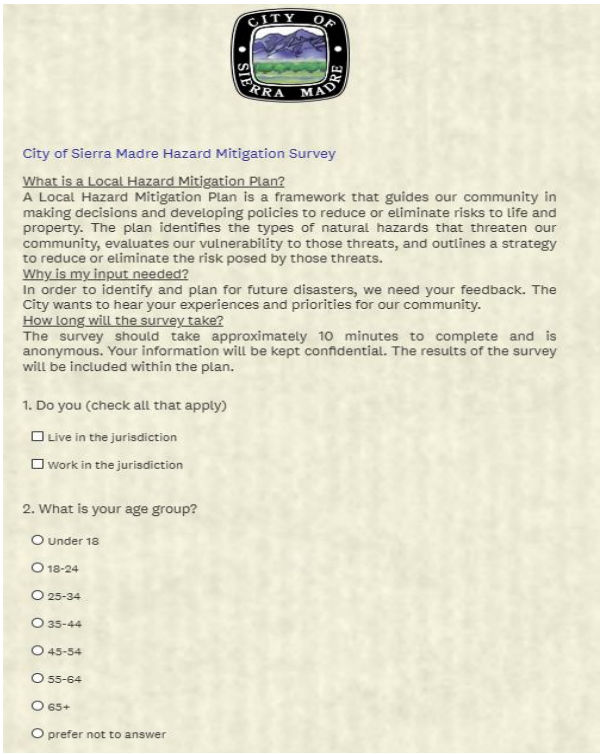
The first community outreach activity took place in November 12, 2024, during the announcement of the planning process to the City Council. The Planning Team's first meeting was on February 12, 2025.



A total of four Planning Team Meetings gathered vital information and insights. During the first meeting, the Community Outreach Strategy was developed. The second meeting included a briefing on the progress of the Community Outreach Strategy along with a discussion on the initial Hazard Analysis. The third meeting focused on providing updates to the 2020 capability assessment and Mitigation Actions Matrix.

An Initial Draft Plan was prepared by the consultant with considerable input from the Planning Team. The Initial Draft Plan was distributed in advance of the fourth meeting. The day of the meeting, the consultant facilitated a discussion of the Initial Draft Plan while soliciting input, corrections, and other suggestions from the Planning Team.

On March 12, 2025, the second community outreach event announced the availability of the Mitigation Survey and Video. Flyers, email, and social media were used to inform the public and stakeholders of the planning process as well as asking for participation in the Survey and Video. While the Video was designed to be informative, the Survey was designed to provide guidance and insights to the Planning Team on the hazards as well as possible mitigation activities. A dedicated website was created for the Hazard Mitigation Plan. As Planning Team Meetings took place, minutes and handouts were posted to the website. Planning Team Meeting #4 reviewed the input gathered from the Survey (see **Attachments**).



Next, the First Draft Plan was ready for notice and distribution to the public and stakeholders. The third outreach event took place in September 2025 which focused on the availability of the First Draft Plan and the Team's stated desire for input. The Planning Team wanted to ensure gathering as many perspectives as possible. Also, sharing and gathering input served as an excellent means to enlist local champions interested in mitigation opportunities regarding their own homes and businesses.

After documenting the input gathered on the First Draft Plan, the Second Draft Plan was ready for submission to Cal OES and FEMA along with a request for a formal review and a determination of "approvable pending adoption". Throughout the formal review process, the Planning Team and consultant completed amendments to the Plan as mandated by Cal OES and FEMA.

Upon receipt of FEMA's Approvable Pending Adoption notice, the Final Draft Plan will be posted in advance of City of Sierra Madre's City Council public meeting. During the fourth community outreach event, the public and stakeholders will be informed of the City Council meeting through email and social media. The purpose of the meeting will be to provide a public forum where additional comments can be gathered from the Council and attendees. The public meeting will include a presentation of a staff report and PowerPoint outlining the planning process and benefits of hazard mitigation. Staff will request the plan be adopted by the City Council and will follow up with forwarding a signed resolution to FEMA. Upon receipt of the proof of adoption, FEMA will issue a Letter of Approval.

Community Outreach Strategy

The planning process was powered by City staff, the public and stakeholders from across the private, public and non-governmental sectors. All of these resources were needed to assist with technical expertise, historical knowledge, and insights into hazards and mitigation strategies.

Stakeholder Outreach

The FEMA Handbook defines the need to identify specific stakeholders with a vested interest in the jurisdiction's mitigation planning. **Table A.3** defines each of the stakeholder categories as defined in the Handbook. Outreach to stakeholders was accomplished through direct emails and mail.

Table A.3: Stakeholder Categories Defined

Stakeholder Categories Defined
Local and Regional Agencies Involved in Hazard Mitigation Activities. Examples include public works, emergency management, local floodplain administration and Geographic Information Systems (GIS) departments.
Agencies that have the Authority to Regulate Development. Examples include zoning, planning, community and economic development departments, building officials, planning commission, and other elected officials.
Neighboring Communities. Examples include adjacent local governments, including special districts, such as those that are affected by similar hazard events or may share a mitigation action or project that crosses jurisdictional boundaries. Neighboring communities may be partners in hazard mitigation and response activities, or maybe where critical assets, such as dams, are located.
Businesses, Academia and other Private Organizations. Examples include a chamber of commerce, institutions of learning, private utilities or major employers that sustain community lifelines (providers of vital services in a community that when stabilized enable all other aspects of society to function).
Nonprofit Organizations and Community-Based Organizations. These organizations work directly with and/or provide support to underserved communities and socially vulnerable populations, among others. It is key to bringing partners to the table who can speak to the unique needs of these groups. Examples include housing, healthcare and social services agencies.

Table A.4 is the Stakeholder List by Category prepared by the Planning Team.

Table A.4: Stakeholder List by Category

Agency Name	Department Name	Individual's Name	Individual's Job Title
Local and Regional Agencies Involved in Hazard Mitigation Activities. Need to include agencies and departments identified with responsibilities on the Mitigation Actions Matrix.			
City of Sierra Madre Planning Team	City Manager Office	Jose Reynoso	City Manager
		Miguel Hernandez	Assistant City Manager
		Laura Aguilar	Deputy City Manager
	Police Department	Gustavo Barrientos	Chief of Police
	Fire Department	Brent Bartlett	Fire Chief
	Public Works	Arnulfo Yanez	Public Works Director
	Water Department	Steven McGee	Water Superintendent
	Planning	Clare Lin	Director of Planning & Community Preservation
	Code Enforcement	Clare Lin	Director of Planning & Community Preservation
	Finance	Anthony Rainey	Finance Director
	IT Department	Oscar Millan	Information Technology Manager
	Fire Department	Bob Spears	Emergency Services Manager
Office of Disaster Management	Area D	Diana Manzano-Garcia	Disaster Management Area Coordinator
City of Glendale	Verdugo Fire Communications Center	Brian Murphy	Fire Chief
Sierra Madre CERT		Pat Alcorn	President
Sierra Madre Search and Rescue		Robert Klusman	President
Los Angeles City	Emergency Management Department	Jim McDonnell	Chief of Police
Los Angeles County Sheriff	Temple City Station	Dispatch	Temple City
Agencies with Authority to Regulate Development. Need to include agencies responsible for enforcing regulatory standards like zoning, building code, and general plan on buildings and facilities owned by the City. Should include departments as well as any commissions or boards with authority to change standards.			
	City Council	Robert Parkhurst	Mayor
		Kristine Lowe	Mayor Pro Tem
		Edward Garcia	Council Member
		Kelly Kriebs	Council Member
		Gene Goss	Council Member
		Sue Spears	City Treasurer
Willdan	Building and Safety	Daren Raskin	Deputy Director
	Fire	Sandie Hastings	Fire Marshall
Hong Tam	Building and Safety	Hog Tam	Structural Engineer

Agency Name	Department Name	Individual's Name	Individual's Job Title
Los Angeles County	Fire	Leticia Pacillas	Community Services Liaison
California State	Department of Fish and Wildlife	Jane McKeever	Senior Environmental Scientist Supervisor
Community Services Commission		Lisa Carlson	Chair
		Roxanne Bartlett	Vice Chair
		Ashley Bonenfant	Commissioner
		Ann Palmer	Commissioner
		Geoffrey Woods	Commissioner
Natural Resources Commission		Allison Evans	Chair
		Jane Nelsen	Commissioner
		Kimberly Rodriguez	Commissioner
		Vicky Ryan	Commissioner
		William Patzert	Commissioner
Planning Commission		Tom Denison	Chair
		Pat Simcock	Vice Chair
		General	
Senior Community Commission		Patricia Krok	Chair
		Jacquie Pergola	Vice Chair
		Mary Carney	Commissioner
		Stephen Heydorff	Commissioner
		Marlene Enmark	Commissioner
Neighboring Communities. Includes jurisdictions and special districts within the service area and adjoining jurisdictions.			
Adjoining & Nearby Cities			
City of Arcadia	City Manager Office	Dominic Lazzaretto	City Manager
City of Pasadena	City Manager Office	Miguel Márquez	City Manager
City of Monrovia	City Manager Office	Dylan Feik	City Manager
City of San Marino	City Manager Office	Philippe Eskandar	City Manager
City of South Pasadena	City Manager Office	Sean Joyce	City Manager
City of San Gabriel	City Manager Office	Mark Lazzaretto	City Manager
City of Glendale	City Manager Office	Roubik Golanian	City Manager
City of Burbank	City Manager Office	Justin Hess	City Manager
Special Districts (providing services to the community)			
Pasadena Unified School District	Unknown	Shannon Malone	Senior Director
Business Organizations, Academia, and other Private Interests. Private Interests are community lifelines and major employers located in the service area.			
Businesses Organizations			

Agency Name	Department Name	Individual's Name	Individual's Job Title
Chamber of Commerce	Sierra Madre Chamber	Chris Cimino	President
The Kensington		Jodie Kendall	Director of Community Relations
Academia			
Pasadena Unified School District		Shannon Malone	Senior Director
Sierra Madre Elementary School		Jodi Marchesso	Principal
Sierra Madre Middlw School		Garret Newsom	Principal
St. Rita School		Jon McMaster	Office Manager
The Gooden School		Sam Enriquez	Director, Facilities, Safety and Security
Bethany Christian School		Jon Hawes	Head of Bethany Christian School
Sierra Madre Community Nursery School		Thais Anderson	Director of Operations
Major Employers			
The Kensington		Jodie Kendall	Director of Community Relations
The British Home in California, Ltd		Unknown	Unknown
Taylor's Ol' Fashion Market		Unknown	Unknown
Poppy Cake Baking Company		Unknown	Unknown
The Only Place in Town		Unknown	Unknown
Nonprofit and Community-Based Organizations that work directly with and/or provide support to underserved communities and socially vulnerable populations. FEMA categorizes "socially vulnerable populations" as including but not limited to high poverty, limited access to a vehicle, age (very old or very young), limited English language skills, disability status, race, and ethnicity. The focus with this part of the list is to contact groups that have direct contact with socially vulnerable populations who can share information about the distribution of your materials.			
Nonprofit Organizations			
Pasadena-Sierra Madre YMCA		Kurt Knop	Executive Director
Faith-Based Organizations			
Christ Church Sierra Madre		Jonathan Wee	Director of Outreach
Bethany Church of Sierra Madre		Frank Schifani	Front Office
St. Rita Catholic Parish		Aida Saldaña	Director of Parish Administration
Sierra Madre United Methodist Church			Administrative Assistant

Agency Name	Department Name	Individual's Name	Individual's Job Title
Disability Services Agencies			
Public Counsel		Stephanie Carroll	Directing Attorney
Health and Social Services	Cancer Support Community	Philip Herrera	Office Manager
Service Clubs			
Sierra Madre Rotary Club		Robert Stockly	President
Sierra Madre Kiwanis Club		Judy Webb-Martin	President
Sierra Madre Civic Club		Colleen McKernan	President
Community-Based Organizations			
Sierra Madre Woman's Club		Mary Carney	
Sierra Madre Canyon		Catherine Adde	Canyon Captain
Other. List other individuals/agencies that are not specifically identified above that you like to include in the distribution of materials.			
California State Senate	Senator Pérez Office	Edmundo Cuevas	Chief of Staff
California State Assembly	Assembly Member	Tom Steel	Chief of Staff
U. S. House of Representatives	Representative Judy Chu Office	Ellen Hamilton	Chief of Staff
City of Los Angeles	Angeles National Forest Services	Robert Garcia	Fire Chief
Charter Spectrum		Peter Hidalgo	Director of Government Affairs
Athens Services		Brandon Stansell	Government Liaison
Southern California Edison		Thomas Wong	Senior Advisor, Local Public Affairs
Southern California Gas Company		Jessica Alvarenga	Manager, Public Affairs
SGV Municipal Water District		Darin Kasamoto	General Manager
Los Angeles County	Public Works	Dai Bui	Area Engineer
	Planning	Amy Bodek	Director
State of California	Hazard Mitigation Branch Director & Building Code Enforcement	Melissa Boudrye	Chief

Public Outreach

Equally important are the individuals who reside, work, study, and play in the Sierra Madre community. Outreach to the public was accomplished through social media, flyers, public forums, newsletters, a dedicated website, and public postings.

Outreach Methods and Activities
The outreach methods identified in **Table A.5** include an extensive list of activities utilized throughout the planning process.

Table A.5: Outreach Methods and Activities for Public and Stakeholders

Outreach Methods and Activities (See **Attachments** for samples)	**Stakeholder Categories**					**Public**
	Local and Regional Agencies Involved in Hazard Mitigation	**Agencies with Authority to Regulate Development**	**Neighboring Communities (including adjacent local governments and special districts)**	**Businesses, Academia, and other Private Organizations**	**Nonprofit Organizations, Community-Based Organizations**	
Email or Mail to Stakeholders – direct communication for each of the community outreach events.	X	X	X	X	X	
Public Forums – City Council	X	X				X
Flyer (electronic and hard copy)– shared via Website, Social Media, and posted at: City Hall, Senior Center, Community Center, City Facilities, Library, Local Businesses on Sierra Madre Boulevard	X	X	X	X	X	X
City's Website – Posted plan- related documents and community outreach materials.	X	X	X	X	X	X
Social Media – Facebook, X, and Instagram	X	X	X	X	X	X
Local Newsletter – Village View	X	X	X	X	X	X
DMAC Area D Meetings	X	X	X			

Public and Stakeholder Input

Table A.6 provides details on the results of the Mitigation Survey as well as comments received via the website and the First Draft Plan. Any generalized comments are also included.

Input gathered from the public or stakeholders is listed in the right column. In addition to the input gathered, and how the information was utilized in the plan.

Table A.6: Public and Stakeholder Input

Date(s) of Invite/Input	Agency, Recipient's Name, Position Title	Information Received and Incorporated into Plan
PUBLIC and STAKEHOLDERS		
March 2025/March 2025	Received via website survey	**Information Received**: Please see the Attachments. **Incorporated into Plan**: Planning Team reviewed all of the results and comments gathered through the Survey. Information gathered influenced additions to the Mitigation Actions Matrix.
PUBLIC		
September 23, 2025/October 7, 2025	Bob Spears, Resident	**Information Received:** See Attachments for complete submission and annotated responses. Comments related to clarifications and corrections in Element B. **Incorporated into Plan:** Element B – Risk Assessment and Vulnerability & Impacts – numerous changes.
September 23, 2025/October 8, 2025	Glenn Hickman, Resident	**Information Received:** See Attachments for complete submission and annotated responses. Comments related to missing and existing content in Elements A, B, and E. Element A needs to include information in the City of Sierra Madre Eaton Fire Response After-Action Report and Improvement Plan (AAR/IP) **Incorporated into Plan:** Element A – AAR/IP was added to "Use of Existing Documents". Element B – Risk Assessment was revised to include more clarity on the purpose of the Calculated Priority Risk Index, Landslide (slope stabilization), and Vulnerability & Impacts – Structures. Element C – Mitigation-related actions in the Improvement Plan have been added to the Mitigation Actions Matrix. Element E Changes in Development.
September 23, 2025/September 24, 2025	Allen Ma, Resident	**Information Received:** Email (see Attachments) with general questions and comments relating to use of 2020 HMP, historical disaster declarations, selected hazard profiles, structure vulnerability analysis, sharing mitigation resources with other communities, and engaging asset owners. **Incorporated into Plan:** 2020 HMP was added to Element A: Planning Process – Use of Existing Data. As for historical declarations – not all disasters receive both state and federal declarations. As for the hazard profiles, the Team and consultant spent considerable time researching and reviewing possible natural hazards. Debris flow is discussed under the Landslide Profile. FEMA regulations for HMPs do not require information on the specific structural status/improvements to the listed buildings and infrastructure. As for sharing mitigation resources, the Stakeholder List includes a robust collection of neighboring communities, utilities, businesses, and local / regional agencies involved in mitigation and development. As per FEMA regulations, this outreach is intended to inform asset owners of the City's intentions to mitigation hazards for City-owned buildings and infrastructure. As for CEQA requirements, generally attorneys for local governments recommend a Negative Declaration since the Mitigation Action Items do not contain project-specific details.
September 23, 2025/September 27, 2025	Allen Ma, Resident	**Information Received:** Email (see Attachments) with question about incorporating the Eaton Fire AAR/IP. **Incorporated into Plan:** Although the AAR/IP was not included in the First Draft Plan, it has since been incorporated into the Second Draft Plan.
STAKEHOLDERS		
Local and Regional Agencies Involved in Hazard Mitigation Activities		

Date(s) of Invite/Input	Agency, Recipient's Name, Position Title	Information Received and Incorporated into Plan
September 23, 2025/October 7, 2025	City of Sierra Madre, Bob Spears, Emergency Services Manager	See Bob Spears, Resident comments above.
September 23, 2025/October 16, 2025	City of Sierra Madre, Debbie Roberts, Associate Librarian	**Information Received**: Email (see Amendments) providing questions and clarifications with most relating to Element B: Risk Assessment. **Incorporated into Plan**: Recommendations within the scope of the planning regulations were incorporated into the Second Draft Plan.
Agencies with Authority to Regulate Development		
September 23, 2025/October 7, 2025	Los Angeles County Public Works, Loni Eazell, Disaster Services Specialist	**Information Received:** Email (see Attachments) providing clarifications and corrections to Element B: Risk Assessment – Hazard Profiles. **Incorporated into Plan:** All of the clarifications and corrections have been incorporated into the plan.
September 23, 2025/October 7, 2025	Willdan Engineering Company, Sandie Hastings, Principal Project Manager	**Information Received:** Email stating "no comments".
September 23, 2025/September 23, 2025	Sierra Madre Energy, Environment and Natural Resources Commission, William Patzert, Commissioner	**Information Received:** Email (see Attachments) providing serious concerns about the status of Eaton Canyon as an "all-natural" environment. **Incorporated into Plan:** Eaton Canyon is not with Sierra Madre jurisdiction.
Neighboring Communities		
		None Received
Business Organizations, Academia, and Private Organizations		
		None Received
Nonprofit Organizations and Community-Based Organizations		
		None Received

Use of Existing Data

The Planning Team gathered and reviewed existing data and plans during plan writing and specifically noted as "sources". Numerous documents were used to support the planning process:

City of Sierra Madre Hazard Mitigation Plan 2020

No longer posted online

Applicable Incorporation: The 2025 document contains numerous references and content from the 2020 HMP.

City of Sierra Madre Website 2025

https://www.sierramadreca.gov/

Applicable Incorporation: Department Information used in Element B: Risk Assessment - Capability Assessment, Element B: Risk Assessment - City Profile
Element B: Risk Assessment – Hazard Profiles

City of Sierra Madre General Plan 2015

https://www.sierramadreca.gov/cityhall/strategic_planning/general_plan

Applicable Incorporation: Information about hazards contributed to Element B: Risk Assessment - City Profile, and Element B: Risk Assessment – Hazard Profiles.

City of Sierra Madre Safety Element 2023
https://www.sierramadreca.gov/cityhall/strategic_planning/general_plan
Applicable Incorporation: Information about hazards contributed to Element B: Risk Assessment - City Profile, and Element B: Risk Assessment – Hazard Profiles.

City of Sierra Madre Circulation Element 2021
https://www.sierramadreca.gov/cityhall/strategic_planning/general_plan
Applicable Incorporation: Information about the planning area used in Element B: Risk Assessment – City Profile

Sierra Madre Fire Department Annual Report 2025
https://www.cityofsierramadre.com/cms/One.aspx?portalId=212393&pageId=7371294
Element B: Risk Assessment – Hazard Profiles—Wildfire and Landslide

County of Los Angeles General Plan 2035
https://planning.lacounty.gov/long-range-planning/general-plan/
Applicable Incorporation: Information about the planning area and geography used in Element B: Risk Assessment - City Profile, and Element B: Risk Assessment – Hazard Profiles.

Draft County of Los Angeles All-Hazards Mitigation Plan 2025
https://ceo.lacounty.gov/emergency-management/hazard-mitigation-planning-update/
Applicable Incorporation: Information about hazards in the County contributed to Element B: Risk Assessment – Identify Hazards.

State of California Hazard Mitigation Plan 2023
https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/state-mitigation-planning/
Applicable Incorporation: Hazard identification information used in Element B: Risk Assessment – Identify Hazards.

HAZUS Maps and Reports 2025
Created by Emergency Planning Consultants
Applicable Incorporation: Numerous HAZUS maps and reports have been included in Element B: Risk Assessment – Hazard Profiles - Earthquake.

National Flood Insurance Program 2025
www.fema.gov/national-flood-insurance-program
Applicable Incorporation: Element C: Mitigation Strategy – Capabilities.

California Department of Forestry and Fire Protection (CAL FIRE) 2025
https://www.fire.ca.gov/
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles - Wildfire.

California Department of Conservation 2025
www.conservation.ca.gov/cgs
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles – Earthquake, Landslide.

U.S. Geological Survey 2025
www.usgs.gov
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles – Earthquake, Landslide

California's Fourth Climate Change Assessment: Los Angeles Region Report 2019
https://www.ioes.ucla.edu/project/los-angeles-regional-climate-assessment/
Applicable Incorporation: Element B: Risk Assessment – Vulnerability and Impacts Assessment.

National Weather Service Website 2025
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles - Windstorm

NOAA National Severe Storms Laboratory 2025
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles - Flooding

Department of Water Resources, Division of Safety of Dams 2025
https://fmds.water.ca.gov/maps/damim/
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles – Flooding

NOAA Storm Events Database 2025
https://www.ncdc.noaa.gov/stormevents/
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles - Wildfire.

U.S. Drought Monitor 2025
https://www.drought.gov/data-maps-tools/us-drought-monitor
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles – Drought

City of Sierra Madre Eaton Fire Response After Action Report and Improvement Plan 2025
https://www.sierramadreca.gov/cityhall/city_manager_s_office/transparency/sierra_madre_eaton_fire_after_action_report
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles – Wildfire

CalMatters – February 2025 How Debris Flows Endanger Fire Ravaged Communities
https://calmatters.org/environment/wildfires/2025/02/debris-flows-eaton-fire-la-montecito/
Applicable Incorporation: Element B: Risk Assessment – Hazard Profiles - Landslides

Element B: Risk Assessment

Q&A | ELEMENT B: RISK ASSESSMENT | B1-a.
Q: Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area? (Requirement 44 CFR § 201.6(c)(2)(i)) **A:** See **Identify Hazards, Table B.1, Table B.2, Hazard Profiles,** and **Table B.5** below.
Q&A | ELEMENT B: RISK ASSESSMENT | B1-b.
Q: Does the plan include information on the location of each identified hazard? (Requirement 44 CFR § 201.6(c)(2)(i)) **A:** See **Local Conditions, Map B.1** below.
Q&A | ELEMENT B: RISK ASSESSMENT | B1-c.
Q: Does the plan describe the extent for each identified hazard? (Requirement 44 CFR § 201.6(c)(2)(ii)) **A:** See **Map B.2-B.4** below.
Q&A | ELEMENT B: RISK ASSESSMENT | B1-d.
Q: Does the plan include the history of **previous** hazard events for each identified hazard? (Requirement 44 CFR § 201.6(c)(2)(i)) **A:** See **Previous Earthquakes Impacting City of Sierra Madre, Previous Earthquakes Impacting Los Angeles County,** and **Table B.7** below.
Q&A | ELEMENT B: RISK ASSESSMENT | B1-e.
Q: Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including the type, location and range of anticipated intensities of identified hazards? (Requirement 44 CFR § 201.6(c)(2)(i)) **A:** See **Probability of Future Earthquakes**

FEMA requires this part of the plan to include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction. In addition, the plan includes information on previous occurrences of hazard events and on the probability of future hazard events. Also, the plan is required to include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards. This includes the National Flood Insurance Program - insured structures that have been repetitively damaged by floods.

Element B: Risk Assessment is divided into three sections: 1) City Profile which provides a brief look at the history and facts about the community, 2) Risk Assessment which focuses on the hazards, and 3) Vulnerability and Impacts Assessment which analyzes the hazards and community assets.

Before delving into the hazards and vulnerability, the jurisdiction believes it is important to share history and background information in the form of a City Profile. Additional information on the assets (People, Structures, Economy, Natural/Historic/Cultural Resources, and Activities Bringing Value to the Community) can be found later in Element B: Risk Assessment – Vulnerability and Impacts Assessment.

City Profile

The City is one of 29 cities in the San Gabriel Valley region of Los Angeles County. The City encompasses approximately 3.2 square miles with a population of 11,268 people, according to the 2020 census. It is located approximately 17 miles northeast of downtown Los Angeles at the base of the San Gabriel Mountains. Sierra Madre is bounded by the cities of Arcadia to the east and south, Pasadena to the west, and the Angeles National Forest to the north.

Sierra Madre's General Plan - Circulation Element explains there are no regional transportation facilities located within the City boundaries of Sierra Madre. The City is served by Interstate 210 Foothill Freeway located approximately one-half mile south of the City. The Los Angeles County Metropolitan Transportation Authority (Metro) maintains a local, on-demand ridesharing service that serves Sierra Madre, Altadena, and Pasadena as well as nearby light rail service (the Sierra Madre Villa L Line Station is approximately two miles from the center of town and the Arcadia L Line Station is approximately 2.6 miles from downtown Sierra Madre). Major streets which are operated by the City include Michillinda Avenue, Santa Anita Avenue, Grandview Avenue, Sierra Madre Boulevard, and Orange Grove Avenue. The circulation system in the City of Sierra Madre includes a network of surface streets which serve two distinct and equally important functions: access to adjacent properties, and movement of persons and goods into and out of the City.

Considerably more information about "community profile" is located later in Element B: Risk Assessment – Vulnerability and Impacts Assessment – People.

What is a Risk Assessment?

Conducting a risk assessment can provide information regarding: the types of hazards a jurisdiction is exposed to; the location where the hazard might occur; the history of the hazard in the City of Sierra Madre and surrounding area; and the future risk they pose. Specifically, the five levels of a risk assessment are as follows:

1. *Identify Hazards*
2. *Hazard Profiles*
3. *Identify Community Assets*
4. *Analyze Impacts*
5. *Summarize Vulnerability*

Identify Hazards

This section is the description of the geographic extent, potential intensity, and the probability of occurrence of a given hazard. Maps are used in this plan to display hazard identification data. To determine the hazard with significant potential to impact the Planning Team examined four resources: California's 2023 State Hazard Mitigation Plan, the Draft Los Angeles County All-Hazard Mitigation Plan 2025, the City's 2015 General Plan, and the General Plan - Safety Element 2023.

The Planning Team reviewed existing documents to determine which of the hazards posed the most significant threat to the planning area and its ability to deliver services. In other words, which hazard would likely result in a local declaration of emergency. The Planning Team also reviewed

Federal Disaster Declarations for Los Angeles County. Los Angeles County experienced 15 federal disaster declarations from 2018 – 2024. **Table B.1** outlines those disaster declarations.

Table B.1: Federal Disaster Declarations 2018-2024 Los Angeles County
Source: FEMA website State and County Disaster Declarations, 2024

Year	Federal Declaration Number	State of Emergency Declaration Issued by California	Declaration Title
2024	DR-4769-CA	Yes	Severe Winter Storms, Tornadoes
2023	DR-4699-CA	Yes	Severe Winter Storms, Straight-Line Winds, Flooding, Landslides, and Mudslides
2023	EM-3591-CA	Yes	Severe Winter Storms, Flooding, and Mudslides
2023	EM-3592-CA	Yes	Severe Winter Storms, Flooding, Landslides, and Mudslides
2023	DR-4683-CA		Severe Winter Storms, Flooding, Landslides, and Mudslides
2022	N/A	Yes	Extreme Heat
2022	N/A	Yes	Tropical Storm Kay
2021	DR-4569-CA		Wildfires
2021	FM-5381-CA		Blue Ridge Fire
2021	N/A	Yes	Winter Storms
2021	N/A	Yes	Drought
2020	DR-4482-CA		Covid-19 Pandemic
2020	EM-3428-CA		Covid-19
2020	N/A	Yes	Extreme Heat Event
2020	FM-5374-CA		Bobcat Fire
2019	FM-5297-CA		Getty Fire
2019	FM-5296-CA		Wildfires
2019	FM-5293-CA		Saddleridge Fire
2018	EM-3409-CA		Wildfire
2018	DR-4407-CA	Yes	Wildfires
2018	DR-5280-CA	Yes	Woolsey Fire

The Team utilized FEMA's Calculated Priority Risk Index (CPRI) ranking technique to quantify the probability, magnitude/severity, warning time and duration for each of the hazards. The hazard ranking system is described below in **Table B.2**.

Table B.2: Calculated Priority Risk Index
Source: Federal Emergency Management Agency

CPRI Category	Degree of Risk			Assigned Weighting Factor
	Level ID	Description	Index Value	
Probability	Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than 1 in 1,000 years.	1	45%
	Possibly	Rare occurrences. Annual probability of between 1 in 100 years and 1 in 1,000 years.	2	
	Likely	Occasional occurrences with at least 2 or more documented historic events. Annual probability of between 1 in 10 years and 1 in 100 years.	3	
	Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability of greater than 1 every year.	4	
Magnitude and Severity	Negligible	Negligible property damage (less than 5% of critical and non-critical facilities and infrastructure. Injuries or illnesses are treatable with first aid and there are no deaths. Negligible loss of quality of life. Shut down of critical public facilities for less than 24 hours.	1	30%
	Limited	Slight property damage (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). Injuries or illnesses do not result in permanent disability, and there are no deaths. Moderate loss of quality of life. Shut down of critical public facilities for more than 1 day and less than 1 week.	2	
	Critical	Moderate property damage (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and at least 1 death. Shut down of critical public facilities for more than 1 week and less than 1 month.	3	
	Catastrophic	Severe property damage (greater than 50% of critical and non-critical facilities and infrastructure). Injuries and illnesses result in permanent disability and multiple deaths. Shut down of critical public facilities for more than 1 month.	4	
Warning Time	> 24 hours	Population will receive greater than 24 hours of warning.	1	15%
	12–24 hours	Population will receive between 12-24 hours of warning.	2	
	6-12 hours	Population will receive between 6-12 hours of warning.	3	
	< 6 hours	Population will receive less than 6 hours of warning.	4	
Duration	< 6 hours	Disaster event will last less than 6 hours.	1	10%
	< 24 hours	Disaster event will last less than 6-24 hours.	2	
	< 1 week	Disaster event will last between 24 hours and 1 week.	3	
	> 1 week	Disaster event will last more than 1 week.	4	

Table B.3: Calculated Priority Risk Index Ranking for the City of Sierra Madre
Source: City of Sierra Madre Planning Team

Hazard	Probability	Weighted 45% (x.45)	Magnitude Severity	Weighted 30% (x.3)	Warning Time	Weighted 15% (x.15)	Duration	Weighted 10% (x.1)	CPRI Total	Hazard Priority Ranking * (H-High, M-Medium, L-Low)
Earthquake	3	1.35	4	1.20	4	0.60	1	0.10	**3.25**	**H**
Wildfire	3	1.35	4	1.20	4	0.60	3	0.30	**3.45**	**H**
Power Outage	4	1.60	2	0.60	3	0.45	2	0.20	**2.85**	**H**
Windstorm	3	1.35	2	0.60	2	0.30	2	0.20	**2.45**	**M**
Landslide	2	0.90	3	0.90	4	0.60	1	0.10	**2.5**	**M**
Flood	3	1.35	3	0.90	2	0.30	2	0.20	**2.75**	**H**
Drought	3	1.35	2	0.60	1	0.15	4	0.40	**2.50**	**M**
Contagious Disease	2	0.90	2	0.60	1	0.15	4	0.40	**2.05**	**L**

***Hazard Priority Ranking**
High=CPRI score for probability + magnitude/severity (impact) = 6 or higher
Medium=CPRI score for probability + magnitude/severity (impact) = 5
Low=CPRI score for probability + magnitude/severity (impact) = 3 or 4
N/A=CPRI score for probability + magnitude/severity (impact) = 2

Table B.4: Hazard Source Review and Inclusion/Omission by Planning Team
Source: Planning Team (PT); California State Hazard Mitigation Plan (SHMP); Los Angeles County All-Hazard Mitigation Plan, (AHMP); Safety Element (SE), National Risk Index (NRI)

Hazard	Source	Profiled in HMP	Reason for Inclusion	Reason for Omission
Avalanche	NRI, SHMP	N		Does not pose a significant threat to the community.
Climate Change	AHMP, SE, PT	N		The Planning Team chose to integrate climate change information into each of the profiled hazards.
Coastal Flooding	NRI	N		Does not pose a significant threat to the community.
Cold Wave	NRI, SHMP	N		Does not pose a significant threat to the community.

Hazard	Source	Profiled in HMP	Reason for Inclusion	Reason for Omission
Dam Inundation	SHMP, AHMP, SE	N		Does not pose a significant threat to the community.
Disease	PT	N		The Planning Team assigned hazard priority ranking of "Low".
Drought	NRI, SHMP, AHMP, SE, PT	Y	The Planning Team assigned hazard priority ranking of "Medium".	
Earthquake	NRI, SHMP, AHMP, SE, PT	Y	The Planning Team assigned hazard priority ranking of "High".	
Riverine Flooding	NRI, SHMP, AHMP	Y	The Planning Team assigned hazard priority ranking of "High".	
Hail	NRI	N		Does not pose a significant threat to the community.
Heat Wave	NRI, SHMP	N		Does not pose a significant threat to the community.
Hurricane	NRI	N		Does not pose a significant threat to the community.
Ice Storm	NRI	N		Does not pose a significant threat to the community.
Landslide	NRI, SHMP, AHMP, SE, PT	Y	The Planning Team assigned hazard priority ranking of "Medium".	
Levee Failure	SHMP	N		Does not pose a significant threat to the community.
Lighting	NRI	N		Does not pose a significant threat to the community.
Power Outage	PT	Y	The Planning Team assigned hazard priority ranking of "High".	
Strong Wind	NRI, SHMP	Y	The Planning Team assigned hazard priority ranking of "Medium".	
Subsidence	SHMP	N		Does not pose a significant threat to the community.

Hazard	Source	Profiled in HMP	Reason for Inclusion	Reason for Omission
Tornado	NRI	N		Does not pose a significant threat to the community.
Tsunami	NRI, SHMP, AHMP	N		Does not pose a significant threat to the community.
Volcanic Activity	NRI, SHMP	N		Does not pose a significant threat to the community.
Wildfire	NRI, SHMP, AHMP, SE PT	Y	The Planning Team assigned hazard priority ranking of "High".	
Winter Weather	NRI	N		Does not pose a significant threat to the community.

Hazard Profiles

Table B.2 (Calculated Priority Risk Index) included all of the natural hazards that can affect the jurisdiction. **Table B.3** (CPRI Ranking) emphasizes the importance of considering the "scope and scale" of a possible event. In other words, the Planning Team members were reminded to envision an event of such significance that a local declaration of emergency would likely be issued. The planning team chose to profile only those hazards with a medium or high hazard priority ranking (probability + magnitude/severity). In total, these hazards include earthquake, wildfire, power outage, windstorm, landslide, flood, and drought. **Table B.4** provided a justification for why or why not a hazard was profiled in the plan. Next, **Table B.5** provides a summary of the profiled hazards indicating a generalized perspective of the community's vulnerability according to extent, location, and probability, and previous significant event.

Table B.5: Hazard Profile of Location, Extent, Probability, Most Recent Previous Significant Event
Source: Safety Element, Planning Team

Hazard	Location (Where)	Extent (How Big an Event)	Probability * (How Often)	Most Recent Previous Significant Event
Earthquake	Entire Project Area	The Southern California Earthquake Center (SCEC) in 2007 concluded that there is a 99.7 % probability that an earthquake of M6.7 or greater will hit California within 30 years.[1]	Likely	1991 - Sierra Madre M5.6
Wildfire	From Highland Avenue North	Moderate, High and Very High Fire Hazard Zones	Likely	January 2025 Eaton Fire destroyed 14 homes and 25 other structures. Severe effects on the Sierra Madre Historical Wilderness

Hazard	Location (Where)	Extent (How Big an Event)	Probability * (How Often)	Most Recent Previous Significant Event
				Area and Mount Wilson Trail.
Power Outage	Entire Project Area	Broad range of extent based on the scope and scale of the utility event.	Likely	January 2025 Public Safety Power Shutoff due to damage from strong winds and wildfire.
Windstorm	Entire Project Area	50 miles per hour or greater.	Likely	January 2025 Santa Ana winds between 60-70mph. Caused downed power lines and fueled wildfire.
Landslide	Northwest, North, and Northeastern areas	Earthquake-induced and rain-induced landslide events could impact dozens of structures.	Possible	February 2025 Dangerous debris flows and heavy flooding led to road closures, evacuation orders, and damage to homes.
Flood	Eastern, Northwest, North, and Northeastern portions of the project area All areas against the foothills Canyon/urban wildland above the City	Urban flooding from severe weather, particularly after wildfire.	Possible	February 2025 Heavy rainfall and flash flooding led to road closures, evacuation orders, and damage to homes.
Drought	City Wide	The US Drought Website determined Sierra Madre's drought severity as moderate.	Likely	2021-2022, the city was included in the Executive order declaring a statewide drought emergency.
* Probability is defined as: Unlikely = 1:1,000 years, Possibly = 1:100-1:1,000 years, Likely = 1:10-1:100 years, Highly Likely = 1:1 year				
[1] Uniform California Earthquake Rupture Forecast				

Earthquake

Description

An earthquake is a sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of the Earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. They usually occur without warning and, after just a few seconds, can cause massive damage and extensive casualties. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure.

Ground Shaking

Ground shaking is the motion felt on the earth's surface caused by seismic waves generated by the earthquake. It is the primary cause of earthquake damage. The strength of ground shaking depends on the magnitude of the earthquake, the type of fault, and distance from the epicenter (where the earthquake originates). Buildings on poorly consolidated and thick soil will typically see more damage than buildings on consolidated soil and bedrock.

Liquefaction

Liquefaction is a phenomenon in which the strength and stiffness of soil is 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 pressure on the soil particles that influences how tightly the particles themselves are pressed together. Prior to an earthquake, the water pressure was relatively low. However, earthquake shaking can cause 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. See Liquefaction Areas discussion below for more information.

Modified Mercalli Scale and Peak Ground Acceleration Comparison

One tool used to describe earthquake intensity is the Magnitude Scale. The Magnitude Scale is sometimes referred to as the Richter Scale. The two are similar but not exactly the same. The Magnitude Scale was devised as a means of rating earthquake strength and is an indirect measure of seismic energy released. The Scale is logarithmic with each one-point increase corresponding to a 10-fold increase in the amplitude of the seismic shock waves generated by the earthquake. In terms of actual energy released, however, each one-point increase on the Richter scale corresponds to about a 32-fold increase in energy released. Therefore, a Magnitude 7 (M7) earthquake is 100 times (10 X 10) more powerful than a M5 earthquake and releases 1,024 times (32 X 32) the energy. **Table B.6** compares the Modified Mercalli Scale and Peak Ground Acceleration.

Table B.6: Modified Mercalli Scale and Peak Ground Acceleration Comparison
Source: USGS

Modified Mercalli Scale	Perceived Shaking	Potential Structure Damage		Estimated PGA (%g)
		Resistant Buildings	Vulnerable Buildings	
I	Not Felt	None	None	<0.17%
II-III	Weak	None	None	0.17% - 1.4%
IV	Light	None	None	1.4% - 3.9%
V	Moderate	Very Light	Light	3.9% - 9.2%

VI	Strong	Light	Moderate	9.2% - 18%
VII	Very Strong	Moderate	Moderate/Heavy	18%-34%
VIII	Severe	Moderate/Heavy	Heavy	34%-65%
IX	Violent	Heavy	Very Heavy	65% - 124%
X-XIII	Extreme	Very Heavy	Very Heavy	>124%

a. PGA = peak ground acceleration. Measured in percent of g, where g is the acceleration of gravity

Sources: USGS, 2008; USGS, 2010

Local Conditions

According to the Safety Element, the City of Sierra Madre is located in a geologically complex area that has a very active history of seismic activity due to the large number of faults in the region.

There are several active and potentially active faults located in the vicinity of the City. The nearest fault is the Sierra Madre Fault Zone which passes through the northern part of the City in a west-northwesterly direction. This fault zone consists of several sub- parallel branches found at the base of the mountains and within the one-quarter mile of slope above the mountain base. The Clamshell- Sawpit Fault, an off-shoot of the Sierra Madre Fault Zone, located approximately 1.5 miles east of Sierra Madre, and which generated the 1991 Sierra Madre earthquake, is a branch of the Sierra Madre Fault Zone.

Scientists have identified almost 100 faults in the Los Angeles area that are suspected of being capable of generating earthquakes with magnitudes of 6.0 or greater. Included within the newly discovered faults are faults that are classified as “blind thrusts”. These faults do not reach the ground surface but do connect many of the known surficial faults at depth and underlie nearly the entire Los Angeles, San Fernando and San Gabriel basins.

The U.S. Geological Survey and the Southern California Earthquake Center say that the Los Angeles area could expect one earthquake every year of magnitude 5.0 for the foreseeable future. The most likely major seismic events to affect Sierra Madre within the next 50 to 200 years most likely would occur as the result of movement along the Sierra Madre Fault, a blind thrust, or the San Andreas Fault.

On a citywide basis, the Sierra Madre, the Raymond, a blind thrust, and the San Andreas are faults considered to represent the greatest hazard to the City. Although significant earthquakes may occur on faults other than those identified, these faults are considered most likely to cause damage in the City. The Sierra Madre Fault Zone is the principal seismic hazard due not only to its potential for ground rupture, but also potential for seismic shaking. The consequences of strong seismic shaking are of greater significance over a far wider area than is ground rupture by active faulting.

The potential hazards that the City could face in an earthquake include the following: ground rupture, ground shaking, liquefaction, and landslides.

Map B.2 shows the geographic relationship of the City to surrounding active and potentially active faults.

Map B.2: Earthquake Faults near Sierra Madre
Source: General Plan, 2015



Estimation of Potential Human and Economic Losses Based on the Exposure and Vulnerability of People, Buildings, and Infrastructure

A vulnerability assessment in its simplest form is a simultaneous look at the geographical location of hazards and an inventory of the underlying land uses (populations, structures, etc.). Facilities that provide critical and essential services following a major emergency are of particular concern because these locations house staff and equipment necessary to provide important public safety, emergency response, and/or disaster recovery functions.

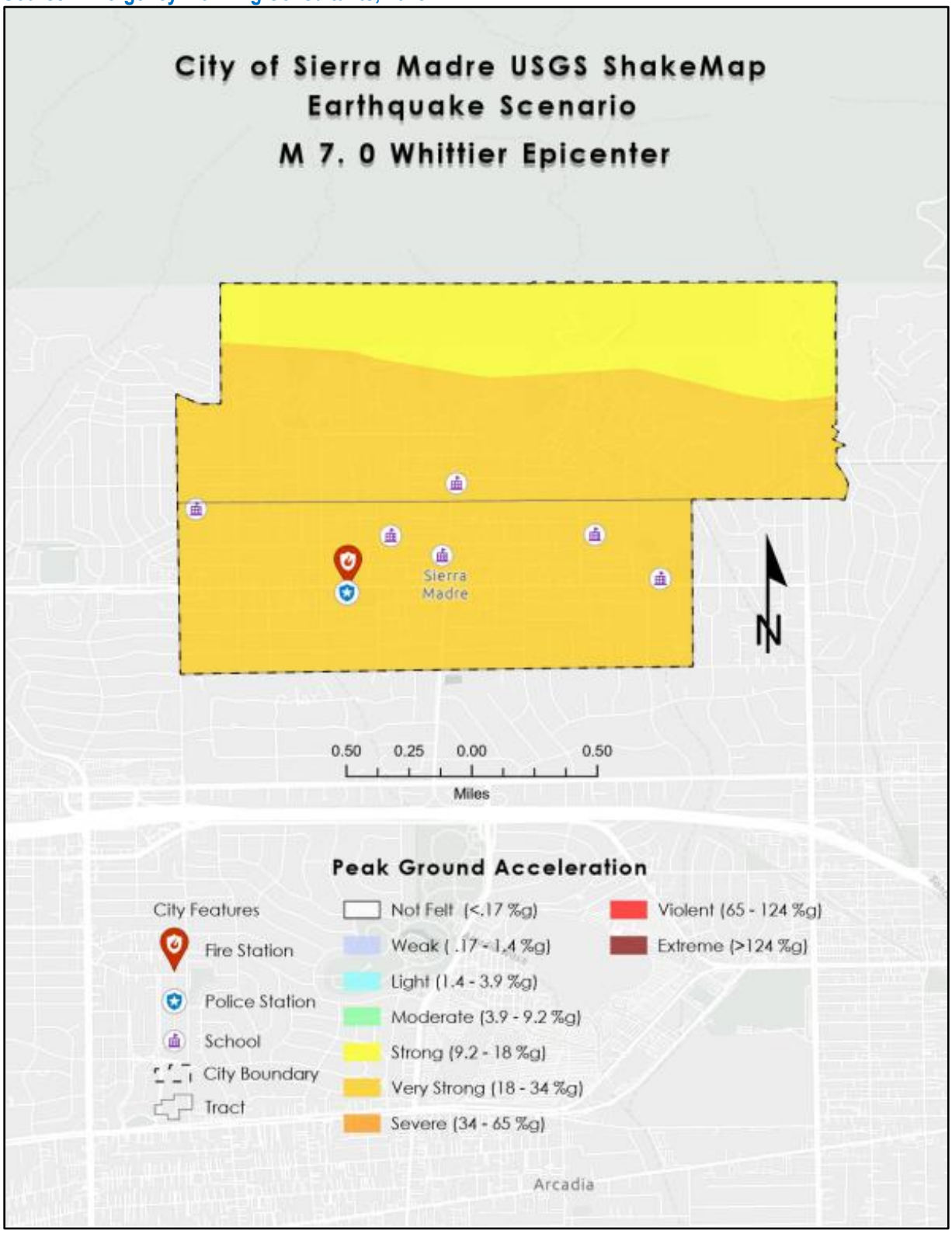
HAZUS

The hazard maps in the mitigation plan were generated by Emergency Planning Consultants using FEMA's Hazards United States – Multi Hazard (HAZUS-MH) software program. Below are the maps generated by HAZUS. The associated reports are available separately. Once the location and size of a hypothetical earthquake are identified, HAZUS-MH estimates the intensity of the ground shaking, the number of buildings damaged, the number of casualties, the amount of damage to transportation systems and utilities, the number of people displaced from their homes, and the estimated cost of repair and clean up. It's important to note that the "project area" is based on Census tracts not jurisdictional boundaries.

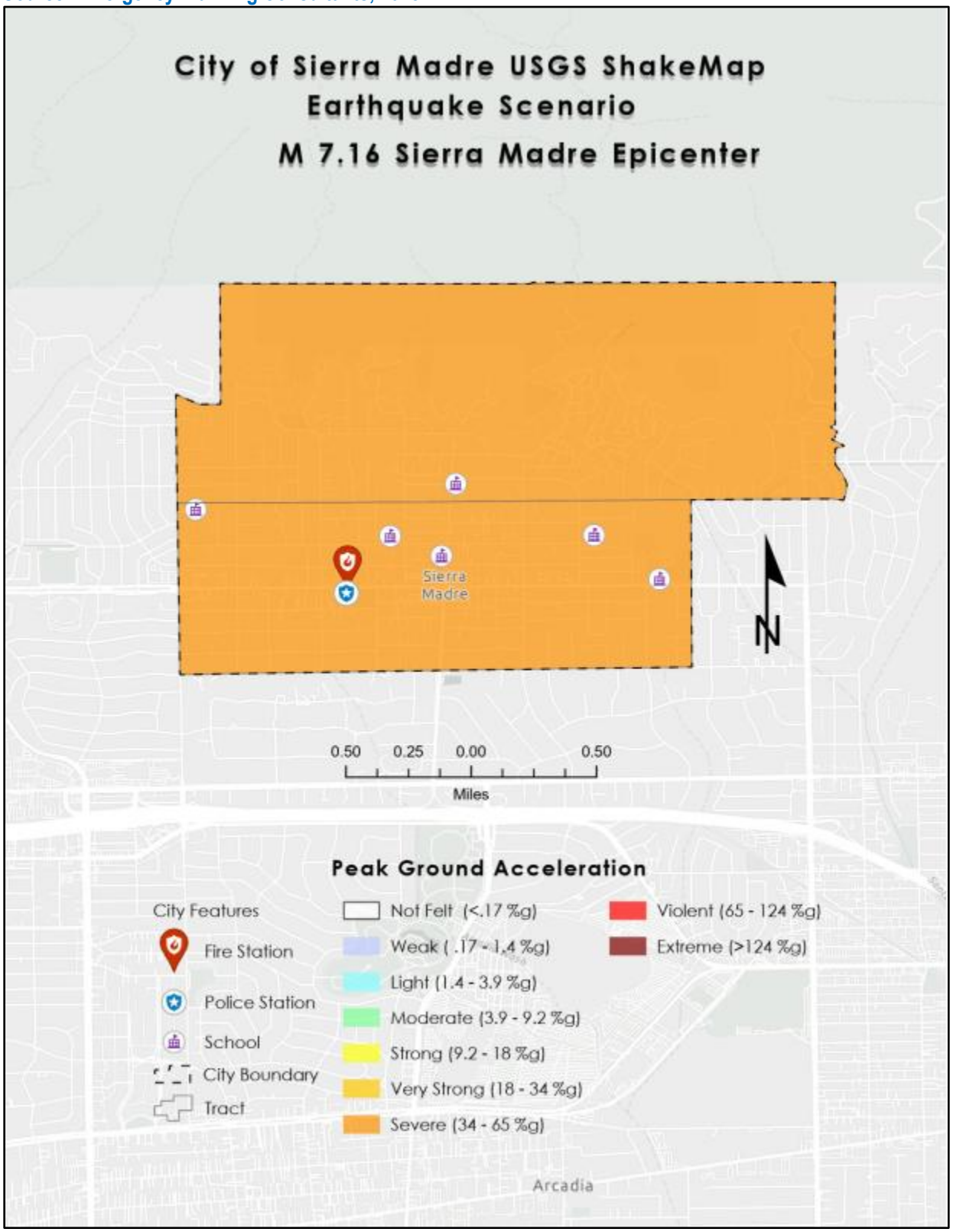
Map B.3: Sierra Madre Earthquake Scenarios
Source: Emergency Planning Consultants, 2025



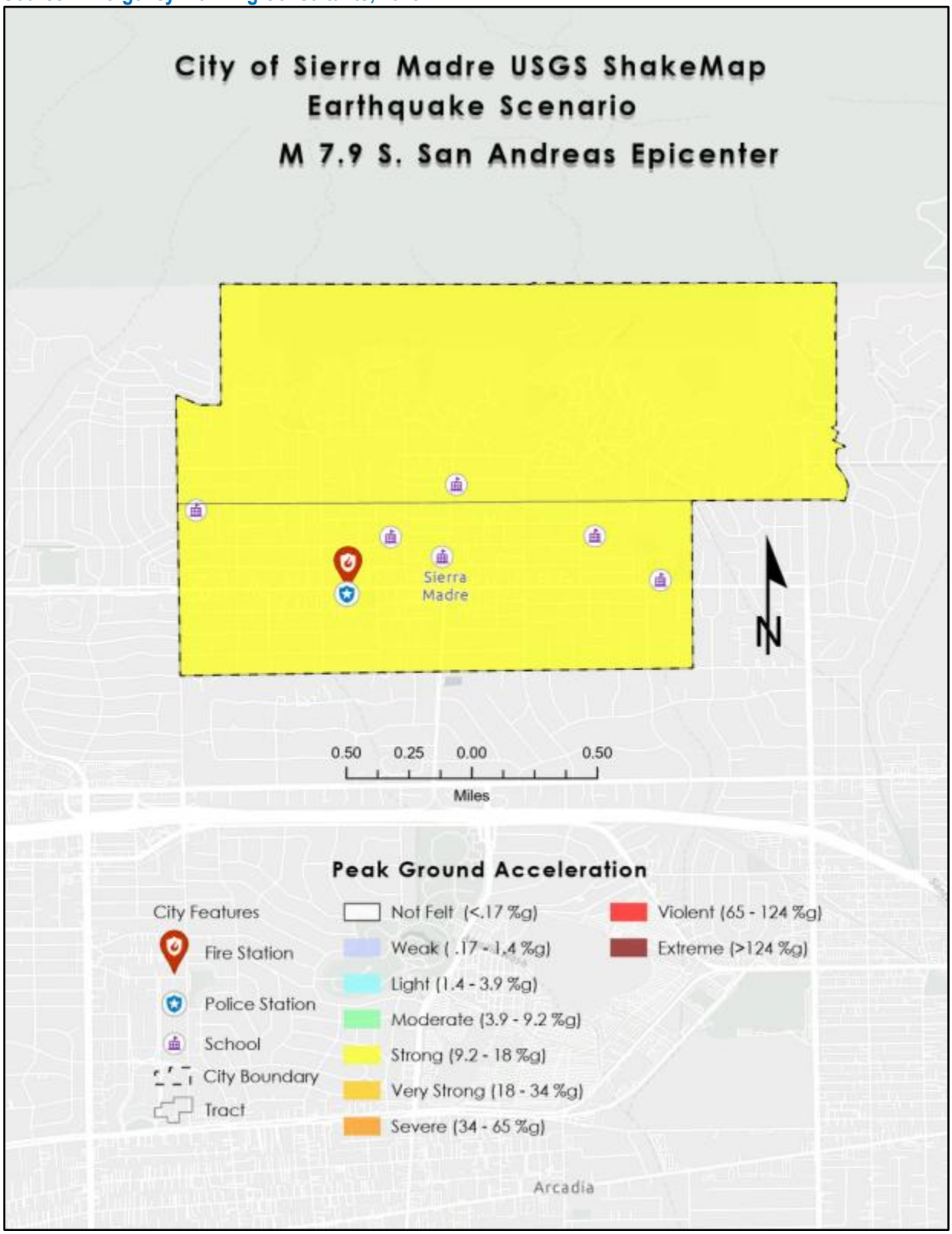
Map B.4: HAZUS – Whittier Fault M7.0
Source: Emergency Planning Consultants, 2025



Map B.5: HAZUS – Sierra Madre Fault M7.16
Source: Emergency Planning Consultants, 2025



Map B.6: HAZUS – San Andreas Fault M7.9
Source: Emergency Planning Consultants, 2025



Ground Rupture

Ground rupture represents the primary hazard associated with earthquakes since it is the initial result of seismic events. Surface rupture poses a difficult seismic problem from an engineering standpoint because it is far more expensive and complicated to design a foundation and structure to withstand the displacement of even fractions of a foot than to build without consideration of rupture. Such ground fractures can cause parallel displacement in the foundation, causing buildings to crack and split. Development should be avoided in areas of high fault rupture potential.

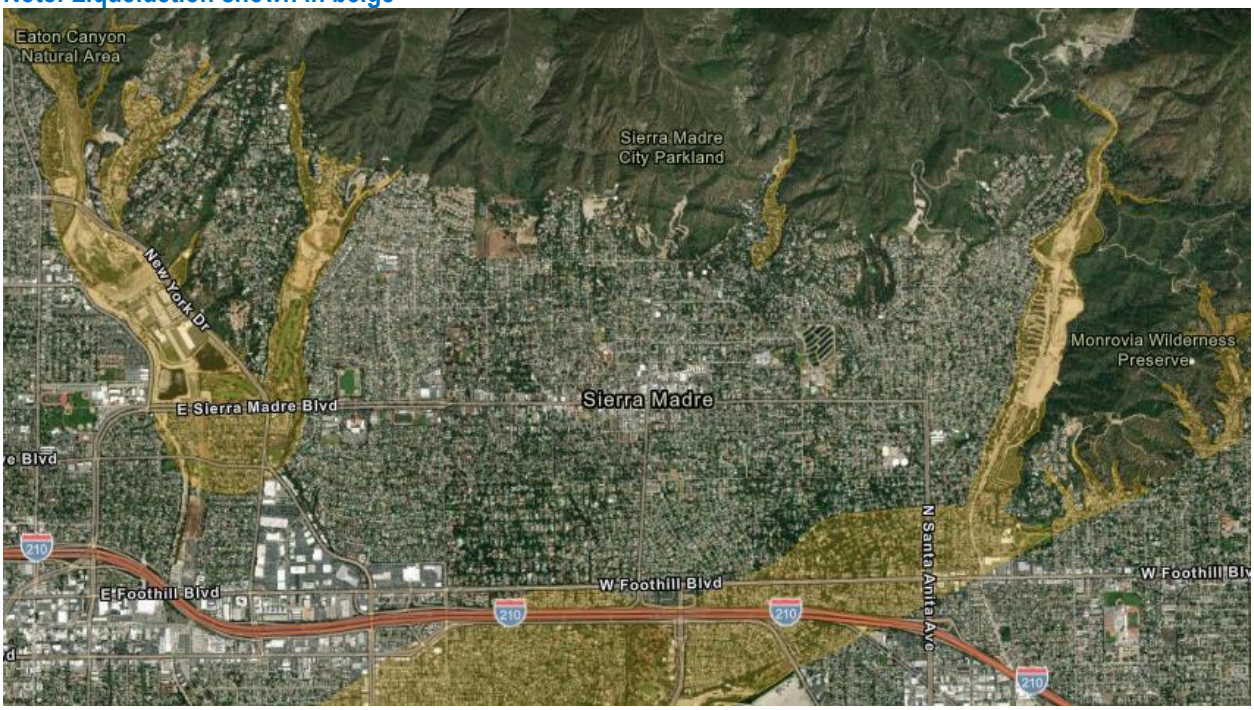
Ground Shaking

The most significant earthquake action in terms of potential structural damage and loss of life is ground shaking. Ground shaking is the movement of the earth's surface in response to a seismic event. The intensity of the ground shaking and the resultant damage is determined by the magnitude of the earthquake, distance from the epicenter, and characteristics of surface geology. This hazard is the primary cause of the collapse of buildings and other structures. Increased hazards from earthquakes occur when seismic activity occurs in a highly urbanized area. The significance of ground shaking action from an earthquake is directly related to the density and type of buildings, and the number of people exposed to its effect.

Liquefaction

According to the Safety Element, liquefaction is a phenomenon involving the loss of shear strength of soil. Liquefaction occurs in saturated soils, in which the space between individual soil particles is completely filled with water. This water exerts pressure on the soil particles that influences how tightly the soil particles themselves are pressed together. Prior to an earthquake, the water pressure is relatively low. However, earthquake shaking can cause water pressure to increase to the point where the soil particles can readily move with respect to each other. If the liquefying layer is near the surface, the effects are much like that of quicksand on any structure located on it. If the layer is in the subsurface, it may provide a sliding surface for the material above it. Liquefaction typically occurs in areas where the groundwater surface is less than 30 feet below the ground surface and where the soils are composed predominantly of poorly consolidated fine sand. During and after severe rain, liquefaction could occur should a moderate to severe earthquake take place. There is one area of the City vulnerable to liquefaction as illustrated in **Map B.7** below.

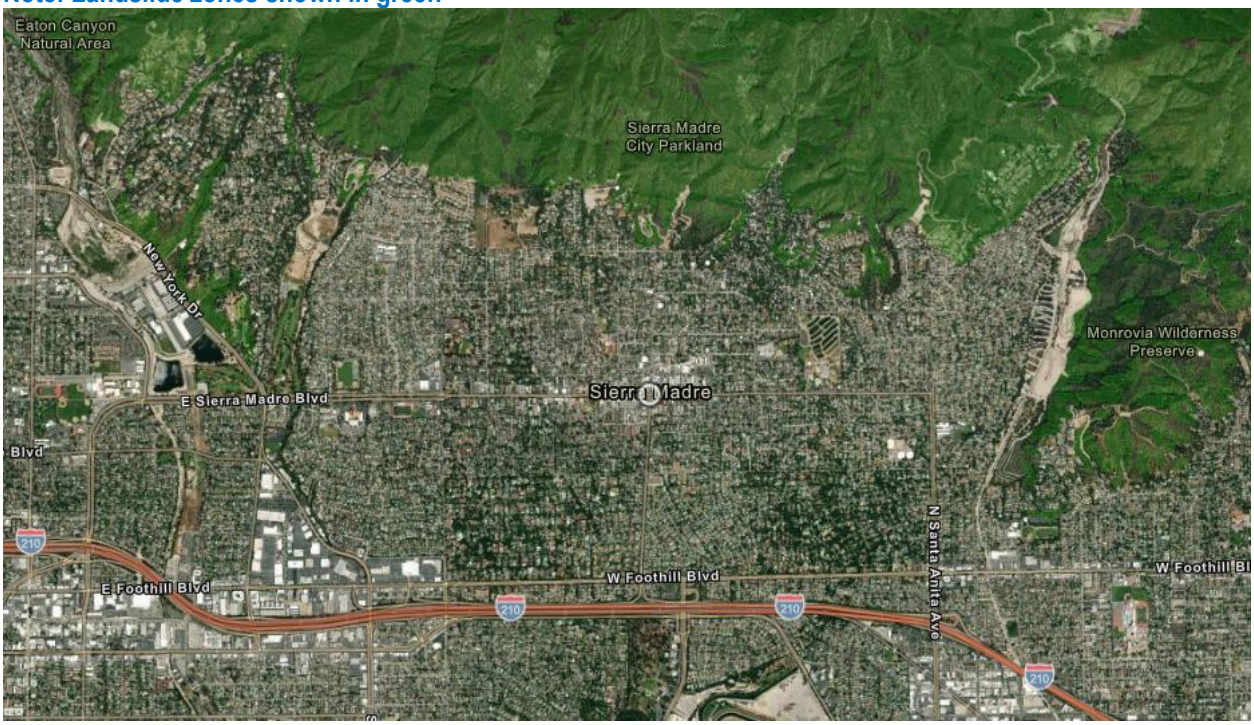
Map B.7: Liquefaction Hazard Areas
Source: CAL OES MyPlan 2.0 Risk Assessment Explorer
Note: Liquefaction shown in beige



Landslides

Landslides can occur for various reasons. For example, severe flooding can undermine the integrity of the soils in the hillsides, therefore causing instability. Landslides may also occur as the result of brush fires, which weaken the soil by removing vegetation integral to its support structure. Ground shaking from an earthquake presents an additional risk; seismic activity of this type can easily initiate a downslope movement. Landslides in the City typically occur at elevations of between 1,400 and 2,000 feet, well above the urban area of the City. A common type of landslide experienced in Sierra Madre is known as a mudflow. This type of landslide involves very rapid downslope movement of saturated soil, sub soil and weathered bedrock. Large mudflows may have enough force to uproot trees and to carry along boulders several feet in diameter. Due to their fast speeds, mudflows can be very destructive especially along the bottom and the mouths of canyons. Mudslides have generally occurred in several locations within the northern foothill areas of the City. The City's policies and programs for seismic safety are designed to reduce death, injuries, damage to property and economic and social dislocation that could result from earthquakes and related geologic hazards, as well as to enhance the preparedness of City agencies and the community in general to survive, respond to, and recover from a major earthquake. **Map B.8** depicts the areas in Sierra Madre at most risk of earthquake-induced landslides.

Map B.8: Landslide Hazard Areas
Source: CAL OES MyPlan 2.0 Risk Assessment Explorer
Note: Landslide zones shown in green



Previous Earthquakes Impacting City of Sierra Madre

The most significant earthquake in the City was the Sierra Madre Earthquake. At 7:43 a.m. on June 28, 1991, this 5.8 earthquake struck. The epicenter (Sierra Madre fault) was 7.5 miles northeast of Sierra Madre and damage totaled $12.5 million. There were 18 personal injuries, but no injuries to hikers; 403 structures damaged; 2 businesses uninhabitable; 22 homes condemned (many in west Sierra Madre Sunnyside and Lima Streets), and 3 religious institutions remained unoccupied; other problems included 36 toppled chimneys; 2 damaged church bell towers, 17 natural gas leaks, 6 water leaks, 4 hazardous materials leaks. The fire department received 150 calls. Sierra Madre School served as an emergency shelter. Other nearby communities that were affected were the cities of Arcadia, Azusa, Irwindale, Monrovia, Pasadena and Rosemead. This was the most recent major rupture of the Sierra Madre fault.

Previous Earthquakes Impacting Los Angeles County

Significant earthquakes in the county over the past 50 years included the following:

Table B.7: Previous Earthquakes Impacting Los Angeles County
Source: County of Los Angeles AHMP; FEMA Disaster Declaration, 2024

Date	Location	Federal Declaration	Impact
July 6, 2019	Ridgecrest (M 7.1)	NA	fires reported as a result of gas leaks no reported major injuries, deaths or major building damage
March 28, 2014	La Habra (M 5.1)	NA	few injuries and $10 million dollars in damages
July 29, 2008	Chino Hills (M 5.5)	NA	8 injuries and limited damages
January 17, 1994	Northridge (M 6.7)	DR-1008-CA	57 deaths, 8,700 injuries and up to $40 billion dollars in damages
June 28, 1991	Sierra Madre (M 5.6)	NA	1 death, 100+ injuries and up to $40 million dollars in damages
February 28, 1990	Upland (M 5.7)	NA	30 injuries and $12.7 million dollars in damages
October 1, 1987	Whitter (M 5.9)	DR-799-CA	8 deaths, 200 injuries and $358 million in damages
February 9, 1971	San Fernando (M 6.6)	DR-299-CA	58 – 65 deaths, 200 – 2,000 injuries and up to $553 million in damages

Probability of Future Earthquakes

The U.S. Geological Survey and the Southern California Earthquake Center say that the Los Angeles area could expect one earthquake every year of magnitude 5.0 for the foreseeable future. The most likely major seismic events to affect Sierra Madre within the next 50 to 200 years most likely would occur as the result of movement along the Sierra Madre Fault, a blind thrust, or the San Andreas Fault. As identified in **Table B.3**, the Planning Team has rated the probability of future earthquakes as "likely".

Wildfire

Description

Wildfire is an uncontrolled fire spreading through vegetative fuels and exposing or possibly consuming structures. They often begin unnoticed and spread quickly. Naturally occurring and non-native species of grass, brush, and trees fuel wildfires. A wildland fire is a wildfire in an area in which development is essentially nonexistent, except for roads, railroads, power lines and similar facilities. A wildland/urban interface fire is a wildfire in a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

Wildfire Characteristics
There are three categories of wildland/urban interface fire: classic, mixed, and occluded.

The classic wildland/urban interface exists where well-defined urban and suburban development presses up against open expanses of wildland areas. The mixed wildland/urban interface is characterized by isolated homes, subdivisions, and small communities situated predominantly in wildland settings. The occluded wildland/urban interface exists where islands of wildland vegetation occur inside a largely urbanized area.

Certain conditions must be present for significant interface fires to occur. The most common conditions include hot, dry and windy weather; the inability of fire protection forces to contain or suppress the fire; the occurrence of multiple fires that overwhelm committed resources; and a large fuel load (dense vegetation).

Once a fire has started, several conditions influence its behavior, including fuel, topography, and weather.

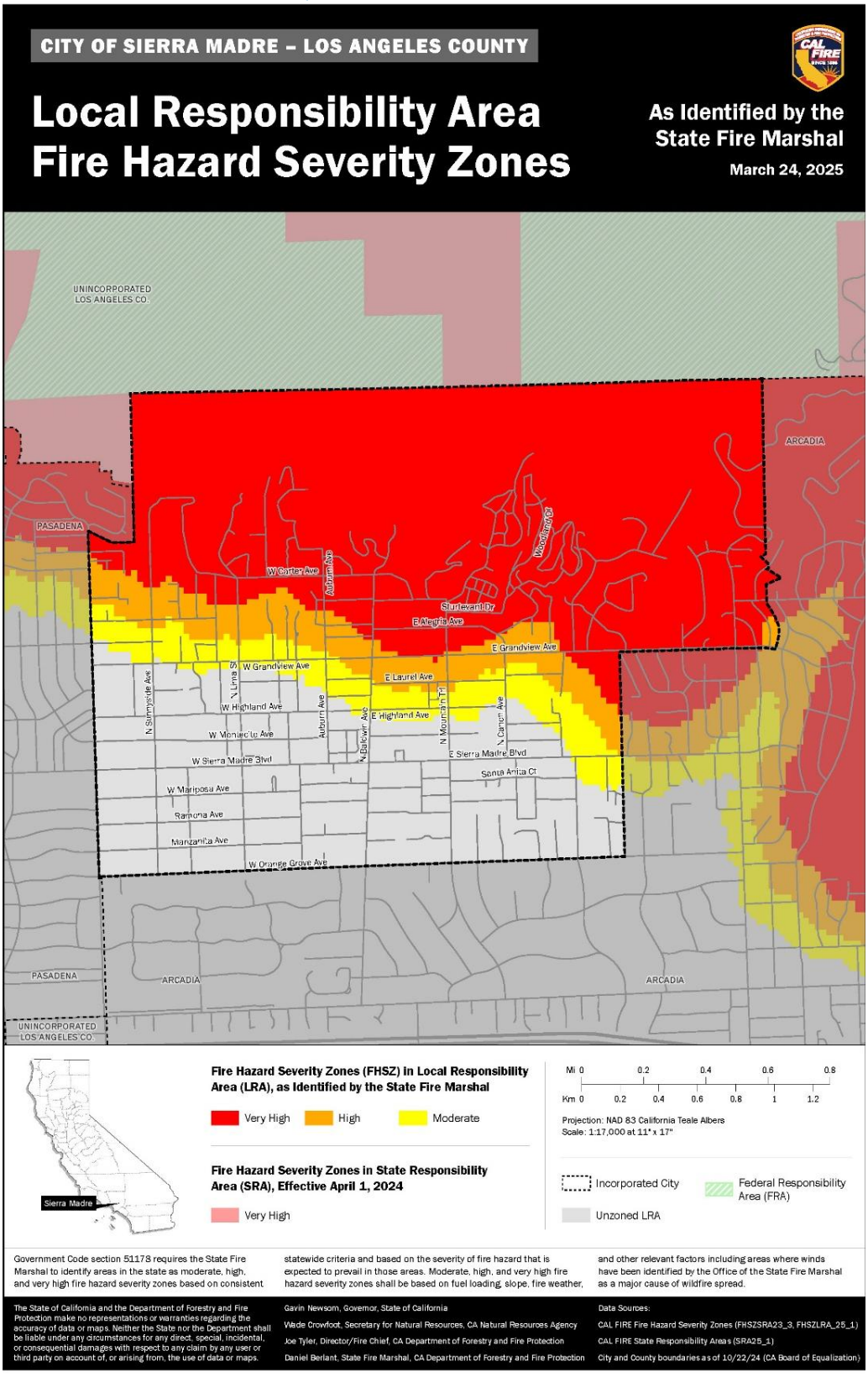
Local Conditions

The Safety Element explains that, while Sierra Madre's location at the base (southern foothills) of the San Gabriel Mountains affords the City with stunning views and other natural amenities, it also presents a significant wildfire hazard to people and structures. The natural, undeveloped slopes of the hillside areas within the City support open coastal sage scrub and chaparral habitats that are susceptible to wildfires common to the San Gabriel Mountains. Additionally, development in the canyon areas is characterized by narrow roads with tree canopy coverage. These tree canopies provide opportunities for hillside wildfires to spread, creating a potential fire hazard for residents of Sierra Madre.

The State of California maps Fire Hazard Severity Zones (FHSZ) throughout the state. An FHSZ is a mapped area that designates zones (based on factors such as fuel, slope, and fire weather) with varying degrees of fire hazard (i.e., moderate, high, and very high). FHSZ maps evaluate wildfire hazards, which are physical conditions that create a likelihood that an area will burn over a 30- to 50-year period. The Zones also include FHSZ for State Responsibility Area lands and separate Very High Fire Hazard Severity Zones for Local Responsibility Area lands. Moderate, high, and very high FHSZs are found in areas where the State has financial responsibility for fire protection and prevention (SRA). Only very high FHSZs are found in Local Responsibility Areas (LRAs).

Map B.9 shows Fire Hazard Severity Zones, which shows moderate to very high Fire Hazard Severity Zones impacting the City.

Map B.9: Fire Hazard Severity Zones
Source: CAL FIRE FHSZ Viewer, 2025



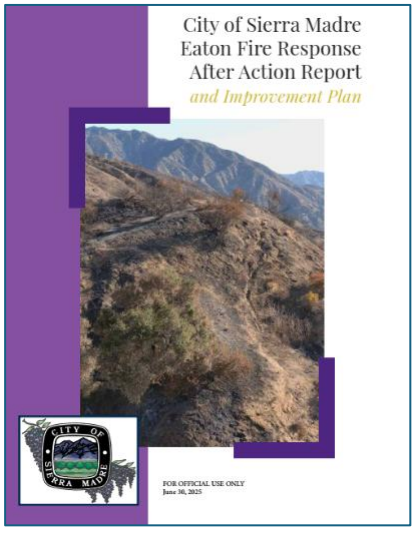
Previous Wildfires Impacting City of Sierra Madre

Large fires have been part of southern California for many years. In April and May 2008, the Santa Anita Fire raged through the foothills above Sierra Madre, forcing the evacuation of all the residents who lived on Grand View Avenue north to the foothills. This fire resulted in over 500 acres being burned, but no houses were destroyed.



According to the 2024-2025 Sierra Madre Fire Department Annual Report, the City experienced significant impacts from the Eaton Fire, which ignited on January 7, 2025, and rapidly spread due to extreme Santa Ana winds. At 8:46am that day, the City issued a NIXLE alert for a Red Flag Warning, accompanied by parking restrictions due to severe wind conditions. As fire conditions worsened, a voluntary evacuation order was issued at 8:06pm for Zone 1 and Zone 16, covering areas north of Grandview Ave and west of Grove Street. By 9:32pm, evacuation orders expanded to include seven zones as the fire spread aggressively.

Burning over 14,000 acres before containment on January 31, the fire devastated portions of the city, destroying 14 homes and 25 additional structures. The Sierra Madre Historical Wilderness Area and Mount Wilson Trail were severely affected, heightening the risk of post-fire erosion and environmental damage. In response, the City mobilized fire crews, law enforcement, and emergency personnel who worked tirelessly under challenging conditions to protect lives and property. SMFD entered into unified command with CAL FIRE, the U.S. Forest Service, and the Pasadena Fire Department. Together, they worked for 36 hours straight, alongside SMFD's 11 firefighters, battling the blaze under extreme conditions. On the afternoon of January 9, some evacuation orders were downgraded to evacuation warnings as conditions improved. As the fire was contained, the City turned the attention to post-fire recovery, particularly in stabilizing slopes and preventing landslides. Experts warned that the recovery process would be extensive, requiring ongoing efforts to restore the resilience of the affected areas.



Following the January 7, 2025 Eaton Fire which burned for 24 days and required a coordinated multi-agency response, the City conducted public listening sessions and gathered input from residents, responders, and stakeholders.

The resulting After-Action Report and Improvement Plan (AAR/IP) documents community feedback, operational findings, and key recommendations to strengthen Sierra Madre's emergency preparedness, response, and recovery capabilities. By sharing this report publicly, the City reaffirmed its dedication to accountability, collaboration, and building resilience against future wildfire threats. Improvement Plan actions relating to hazard mitigation were added to the Element: C Mitigation Strategies – Mitigation Actions Matrix.

Previous Wildfires Impacting Los Angeles County

Previously, the most recent significant wildfire events to impact Los Angeles County were the Palisades Fire and Eaton Fire in January 2025. The Palisades Fire was a devastating wildfire that ignited on January 7, 2025, in the Santa Monica Mountains of Los Angeles County. Over 24 days, it consumed approximately 23,000 acres, leading to the destruction of nearly 6,800 homes and resulting in at least 29 fatalities. The fire prompted the evacuation of over 100,000 residents from areas including Pacific Palisades, Topanga, and Malibu. Significant cultural landmarks were affected, such as the Getty Villa Museum grounds and historic structures in Will Rogers State Historic Park

The Eaton Fire, which began on January 7, 2025, had a significant impact on Los Angeles County, particularly affecting the San Gabriel Mountains and nearby communities like Altadena, Pasadena, Sierra Madre, arcadia, and Duarte. The fire burned over 9,400 acres, destroying thousands of structures and resulting in 17 fatalities. It prompted widespread evacuations, including residents from at-risk neighborhoods and key facilities like the City of Hope cancer treatment center in Duarte. The fire also brought attention to environmental concerns, as the U.S. Environmental Protection Agency (EPA) designated a local site, Lario Park, for hazardous debris processing, sparking opposition from local communities over potential contamination risks. The Eaton Fire's destruction and the challenges faced in recovery, including slow rebuilding efforts, highlighted the vulnerability of Los Angeles County to wildfire risks and the need for improved fire prevention, preparedness, and resilience in urban and wildland areas.

Table B.9: Wildfires Impacting Los Angeles County 2018-2025
Source: NOAA Storm Events Database

Date	Fire	Damage
01/07/2025	Palisades Fire	Burned over 23,000 acres. The fire destroyed nearly 6,800 homes and resulted in at least 29 fatalities. Extensive damage to critical infrastructure and roadside facilities.
01/07/2025	Eaton Fire	Burned over 9,400 acres. The fire destroyed over 9,400 structures and resulted in 17 fatalities.
9/6/2020	Bobcat Fire	The Bobcat Fire burned 115,796 acres in the Angeles National Forest as well as the foothills of the Antelope Valley and San Gabriel Valleys. Overall, 87 homes were destroyed, and 28 more homes were damaged.
10/28/2019	The Getty Fire	Burned 745 acres. The fire destroyed 10 residences and damaged 15 other residences.
10/24/2019	The Tick Fire	Burned 4,615 acres in the Canyon County area of Los Angeles County. The fire destroyed 23 homes and damaged 40 other homes. During the incident, four firefighter injuries were reported.
10/10/2019	The Saddle Ridge Fire	Burned 8,799 acres across the foothills of the San Fernando Valley as well as the Santa Clarita Valley and the Los Angeles County mountains. The fire destroyed 19 residences and damaged 88 additional residences. One civilian death was reported (due to cardiac arrest) and eight firefighters were injured.
11/8/2018	The Woolsey Fire	Burned a total of 96,949 acres in Los Angeles and Ventura Counties including Thousand Oaks, Agoura Hills, Calabasas, the Santa Monica Mountains, Malibu, and West Hills. A total of 1,643 structures were destroyed and 3 people were killed.
6/4/2018	The Stone Fire	Burned 1,352 acres in the mountains of Los Angeles County.

Probability of Future Wildfires

When conducting the risk assessment, the Planning Team determined that the probability of wildfire affecting the City of Sierra Madre is likely with an annual probability of occurrence being between 1 in 10 and 1 in 100 years.

Power Outage

Description

Utility providers provide communities with vital services. Because of training and rigorous safety programs, delivery of services is typically very reliable and without incident. However, in certain hazardous circumstances, like an earthquake, power outage, or high wind, utility providers are impacted just like their customers. In an effort to minimize this vulnerability, power utility providers have developed protocols like Public Safety Power Shutoff.

Over the last decade, California has experienced increased, intense, and record-breaking wildfires in California. These wildfires have resulted in a devastating loss of life and billions of dollars in property and infrastructure damage. Historically, electric utility infrastructure has been responsible for less than 10% of reported wildfires. However, wildfires attributed to electrical infrastructure consist of roughly half of the most destructive wildfires in California history. With the continuing threat of wildfire, the electric investor-owned utilities (IOUs) may proactively cut power to electrical lines as a measure of last resort if the utility reasonably believes that there is an imminent and significant risk that strong winds may topple power lines or cause major vegetation-related issues leading to increased risk of wildfires. This effort is called a Public Safety Power Shutoff (PSPS). While PSPS events may reduce the risk of utility-associated wildfires, PSPS events can leave communities and essential facilities without power, which brings its own risks and hardships, especially for vulnerable communities and individuals.

Local Conditions

According to the Safety Element, electricity throughout the planning areas is provided by Southern California Edison. In 2018, the California Public Utilities Commission (CPUC) directed California's three largest energy companies to coordinate to prepare all Californians for the threat of wildfires and power outages during times of extreme weather. To help protect customers and communities during extreme weather events, electric power may now be shut off for reasons of public safety in an effort to prevent wildfire. This new protocol is referred to as Public Safety Power Shutoff (PSPS).

Additionally, although a power outage would affect all occupants of the City, it would potentially more critically impact medically challenged individuals with health care equipment reliant on electricity (e.g. oxygen), businesses, emergency service locations, and vulnerable populations center (e.g. schools).

Previous Power Outages Impacting City of Sierra Madre

In December 2011, severe winds contributed to downed power lines, causing complete power outages for up to 7 days for portions of the City.

On January 7, 2025, the Eaton Fire ignited and spread quickly due to Santa Ana winds. On January 9, the City informed residents of power outages. On January 11, Southern California

Edison deployed over 40 units to the City with no estimated timeline for full restoration. Portions of the City were without power for several days.

Previous Power Outages Impacting Los Angeles County

The Draft Los Angeles County All-Hazard Mitigation Plan 2025 described previous power outages affecting the county. In August 2020, a severe heatwave led to widespread power outages, affecting nearly 500,000 residents. From February – March 2024, an Atmospheric River Storm caused one of the most intense rainfall events in recent history, resulting in severe flash floods, mudslides, and power outages.

The County of Los Angeles also experienced widespread power outages due to Public Power Safety Shutoff in January 2025. By the night of January 7, nearly 50,000 customers suffered power outages, 28,300 under the Los Angeles Department of Water and Power and 21,699 under Southern California Edison (SCE). The number in the Los Angeles metropolitan area alone increased to over 200,000 by around 9:30p.m. PST, with outages reported in Los Angeles, Glendale, Pasadena, and Burbank. SCE later stated that, at 4p.m. PST on January 8, about 414,000 of its customers were without power and 454,000 customers are under a Public Safety Power Shutoff program watch. As of January 12, 2025, 35,000 customers were still left without electricity.

Probability of Future Power Outages

The Planning Team determined that the probability of a catastrophic power outage related hazard affecting the City of Sierra Madre is highly likely. The Planning Team expects an annual probability of occurrence being greater than 1 every year.

Windstorm

Description

A windstorm is a storm with high winds and little to no precipitation. Wind speeds typically exceed 34 mph, which can include gusts of wind or longer periods of sustained winds. Windstorms can cause damage to trees or structures.

According to the National Weather Service, Santa Ana Winds occur when air from a region of high pressure over the dry, desert region of the southwestern U.S. flows westward towards low pressure located off the California coast. This creates dry winds that flow east to west through the mountain passages in Southern California. These winds are most common during the cooler months of the year, occurring from September through May. Santa Ana winds typically feel warm (or even hot) because as the cool desert air moves down the side of the mountain, it is compressed, which causes the temperature of the air to rise. These strong winds can cause major property damage. They also increase wildfire risk because of the dryness of the winds and the speed at which they can spread a flame across the landscape.

Local Conditions

The Safety Element confirms severe windstorms can pose a significant risk to life and property in Sierra Madre by creating conditions that disrupt essential systems such as public utilities, telecommunications and transportation routes. High winds can and do occasionally cause

tornado-like damage to local homes and businesses. High winds can have destructive impacts, especially on trees, power lines, and utility services.

Previous Windstorms Impacting City of Sierra Madre

In November 30, 2011, severe winds caused building damage to 34 residences in Sierra Madre, including eight homes which reported major structural damage and were forced to evacuate and seven homes and one business which had restricted access. The severe winds uprooted many trees and snapped limbs, which attributed to structure damage. Downed electrical power lines significantly impacted the City, which caused complete power outages for up to seven days for portions of the City. Preliminary cost estimates to repair damaged residential structures was costly, including the costs for the extensive clean-up of vegetation debris that obstructed street access following the windstorm.

On January 7, 2025, the Eaton Fire ignited. Due to extreme Santa Ana winds, it spread rapidly. Before containment on January 31, the fire devastated portions of the city, destroying 14 homes and 25 additional structures. Santa Ana Winds often fall between 30-40 mph, and the winds present during the Easton Fire were 60-70 mph. The extreme wind conditions caused downed power lines, which led to residents being without power for several days.

Previous Windstorms Impacting Los Angeles County

According to the Draft Los Angeles County All-Hazard Mitigation Plan 2025, the County has experienced multiple severe wind events and occasional tornadoes in recent history which caused destruction and wildfires. Some notable incidents include:

Table B.10: History of Windstorms in Los Angeles County
Source: Draft Los Angeles County All-Hazard Mitigation Plan, 2025

December 2019	An EF-0 tornado touched down in South Los Angeles, causing minor roof damage and downing power lines.
January 2021	A severe windstorm impacted the region, leading to damage across multiple communities and emergency response efforts to clear roadways.
September 2021	September 2021: An EF-0 tornado developed near the community of Lake of Los Angeles; % no damage was reported.
April 2023	An EF-0 tornado recorded in Cerritos causing tree damage.
March 2023	An EF-1 tornado struck Montebello, one of the strongest tornadoes recorded in the area, causing significant damage to commercial structures and vehicles.
May 2023	An EF-0 tornado occurred near the communities of Carson and Compton damaging buildings and vehicles.
August 2023	Tropical Storm Hillary impacting Los Angeles County.
February 2024	Strong winds impacting across Eastern Santa Monica Mountain and Santa Clarita Valley.
March 2024	Strong winds impacting areas around San Gabriel Valley.
January 2025	A severe windstorm impacted the region, leading to a Potentially Dangerous Situation (PDS), red flag conditions. Several fires broke out in the area, which exhibited extreme fire behavior, causing widespread destruction.
March 2025	As part of a storm event, an EF-0 tornado struck Pico Rivera, California, at 3:15am, with wind speeds reaching up to 85 mph.

Probability of Future Events

Based on the risk assessment, it is evident that windstorms are likely to occur and continue to have potentially devastating economic impact on certain areas of the city.

Landslide

Description

According to the USGS, landslides are the downslope movement of earth materials (rock, debris, and soil) at rates that range from inches per year to tens of miles per hour. Some landslides can move faster than a person can run. Landslides can happen with no notice or can take place over a period of days, weeks, or longer. Landslides occur in every state and U.S. territory including the Appalachian Mountains, the Rocky Mountains, the Pacific Coastal Ranges, and some parts of Alaska and Hawaii. Any area composed of very weak or fractured materials resting on a steep slope can and will likely experience landslides. Landslides are dangerous and very difficult to predict. Some landslides may provide clues that they are about to happen; others may happen suddenly without any warning signs.

Local Conditions

According to the Safety Element, severe flooding can also undermine the integrity of the soils in the hillsides and cause landslides. Landslides represent only one step in the continuous natural erosion process and represent a basic geologic hazard. Ground shaking from an earthquake could provide the stimulus to initiate downslope movement of an already unstable earth mass. Movement could also be triggered by heavy rains or by grading. The landslide areas in the City occur at elevations between 1,400 and 2,000 feet, thus above the urban areas.

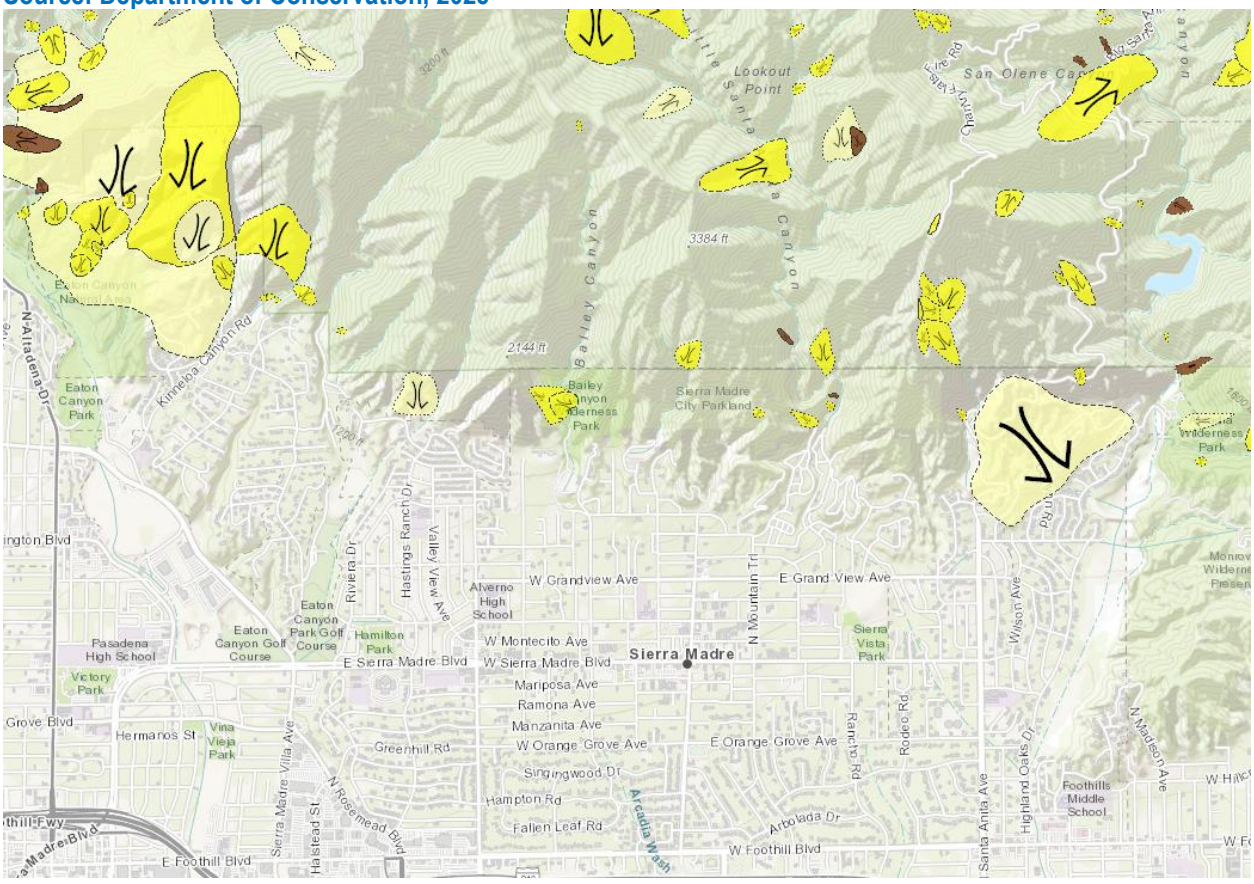
One of the local conditions that magnifies landslides, debris flow, mudflows, flooding, etc. in Sierra Madre is the angle of repose of the San Gabriel Mountains. Above Sierra Madre the angle is mostly above 65%, which increases the velocity of any debris or water moving downhill into the town.

The same amount of rainfall in most cities will not have the impact that it does above Sierra Madre. According to several sources, the exact angle of repose, defined as the steepest angle at which loose material can remain stable without moving, varies locally throughout the San Gabriel Mountains depending on factors like soil type, rock strength, and shape. Studies have shown that the average slope gradient in the San Gabriels is often well over 30° to 45°, with some research citing an average of over 65% (approximately 33°). Due to rapid tectonic uplift along faults like the Sierra Madre, many slopes in the mountains are considered "over steepened"—exceeding the natural angle of repose. While average slopes are very steep, catchment-mean slopes across the range can vary considerably, from around 15° to over 48°. Slopes of bare bedrock are often steeper than those that are soil-mantled. (Sources are listed in Element A: Planning Process – Use of Existing Data, Attachments – Comments from Bob Spears, Resident).

Debris flows are a type of landslide experienced in Sierra Madre. Debris flows involve very rapid downslope movement of saturated soil, sub-soil and weathered bedrock. Debris flows also include burned or partially burned plant materials. They originate in hillside areas where the soil horizon is well developed, but the soil has poor drainage characteristics. Large debris flows may have the energy to uproot trees and to carry along boulders several feet in diameter. Because they can happen with little or no warning and because of the speed with which they move, debris

flows can be quite destructive, especially along the bottom and at the mouths of canyons. Historically, debris flows have occurred in several locations within the northern portion of the City.

Map B.10: Landslide Zones
Source: Department of Conservation, 2025



Previous Landslides Impacting City of Sierra Madre

In January 1954, 2,000 residents were urged to evacuate north of Grand View between Grove and Mountain Trail Avenues and evacuation centers were established at the Monastery and the Woman's Club. Areas hardest hit included North Lima, Bailey Canyon, Carter Avenue, North Auburn Avenue, Woodland Avenue, Brookside Lane; silt, boulders, mud and debris strewn down as far as Sierra Madre Boulevard. Silt was 8-10 feet in some places while catch basins filled with mud (30,000 cubic feet). Boulders broke City water lines in the north section of town while runoff led to water contamination and many residents became sick with abdominal pain.

On March 6, 1994, a cloudburst below Mount Wilson caused a flash flood and mudslide in Bailey Canyon. An inch of rain fell between 4pm and 6pm that afternoon causing 15 feet of mud to collect in the Bailey Canyon catch basin. The mudslide claimed the lives of two hikers, both Sierra Madre residents. Underbrush and grass in the area had been burned by the October 1993 fire.

In February 2025, severe rainfall led to dangerous mudflows throughout Sierra Madre, exacerbating the challenges faced in the Eaton Fire's aftermath. As a precaution, the City issued a NIXLE alert announcing evacuation orders for portions of Sierra Madre affected by the Eaton Fire burn areas. As heavy flooding led to road closures, evacuation orders, and damage to homes as several feet of mud, rocks, and debris cascaded into residential areas. The City responded swiftly, deploying emergency crews to clear debris, restore infrastructure, and provide support to impacted residents. No injuries were reported, though property damage resulted. While evacuation orders were eventually downgraded to warnings, the risk of future debris flows remains high.

As described below, when rains are projected, Los Angeles County Public Works goes into action to create debris flow maps for areas recently impacted by wildfire:

LOS ANGELES COUNTY PUBLIC WORKS
DEBRIS FLOW FORECASTS

Los Angeles County Public Works' (Public Works') Debris Flow Forecasts are based upon a review of watershed conditions, weather forecasts from the National Weather Service (NWS) and other weather predicting sources, and the functionality of flood control facilities. The purpose of the Debris Flow Forecasts is to provide emergency response agencies and the public with an assessment of the magnitude of potential debris flows associated with forecasted storms in recently burned watershed areas.

What Areas Are Covered by Debris Flow Forecasts

Public Works generally prepares Debris Flow Forecasts for all areas in which a major fire has occurred within the last 4 years. Each forecast includes qualitative descriptions of the estimated severity of debris flow impacts (see below).

Debris Flow Forecast Determinations

Approximately 36 to 48 hours prior to the arrival of a forecasted storm, Public Works will begin tracking the storm closely and will make a preliminary assessment of the potential for debris flows.

Public Works considers several of factors when preparing Debris Flow Forecasts, including:

- The degree of watershed recovery
- Estimated rainfall totals
- Estimated rainfall intensities
- Whether thunderstorms are being forecasted and if so, their likelihood.
- The degree of confidence in the forecasts, including the forecasters' level of confidence in the models upon which their forecasts are based and the accuracy of the forecasts for prior storm events.
- National Weather Service advisories for flood watch, warnings, and advisories, including summary of greatest impacts for mud flows/rock falls impacts.
- Estimated soil moisture in the burned watersheds.
    - Whether the forecasted storm is the first storm after a dry or relatively dry period, or will occur soon after one or more previous storms.
    - If there have been recent storms over the fire area, whether the previous storms produced enough rainfall to saturate or nearly-saturate the soil in the fire area.

Beginning 24 hours prior to the storm's arrival, Public Works makes a Debris Flow Phase estimate (as described below) for each fire area. It should be noted that, notwithstanding Public Works' best engineering judgment, **debris and mudflows are highly unpredictable**

events.

The purpose of the following Debris Flow Phase descriptions is to assist storm response Divisions, members of the public and emergency response agencies in their emergency planning:

NO PHASE (light rainfall –minimal debris flow potential)

Rain is forecast by the NWS, but the amount of rain and/or watershed conditions are not anticipated to produce appreciable amounts of debris on streets or specific public infrastructure locations above those normally observed under unburned watershed conditions. Reports of debris on private property may be received by emergency response agencies. Few, if any, structures are anticipated to be impacted, other than those advised to be prepared to evacuate with any forecast of rain.

PHASE I (light to moderate rainfall – light to moderate debris flow potential)

Small isolated debris and mudflows possible at specific public infrastructure locations. Some streets may be flooded or partially/significantly blocked by debris at these locations. Reports of debris on private property may be received by emergency response agencies. A few structures may be impacted, in addition to those advised to be prepared to evacuate with any forecast of rain.

PHASE II (moderate to heavy rainfall – moderate to heavy debris flow potential)

Moderate debris and mudflows possible at more widespread locations. Several streets may be completely blocked by debris. Depending on location and terrain, some structures may be impacted, in addition to those advised to be prepared to evacuate with any forecast of rain.

PHASE III (heavy rainfall – large amounts of debris flow potential)

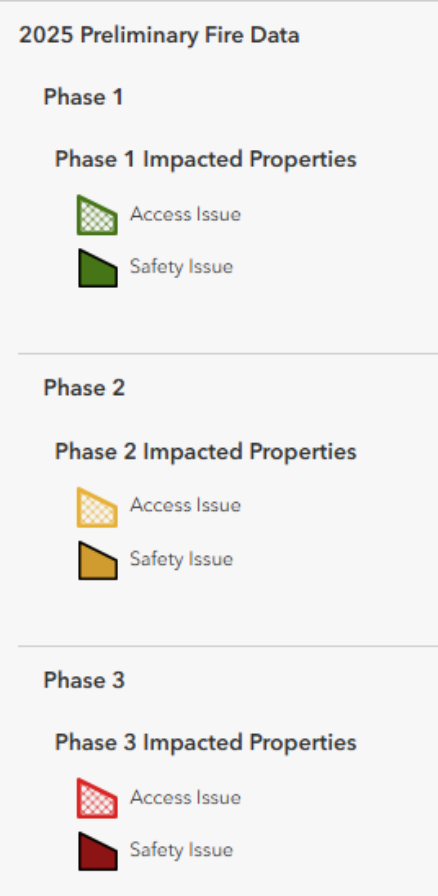
The potential exists for **significant debris and mudflows** to be widespread over specific areas. Significant numbers and/or extents of streets may be blocked and considered unsafe for travel. Many structures could be impacted by debris and mudflows. Extreme caution should be exercised below uncontrolled canyons due to sudden debris flows.

Debris Flow Forecast Postings

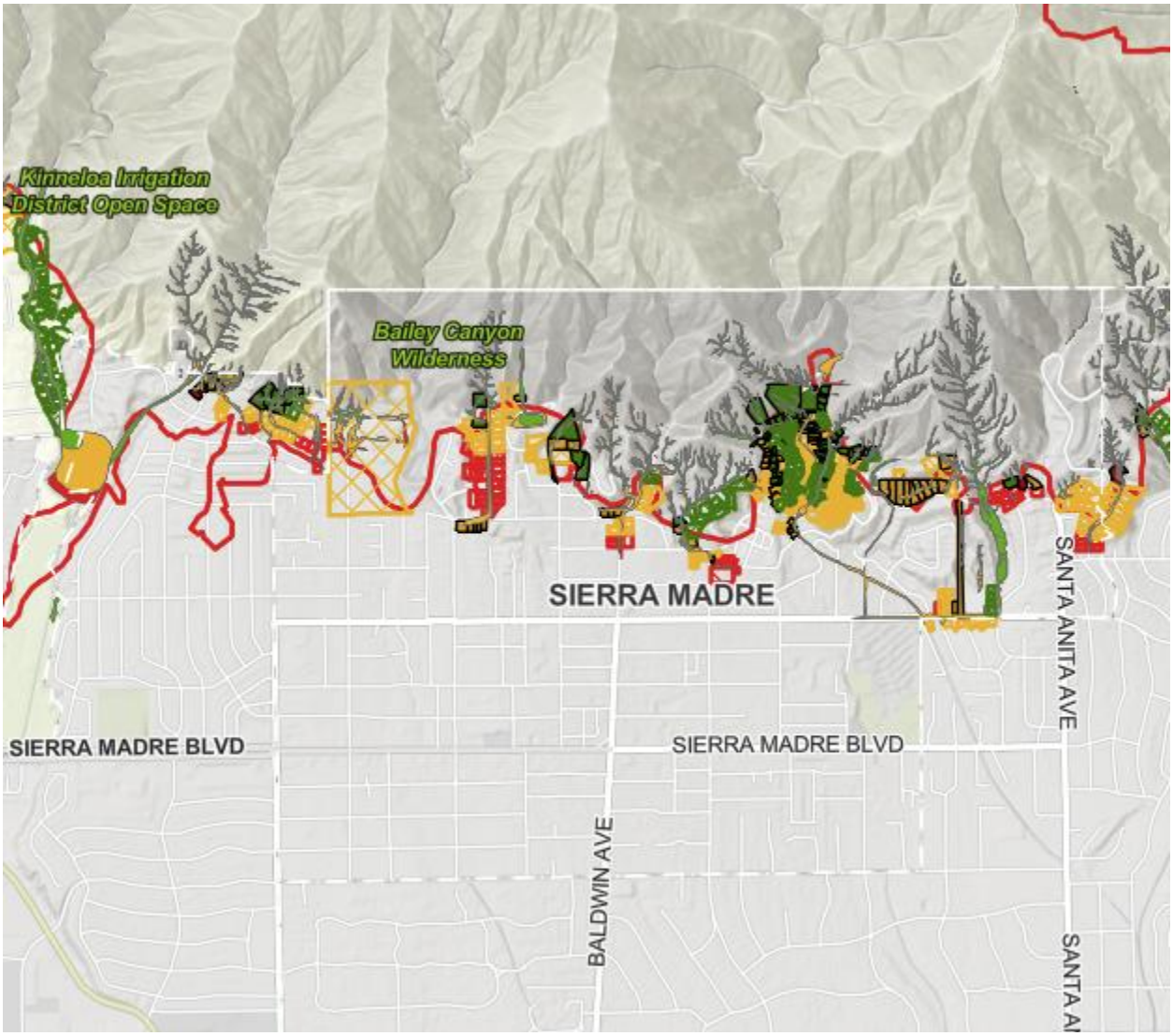
Debris Flow Forecasts are posted to the Internet on Public Works' **Fire Disaster Information website**: http://dpw.lacounty.gov/wrd/Fire/. In addition, residents as well as public agencies can sign up for Public Works' eNotify system to receive Phase alerts. Similarly, residents can sign up for "Alert LA County" to receive emergency notifications.

The Los Angeles County Public Works **Post-Fire Debris Flow Hazards App** showing the City of Sierra Madre is shown below using the following legend:

Figure B.1: Post-Fire Debris Flow Hazards Legend
Source: Los Angeles County Public Works, 2025



Map B.11: Post-Fire Debris Flow Hazards Map
Source: Los Angeles County Public Works, 2025



Previous Landslides Impacting Los Angeles County

According to the 2025 Draft Los Angeles County All-Hazard Mitigation Plan, land movement has historically caused significant damage in Los Angeles County, often resulting in property destruction, infrastructure damage, and road closures. No federal declaration has been made in the planning area in the last five years. Some of the most notable events include:

Table B.11: History of Landslides in Los Angeles County
Source: Draft Los Angeles County All-Hazard Mitigation Plan, 2025

1956 – Portuguese Bend Landslide	A massive landslide on the Palos Verdes Peninsula began in 1956 and remains active today. The movement of land has displaced homes and infrastructure, highlighting the region's ongoing geologic instability.
1994 – Northridge Earthquake-Induced Land movement	The earthquake triggered more than 11,000 moving events, primarily in the Santa Susana Mountains and San Gabriel Mountains, causing extensive road and structural damage.
March 1995 – Pacific Palisades Landslide	Heavy rains weakened the coastal bluffs, leading to a 300-foot-wide collapse that buried part of the Pacific Coast Highway under 30 feet of debris.
March 2005 – Sunset Mesa Landslide	A slope failure near Malibu caused over 20,000 cubic yards of debris to block roadways and damage property.
July 2023 – Peartree Lane Land Movement (Rolling Hills Estates)	A sudden slope failure resulted in the displacement of 12 homes, which were red tagged due to structural instability.
September 2024 – Accelerated Land Movement in Rancho Palos Verdes	A significant increase in land movement, with certain areas shifting up to four inches per week toward the ocean, threatening roads and over 250 residential properties.

Probability of Future Events

Based on the risk assessment, the Planning Team determined that landslides continue to have a possible impact on the City.

Flooding

Description

According to the NOAA National Severe Storms Laboratory, flooding is an overflowing of water onto land that is normally dry. Floods can happen during heavy rains, when ocean waves come on shore, when snow melts quickly, or when dams or levees break. Damaging flooding may happen with only a few inches of water, or it may cover a house to the rooftop. Floods can occur within minutes or over a long period, and may last days, weeks, or longer. Floods are the most common and widespread of all weather-related natural disasters.

Flash floods are the most dangerous kinds of floods, because they combine the destructive power of a flood with incredible speed. Flash floods occur when heavy rainfall exceeds the ability of the ground to absorb it. They also occur when water fills normally dry creeks or streams or enough water accumulates for streams to overtop their banks, causing rapid rises of water in a short amount of time. They can happen within minutes of causative rainfall, limiting the time available to warn and protect the public.

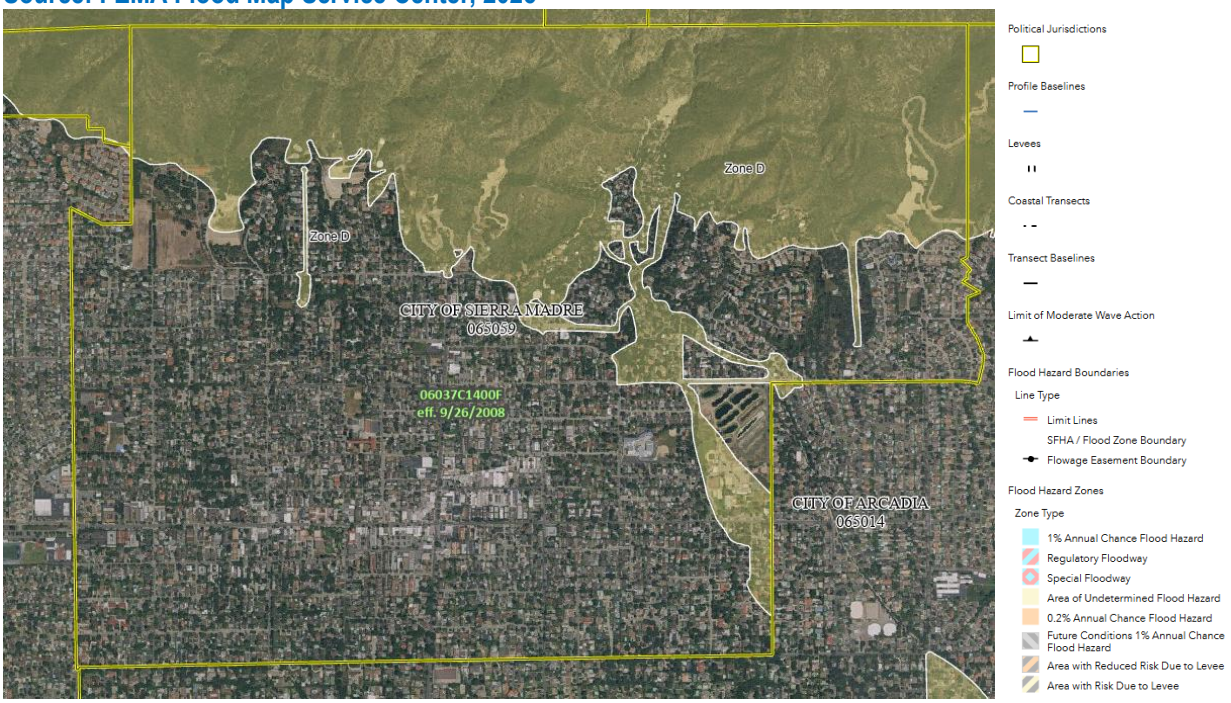
Local Conditions

The Safety Element explains that flooding represents a potential hazard to population and buildings, and as such, it is a component of the State-mandated safety element. This section addresses the risks of flooding due to the City's natural terrain, vegetation, rainfall, runoff, and risks associated with flooding due to dam failure.

Flood Insurance Rate Maps (FIRM) are published by the Federal Emergency Management Agency (FEMA.) The 2008 FIRM for Sierra Madre designates the overwhelming majority of the City as Flood Zone X, defined as "areas determined to be outside the 0.2% annual chance floodplain." A small segment of the community, centered along the Little Santa Anita Creek channel, is classified as Zone D, an "area in which flood hazards are undetermined, but possible."

However, there are specific areas unmapped by FEMA within the City that are considered to be at risk for flooding. All of these areas are against the foothills and are of significant risk of flooding and landslides, particularly after a brush fire. The canyon urban/wild land interface areas above the city are the most prone to major flooding. In the years immediately following a brush fire in the foothills, these areas can be an extreme hazard to people and property during heavy rainfall events. Flooding in these special risk areas can occur rapidly or slowly depending on the time transpired since the fire, the frequency of rainfall events, the duration of rainfall events, and the intensity of the precipitation.

Map B.12: Flood Hazard Zones in the City of Sierra Madre
Source: FEMA Flood Map Service Center, 2025



Flood hazards associated with stormwater runoff channeled from the mouths of canyons in the northern part of the city have generally been controlled by dams, debris basins, and flood control channels. There is one dam and a total of seven debris basins located within the city. **Table B.12** below lists the existing debris structures and dam in a west to east order.

Table B.12: Existing Debris Structures and Dam (West to East order)
Source: Safety Element

Facility Name	Owned/Operated	Type	Capacity
Sunnyside Debris Basin	LA County Public Works	Earth	Fill .64 DDE
Bailey Canyon Debris Basin	LA County Public Works	Earth	Fill 1.60 DDE
Floral Debris Basin	Sierra Madre Public Works	Earth	Not available.
Auburn Debris Basin	LA County Public Works	Earth	Fill 1.12 DDE
Carter Debris Basin	LA County Public Works	Earth	Fill 1.06 DDE
Sierra Madre Dam	LA County Public Works	Concrete	Arch Dam 0.53 DDE
Sturtevant Debris Basin	LA County Public Works	Earth	Fill 0.85 DDE
Lannan Debris Basin	LA County Public Works	Earth	Fill 1.00 DDE

The acronym DDE in Table B.12 indicates Design Debris Event, a term that Los Angeles County Department of Public Works uses to describe the maximum amount of debris a burned watershed could produce. As noted in **Table B.12**, the Sunnyside, Floral, Sierra Madre Dam, and Sturtevant facilities do not have capacity to contain the amount of debris that their watersheds could produce. Therefore, residential areas below these facilities are potentially subject to post-fire debris flow damage.

While these debris facilities protect most of the large watersheds above Sierra Madre, some watershed areas remain in an unprotected condition. If burned in wildfires, these watersheds will produce debris during rainfall events that will flow unhindered into the community. The most notable of these is Stonehouse Canyon, a 67-acre watershed capable of producing over 20,000 cubic yards of debris. The watershed outlets onto Stonehouse Drive above its intersection with Grandview Avenue. Other uncontrolled watersheds that have been identified are listed in **Table B.13**.

Table B.13: Watershed Location Area Discharges
Source: Safety Element

Unnamed canyon above Mater Dolorosa behind Retreat Center Main Building: 9 acres Mater Dolorosa private property
Hillside above the private extension of Auburn Avenue northeasterly of the north end of the private street: 6 Acres Private and public portions of Auburn Avenue
Unnamed canyon Parallel to and northwesterly from the private street section of Mt. Wilson Trail: 17 Acres across private property into Mt. Wilson Trail at East Mira Monte Avenue
Hillside above Skyland Drive northwesterly of 801 Skyland Drive: 19 Acres across private property into Skyland Drive Unnamed Canyon
Above Woodland Drive southwesterly of Sierra Madre Dam: 16 Acres across private property into the upper intersection of Woodland and Brookside Yucca Canyon* East end of Yucca Trail: 18 Acres Woodland Drive via Yucca Trail
* Los Angeles County Public Works has constructed debris structures in Yucca Canyon

Dam Inundation

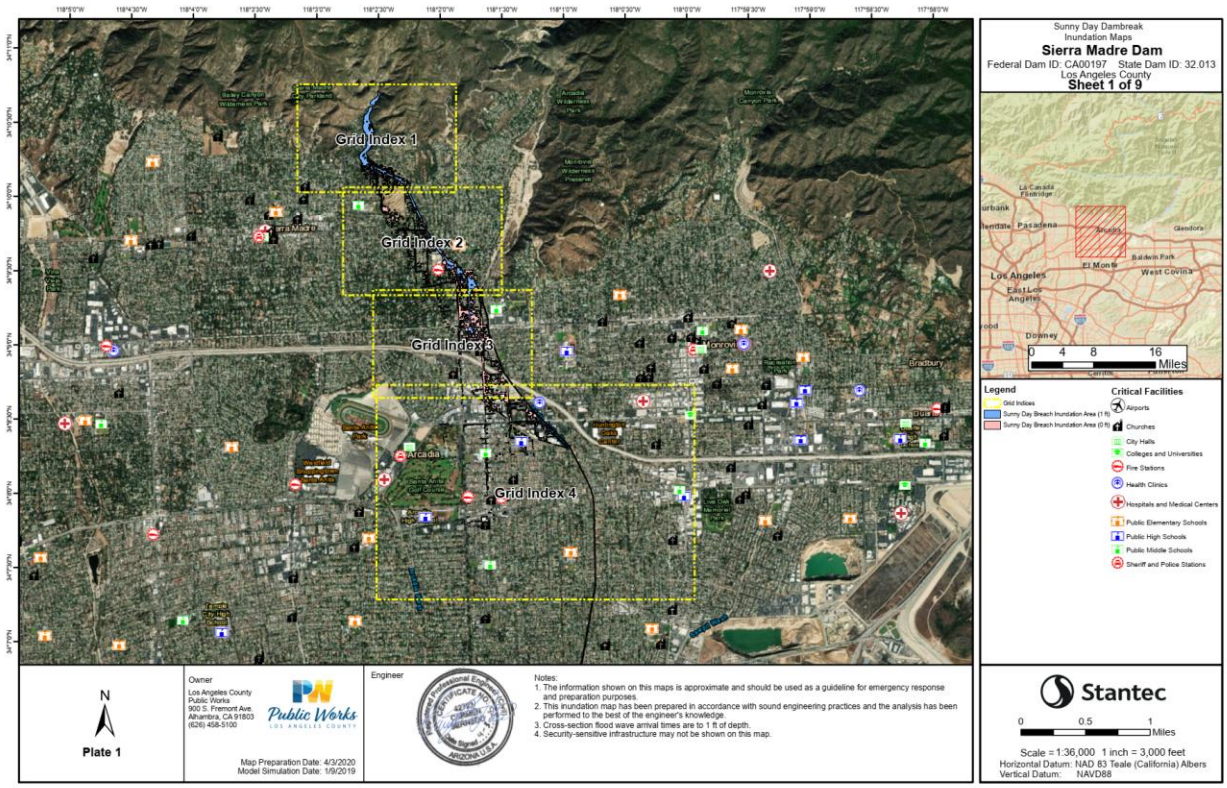
Flooding which occurs as a result of the structural failure of a dam is called dam inundation. Structural failure may be caused by seismic activity. Seismic activity may also cause dam inundation by the action of a seismically induced wave that overtops the dam without also causing dam failure. This action is referred to as a seiche. Landslides flowing into a reservoir are also a source of potential dam failure from overtopping.

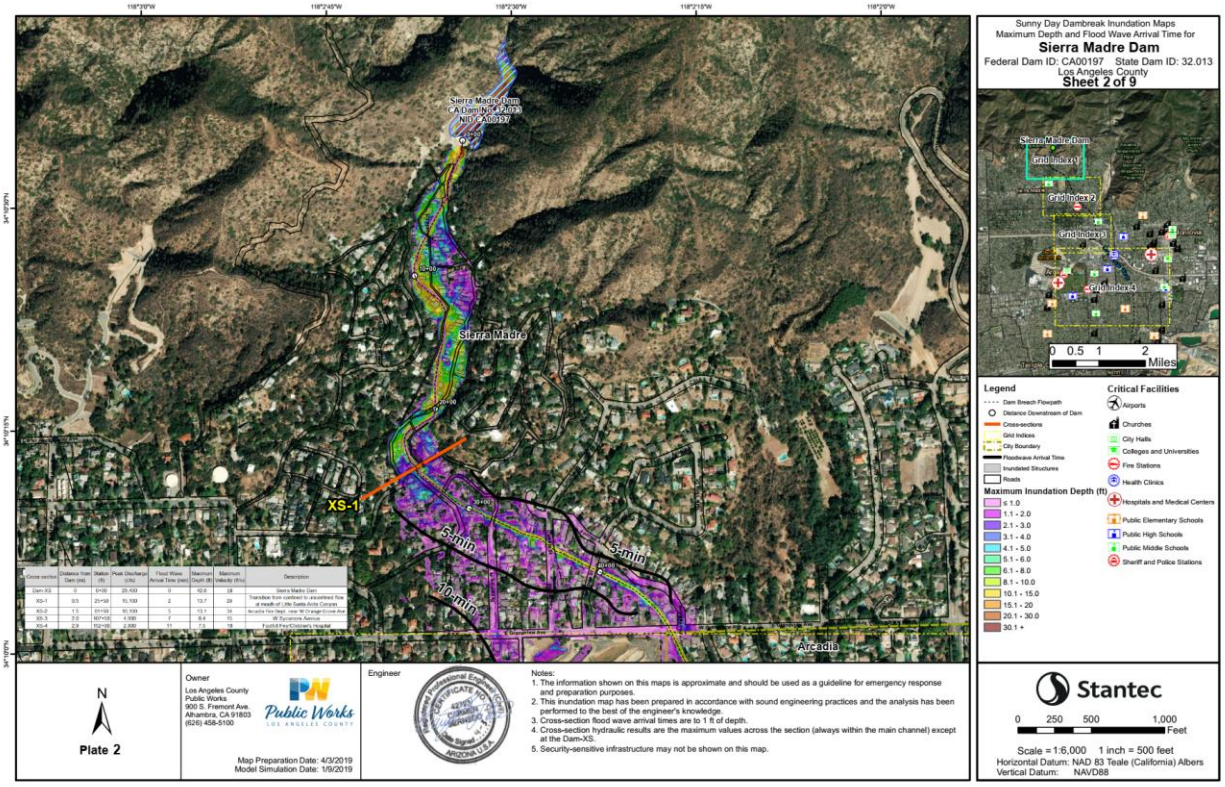
The major dam which could have a significant impact on the City in the event of dam failure is the Little Santa Anita Dam/Sierra Madre Dam. However, failure of this dam during a catastrophic event, such as a severe earthquake, is considered a very unlikely event. Due to the method of construction of this dam, it has performed well in earthquakes, and failure is not expected to occur. The Sierra Madre Dam contains water only during rain as it fulfills its flood control function, the dam may attenuate flows during storm/rain events, however, Los Angeles County Public Works does not currently operate it as a flood control facility, but rather as a debris control facility.

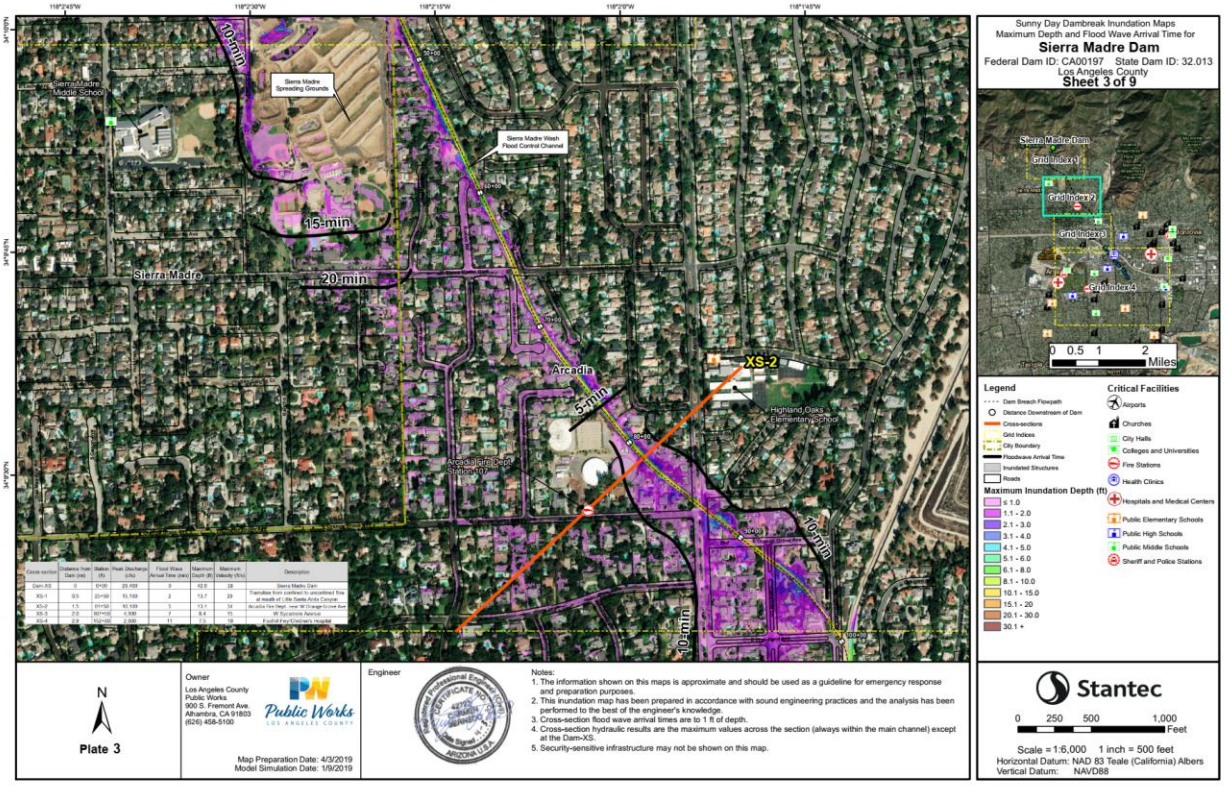
The area one quarter of a mile west of Santa Anita Canyon is an area requiring flood control. According to the Los Angeles County Public Works Department, the city is included in Big Santa Anita Dam's inundation area. However, even though the dam is located 2 miles northeast of the City, the dam is not considered to be a threat to the city in the event of dam failure.

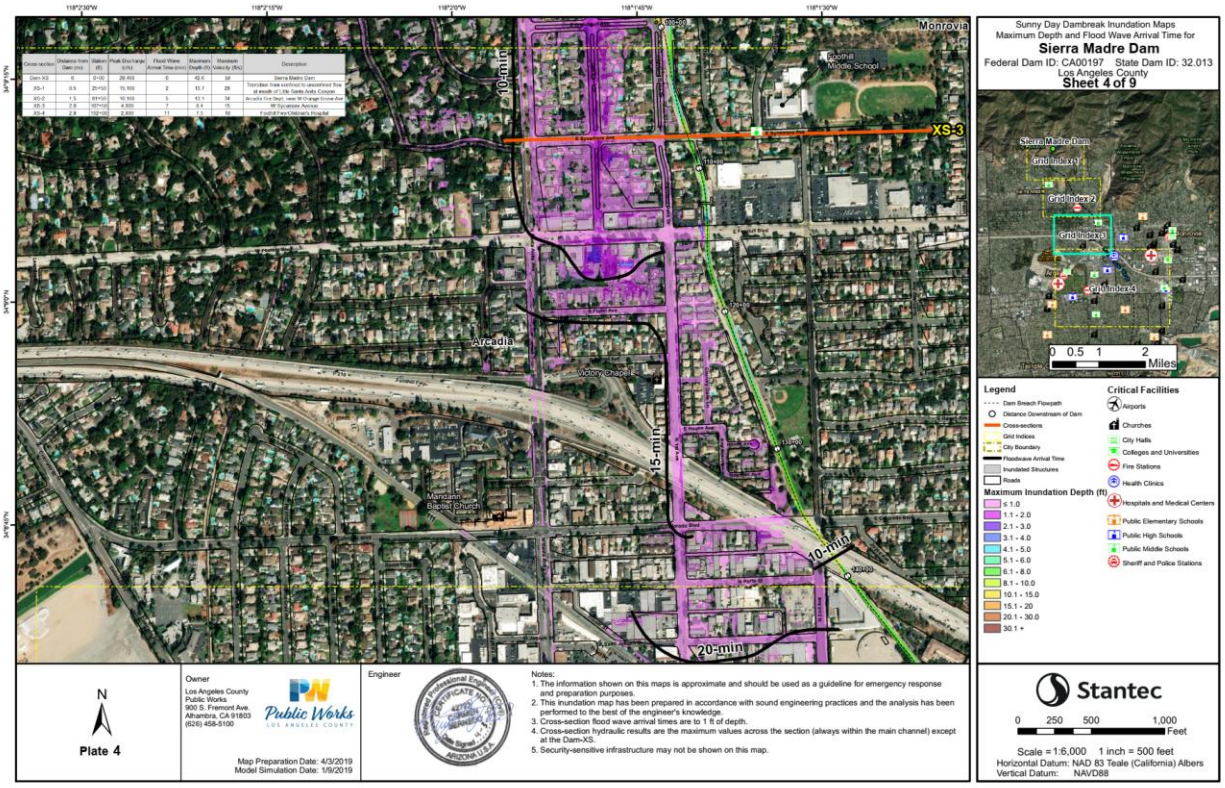
Map B.13 illustrates Dam Inundation Area of the Sierra Madre Dam.

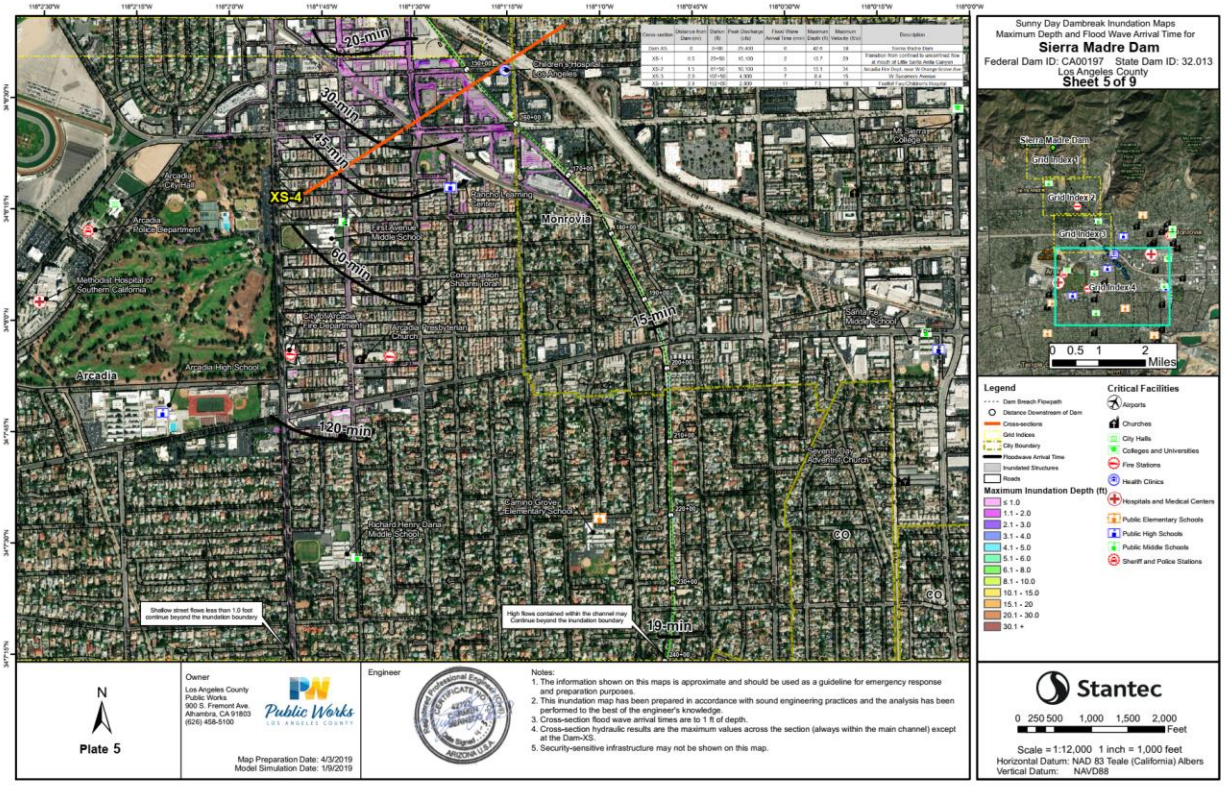
Map B.13: Sierra Madre Dam Inundation Sheets 1-9
Source: Department of Water Resources, Division of Safety of Dams, 2025

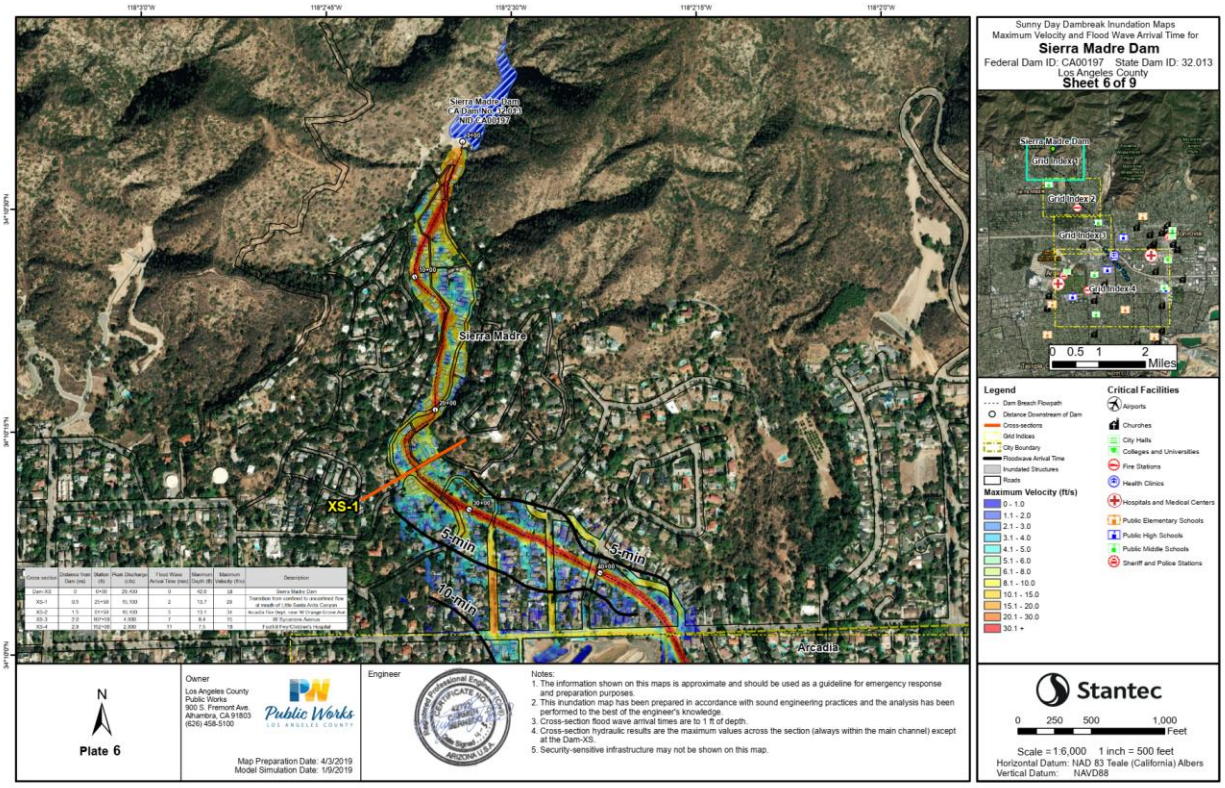


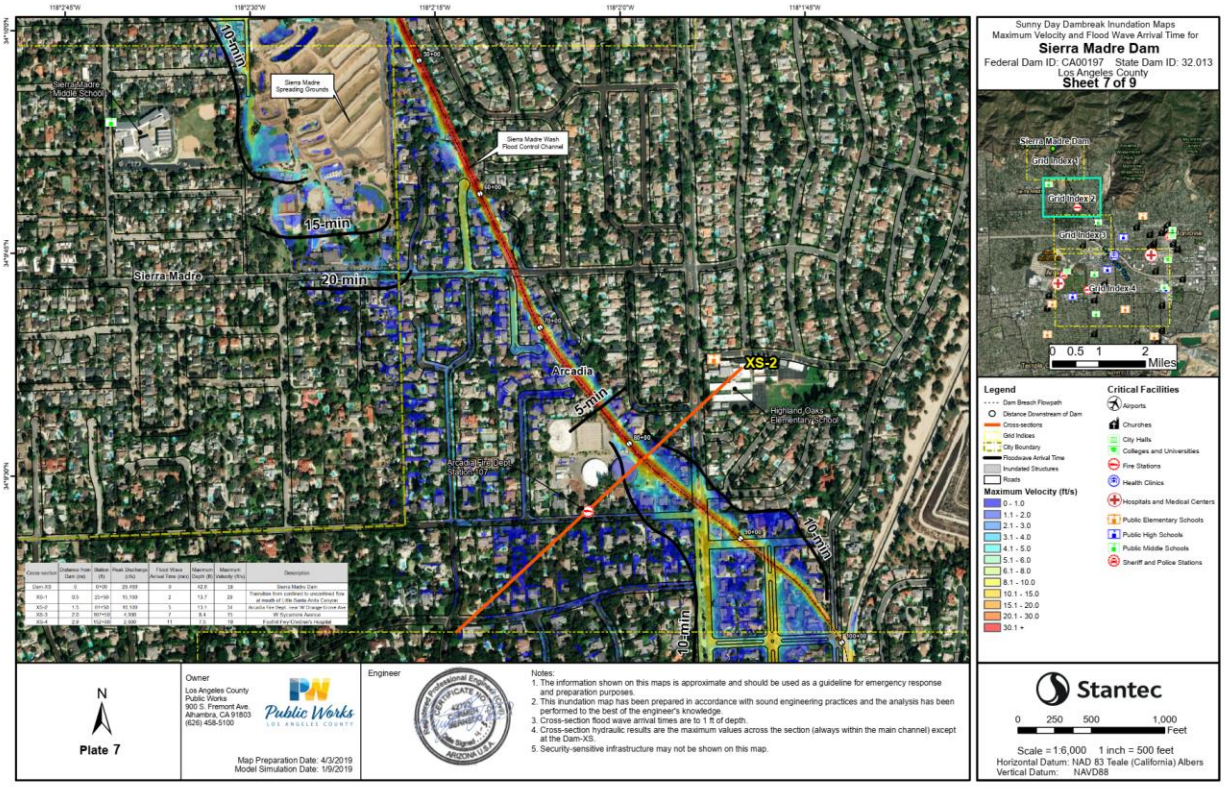

Sierra Madre Dam
CA Dam ID: CA00197
NID: CA00197
Sierra Madre
XS-1
5-min
5-min
10-min
Arcadia
Sunny Day Dambreak Inundation Maps
Maximum Depth and Flood Wave Arrival Time for
Sierra Madre Dam
Federal Dam ID: CA00197 State Dam ID: 32.013
Los Angeles County
Sheet 2 of 9
Grid Index 1
Grid Index 2
Grid Index 3
Grid Index 4
0 0.5 1 2 Miles
Legend
Dam Breach Flowpath
Distance Downstream of Dam
Cross-sections
Grid Indices
City Boundary
Floodwave Arrival Time
Inundated Structures
Roads
Maximum Inundation Depth (ft)
≤ 1.0
1.1 - 2.0
2.1 - 3.0
3.1 - 4.0
4.1 - 5.0
5.1 - 6.0
6.1 - 8.0
8.1 - 10.0
10.1 - 15.0
15.1 - 20
20.1 - 30.0
30.1 +
Critical Facilities
Airports
Churches
City Halls
Colleges and Universities
Fire Stations
Health Clinics
Hospitals and Medical Centers
Public Elementary Schools
Public High Schools
Public Middle Schools
Sheriff and Police Stations
N
Plate 2
Owner
Los Angeles County
Public Works
900 S. Fremont Ave.
Alhambra, CA 91803
(626) 458-5100
Public Works
LOS ANGELES COUNTY
Map Preparation Date: 4/3/2019
Model Simulation Date: 1/9/2019
Engineer
Notes:
1. The information shown on this maps is approximate and should be used as a guideline for emergency response and preparation purposes.
2. This inundation map has been prepared in accordance with sound engineering practices and the analysis has been performed to the best of the engineer's knowledge.
3. Cross-section flood wave arrival times are to 1 ft of depth.
4. Cross-section hydraulic results are the maximum values across the section (always within the main channel) except at the Dam-XS.
5. Security-sensitive infrastructure may not be shown on this map.
Stantec
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Scale = 1:6,000 1 inch = 500 feet
Horizontal Datum: NAD 83 Teale (California) Albers
Vertical Datum: NAVD88

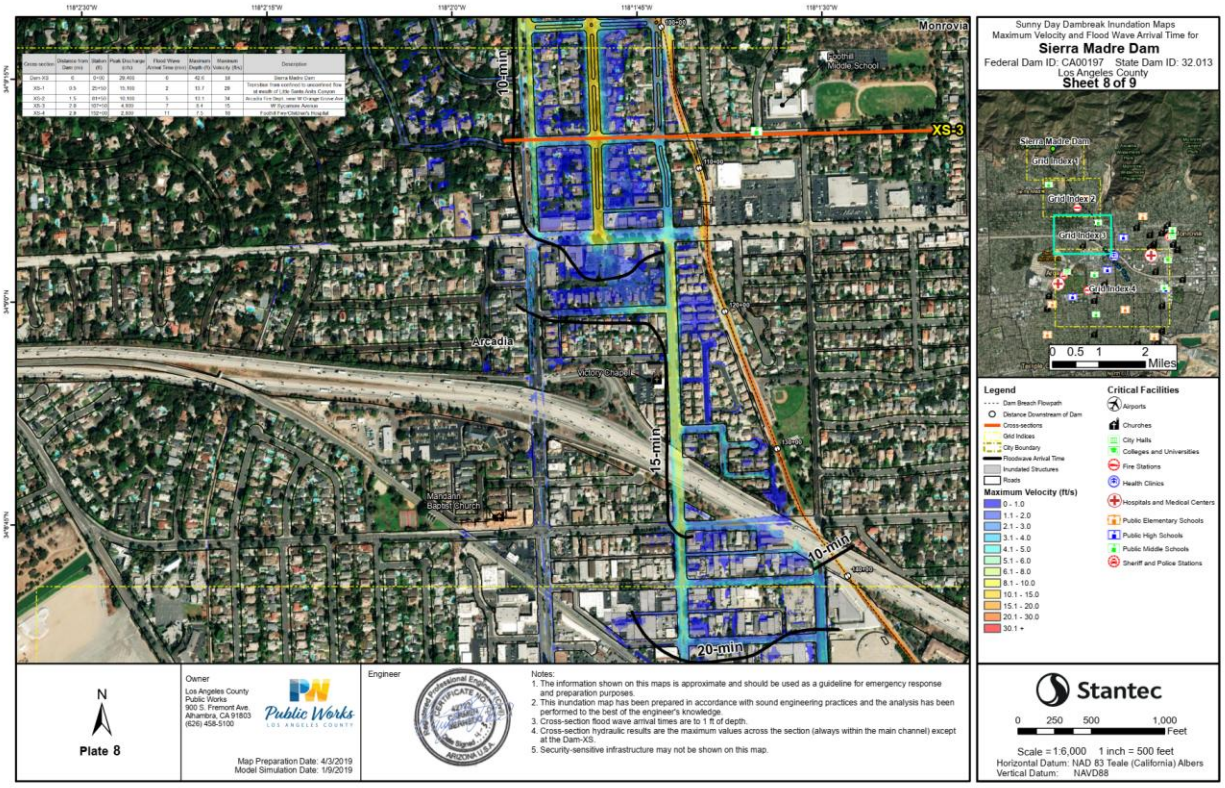

10-min
Sierra Madre Middle School
Sierra Madre Spreading Grounds
Sierra Madre Wash Flood Control Channel
15-min
Sierra Madre
20-min
Arcadia
XS-2
5-min
Highland Oaks Elementary School
Arcadia Fire Dept. Station 107
10-min
10-min
Sunny Day Dambreak Inundation Maps
Maximum Depth and Flood Wave Arrival Time for
Sierra Madre Dam
Federal Dam ID: CA00197 State Dam ID: 32.013
Los Angeles County
Sheet 3 of 9
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0 0.5 1 2 Miles
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Inundated Structures
Roads
Maximum Inundation Depth (ft)
≤ 1.0
1.1 - 2.0
2.1 - 3.0
3.1 - 4.0
4.1 - 5.0
5.1 - 6.0
6.1 - 8.0
8.1 - 10.0
10.1 - 15.0
15.1 - 20
20.1 - 30.0
30.1 +
Critical Facilities
Airports
Churches
City Halls
Colleges and Universities
Fire Stations
Health Clinics
Hospitals and Medical Centers
Public Elementary Schools
Public High Schools
Public Middle Schools
Sheriff and Police Stations
N
Plate 3
Owner
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Stantec
0 250 500 1,000 Feet
Scale = 1:6,000 1 inch = 500 feet
Horizontal Datum: NAD 83 Teale (California) Albers
Vertical Datum: NAVD88

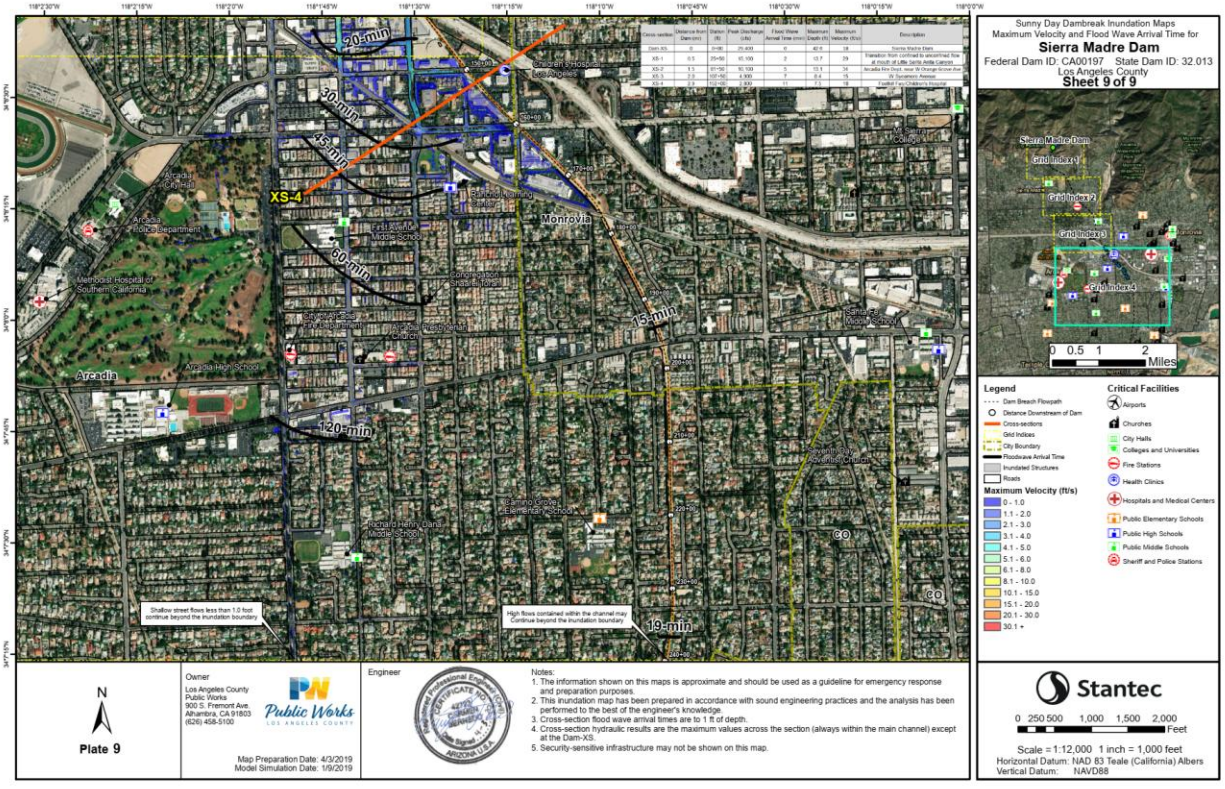

Sunny Day Dambreak Inundation Maps
Maximum Depth and Flood Wave Arrival Time for
Sierra Madre Dam
Federal Dam ID: CA00197 State Dam ID: 32.013
Los Angeles County
Sheet 4 of 9
Monrovia
Arcadia
XS-3
10-min
15-min
20-min
Legend
Critical Facilities
Maximum Inundation Depth (ft)
Plate 4
Owner
Los Angeles County
Public Works
900 S. Fremont Ave.
Alhambra, CA 91803
(626) 458-5100
Public Works
Map Preparation Date: 4/3/2019
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Scale = 1:6,000 1 inch = 500 feet
Horizontal Datum: NAD 83 Teale (California) Albers
Vertical Datum: NAVD88


Sunny Day Dambreak Inundation Maps
Maximum Depth and Flood Wave Arrival Time for
Sierra Madre Dam
Federal Dam ID: CA00197 State Dam ID: 32.013
Los Angeles County
Sheet 5 of 9
Monrovia
Arcadia
XS-4
20-min
30-min
45-min
60-min
90-min
120-min
15-min
Shallow street flows less than 1.0 foot continue beyond the inundation boundary
High flows contained within the channel may Continue beyond the inundation boundary
Legend
Critical Facilities
Maximum Inundation Depth (ft)
Plate 5
Owner
Los Angeles County
Public Works
900 S. Fremont Ave.
Alhambra, CA 91803
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Public Works
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Stantec
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Scale = 1:12,000 1 inch = 1,000 feet
Horizontal Datum: NAD 83 Teale (California) Albers
Vertical Datum: NAVD88


Sunny Day Dambreak Inundation Maps
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Sierra Madre Dam
Federal Dam ID: CA00197 State Dam ID: 32.013
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XS-1
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10-min
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0 - 1.0
1.1 - 2.0
2.1 - 3.0
3.1 - 4.0
4.1 - 5.0
5.1 - 6.0
6.1 - 8.0
8.1 - 10.0
10.1 - 15.0
15.1 - 20.0
20.1 - 30.0
30.1 +
Critical Facilities
Airports
Churches
City Halls
Colleges and Universities
Fire Stations
Health Clinics
Hospitals and Medical Centers
Public Elementary Schools
Public High Schools
Public Middle Schools
Sheriff and Police Stations
N
Plate 6
Owner
Los Angeles County
Public Works
900 S. Fremont Ave.
Alhambra, CA 91803
(626) 458-5100
Public Works
Map Preparation Date: 4/3/2019
Model Simulation Date: 1/9/2019
Engineer
Notes:
1. The information shown on this maps is approximate and should be used as a guideline for emergency response and preparation purposes.
2. This inundation map has been prepared in accordance with sound engineering practices and the analysis has been performed to the best of the engineer's knowledge.
3. Cross-section flood wave arrival times are to 1 ft of depth.
4. Cross-section hydraulic results are the maximum values across the section (always within the main channel) except at the Dam-XS.
5. Security-sensitive infrastructure may not be shown on this map.
Stantec
0 250 500 1,000 Feet
Scale = 1:6,000 1 inch = 500 feet
Horizontal Datum: NAD 83 Teale (California) Albers
Vertical Datum: NAVD88


Sunny Day Dambreak Inundation Maps
Maximum Velocity and Flood Wave Arrival Time for
Sierra Madre Dam
Federal Dam ID: CA00197 State Dam ID: 32.013
Los Angeles County
Sheet 7 of 9
10-min
Sierra Madre Middle School
Sierra Madre Spreading Grounds
Sierra Madre Wash Flood Control Channel
15-min
Sierra Madre
20-min
Arcadia
5-min
XS-2
Highland Oaks Elementary School
Arcadia Fire Station 107
10-min
10-min
Grid Index 1
Grid Index 2
Grid Index 3
Grid Index 4
0 0.5 1 2 Miles
Legend
Dam Breach Flowpath
Distance Downstream of Dam
Cross-sections
Grid Indices
City Boundary
Roadwave Arrival Time
Inundated Structures
Roads
Maximum Velocity (ft/s)
0 - 1.0
1.1 - 2.0
2.1 - 3.0
3.1 - 4.0
4.1 - 5.0
5.1 - 6.0
6.1 - 8.0
8.1 - 10.0
10.1 - 15.0
15.1 - 20.0
20.1 - 30.0
30.1 +
Critical Facilities
Airports
Churches
City Halls
Colleges and Universities
Fire Stations
Health Clinics
Hospitals and Medical Centers
Public Elementary Schools
Public High Schools
Public Middle Schools
Sheriff and Police Stations
N
Plate 7
Owner
Los Angeles County
Public Works
900 S. Fremont Ave.
Alhambra, CA 91803
(626) 458-5100
Public Works
Map Preparation Date: 4/3/2019
Model Simulation Date: 1/9/2019
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Stantec
0 250 500 1,000 Feet
Scale = 1:6,000 1 inch = 500 feet
Horizontal Datum: NAD 83 Teale (California) Albers
Vertical Datum: NAVD88


Sunny Day Dambreak Inundation Maps
Maximum Velocity and Flood Wave Arrival Time for
Sierra Madre Dam
Federal Dam ID: CA00197 State Dam ID: 32.013
Los Angeles County
Sheet 8 of 9
Monrovia
Arcadia
XS-3
10-min
15-min
20-min
Legend
Critical Facilities
Maximum Velocity (ft/s)
Plate 8
Owner
Los Angeles County
Public Works
900 S. Fremont Ave.
Alhambra, CA 91803
(626) 458-5100
Public Works
Engineer
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Model Simulation Date: 1/9/2019
Stantec
Scale = 1:6,000 1 inch = 500 feet
Horizontal Datum: NAD 83 Teale (California) Albers
Vertical Datum: NAVD88


Sunny Day Dambreak Inundation Maps
Maximum Velocity and Flood Wave Arrival Time for
Sierra Madre Dam
Federal Dam ID: CA00197 State Dam ID: 32.013
Los Angeles County
Sheet 9 of 9
Monrovia
Arcadia
XS-4
20-min
30-min
45-min
1-hr
1-hr 30-min
2-hr
Legend
Critical Facilities
Maximum Velocity (ft/s)
Plate 9
Owner
Los Angeles County
Public Works
900 S. Fremont Ave.
Alhambra, CA 91803
(626) 458-5100
Public Works
Engineer
Notes:
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3. Cross-section flood wave arrival times are to 1 ft of depth.
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5. Security-sensitive infrastructure may not be shown on this map.
Map Preparation Date: 4/3/2019
Model Simulation Date: 1/9/2019
Stantec
Scale = 1:12,000 1 inch = 1,000 feet
Horizontal Datum: NAD 83 Teale (California) Albers
Vertical Datum: NAVD88

Previous Flooding Impacting City of Sierra Madre

Flooding has impacted the city throughout history:

March 1938: Perhaps the worst flooding in the history of Los Angeles County. USGS records indicate over 60,000 cubic yards of debris deposited in the basin behind Sierra Madre Dam. According to Los Angeles County Flood Control District records, the deposit was more than 80 percent of the basin's total capacity.

January 1954: Floods and mudslides tore through Sierra Madre Canyon, damaging hundreds of homes and businesses and depositing up to 8 feet of silt on city streets.

January 1969: A storm dropped between 20.5 and 25.8 inches of rain in Sierra Madre. In February another storm dropped between 7.6 and 9.5 inches in Sierra Madre. Combined, the storms delivered approximately 110,000 cub yards of debris in the basin behind Sierra Madre Dam. Flows at the dam went over spillway level during the February storm. The trapping of this debris prevented extensive damage to the city neighborhoods immediately downstream of the dam.

May 2008: Debris flow from recent burn areas caused $50,000 in damage. Mitigation measures include K-rail installation by Los Angeles County Department of Public Works at a cost of $2.4 million.

February 2025: Following the January 2025 Eaton Fire, the city experienced heavy rainfall and flash flooding. With the hillsides stripped of vegetation due to the Eaton Fire, the storm caused several feet of mud, rocks, and debris moving into residential areas. According to the City's website, 2,500 truckloads of debris were removed from the Sierra Madre Dam debris basin, prioritizing areas affected by burn zones to mitigate mudflow risks. The massive 2025 effort was part of debris flow mitigation to prevent blockages in storm drains and potential property damage.

Previous Flooding Impacting Los Angeles County

According to the 2025 Draft Los Angeles County All-Hazards Mitigation Plan, flood hazards are geographically widespread, with more than 240 square miles of land located within the 100- and 500-year floodplains. Historically significant events, such as the 1938 and 1969 floods, as well as more recent storms in 2023 and 2024, have caused substantial damage to infrastructure, triggered evacuations, and challenged long-term recovery efforts. Socially vulnerable populations, including older adults, individuals with access and functional needs, and low-income households, face disproportionate impacts due to limited financial resources, inadequate insurance coverage, and reduced access to services. The County's flood control system includes concrete river channels, levees, storm drains, debris basins and reservoirs; has helped mitigate some flood risks but remains vulnerable to high-intensity storms that exceed design capacities. Major flood-prone areas include:

- Los Angeles River, San Gabriel River, and Santa Clara River: These major waterways are prone to overflow during extreme storm events, particularly during El Niño years.
- Ballona Creek and Malibu Creek: These urban watersheds experience rapid runoff and flash flooding, especially in developed areas.
- Foothills, Valleys, and Recent Burn Scar Areas: Post-wildfire regions face heightened risk of flash floods and debris flows following storms.

- Antelope Valley: In desert regions, stormwater pools into temporary lakes, causing flooded roadways and infrastructure damage.
- Coastal Communities: Rising sea levels and storm surges threaten beachfront properties, harbors, and businesses.

Los Angeles County has experienced numerous severe flood events, many of which have caused catastrophic damage to infrastructure, property, and human life. Over the decades, climate variability, rapid urbanization, and an aging flood control system have led to repeated flooding disasters. Below are some of the most significant historical and recent flood events affecting the region. **Table B.13** shows the 13 flooding emergencies affecting Los Angeles County:

Table B.13: History of Flood Events in Los Angeles County
Source: 2025 Draft Los Angeles County All-Hazard Mitigation Plan

Date	Description
1938 Los Angeles Floods	One of the deadliest floods in county history, caused by weeks of torrential rainfall, resulting in over 100 deaths, the destruction of thousands of homes, and widespread infrastructure damage, particularly to bridges and roadways
1969 Winter Storms	Heavy rains led to massive debris flows in the San Gabriel Mountains, severe urban flooding across Los Angeles, and multiple dam breaches, prompting major evacuations.
1992-1993 El Niño Floods	A series of storms triggered landslides, flash flooding, and major coastal erosion, with significant damage to Pacific Coast Highway and residential areas
2017 Winter Storms	Record-breaking rainfall led to significant urban flooding, road closures, and mudslides, with severe impacts across multiple communities.
September 2022 Hurricane Kay	A pacific hurricane that caused significant rainfall along with risk of mudflows, coastal flooding, and coastal erosion.
January 2023 Atmospheric River Event	Heavy rainfall overwhelmed storm drains, causing significant flooding in Hollywood, Baldwin Hills, and low-lying inland areas, leading to evacuations and infrastructure damage.
February 2023 Los Angeles Floods	A series of intense storms caused widespread flash flooding, freeway closures, and landslides, demonstrating the increasing vulnerability of the county's urban areas to extreme precipitation events
August 2023 Tropical Storm Hilary	Several locations in the mountains of Southern California received over 10 inches of rainfall which set daily and/or monthly rainfall records, in many locations in Southern California, including within Los Angeles County. It also created significant threat of flash and riverine flooding prompted the evacuation of numerous vulnerable communities near burn scars in the region.
December 2023 Pacific Storm	Storm surges and extreme coastal flooding led to significant erosion along the coastline, particularly impacting Marina del Rey, Long Beach, and Venice Beach.
February - March 2024 Atmospheric River Storm	One of the most intense rainfall events in recent history, resulting in severe flash floods, mudslides, and power outages, with many homes and businesses sustaining flood damage.

Probability of Future Flooding

Floods and their impacts vary by location and severity of any given flood event, and likely only affect certain areas of the city during specific times. Based on the risk assessment, it is evident that floods are likely to have a devastating economic impact to certain areas of the city.

Drought

Description

Drought is defined as a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group, or environmental sector. Drought should be considered relative to some long-term average condition of balance between precipitation and evapotranspiration (i.e., evaporation + transpiration) in a particular area, a condition often perceived as "normal". It is also related to the timing (e.g., principal season of occurrence, delays in the start of the rainy season, occurrence of rains in relation to principal crop growth stages) and the effectiveness of the rains (e.g., rainfall intensity, number of rainfall events).

Other climatic factors such as high temperature, high wind, and low relative humidity are often associated with it in many regions of the world and can significantly aggravate its severity. Drought should not be viewed as merely a physical phenomenon or natural event. Its impacts on society result from the interplay between a natural event (less precipitation than expected resulting from natural climatic variability) and the demand people place on water supply. Human beings often exacerbate the impact of drought. Recent droughts in both developing and developed countries and the resulting economic and environmental impacts and personal hardships have underscored the vulnerability of all societies to this natural hazard.

One dry year does not normally constitute a drought in California but serves as a reminder of the need to plan for droughts. California's extensive system of water supply infrastructure — its reservoirs, groundwater basins, and inter-regional conveyance facilities — mitigates the effect of short-term dry periods for most water users. Defining when a drought begins is a function of drought impacts to water users. Hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users elsewhere, or for water users having a different water supply. Individual water suppliers may use criteria such as rainfall/runoff, amount of water in storage, or expected supply from a water wholesaler to define their water supply conditions.

Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Most natural disasters, such as floods or forest fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts occur slowly, over a multiyear period. There is no universal definition of when a drought begins or ends. Impacts of drought are typically felt first by those most reliant on annual rainfall -- ranchers engaged in dry land grazing, rural residents relying on wells in low-yield rock formations, or small water systems lacking a reliable source. Criteria used to identify statewide drought conditions do not address these localized impacts. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline.
There are four different ways that drought can be defined:

- **Meteorological** - a measure of departure of precipitation from normal. Due to climatic differences, what is considered a drought in one location may not be a drought in another location.
- **Agricultural** - refers to a situation when the amount of moisture in the soil no longer meets the needs of a particular crop.
- **Hydrological** - occurs when surface and subsurface water supplies are below normal.

- **Socioeconomic** - refers to the situation that occurs when physical water shortage begins to affect people.

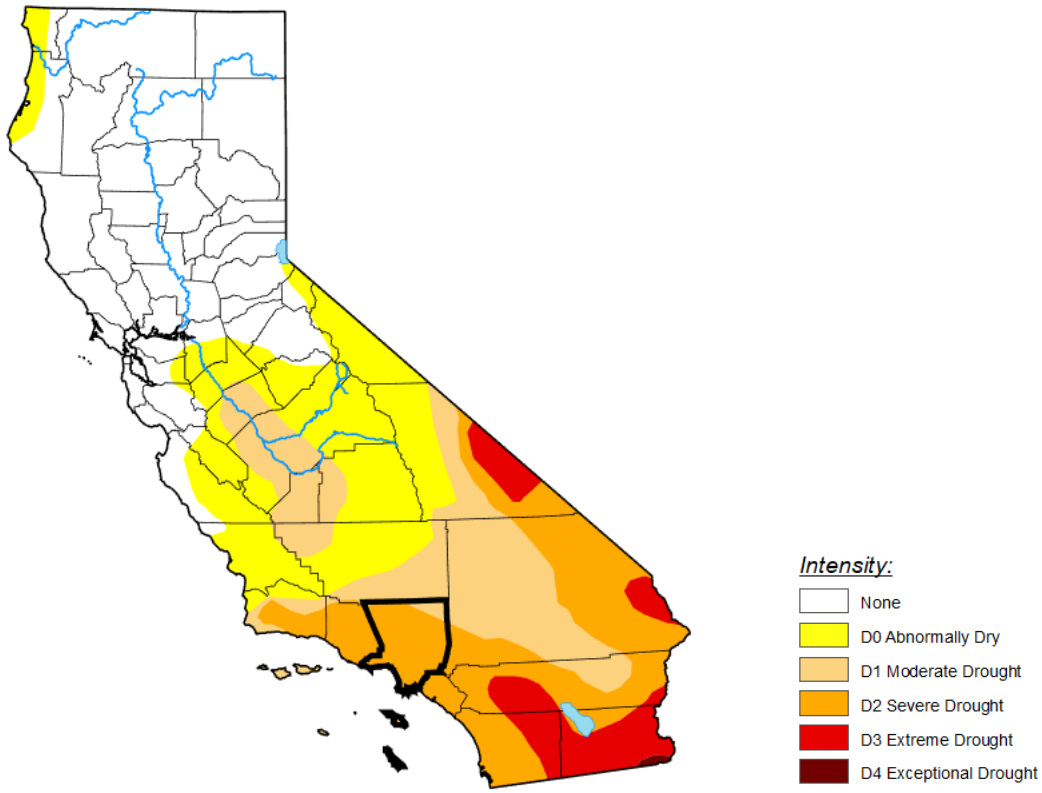
U.S. Drought Monitor

The U.S. Drought Monitor (USDM) is a map that is updated weekly to show the location and intensity of drought across the country. The USDM uses a five-category system (USDM, 2021):

- D0—Abnormally Dry
  - Short-term dryness slowing planting, growth of crops
  - Some lingering water deficits
  - Pastures or crops not fully recovered
- D1—Moderate Drought
  - Some damage to crops, pastures
  - Some water shortages developing
  - Voluntary water-use restrictions requested
- D2—Severe Drought
  - Crop or pasture loss likely
  - Water shortages common
  - Water restrictions imposed
- D3—Extreme Drought
  - Major crop/pasture losses
  - Widespread water shortages or restrictions
- D4—Exceptional Drought
  - Exceptional and widespread crop/pasture losses
  - Shortages of water creating water emergencies

The USDM categories show experts' assessments of conditions related to drought. These experts check variables including temperature, soil moisture, stream flow, water levels in reservoirs and lakes, snow cover, and meltwater runoff. They also check whether areas are showing drought impacts such as water shortages and business interruptions. Associated statistics show what proportion of various geographic areas are in each category of dryness or drought, and how many people are affected. U.S. Drought Monitor data go back to 2000.

Infographic B.1: U.S. Drought Monitor – Los Angeles County, California
Source: Website – U.S. Drought Monitor 6.10.2025

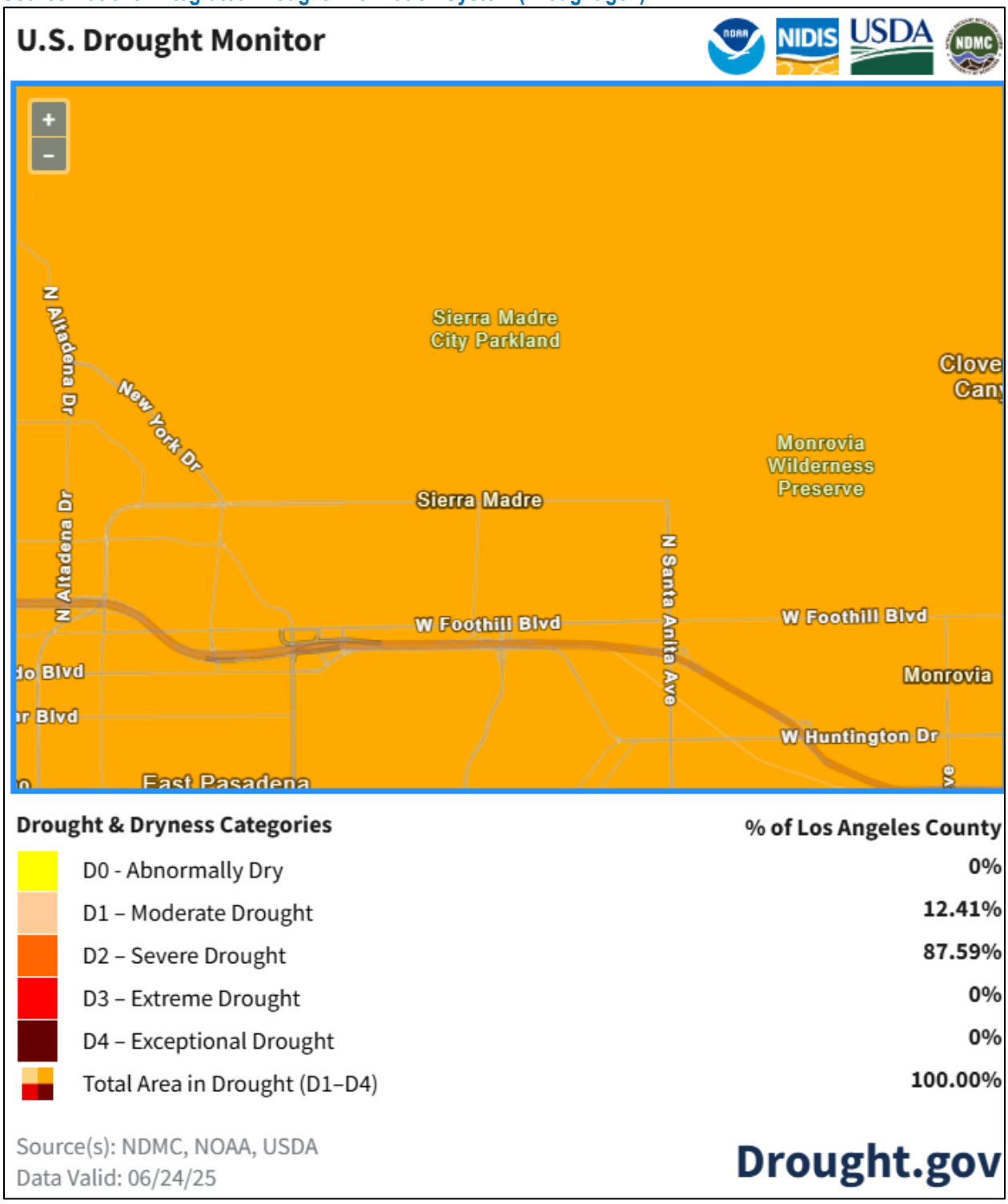


Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2025-06-03	0.00	100.00	100.00	98.01	25.47	0.00	323
Last Week to Current	2025-05-27	0.00	100.00	100.00	98.01	25.46	0.00	324
3 Months Ago to Current	2025-03-04	0.00	100.00	100.00	98.02	76.06	4.31	378
Start of Calendar Year to Current	2024-12-31	0.00	100.00	100.00	28.93	5.32	0.00	234
Start of Water Year to Current	2024-10-01	23.15	76.85	41.08	0.00	0.00	0.00	118
One Year Ago to Current	2024-06-04	92.38	7.62	0.00	0.00	0.00	0.00	8

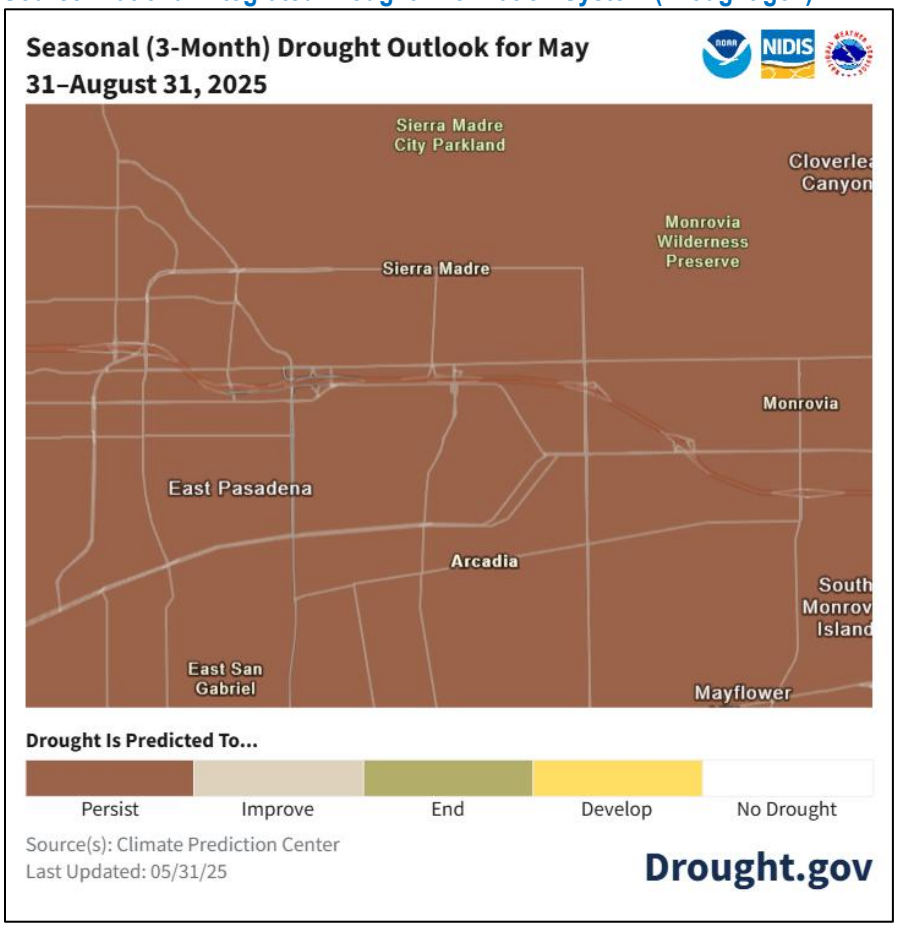
Local Conditions

Although the City is able to meet its water demands, the city is currently in a drought. **Map B.14** shows the drought as severe, and **Map B.15** shows the current drought severity is expected to persist.

Map B.14: U.S Drought Monitor for the City of Sierra Madre
Source:National Integrated Drought Information System (Drought.gov)



Map B.15: Drought Outlook for the City of Sierra Madre
Source: National Integrated Drought Information System (Drought.gov)



Previous Drought Impacting the City of Sierra Madre

According to the City's website, the City of Sierra Madre has experienced a drought for a number of years. In 2013 the City Council declared a Stage Two Water Emergency, requiring all water customers to reduce consumption by 20% and in July of 2014, conservation measures were increased to 30%. From 2021-2022, the city was included in the Executive order declaring a statewide drought emergency.

Previous Droughts Impacting Los Angeles County

According to the Draft Los Angeles County All-Hazard Mitigation Plan 2025, Los Angeles County has experienced multiple significant droughts, with some lasting several years. **Table B.14** outlines the Notable Historical Drought Periods for Los Angeles County.

Table B.14: Notable Historical Drought Periods for Los Angeles County
Source: Draft Los Angeles County All Hazards Mitigation Plan, 2025

Date	Description
1917-1921	A widespread drought affecting most of California.
1976-1977	One of the driest two-year periods in recorded history.
1987-1992	A six-year drought that severely impacted water supplies and agriculture.
2007-2009	A prolonged drought leading to state-imposed water restrictions.
2011-2017	The most severe drought in modern history, resulting in groundwater depletion and mandatory conservation measures.
2020-2022	California experienced a significant drought, with Los Angeles County experiencing "abnormally dry" conditions.
2024-2025	Los Angeles County is continuing to experience abnormally dry conditions, with lower average rainfall and arid conditions.

Probability of Future Droughts

Droughts occur every day throughout California. When conducting the risk assessment, the planning team determined that the probability of a significant drought affecting Sierra Madre will remain “likely”.

Vulnerability and Impacts Assessment

Q&A | ELEMENT B: RISK ASSESSMENT | B2-a.
Q: Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards? (Requirement 44 CFR § 201.6(c)(2)(ii)) **A:** See **Vulnerability of People, Vulnerability of Structures, Vulnerability of Economy, Vulnerability of Natural, Historic, and Cultural Resources, and Vulnerability of Activities Bringing Value to the Community** below.
Q&A | ELEMENT B: RISK ASSESSMENT | B2-b.
Q: For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction? (Requirement §201.6(c)(2)(ii)) **A:** See **Impact Profile of People, Impact Profile of Structures, Impact Profile of Economy, Impact Profile of Natural, Historic, and Cultural Resources, Impact Profile of Activities Bringing Value to the Community,** below.
Q&A | ELEMENT B: RISK ASSESSMENT | B2-c.
Q: Does the Plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii)) **A:** See **Repetitive Loss Properties/Severe Repetitive Loss Properties,** below.

The Vulnerability and Impacts Assessment process analyzes the potential harm of the prioritized hazard events discussed in Element B: Risk Assessment – Risk Assessment.

Vulnerability and Impact Assessment Process

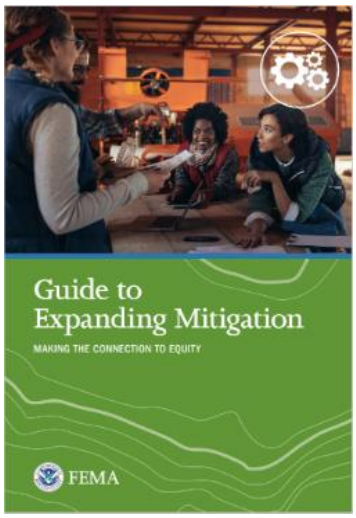
The assessment examines the potential harm that may result from a hazard event, without factoring in its likelihood. This means that equal attention is given to hazards regardless of their probability. The assessment evaluates three key aspects of each hazard on assets: the physical threat posed to facilities, the social threat to vulnerable populations, and the potential impact on other assets. The FEMA Handbook categorizes assets as follows:

People
Structures
Economy
Natural, Historic, and Cultural Resources
Activities Bringing Value to the Community

People

People are the community's most important asset. In the context of this discussion, people are defined as individuals who live and/or work in the City of Sierra Madre.

Vulnerability of People



Disasters affect all populations; however, some populations are more adversely affected because of a higher level of social vulnerability. According to **The Guide to Expanding Mitigation – Making the Connection to Equity**, social vulnerability is defined in terms of the characteristics of a person or group that affect "their capacity to anticipate, cope with, resist, and recover from the impact" of a discrete and identifiable disaster in nature or society.

Using **FEMA's Resilience Analysis and Planning Tool** (RAPT), census tract data was used to understand what census tracts might be more vulnerable. Many of the maps in the People section were created using data provided by RAPT. RAPT is a free, publicly available geographic information systems (GIS) tool to help emergency managers and community partners of all GIS skill levels to visualize and assess potential challenges to community resilience. RAPT includes over 100 pre-loaded data layers and the tool's functionality allows users to visualize combinations of these data layers for a specific location. One of the layers includes community demographics for counties, census tracts, and tribes drawn primarily from the U.S. Census Bureau. RAPT includes 27 demographic layers, including 22 community resilience challenges indicators identified from peer-reviewed research, and **FEMA's Community Resilience Challenges Index** (CRCI) for counties and census tracts, a composite value of all 22 community resilience challenges indicators. The graphics below outline the community resilience indicators.

Graphic B.1: People & Community Indicators
Source: FEMA Resilience Analysis and Planning Tool (RAPT)

People & Community Indicators

County and Census Tract Community Resilience Challenges Index (CRCI) combining 22 indicators.

Population Characteristics	Household Characteristics	Housing
• Population without a High School Education • Population 65 and Older • Population with a Disability • Population by Race and Hispanic Origin	• Households without a Vehicle • Households with Limited English • Single-Parent Households • Households without a Smartphone • Households without Broadband Subscription	Mobile Homes as Percentage of Housing Owner-Occupied Housing Rental Housing Costs Residential Structures in SHFA with Flood Insurance

Healthcare	Economic	Connection to Community
• Number of Hospitals • Medical Professional Capacity • Population without Health Insurance • Medicare Recipients with Power-Dependent Devices	• Population Below Poverty Level • Median Household Income • Unemployed Labor Force • Unemployed Women Labor Force • Income Inequality • Workforce in Predominant Sector	• Presence of Civic and Social Organizations • Population without Religious Affiliation • Percentage of Inactive Voters • Population Change

Graphic B.2: Infrastructure Indicators
Source: FEMA Resilience Analysis and Planning Tool

Infrastructure Indicators

Homeland Infrastructure Foundation-Level Data (Open)

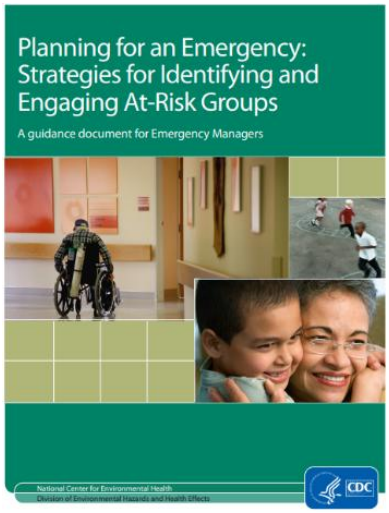
- Hospitals
- Nursing Homes
- Pharmacies
- Urgent Care Facilities
- Dialysis Centers
- Mobile Home Parks
- Fire Stations
- Local Law Enforcement Locations
- Public Health Departments
- 911 Service Area Boundaries
- SNAP Authorized Retailers
- Places of Worship
- Colleges and Universities
- Private Schools
- Public Schools
- Prison Boundaries
- Power Plants
- Wastewater Treatment Plants
- Solid Waste Landfills
- High-Hazard Dams
- Electric Power Transmission Lines

Graphic B.3: Hazard and Risk Indicators
Source: FEMA Resilience Analysis and Planning Tool

Hazard & Risk Indicators

National Weather Service Live Data Feeds

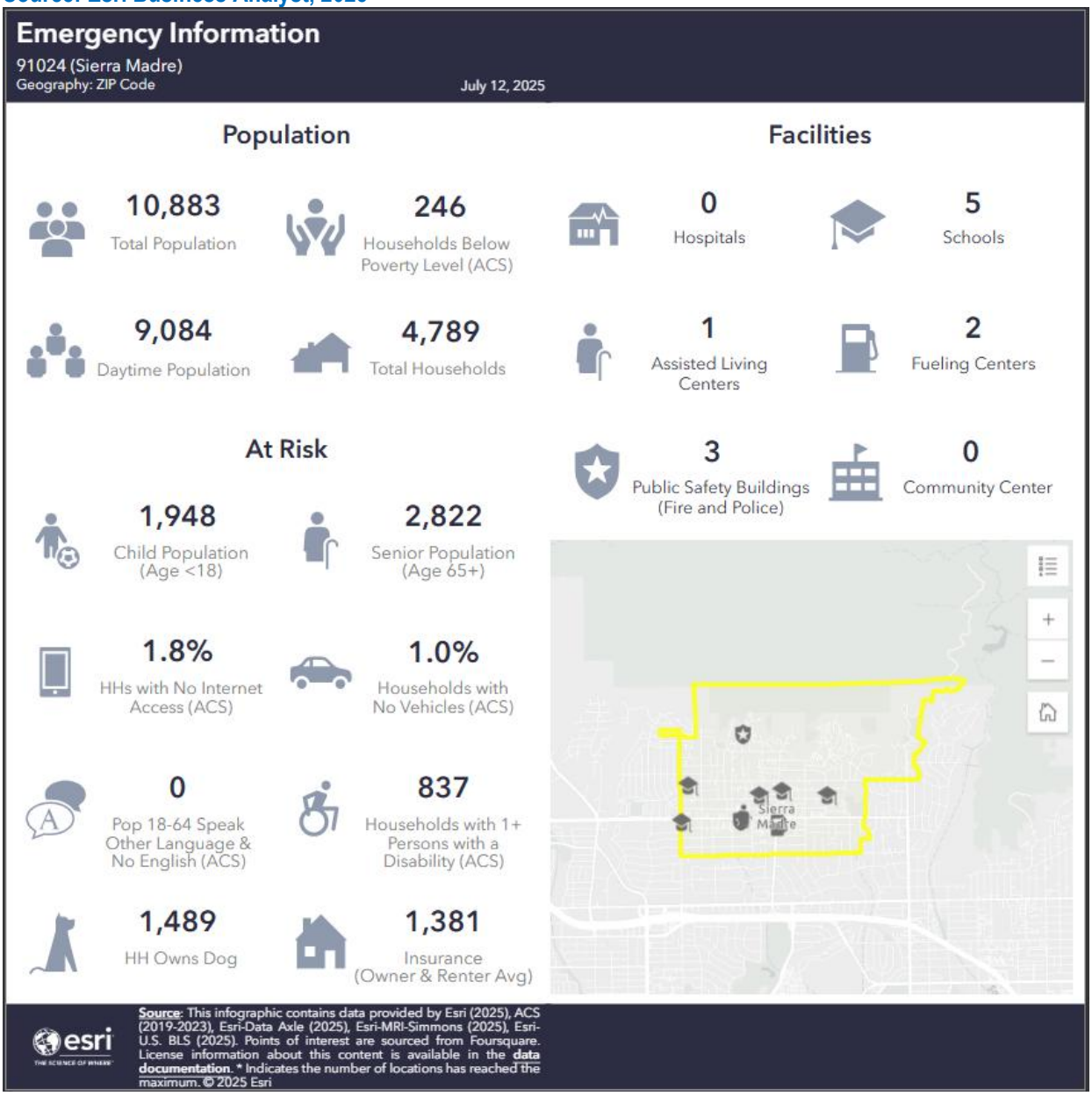
- Live Stream Gauges
- Flood Hazard
- Hurricane Tracks (1990+)
- Historical Tornado Tracks
- Wildfires – Current Incidents (Points)
- Wildfires – Current incidents (Perimeters)
- Seismic Hazard
- National Risk Index Census Tracts
- NOAA Sea Level Rise (4-6 ft.)
- NWS Severe Weather Watches and Warnings
- NWS Severe Weather Outlook
- NWS Atlantic/Caribbean Tropical Cyclones
- NWS Eastern Pacific Tropical Cyclones
- NWS Excessive Rainfall Outlook
- NEXRAD Real-Time Weather Radar



A person's vulnerability to disaster is influenced by many factors. According to **CDC's Planning for an Emergency: Strategies for Identifying and Engaging At-Risk Group**, the following six categories are among the most commonly accepted factors: socioeconomic status, age, gender, race and ethnicity, English language proficiency, and medical issues and disability. These categories were used to analyze the vulnerability of people in Sierra Madre. The compounding effects of these factors will further impact an individual's ability to withstand the effects of disasters and other hazards.

Below is an overview of Sierra Madre's population. Due to a limitation on data that is currently available it is not known exactly where in the city those who are more vulnerable may reside.

Graphic B.4: At Risk Population – City of Sierra Madre
Source: Esri Business Analyst, 2025



Graphic B.5: Emergency Information – City of Sierra Madre
Source: Esri Business Analyst, 2025



Language Spoken (ACS)	Age 5-17	18-64	Age 65+	Total
English Only	1,299	5,157	2,012	8,468
Spanish	29	358	145	532
Spanish & English Well	29	358	135	522
Spanish & English Not Well	0	0	10	10
Spanish & No English	0	0	0	0
Indo-European	21	216	18	255
Indo-European & English Well	21	216	18	255
Indo-European & English Not Well	0	0	0	0
Indo-European & No English	0	0	0	0
Asian-Pacific Island	64	714	132	910
Asian-Pacific Isl & English Well	37	650	79	766
Asian-Pacific Isl & English Not Well	27	63	53	143
Asian-Pacific Isl & No English	0	1	0	1
Other Language	23	161	118	302
Other Language & English Well	23	144	91	258
Other Language & English Not Well	0	17	0	17
Other Language & No English	0	0	27	27

The infographics provide a detailed profile of Sierra Madre focusing on population, at-risk groups, and emergency-related infrastructure. As of July 2025, the city has a total population of 10,883, with 4,789 households and a daytime population of 9,084. Children under 18 (1,948) and seniors over 65 (2,822) represent a significant portion of vulnerable groups. Additionally, 837 households include individuals with disabilities, 131 households lack vehicles, and 1.8% of households lack internet access—factors that can hinder emergency response and evacuation.

Sierra Madre also exhibits notable linguistic and economic vulnerabilities. While the median household income is $144,691, 5% of households fall below the poverty line. A majority of the population (8,468) speaks English; however, there is a small population (~2%) that do not speak English well. This language barrier could pose challenges in disseminating emergency information. The average household size is 2.26, and the median age is 48.7. Overall, Sierra Madre has significant concentrations of at-risk populations, and linguistic diversity that underscore the importance of targeted preparedness and response strategies.

Map B.16: Census Tract
Source: Emergency Planning Consultants, 2025

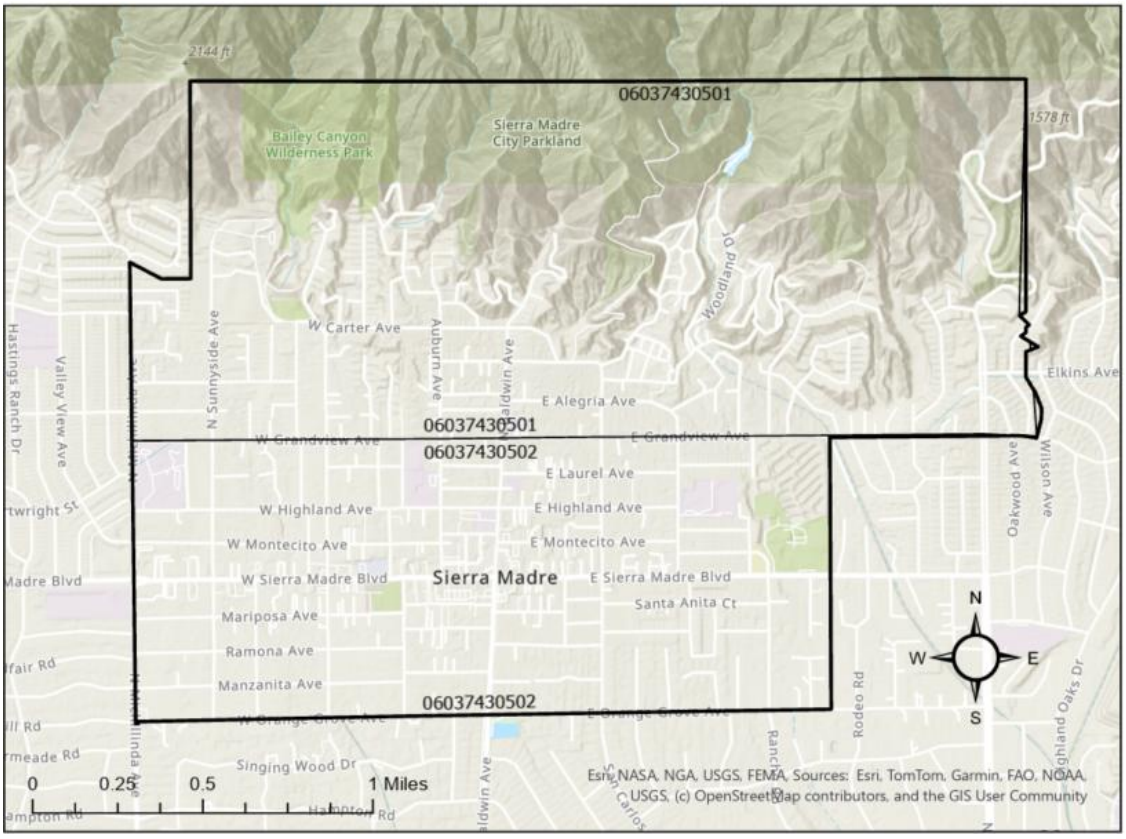


Table B.15: Hazard Vulnerability to People by Census Tracts
Source: Emergency Planning Consultants

Census Tracts in City of Sierra Madre	Drought	Earthquake	Flood	Landslide	Power Outage	Wildfire	Windstorm
06037430501	X	X		X	X	X	X
06037430502	X	X			X		X

Impact Profile of People

Drought

A drought in the City of Sierra Madre can have wide-ranging effects on the daily lives and well-being of its residents. One of the most immediate impacts is on the local water supply. With reduced rainfall and snowmelt, the availability of surface and groundwater declines, often leading to strict water use restrictions. Residents may be required to limit outdoor watering, reduce household water consumption, and face higher water bills. These constraints are especially challenging for low-income households and those with limited ability to adapt.

Public health is another critical concern. Drought conditions often coincide with extreme heat, raising the risk of heat-related illnesses and respiratory problems. Dry, dusty conditions also degrade air quality, which can aggravate asthma and other chronic health conditions. Additionally, prolonged drought dries out local vegetation, significantly increasing the risk of wildfires. This poses serious safety threats, including the possibility of property damage, evacuation, and long-term health effects from smoke exposure.

Economically, drought can impact landscaping, gardening, and local businesses that depend on water, such as nurseries or small farms. Recreational opportunities may also diminish as natural areas become dry and less hospitable. Beyond the physical and economic effects, the psychological toll should not be overlooked. The uncertainty and stress caused by ongoing drought, water insecurity, and fire danger can affect mental health, particularly among seniors, families with young children, and individuals with disabilities. Vulnerable populations often bear the greatest burden, highlighting the need for targeted support and resilience planning in the community.

Earthquake

An earthquake in the City of Sierra Madre could have significant and far-reaching impacts on its residents due to the city's proximity to active fault lines and its location at the base of the San Gabriel Mountains. A strong quake would likely cause structural damage to homes and buildings, particularly older ones that may not be seismically retrofitted. Critical infrastructure like roads, power lines, and water systems could be damaged, severely disrupting daily life and emergency response capabilities.

Residents would face immediate risks such as injuries, fires, and potential fatalities. Vulnerable groups—including seniors, people with disabilities, low-income households, and non-English

speakers—may experience greater challenges in evacuation, accessing emergency services, and recovering afterward. Mental health impacts like anxiety and trauma would also be common in the aftermath, especially for those who suffer displacement or loss.

Secondary hazards such as landslides and fires are also a serious concern in Sierra Madre's hilly terrain. Limited evacuation routes could complicate efforts to move people to safety, while demand for temporary shelter and medical care may quickly exceed available resources. Long-term effects could include economic disruption, school closures, and uneven recovery for residents depending on their access to financial and social support systems. Overall, a major earthquake would strain both physical infrastructure and social resilience in Sierra Madre.

Flood

Flooding in Sierra Madre poses a serious threat to residents, particularly during periods of intense rainfall or rapid snowmelt in the nearby San Gabriel Mountains. Although the city is not located near a major river, its location at the mountain foothills makes it highly vulnerable to flash floods and debris flows, especially in areas near canyons and steep slopes. Stormwater runoff can quickly overwhelm drainage systems, leading to localized flooding of streets, homes, and public infrastructure.

The physical impact on residents includes property damage, road closures, and disrupted utility services. Homes located in flood-prone zones may experience basement or ground-level flooding, resulting in costly repairs and potential displacement. Critical facilities like schools, fire stations, and emergency shelters could also be compromised, affecting response and recovery efforts.

Vulnerable populations such as the elderly, low-income households, and those without adequate insurance are especially at risk. These groups may lack the resources to evacuate quickly or recover from property loss. Health risks from floodwaters—such as exposure to contaminants or mold—can further affect the wellbeing of residents, particularly those with pre-existing conditions.

Landslide

A landslide in Sierra Madre could pose serious risks to residents due to the City's location along the foothills of the San Gabriel Mountains. Heavy rainfall, earthquakes, or wildfires weakening vegetation can trigger landslides, especially on steep slopes. When this occurs, homes situated near hillsides may face structural damage or total destruction, with debris flows potentially burying roads, utilities, and properties in their path.

Residents in high-risk areas may experience forced evacuations or displacement, with limited time to respond if a landslide occurs suddenly. Vulnerable populations, including the elderly and people with limited mobility, may find evacuation particularly challenging. Access to emergency services could be delayed due to blocked roads and damaged infrastructure, hindering rescue efforts and slowing aid delivery.

In addition to physical damage, landslides can disrupt daily life for extended periods. Road closures may cut off access to schools, work, and emergency facilities, while utilities like water, gas, and electricity could be shut down. Psychological stress and economic hardship are also common, especially for residents without insurance or those who suffer home losses. The risk of recurring slides during ongoing rain or seismic activity further complicates recovery and long-term safety planning.

Power Outage

Abrupt and long-lasting power outages in Sierra Madre could significantly disrupt daily life for residents, particularly during extreme weather or emergencies. Loss of electricity would affect lighting, heating and cooling systems, refrigeration, and access to digital communication, making it difficult for households to stay safe and informed. Extended outages could also disrupt water supply and sewage systems, especially in hillside areas where electric pumps may be necessary.

The impact would be especially severe for vulnerable populations. Seniors and people with medical conditions who rely on electric-powered medical equipment could face serious health risks. Low-income residents may struggle to replace spoiled food or find alternate lodging if conditions become unsafe at home. School closures and business interruptions would affect families' routines and income sources.

Local infrastructure like traffic lights, gas stations, and grocery stores would also be affected, leading to increased safety risks and reduced access to essentials. If the outage follows or coincides with an emergency, such as an earthquake or wildfire, the consequences would be even more serious, as communication and coordination of emergency services would be hindered. Overall, a major power outage would reveal gaps in preparedness and could significantly challenge the resilience of Sierra Madre's community systems.

Wildfire

A wildfire in Sierra Madre would pose a serious threat to the safety and well-being of residents due to the city's location in a wildland-urban interface at the base of the San Gabriel Mountains. Fast-moving fires, driven by dry conditions and strong Santa Ana winds, could quickly spread into residential areas, threatening homes, critical infrastructure, and lives. The steep terrain and dense vegetation increase the risk of fire ignition and rapid expansion.

Residents in the northern part of the city are in a very high wildfire severity zone. These residents could face immediate dangers such as evacuation orders, property loss, poor air quality, and potential injuries or fatalities. Vulnerable populations, including the elderly, individuals with disabilities, and low-income residents—may struggle with evacuation and access to emergency services. Wildfire smoke poses significant health risks, particularly for children, seniors, and those with respiratory conditions like asthma or COPD.

In the longer term, wildfires could cause displacement, economic hardship, and emotional distress for affected families. Damage to utilities and roads could isolate neighborhoods and delay emergency response. Recovery may be slow, particularly for residents without insurance or access to resources. In addition, the aftermath of wildfire may lead to increased erosion and mudslides during subsequent rainstorms, further threatening homes and infrastructure. Overall, the impact of wildfire on Sierra Madre residents would be both immediate and long-lasting, underscoring the need for preparedness and community resilience.

Wind

High wind events in Sierra Madre, especially strong Santa Ana winds, can significantly affect the safety and well-being of residents. These winds, which often blow through the San Gabriel Valley from the northeast, can reach gusts over 50 miles per hour, posing dangers to people, property, and infrastructure. Tree limbs and power lines may fall, leading to power outages, blocked roads,

and even fires sparked by electrical equipment. Homes with older roofs or poorly secured outdoor structures are particularly vulnerable to damage.

Residents face increased health and safety risks during these events. Flying debris can cause injury, and driving becomes hazardous, especially for high-profile vehicles. Prolonged power outages can impact vulnerable individuals who rely on medical equipment or refrigeration for medication. Schools and businesses may also close temporarily due to safety concerns or lack of electricity.

Santa Ana winds also greatly elevate the risk of **wildfires**, as the dry, fast-moving air can cause fires to ignite and spread rapidly. These conditions can place entire neighborhoods at risk, especially those located near the wildland-urban interface along the mountain foothills. Evacuations may be necessary with little warning, and smoke from fires can create respiratory problems, particularly for children, seniors, and those with preexisting health conditions.

Structures

Vulnerability of Structures

Structures include critical facilities, properties and structures that serve vital functions in government operations and the services offered to the community. These may include local government offices and yards, community centers, public safety buildings such as police and fire stations, schools, and other properties deemed essential for city operations. Additionally, some critical facilities may serve dual roles if designated as public assembly points during emergencies. While many critical facilities are owned by the city, certain ones, such as utilities and telecommunication infrastructure, may be privately owned and operated.

FEMA separates critical buildings and facilities into the five categories shown below based on their loss potential. All of the following elements are considered critical facilities:

Essential Facilities are essential to the health and welfare of the whole population and are especially important following hazard events. Essential facilities include hospitals and other medical facilities, police and fire stations, emergency operations centers and evacuation shelters, and schools.

Transportation Systems include airways – airports, heliports; highways – bridges, tunnels, roadbeds, overpasses, transfer centers; railways (trackage, tunnels, bridges, rail yards, depots; and waterways), canals, locks, seaports, ferries, harbors, drydocks, piers.

Lifeline Utility Systems such as potable water, wastewater, oil, natural gas, electric power and communication systems.

High Potential Loss Facilities are facilities that would have a high loss associated with them, such as nuclear power plants, dams, and military installations.

Hazardous Materials Facilities include facilities housing industrial/hazardous materials, such as corrosives, explosives, flammable materials, radioactive materials, and toxins.

The Planning Team identified critical and essential facilities. **Table B.16** illustrates the hazards with potential to impact critical and essential facilities relied upon by the City during the emergency response phase and immediately following.

Table B.16: Hazard Vulnerability to Critical and Essential Structures
Source: Planning Team, Emergency Planning Consultants
Note: "X" indicates affirmative

Name of Facility	Address	Drought	Earthquake	Flood	Landslide	Power Outage	Wildfire	Windstorm
City of Sierra Madre								
Sierra Madre City Hall (includes EOC)	232 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
Sierra Madre Community Recreation Center (YMCA)	611 E. Sierra Madre Boulevard	X	X	X	X	X	X	X
Sierra Madra Fire Department	242 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
Sierra Madre Maintenance Yards - Utility Department	621 E. Sierra Madre Boulevard	X	X	X	X	X	X	X
Sierra Madre Police Department	242 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
Sierra Madre Public Library	440 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
City-Owned Commercial Building	350 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
Sierra Madre Search & Rescue Facility	(Address Protected)	X	X	X	X	X	X	X
Sierra Vista Park	611 E. Sierra Madre Boulevard	X	X	X	X	X	X	X
Mount Wilson Trail Park (aka Turtle Park)	189 East Mira Monte Avenue	X	X	X	X	X	X	X
Memorial Park	222 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
Hart Park House Senior Center	222 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
Kersting Court	Corner of Sierra Madre Boulevard and Baldwin Avenue	X	X	X	X	X	X	X
Bailey Canyon Wilderness Park	451 W. Carter Avenue	X	X	X	X	X	X	X
Milton & Harriet Goldberg Recreation Area	171 S. Sunnyside Avenue	X	X	X	X	X	X	X

Name of Facility	Address	Drought	Earthquake	Flood	Landslide	Power Outage	Wildfire	Windstorm
Utilities and Services								
Grove Reservoir	(Address Protected)	X	X	X		X	X	X
Mira Monte Reservoirs	(Address Protected)	X	X			X	X	X
MWD Water Connection	(Address Protected)	X	X			X	X	X
Sierra Madre Dam	(Address Protected)	X	X	X	X	X	X	X
Southern California Edison Sierra Madre Substation	(Address Protected)	X	X			X	X	
Telecom Sierra Madre Substation	(Address Protected)	X	X			X		X
Public and Private Schools								
Alverno Hights Academy School	200 N Michillinda Avenue	X	X	X		X	X	X
Bethany Christian School	93 N. Baldwin Avenue	X	X	X		X	X	X
Sierra Madre Elementary School	141 W. Highland Avenue	X	X	X		X	X	X
Sierra Madre Middle School	160 N. Canon Avenue	X	X	X		X	X	X
St. Ritas School	322 N Baldwin Avenue	X	X	X		X	X	X
The Gooden School	192 N. Baldwin Avenue	X	X	X		X	X	X
Residential Centers								
Sierra Madre Hart Park House Senior Center and Memorial Park	222 W. Sierra Madre Boulevard	X	X	X		X	X	X
Sierra Vista Apartments	70 Esperanza Avenue	X	X	X		X	X	X
The British Home	647 Manzanita Avenue	X	X	X	X	X	X	X
CLIMB	161 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
The Kensington Sierra Madre	245 W. Sierra Madre Boulevard	X	X	X	X	X	X	X

Impact Profile of Structures

Drought

Drought conditions in Sierra Madre can have a notable impact on the city's structures and critical infrastructure. As droughts persist, the ground moisture levels decrease, which can lead to soil shrinkage—especially in areas with clay-rich soils. This shrinkage can cause foundation settlement or cracking in buildings, particularly older structures that may not have been built with

modern engineering standards. Sidewalks, roads, and driveways can also develop cracks or become uneven, posing tripping hazards and requiring costly repairs.

In Sierra Madre, the water department is a city-operated utility. Sierra Madre must manage water usage at a local level so the response to drought conditions is not the responsibility of another outside utility. Water-related infrastructure is directly strained during droughts. The city may implement water use restrictions to conserve supply, reducing water available for landscaping, street cleaning, and other municipal functions. Pipes and water mains are more susceptible to breaks during periods of dry soil, which can shift and stress underground infrastructure. Additionally, the increased reliance on groundwater during droughts can lead to over-extraction, lowering aquifer levels and potentially damaging well systems.

Critical services such as firefighting may also be affected. Limited water availability can hinder firefighting efforts, especially during concurrent high fire-risk periods, such as when drought overlaps with extreme heat and wind events. Furthermore, parks, trees, and green spaces may suffer due to reduced irrigation, increasing the urban heat island effect and placing further stress on public health and cooling infrastructure.

Earthquake

Structures include physical buildings, lifelines, and critical infrastructure in a community. All properties and occupants in Sierra Madre can be either directly impacted or affected by earthquakes. The Planning Department estimates 80% of the planning area's building stock was built prior to 1975, when seismic provisions became uniformly applied through building code applications. These buildings are at a higher risk of damage from earthquakes due to lack of seismic reinforcement. Some of the critical facilities in the planning area could be at risk. A more thorough review of the age of critical facilities, codes they were built to, and location on liquefiable soils should be conducted. Damage to transportation systems in the planning area after an earthquake has the potential to significantly disrupt response and recovery efforts and lead to isolation of populations. Additionally, seismic events can damage communication systems, complicating efforts to coordinate response to the event. Many structures may need seismic retrofits in order to withstand a moderate earthquake. Residential retrofit programs, such as Earthquake Brace+Bolt, may be able to assist in the costs of these efforts.

Flood

Flooding in Sierra Madre, though less frequent than other natural hazards, can still pose serious risks to structures and critical infrastructure, particularly during intense winter storms or post-wildfire rain events. The city's location at the base of the San Gabriel Mountains makes it vulnerable to flash flooding and debris flows, especially when heavy rainfall occurs on steep, burned hillsides with little vegetation to absorb water.

Structural impacts may include water damage to homes, especially in low-lying areas near storm drains, creeks, or natural drainage channels. Older homes without proper drainage systems or elevated foundations are at higher risk. Floodwater can weaken foundations, erode soil around building supports, and infiltrate basements and crawlspaces, leading to long-term mold and structural integrity issues.

Critical infrastructure such as roads, stormwater systems, and utility lines may also be compromised. Floodwater can wash out roads, damage culverts, and overload the city's drainage

systems. Downed power lines and blocked transportation routes can hinder emergency response efforts and isolate parts of the community. Public facilities like fire stations, schools, and city buildings could be temporarily closed or damaged if located in flood-prone zones.

Landslide

Landslides in Sierra Madre pose a serious threat to structures and critical infrastructure due to the city's location along the steep slopes of the San Gabriel Mountains. Heavy rains, earthquakes, or wildfires (which remove stabilizing vegetation) can trigger slope failures, particularly in hillside neighborhoods. Homes built on or below unstable slopes are at risk of foundation damage, partial collapse, or total destruction. Even well-engineered structures may be compromised if the ground beneath them gives way.

Additionally, as mentioned earlier in Element B: Risk Assessment – Hazard Profiles – Landslide, the angle of repose in the San Gabriel Mountains is a critical geological concept that varies across the range, with many slopes being at or even steeper than the angle of repose for their constituent materials. The region's active tectonics and frequent fires make it prone to destabilized slopes and catastrophic debris flows. Above Sierra Madre the angle is mostly above 65% which increases the velocity of any debris or water moving downhill into the town. The same amount of rainfall in most cities will not have the impact that it does above Sierra Madre.

Critical infrastructure is also vulnerable. Landslides can block or damage key transportation routes, including mountain access roads and residential streets, isolating parts of the city and delaying emergency response. Water, sewer, and gas lines can rupture if the ground shifts, leading to service interruptions, potential contamination, or hazardous leaks. Power and communication lines, especially overhead systems, may collapse under the pressure of falling debris or shifting soil.

In addition to direct physical damage, landslides can disrupt city services, delay recovery efforts, and strain emergency resources. Facilities like fire stations and emergency shelters located near unstable terrain may be rendered inoperable or inaccessible.

Power Outage

An abrupt or long-lasting power outage in Sierra Madre can have widespread effects on the city's structures and critical infrastructure, especially during extreme weather events or natural disasters. While residential and commercial buildings may remain structurally sound during a blackout, the functionality of these structures is severely reduced. Homes lose lighting, heating or cooling, internet connectivity, and refrigeration, which can endanger vulnerable residents, such as the elderly and medically dependent individuals.

Critical infrastructure is particularly affected. Emergency services like fire stations, police, and hospitals rely on electricity for communications, dispatch systems, and essential equipment. If backup generators fail or are insufficient, response times may increase, and lifesaving operations could be delayed. Traffic signals and streetlights also go dark during outages, creating hazardous driving conditions and raising the risk of accidents, especially on busy corridors like Sierra Madre Boulevard.

Water and wastewater systems are another key concern. Power outages can disable water pumps and treatment facilities, reducing water pressure, limiting availability for firefighting, and

potentially contaminating drinking water. Similarly, telecommunications infrastructure can go down, cutting off residents from vital emergency updates and support services.

Wildfire

Sierra Madre is particularly vulnerable to wildfire due to its proximity to hills with dry vegetation and its exposure to strong Santa Ana winds that can rapidly spread flames and embers. In 2025 CAL FIRE updated the Fire Hazard Severity Zone map (see **Map B.9: Fire Hazard Severity Zones**). The updated 2025 Fire Hazard Severity Zone map identifies a continuous band of moderate to very high fire hazard severity zones across the northern portion of Sierra Madre. These hazard severity zones extend north of East Montecito Avenue, beginning near North Lima Street on the west and stretching eastward toward North Santa Anita Avenue. Within these mapped boundaries, Sierra Madre Park, the Sierra Madre Public Works Yard, and the Community Center all fall inside designated fire hazard severity zones.

The Moderate Fire Hazard Severity Zone runs just north of Sierra Madre Boulevard, and along portions of East Montecito Avenue. It forms the southernmost edge of the hazard zone, cutting across the base of the foothills. This zone generally buffers the higher hazard areas by covering neighborhoods closest to the city's core but still vulnerable to ember intrusion.

The High Fire Hazard Severity Zone lies directly north of the yellow zone and covers a large swath of the city's hillside neighborhoods. It runs across the mid-slopes above Highland Avenue, Grandview Avenue, and Alegria Avenue, indicating where fuel loading, slope, and wind exposure significantly increase fire risk.

The Very High Fire Hazard Severity Zone dominates the upper northern section of Sierra Madre, extending into the Angeles National Forest boundary. It includes steep terrain above Carter Avenue and Sturtevant Drive and stretches laterally across the city's northern boundary. This zone marks the highest-risk area, where fire behavior is expected to be most extreme due to steep slopes, heavy vegetation, and direct exposure to Santa Ana winds. Prolonged drought and climate change further exacerbate this risk by creating drier, more flammable conditions. These factors highlight the need for proactive fire prevention measures, like fire-resistant landscaping and public awareness, to help protect Sierra Madre's residents and infrastructure.

Windstorm

A windstorm in Sierra Madre can cause widespread damage to both structures and critical infrastructure due to the city's location near the foothills of the San Gabriel Mountains, where wind speeds can be particularly intense. Structures such as homes, commercial buildings, and schools may sustain roof damage, broken windows, and compromised siding, especially if they are older or not built to modern wind-resistance standards. Detached structures like garages, carports, fences, and sheds are also at high risk of damage or destruction during high wind events.

Critical infrastructure is especially vulnerable. Power lines are frequently brought down by falling trees or snapped poles, resulting in extended electricity outages that can affect traffic signals, streetlights, emergency services, and communication networks. Water systems can also be disrupted if pumps or treatment facilities lose power. Transportation infrastructure may be obstructed by debris or fallen trees, hampering emergency response and isolating parts of the community.

Public safety facilities like fire stations, police departments, and hospitals must remain operational during such events, but their ability to respond may be hindered by road closures or communication failures. Schools and city buildings may suffer damage that requires temporary closure and repairs, affecting public services and education.

Economy

Vulnerability to Economy

Sierra Madre has several assets that have an important impact on the city's economy. Several of these economic assets overlap with the assets outlined earlier in this Element under "Structures" as they are community lifelines. Specific information on major employers in Sierra Marde is limited; however, the 2024 Annual Comprehensive Financial Report provided a list of local employers in the area.

Table B.17: Hazard Vulnerability to Economic Assets
Source: 2024 Annual Comprehensive Financial Report
Note: "X" indicates affirmative, asterisk indicates asset is included as a Structure as well

Economic Assets	Address	Drought	Earthquake	Flood	Landslide	Power Outage	Wildfire	Windstorm
Casual Dinning/Quick-Service Restaurant								
Village Pizzeria	41 N. Baldwin Avenue	X	X			X		X
Buccaneer Lounge	70 W. Sierra Madre Boulevard	X	X			X		X
Casa Del Rey	31 N. Baldwin Avenue	X	X			X		X
Lucky Baldwins Delirium Café	21 Kersting Court	X	X			X		X
Monsieur Crepe	54 W. Sierra Madre Boulevard	X	X			X		X
Nano Café	322 W. Sierra Madre Boulevard	X	X			X		X
Only Place in Town	110 W. Sierra Madre Boulevard	X	X			X		X
Roe Japanese Fusion	120 W. Sierra Madre Boulevard	X	X			X		X
Sierra Madre Pizza Co	181 W. Sierra Madre Boulevard, Suite C	X	X			X		X
Starbucks	1 Kersting Court	X	X			X		X
Tacos Ensenada Dom	345 W. Sierra Madre Boulevard	X	X			X		X
RT Rogers Brewing Co	38 E. Montecito Avenue #1	X	X			X		X
Wistaria Restaurant & Bar	44 N. Baldwin Avenue	X	X			X		X
Yui	24 W. Sierra Madre Boulevard # A	X	X			X		X
Convenience Stores/Liquor								
Bottle Shop	58 W. Sierra Madre Boulevard	X	X			X		X
Lucky Stop Liquor and Fine Wine	12 W. Sierra Madre Boulevard #2434	X	X			X		X
Florist								

Economic Assets	Address	Drought	Earthquake	Flood	Landslide	Power Outage	Wildfire	Windstorm
Flowers by Nobee	370 W. Sierra Madre Boulevard # A	X	X			X	X	

Impact Profile of Economy

Casual Dinning/Quick-Service Restaurant

Drought

Droughts in Sierra Madre affect restaurants primarily through water restrictions and supply chain disruptions. Local ordinances may limit water usage, forcing restaurants to reduce dishwashing, change sanitation procedures, or stop offering tap water by default. Outdoor landscaping requirements can also add costs if restaurants must replace greenery with drought-tolerant alternatives.

On a broader scale, drought impacts agriculture, which affects the availability and price of fresh ingredients. Local restaurants may struggle to source items like produce, meats, and dairy at reasonable prices, forcing changes to menus or raising prices. This, in turn, can hurt customer satisfaction and revenue.

Earthquake

Earthquakes pose a serious threat to restaurants through physical damage and business disruption. Many restaurant buildings in Sierra Madre are older and may not meet current seismic standards. A strong quake could damage structural components, kitchen equipment, refrigeration units, and plumbing, leading to temporary or permanent closure.

Even minor quakes can cause inventory loss (e.g., broken glassware, spilled ingredients), utility outages, and health inspection violations. Additionally, post-quake inspections may delay reopening, while frightened customers may avoid dining out. Insurance, if available, may not cover all losses, especially income lost during the closure.

Flood

Flooding is less common in Sierra Madre due to its elevation, but flash floods or stormwater runoff from the San Gabriel Mountains can still affect lower-lying or poorly drained areas. Restaurants in these zones risk interior flooding, damaging flooring, electrical systems, and food storage areas.

Flood events can lead to mold growth, health code violations, and costly remediation. If surrounding streets or parking lots flood, access for customers and deliveries can be restricted, hurting business even if the restaurant itself remains dry. Business insurance for flood damage is often limited, making recovery more difficult.

Landslide

Landslides in Sierra Madre can occur after heavy rains or seismic events, especially in hillside areas. Restaurants located near slopes or along canyon roads are at risk of foundation damage, road closures, or complete property loss. Even if not directly impacted, nearby landslides can cut off access, disrupt delivery routes, and reduce foot traffic.

Debris flow can also block storm drains and cause localized flooding around restaurants. Business interruption insurance may not fully compensate for lost income, especially for smaller restaurants operating on thin margins.

Power Outage
Power outages have an immediate and often severe impact on restaurants. Loss of refrigeration can spoil perishable inventory, forcing operators to discard large quantities of food. Cooking equipment, point-of-sale systems, and lighting are often fully electric, halting service until power is restored.

Extended outages can also result in health inspection issues and customer dissatisfaction. Backup generators can help mitigate the impact but are expensive and not common among small restaurants. Repeated outages can damage a restaurant's reputation and discourage return customers.

Wildfire
Wildfire in the foothill-adjacent areas of Sierra Madre can threaten restaurants both directly and indirectly. Direct damage from fire or smoke can destroy property, while evacuation orders or air quality alerts may force closures even if the business is physically unaffected.

Smoke infiltration can render kitchens and dining areas unusable, requiring professional cleaning. Staff may be unavailable due to personal evacuations, and customers may avoid the area altogether. Wildfire season also raises insurance costs and may reduce tourism, a key revenue source for local businesses.

Windstorm
High winds, especially from Santa Ana conditions, can knock down trees, power lines, and signage, posing both safety hazards and operational challenges. Outdoor dining setups, which many restaurants rely on post-COVID, can be damaged or rendered unusable. Wind-blown debris may break windows or damage roofs.

Like with power outages, windstorms can cause utility disruptions, cutting off electricity or water and forcing temporary closures. Roads blocked by downed trees may delay deliveries or reduce customer access. Repeated wind events can also increase maintenance costs for signage, canopies, and heating systems.

Convenience Stores/Liquor

Drought
Drought primarily impacts convenience stores indirectly but meaningfully. Reduced water availability may lead to restrictions on water usage within the store (e.g., for restrooms, sanitation, and beverage services like fountain drinks or coffee). Supply chains for water-heavy goods—

bottled water, produce, and some beverages may also become strained, driving up costs or causing shortages.

In prolonged droughts, consumer behavior can shift: demand for bottled drinks and packaged goods may increase, while fresh food offerings become limited. Convenience stores must adapt by adjusting inventory and possibly investing in water-saving fixtures or sanitation practices to comply with city or county water restrictions.

Earthquake
An earthquake can have immediate and severe effects on convenience stores in Sierra Madre. Structural damage to the building, including cracked walls, broken windows, or collapsed shelving, can force temporary or long-term closures. Inventory loss is also common as items fall from shelves or refrigeration units fail due to power loss.

Utility disruption, especially electricity and gas, can render the store inoperable. Fuel pumps, ATMs, freezers, and lighting may not work without backup power. If roads are damaged, resupply becomes difficult, leaving the store unable to restock essentials. Recovery costs are significant, and stores without seismic retrofitting may suffer greater damage.

Flood
Flooding, though less common in Sierra Madre due to its elevated topography, can occur from heavy rainstorms or broken infrastructure. Floodwater can damage flooring, electrical systems, and inventory stored at ground level. Contaminated water also poses health risks, possibly requiring professional cleanup and health inspections before reopening.

Flooding can also disrupt deliveries if roads become impassable, limiting access to fresh stock. In extreme cases, prolonged closures can lead to long-term financial strain, especially for small, independently owned stores that rely on steady daily income.

Landslide
Landslides, especially in Sierra Madre's hillside neighborhoods, can block access routes, isolate the store, or in rare cases, directly damage the building. While structural impacts are less likely unless the store is located near a slope, the main concern is interruption of supply chains and loss of customer traffic due to impassable roads.

In some cases, nearby landslides may require mandatory evacuation or business shutdowns for safety reasons. Additionally, the threat of follow-on events (like mudslides after fires) makes landslide risk a growing concern.

Power Outage
Power outages are especially disruptive to convenience stores, which rely heavily on refrigeration, lighting, point-of-sale systems, fuel pumps, and ATMs. Even a short-term outage can lead to spoilage of perishable goods and loss of sales due to system failures.
Longer outages can cause significant economic losses, force temporary closures, and harm a store's reputation if customers find unreliable service. Investing in backup generators can mitigate impacts but represents a substantial upfront cost, often unaffordable for small businesses.

Wildfire
While Sierra Madre itself is not usually the ignition point for wildfires, it is located near the wildland-urban interface and can be affected by nearby fires or smoke events. Wildfires may trigger

mandatory evacuations or cause significant drops in foot traffic, especially if the air quality is poor or evacuation routes pass through the city.

Smoke and ash can contaminate inventory, requiring disposal of exposed food items. Fires can also damage supply lines and cut off utilities. In worst-case scenarios, a fire could destroy the store entirely, especially if it's located in an area with dry vegetation or inadequate defensible space.

Windstorm
Severe windstorms, such as Santa Ana winds, can knock out power, damage signage, and break windows or doors, particularly in older buildings. Flying debris can also pose a direct physical threat to the structure or customers. Like wildfires, windstorms may also lead to temporary road closures, disrupting deliveries and customer access.

If the windstorm follows wildfire, the risk of fire spread increases, posing additional threats. Convenience stores may need to shut down temporarily due to safety concerns, lost inventory, or lack of power that cuts into vital daily revenue.

Florist

Drought
A drought can directly affect a florist's supply chain by reducing the availability and increasing the cost of locally grown flowers and plants. Since Sierra Madre relies on regional agriculture (including imports from California's Central Valley), water restrictions and crop failures upstream could force florists to purchase more expensive imports or limit product selection.

On-site water use might also be restricted during droughts. This could hinder care for perishable goods, especially if the florist maintains a garden or nursery. A prolonged drought may discourage customers from purchasing water-intensive plants, reducing revenue from certain product lines.

Earthquake
An earthquake could cause major disruptions to a florist shop in Sierra Madre. Structural damage to the building may range from broken windows and ceiling tiles to collapsed shelves and shattered glass vases or containers. Inventory loss could be high, especially for fragile or perishable items.

Utilities like water and power may be temporarily cut, affecting refrigeration systems that are crucial for flower preservation. If roadways are damaged, supply deliveries might be delayed or canceled, further straining operations. If the earthquake impacts customer homes or infrastructure, discretionary spending on floral arrangements may decline temporarily.

Flood
Though widespread flooding is less common in Sierra Madre due to its elevation, localized flooding from heavy rain or blocked storm drains can still damage a florist shop. Water intrusion may ruin inventory, equipment, and furnishings, especially in street-level businesses.

Even minor flooding can lead to mold issues or require temporary closure for cleaning and repairs. Road closures or hazardous travel conditions during a flood can reduce foot traffic and prevent deliveries from reaching the shop or customers.

Landslide
Given Sierra Madre's proximity to steep foothills, landslides (especially after heavy rains) can disrupt road access to the florist shop. Even if the business itself isn't physically damaged, blocked roads may delay deliveries or keep customers from visiting.
If a landslide damages utility lines or communication systems, the florist may face business interruptions, particularly if reliant on online orders or local suppliers using hillside roads. Emergency response priorities during a landslide may also sideline nonessential businesses like florists for days or even weeks.

Power Outage
Florists rely heavily on refrigeration to preserve fresh flowers. Even a brief power outage can result in spoilage of inventory, lost revenue, and customer dissatisfaction. Longer outages may force temporary closures and damage electrical systems or point-of-sale terminals.

Without lighting, internet, or electronic payment systems, walk-in and delivery orders may be impossible to fulfill. If outages are frequent or prolonged (especially during windstorms or wildfires), the florist may need to invest in a backup generator, adding to operational costs.

Wildfire
Wildfire poses both direct and indirect threats. Although the florist shop may not be in a high-fire-risk zone, nearby wildfires can cause smoke damage, evacuations, and long-term air quality issues. Fresh flowers are sensitive to heat and smoke, so even indirect exposure can reduce product quality.

Deliveries may be suspended due to road closures or hazardous air, and customer demand may drop during emergencies. Local events (weddings, funerals, etc.) may also be postponed or canceled, leading to lost revenue for event-focused florists. Insurance costs and business continuity planning become critical considerations.

Windstorm
Strong windstorms, especially Santa Ana winds, can damage the exterior of the shop, signage, and displays. Downed trees or debris may break windows or create hazards around the storefront. If power lines are affected, the florist may face outages and refrigeration loss.

Outdoor plant displays or inventory could be destroyed, and transportation for deliveries might be disrupted by blocked roads or unsafe driving conditions. Windstorms can also temporarily reduce foot traffic, especially if safety advisories are in place.

Natural, Historic, and Cultural Resources

Natural, historic, and cultural resources are essential elements that define the identity and heritage of a community. Natural resources include native flora and fauna, water bodies, landscapes, and climate, providing ecological and recreational benefits. Historic resources consist of buildings, archaeological sites, monuments, and historic districts that hold historical significance. Cultural resources encompass museums, traditional practices, languages, literature, festivals, and public art, reflecting the community's cultural heritage and values. Together, these resources contribute to preserving the community's history, environment, and cultural identity, enriching the quality of life for its residents.

Vulnerability of Natural, Historic, and Cultural Resources*

Sierra Madre is home to an array of natural, historic, and cultural resources that reflect its unique character. Memorial Park is a central, historic community space located near downtown along Sierra Madre Boulevard. Known for its open green lawns, mature trees, and iconic gazebo, the park serves as a hub for recreation, relaxation, and civic events. It features a children's playground, picnic areas, and the Sierra Madre Veterans Wall, which honors local military service members. The park also hosts concerts, holiday celebrations, and cultural gatherings, making it a vital part of the city's social and historical fabric. Its proximity to the Sierra Madre Playhouse enhances its role as a cultural and community landmark.
The Episcopal Church of the Ascension in Sierra Madre an historic church that was built in 1888. It was listed on the National Register of Historic Places in 1977. It is site #7 on Sierra Madre designated historical landmarks list. There are forty-eight properties listed on Sierra Madre's Designated Historical Properties List.

Cultural resources also abound. The Sierra Madre Playhouse is a historic, intimate performing arts venue. Originally built in 1910 as a furniture store and later converted into a silent movie theater, it has served various entertainment purposes over the decades. Since the 1970s, it has been operated as a nonprofit live theater, offering professional-quality performances in an accessible, small-town setting. Architecturally, the building retains much of its early 20th-century charm, with a classic marquee and a cozy interior that seats just under 100 people. Despite its modest size, the Playhouse is known for staging critically acclaimed plays, musicals, and youth productions, often drawing audiences from across the San Gabriel Valley. Beyond entertainment, the Sierra Madre Playhouse plays a vital cultural role in the community, hosting educational outreach, workshops, and seasonal programming. Its long history and continued community support make it a treasured institution and a symbol of Sierra Madre's commitment to the arts and cultural preservation.

*The vulnerability of city parks is included in the section discussing the vulnerability of **Structures**
* The vulnerability of community events such as visits to Sierra Madre Park are discussed in the **Activities Bringing Value to the Community** section.

Table B.18: Hazard Vulnerability to Natural, Historic, and Cultural Resources
Source: Planning Team, Emergency Planning Consultants
Note: "X" indicates affirmative

Natural, Historic, and Cultural Resources	Drought	Earthquake	Flood	Landslide	Power Outage	Wildfire	Windstorm
Natural							
Memorial Park	X	X			X	X	X
Historic							
Episcopal Church of the Ascension 191 W. Sierra Madre Boulevard	X	X			X		X
Cultural							
Sierra Madre Playhouse 87 W. Sierra Madre Boulevard	X	X			X		X

Impact Profile on Natural, Historic, and Cultural Resources

Drought

A drought in Sierra Madre can have serious and lasting impacts on the city's natural, historic, and cultural resources, especially given its foothill setting and dependence on regional water systems.

Natural Resources
Prolonged drought reduces soil moisture, stresses native vegetation, and increases the risk of wildfires. Trees and plants may weaken or die, affecting biodiversity and the overall health of local ecosystems. Wildlife can suffer from diminished water sources and food availability. Additionally, dry conditions heighten erosion risks and degrade the quality of open space and natural recreational areas.

Historic Resources
Historic buildings and landscapes may deteriorate more quickly during drought conditions. Reduced soil moisture can cause ground shifting or settling, potentially leading to foundation cracks in older structures. Water restrictions may limit the ability to maintain historic gardens, lawns, or plantings that are part of a site's historical character. Drought-stressed vegetation around historic properties also increases fire vulnerability.

Cultural Resources
Cultural events, festivals, and public gatherings may be impacted by heat waves or outdoor water use restrictions. Community gardens and green spaces used for cultural programming may suffer, reducing their aesthetic and functional value. Additionally, drought-related concerns may shift public priorities and funding away from cultural projects and preservation toward emergency management and infrastructure needs.

In summary, drought can significantly weaken Sierra Madre's natural ecosystems, threaten the integrity of historic properties, and disrupt cultural life, highlighting the importance of sustainable water practices and drought resilience planning.

Earthquake

An earthquake can have significant impacts on the natural, historic, and cultural resources in Sierra Madre affecting both the environment and the community's heritage.

Natural Resources
Earthquakes can trigger landslides in hillside areas, damaging trails, vegetation, and wildlife habitats. Ground shaking may also disrupt natural water flows, leading to erosion, blocked drainage systems, or changes in local ecosystems. Mature trees throughout the city could be uprooted or damaged, affecting both the landscape and increasing fire risk due to downed limbs and debris.

Historic Resources
Many of Sierra Madre's historic structures are vulnerable to seismic damage, particularly older buildings with unreinforced masonry or delicate architectural features. Shaking may lead to structural cracks, collapsed walls, or broken decorative elements. Even minor damage can threaten the preservation of these buildings, often requiring extensive and costly repairs to restore or maintain their historic value.

Cultural Resources
Cultural facilities and community gathering spaces may be damaged, disrupting performances, educational programs, and public events. Artifacts, archives, and exhibits can be destroyed or compromised during shaking or by water damage from broken pipes. Cultural traditions and celebrations may be postponed or canceled in the aftermath of a quake, weakening community ties and delaying emotional recovery.

In summary, an earthquake could cause widespread and lasting effects on Sierra Madre's natural landscape, historic architecture, and cultural life, emphasizing the need for preparedness and ongoing investment in preservation and resilience.

Flood

A flood in Sierra Madre, though less common due to the city's foothill location, can still have notable impacts on its natural, historic, and cultural resources, especially during intense storms or in areas prone to runoff and poor drainage.

Natural Resources
Flooding can cause severe soil erosion, damage vegetation, and degrade trails or open spaces. Excess water may wash pollutants and debris into natural habitats, disrupting local ecosystems and water quality. Saturated soil can weaken root systems, leading to fallen trees and long-term damage to the landscape. Natural creeks or drainage channels may overflow, altering their course and affecting nearby habitats.

Historic Resources
Historic buildings are particularly vulnerable to flood damage, especially if they have older foundations or are not elevated above grade. Floodwater can seep into basements, warp wood structures, and damage original materials like plaster, flooring, and paint. Even minimal water intrusion may lead to mold growth or structural weakening, requiring costly restoration efforts and threatening the long-term preservation of heritage sites.

Cultural Resources
Flooding can damage community centers, theaters, museums, and other cultural facilities, leading to the loss of archives, artifacts, or performance space. Scheduled cultural events may be postponed or canceled due to facility closures or hazardous conditions. Flood-damaged outdoor venues and public art installations may also require extensive repairs, interrupting community life and limiting access to cultural experiences.

In summary, a flood in Sierra Madre could disrupt ecosystems, harm historic buildings, and delay or damage cultural activities, underscoring the need for effective stormwater management and preservation planning in flood-prone areas.

Landslide

Landslides in Sierra Madre poses a serious threat to the city's natural, historic, and cultural resources, particularly due to its steep terrain and location along the San Gabriel Mountains. Heavy rainfall or seismic activity can trigger slope failures, especially in areas with loose or saturated soil.

Natural Resources

Landslides can destroy vegetation, disrupt wildlife habitats, and drastically alter the landscape. Native plants and trees may be uprooted or buried, while soil displacement can lead to long-term

erosion and instability. Trails, natural drainage paths, and open spaces used for recreation and conservation may become inaccessible or unsafe, limiting public access to nature and degrading the environment.

Historic Resources

Historic structures located near hillside areas are at risk of foundation damage, structural shifting, or even complete destruction if a landslide occurs nearby. Earth movement can compromise the stability of older buildings, especially those not designed to withstand soil displacement or lateral pressure. Debris flows may also damage historically significant landscaping or boundary walls, diminishing the integrity of heritage sites.

Cultural Resources

Landslides can isolate or damage community centers, cultural venues, and gathering spaces located near or below steep slopes. Disruption to roads and access routes may cancel events or prevent public participation in cultural activities. Outdoor public art, monuments, or performance areas may also be affected by falling debris or slope instability, limiting their use or requiring restoration.

In summary, landslides in Sierra Madre can have wide-reaching effects on natural landscapes, historic buildings, and cultural activities. Proactive hillside management and slope stabilization are essential to protect these valued community resources.

Power Outage

A power outage in Sierra Madre can significantly disrupt the city's natural, historic, and cultural resources, especially during emergencies or extreme weather events. While often temporary, outages can have lasting impacts depending on their duration and timing.

Natural Resources

Although the direct impact on natural landscapes may be limited, power outages can hinder the operation of critical systems that support resource management. Irrigation systems for public gardens, parks, and urban trees may fail, leading to plant stress or loss—particularly during hot or dry conditions. Additionally, outages may affect air quality monitoring or environmental control systems, delaying response to natural hazards like fires or flooding.

Historic Resources

Historic buildings often rely on electricity for climate control, security systems, and lighting. A prolonged outage can lead to temperature and humidity fluctuations that damage sensitive materials such as wood, plaster, textiles, or archival documents. Loss of lighting and alarms may also leave historic sites vulnerable to vandalism or accidental damage. Backup systems are not always available in older structures, increasing their risk during blackouts.

Cultural Resources

Power outages can force the cancellation or postponement of cultural events, performances, and public gatherings. Venues such as theaters, museums, and community centers depend on lighting, sound systems, and climate control (all of which may be inoperable during an outage).

Electronic ticketing, communications, and online engagement also cease, reducing community access to cultural experiences and interrupting programming.

In summary, a power outage in Sierra Madre can disrupt the care of natural areas, compromise the preservation of historic structures, and interrupt cultural life. Investing in backup power systems and emergency planning is essential to protect these community resources from extended electrical disruptions.

Wildfire

A wildfire in Sierra Madre poses a major threat to the city's natural, historic, and cultural resources, especially given its location at the base of the San Gabriel Mountains and its proximity to wildfire-prone areas. Even if the flames do not reach developed parts of the city, smoke, ash, and emergency response efforts can still cause significant disruption.

Natural Resources

Wildfires can devastate local ecosystems, burning native vegetation, damaging wildlife habitats, and increasing the risk of erosion and landslides after the fire is contained. The loss of trees and ground cover affects biodiversity and disrupts natural water flows. Recovery of natural areas can take years, and repeated fires can lead to permanent ecological changes, including the spread of invasive species.

Historic Resources

Historic buildings and landmarks located near wildland-urban interface zones are highly vulnerable to fire damage. Structures made of wood or with historic landscaping can be lost or severely damaged if defensible space is lacking. Even without direct contact with flames, smoke and ash can stain surfaces, corrode materials, and infiltrate interiors, causing long-term degradation. Fire suppression efforts may also unintentionally damage fragile structures.

Cultural Resources

Cultural venues and community events are often canceled or delayed during wildfire incidents due to evacuations, poor air quality, or use of public spaces for emergency response. Theaters, museums, and event spaces may suffer from smoke damage or power outages, and stored collections or equipment could be at risk. Wildfires also strain public resources, potentially diverting funding and attention away from cultural programming during and after the crisis.

In summary, wildfires in Sierra Madre can cause widespread harm to the city's natural beauty, historic landmarks, and cultural life. Ongoing fire mitigation, defensible space planning, and community preparedness are essential to safeguard these irreplaceable resources.

Windstorm

A serious windstorm in Sierra Madre particularly during strong Santa Ana wind events, can significantly impact the city's natural, historic, and cultural resources. High wind speeds can cause both direct physical damage and secondary effects such as power outages, falling debris, and heightened wildfire risk.

Natural Resources

Windstorms can uproot or break tree limbs, damage public gardens, and strip vegetation, especially in hillside and open space areas. Fallen trees may block trails, roads, or access to natural areas, while damaged vegetation increases the risk of erosion and debris flows in subsequent storms. Native plants may be harmed by soil displacement or wind-borne dust and debris, weakening the local ecosystem.

Historic Resources

Historic structures are especially vulnerable to wind damage due to their age and delicate features. Strong winds can loosen roofing materials, break windows, or damage architectural elements such as shutters, trim, or signage. Flying debris may cause additional harm, and loss of power or communications can leave historic sites without security or climate control, increasing the risk of secondary damage.

Cultural Resources

Cultural facilities and events can be disrupted by windstorms, particularly if venues lose power, suffer physical damage, or become unsafe for public use. Outdoor events and performances may be canceled due to hazardous conditions or damage to stages, equipment, or seating areas. Temporary closures of museums, theaters, and community centers can interrupt programming and reduce access to cultural services.

In summary, windstorms in Sierra Madre can damage natural landscapes, compromise historic buildings, and disrupt cultural life. Proactive tree maintenance, structural reinforcement, and emergency preparedness are essential to minimize the impact on the city's valued resources.

Activities Bringing Value to the Community

Activities bringing value to the community are those that contribute positively to the well-being, cohesion, and development of the community as a whole. These activities can take various forms and serve different purposes, but they generally aim to enhance the quality of life for community members and promote a sense of belonging and connectedness.

Vulnerability of Activities Bringing Value to the Community

Table B.19: Hazard Vulnerability of Activities Bringing Value to the Community
Source: Planning Team, Emergency Planning Consultants
Note: "X" indicates affirmative

Activities Bringing Value to the Community	Drought	Earthquake	Flood	Landslide	Power Outage	Wildfire	Windstorm
Concerts In the Park 222 W. Sierra Madre Boulevard	X	X			X		X
Family Movie Fridays 222 W. Sierra Madre Boulevard	X	X			X		X

Activities Bringing Value to the Community	Drought	Earthquake	Flood	Landslide	Power Outage	Wildfire	Windstorm
4th of July Festivities Sierra Madre Boulevard	X	X	X	X	X	X	X
Mt. Wilson Trail Race N. Baldwin Avenue & Kersting Court	X	X	X	X	X	X	X
Wistaria Festival Sierra Madre Boulevard	X	X	X	X	X	X	X
Fire Prevention Festival & Car Show Memorial Park 222 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
Easter Egg Hunt Memorial Park 222 W. Sierra Madre Boulevard	X	X	X	X	X	X	X
Community Yard Sale Memorial Park 222 W. Sierra Madre Boulevard	X	X	X	X	X	X	X

Impact Profile on Activities Bringing Value to the Community

Drought

A drought in Sierra Madre can impact community events in several ways, both directly and indirectly. During drought conditions, local parks may face water restrictions, leading to dry, brown grass and less inviting outdoor conditions. Without regular irrigation, the comfort and appearance of the event spaces may decline, making it less pleasant for attendees to sit, picnic, or play. If the drought is accompanied by extreme heat or poor air quality, turnout may drop as families opt to stay indoors for health and safety reasons.

Drought conditions can also lead to increased wildfire risk, prompting fire safety regulations that limit certain equipment or activities, such as cooking, lighting, or using power generators in public spaces. In some cases, events may be rescheduled, relocated, or canceled entirely if the risk level becomes too high or if the city prioritizes emergency response over public programming. In summary, a drought can reduce the comfort, safety, and overall appeal of Sierra Madre's outdoor events, potentially leading to lower attendance, scaled-back programming, or temporary cancellations.

Earthquake

An earthquake in Sierra Madre could significantly disrupt community events, particularly if it results in damage to infrastructure, public spaces, or essential services. Immediately following an earthquake, public gatherings may be postponed or canceled due to safety concerns. Parks and event areas may be unsafe if there is ground shifting, damaged walkways, fallen trees, or compromised lighting and electrical systems. Equipment such as sound systems, projectors, and staging structures may also be damaged or inaccessible due to power outages or storage issues. Even if the park itself remains usable, community focus may shift toward recovery efforts, and attendance at recreational events could decline. Emotional distress, limited resources, and transportation issues following a quake can make it difficult for families to participate in leisure activities. The city may also redirect funding or staffing from public events to emergency services

and infrastructure repair. In summary, an earthquake can temporarily halt or scale back community events in Sierra Madre due to safety hazards, infrastructure damage, and shifts in community priorities during recovery.

Flood

A flood in Sierra Madre can significantly affect community events, particularly if it causes damage to parks or disrupts access to public spaces. Flooding can leave park grounds muddy, waterlogged, or structurally unsafe, making it difficult or impossible to safely set up equipment or accommodate attendees. Standing water may damage electrical systems, sound equipment, and projection gear used for concerts and movie nights. Even after the water recedes, cleanup and repairs may take days or weeks, forcing event cancellations or relocation. In addition, roads and sidewalks leading to event areas may become impassable or hazardous, discouraging families from attending or prompting safety concerns. Ongoing flood risks or the potential for additional storms may also lead city officials to postpone events out of caution. In summary, a flood can disrupt or delay Sierra Madre's outdoor community events by damaging venues, creating safety hazards, and reducing accessibility—often requiring cleanup, rescheduling, or relocation of planned activities.

Landslide

While Concerts in the Park and Family Movie Fridays in Sierra Madre are not located in a landslide-prone area, a landslide elsewhere in the city can still indirectly impact these events. If a landslide occurs, it may block roads or access routes, making it difficult for attendees, performers, or city staff to reach the park. Equipment deliveries or vendor transportation may also be delayed or rerouted, potentially disrupting event setup or operations. Even if the event location is safe, logistical complications could lead to delays or cancellations. In addition, a recent landslide may shift the community's focus toward emergency response and recovery, reducing attendance or prompting the city to reallocate resources away from public events. Concerns about safety, infrastructure stability, or further slope movement may also discourage public gatherings in the immediate aftermath. In summary, while the event site itself may not be vulnerable, a landslide elsewhere in Sierra Madre can cause logistical challenges and community disruptions that impact the planning and attendance of local outdoor events.

Power Outage

A power outage in Sierra Madre can directly disrupt events like Concerts in the Park and Family Movie Fridays, as both rely heavily on electricity for lighting, sound systems, and audiovisual equipment. Without power, amplification for live music, projectors for movies, and safety lighting may become unavailable, making it impossible to hold these events as planned. Even a short-term outage around event time can lead to cancellations or early shutdowns. If the outage is widespread or prolonged, it can also affect planning and communication, making it difficult to coordinate vendors, performers, or city staff. Additionally, public safety becomes a concern during nighttime events without lighting, especially for families with children. Limited visibility and the inability to operate essential equipment could make the environment unsafe or unwelcoming for attendees. In summary, power outages can force the cancellation, delay, or downsizing of outdoor community events in Sierra Madre by disabling essential infrastructure and reducing safety and accessibility for the public.

Wildfire

Although Concerts in the Park and Family Movie Fridays in Sierra Madre are held in areas not directly at risk of wildfire, a nearby wildfire can still significantly affect these events. Smoke and

poor air quality from surrounding fires can make it unsafe or uncomfortable for families to attend outdoor gatherings, especially for children, older adults, or individuals with respiratory conditions. Even if the fire is not close, city officials may cancel or postpone events as a precaution due to health advisories or shifting emergency priorities. Additionally, wildfires often lead to road closures, power outages, or emergency resource deployment, which can disrupt event logistics, limit staff availability, or hinder equipment setup. Public spaces may also be temporarily repurposed for emergency response or shelter if the wildfire impacts nearby communities. In summary, while the event location itself may be outside a wildfire hazard zone, smoke, air quality issues, and emergency disruptions from a nearby wildfire can still cause cancellations or reduced participation in Sierra Madre's outdoor community events.

Windstorm

A serious windstorm in Sierra Madre can significantly disrupt community events like Concerts in the Park and Family Movie Fridays, even if the weather clears by the time of the event. High winds can cause physical damage to event infrastructure, such as tents, screens, sound equipment, and seating. Loose debris, falling branches, or downed trees in or around the park can create safety hazards for attendees and delay event setup or cleanup. In some cases, strong winds may force the cancellation of the event entirely, especially if conditions are unsafe for outdoor gatherings. Even after the storm passes, residual damage or power outages may limit access to necessary equipment or utilities. Families may also be hesitant to attend outdoor events in the aftermath of a windstorm due to lingering weather concerns or cleanup activity in the area. In summary, a windstorm can lead to unsafe conditions, damaged equipment, and reduced attendance, potentially forcing Sierra Madre's outdoor community events to be canceled, postponed, or scaled back for safety and logistical reasons.

Element C: Mitigation Strategy

Q&A | ELEMENT C. MITIGATION STRATEGY | C1-a.
Q: Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations? (Requirement 44 CFR § 201.6(c)(3)) **A:** See **Capability Assessment – Existing Processes and Programs**, **Table C.1** below.
Q&A | ELEMENT C: MITIGATION STRATEGY | C1-b.
Q: Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation? (Requirement 44 CFR § 201.6(c)(3)) **A:** See **Expanding and Improving Capabilities** below.
Q&A | ELEMENT C: Mitigation Strategy | C2-a.
Q: Does the plan contain a narrative description or a table/list of their participation activities? (Requirement 44 CFR § 201.6(c)(3)(ii)) **A:** See **NFIP Participation** below.
Q&A | ELEMENT C. MITIGATION STRATEGY | C3-a.
Q: Does the plan include goals to reduce the risk from the hazards identified in the plan? (Requirement 44 CFR § 201.6(c)(3)(i)) **A:** See **State Hazard Mitigation Plan Goals**, **HMP Goals** below.
Q&A | ELEMENT C: MITIGATION STRATEGY | C4-a.
Q: Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment? (Requirement 44 CFR § 201.6(c)(3)(ii)) **A:** See **Mitigation Actions Matrix (Action Items), Priority Rating** below.
Q&A | ELEMENT C: MITIGATION STRATEGY | C4-b.
Q: Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment? (Requirement 44 CFR § 201.6(c)(3)(ii)) **A:** See **Mitigation Actions Matrix (Action Items)** below.
Q&A | ELEMENT C: MITIGATION STRATEGY | C5-a.
Q: Does the plan describe the criteria used for prioritizing actions? (Requirement 44 CFR § 201.6(c)(3)(ii)) **A:** See **Mitigation Actions Matrix (Priority, Goals), Benefit/Cost Ratings** below.
Q&A | ELEMENT C: MITIGATION STRATEGY | C5-b.
Q: Does the plan identify the position, office, department, or agency responsible for implementing/administering the identified mitigation actions, as well as potential funding sources and expected time frame? (Requirement 44 CFR § 201.6(c)(3)(iii))) **A:** See **Lead Department** below.

Overview of Mitigation Strategy

As the cost of damage from disasters continues to increase nationwide, the City of Sierra Madre recognizes the importance of identifying effective ways to reduce vulnerability to disasters. Mitigation plans assist communities in reducing risk from natural hazards by identifying resources, information and strategies for risk reduction, while helping to guide and coordinate mitigation activities at city facilities.

The plan provides a set of action items to reduce risk from hazards through education and outreach programs, and to foster the development of partnerships. Further, the plan provides for the implementation of preventative activities.

Resources and information within the mitigation plan include:

1. Establishing a basis for coordination and collaboration among agencies and the public in the City of Sierra Madre,
2. Identifying and prioritizing future mitigation projects, and
3. Assisting in meeting the requirements of federal assistance programs.

The mitigation plan is integrated with other city plans including the Emergency Operations Plan, General Plan, Capital Improvement Program, as well as department-specific standard operating procedures.

Capability Assessment – Existing Processes and Programs

The City will incorporate mitigation planning as an integral component of daily operations. This will be accomplished by the Planning Team members with their respective departments to integrate mitigation strategies into their planning documents and operational guidelines. In addition to the Capability Assessment below, the Planning Team will strive to identify additional policies, programs, practices, and procedures that could be created or modified to address mitigation activities.

FEMA identifies four types of capabilities: Planning and Regulatory, Administrative and Technical, Financial, and Education and Outreach. Following are explanations drawn from "Beyond The Basics" a website developed as part of a multi-year research study funded by the U.S. Department of Homeland Security, Coastal Resilience Center and led by the Center for Sustainable Community Design within the Institute for the Environment at the University of North Carolina at Chapel Hill and the Institute for Sustainable Coastal Communities at Texas A&M University. This excellent resource ties FEMA regulations together with best practices in hazard mitigation.

Planning and Regulatory
Planning and regulatory capabilities are based on the implementation of ordinances, policies, local laws and State statutes, and plans and programs that relate to guiding and managing growth and development. Examples of planning capabilities that can either enable or inhibit mitigation include comprehensive land use plans, capital improvements programs, transportation plans, small area development plans, disaster recovery and reconstruction plans, and emergency preparedness and response plans. Plans describe specific actions or policies that support community goals and drive decisions. Likewise, examples of regulatory capabilities include the enforcement of zoning ordinances, subdivision regulations, and building codes that regulate how and where land is developed and structures are built. Planning and regulatory capabilities refer not only to the current plans and regulations, but also to the community's ability to change and improve those plans and regulations as needed.

Administrative and Technical
Administrative and technical capability refers to the community's staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. It also refers to the ability to access and coordinate these resources effectively. Think about the types of personnel employed by each jurisdiction, the public and private sector resources that may be

accessed to implement mitigation activities in your community, and the level of knowledge and technical expertise from all of these sources. These include engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, floodplain managers, and more. For jurisdictions with limited staff resources, capacity should also be considered; while staff members may have specific skills, they may not have the time to devote themselves to additional work tasks.

The planning team can identify resources available through other government entities, such as counties or special districts, which may be able to provide technical assistance to communities with limited resources. For example, a small town may turn to county planners, engineers, or a regional planning agency to support its mitigation planning efforts and provide assistance. For large jurisdictions, reviewing administrative and technical capabilities may involve targeting specific staff in various departments that have the expertise and are available to support hazard mitigation initiatives. The degree of intergovernmental coordination among departments also affects administrative capability.

Financial

Financial capabilities are the resources that a jurisdiction has access to or is eligible to use to fund mitigation actions. The costs associated with implementing mitigation activities vary. Some mitigation actions, such as building assessment or outreach efforts, require little to no costs other than staff time and existing operating budgets. Other actions, such as the acquisition of flood-prone properties, could require substantial monetary commitments from local, state, and federal funding sources. Some local governments may have access to a recurring source of revenue beyond property, sales, and income taxes, such as stormwater utility or development impact fees. These communities may be able to use the funds to support local mitigation efforts independently or as the local match or cost-share often required for grant funding.

Education and Outreach

This type of capability refers to education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information. Examples include fire safety programs that the Fire Department delivers to students at local schools; and participation in community programs, such as Firewise.

Table C.1 below includes a broad range of capabilities within the City of Sierra Madre to successfully accomplish mitigation.

Table C.1: Capability Assessment - Existing Processes and Programs
Source: City of Sierra Madre Planning Team

Capability Type				Capability Name	Capability Description and Ability to Support Mitigation
Planning and Regulatory	Administrative and Technical	Financial	Education and Outreach		
City Staff					
X	X	X	X	City Manager's Office	*The City Manager is appointed by the City Council to enforce municipal laws, direct daily operations of the City, make recommendations to the Council, prepare and observe the municipal budget, appoint and supervise all City department heads and employees, and supervise the operation of all City departments. The City Manager is responsible for implementing policies adopted by the City Council, preparing and submitting the annual budget, and administering the day-to-day operations of the City.*
	X		X	Community Services	*The Community Services Department consists of four full-time employees. The Department is responsible for a variety of facilities, parks, events, services and programs ranging from traditional recreation programs to arts and seniors. The Department oversees the Community Recreation Center and Youth Activity Center, Sierra Madre Aquatic Center, Hart Park House Senior Center, and six parks as well as supports and coordinates the activities of the City's Community Services Commission, Senior Community Commission, and various committees.*
	X	X		Finance Department	*The Finance Department is responsible for administering the city-wide operating budget and plays a key role in every financial transaction. The Department provides city-wide fiscal oversight, accounting, analysis, debt management, investments, purchasing, result-based budgeting, cash handling, payroll, billing, collections and administrative services.*
X	X		X	Fire Department	*The mission of the Sierra Madre Fire Department is to provide superior community service through the delivery of fire suppression, fire prevention, and emergency medical and public education services. The Sierra Madre Fire Department proudly protects those residing, working and visiting the City of Sierra Madre from its central location in downtown. The Department services a primarily residential area of 3.2 square miles with a wildland/urban interface to more than 11,000 residents.*
	X		X	Human Resources Department	*Human Resources is responsible for administering the City's human resources management system, including labor relations, benefits administration, and staff development, as well as providing personnel support services to all City departments. Responsibilities of the Division include recruitment, application review, and testing of all candidates for*

Capability Type				Capability Name	Capability Description and Ability to Support Mitigation
					City employment. In addition, the Department oversees the administration of compensation and benefits for all current employees, labor relations, contract negotiations and the maintenance of personnel records. Finally, Human Resources also coordinates all the risk management functions for the City including claims administration.
	X		X	Library Services	*The Sierra Madre Public Library is a community library dedicated to providing equal access to information services and programs reflecting diverse points of view, always endeavoring to be responsive to changing needs of the community, to preserving its history, and to meeting the challenges of the future. The library provides a welcoming environment, quality materials and technologies, and professional, dedicated staff.*
X	X		X	Planning and Community Preservation	*The Planning & Community Preservation Department is comprised of the Planning, Zoning, Building & Safety, and Code Enforcement Divisions. Planning and Zoning divisions are responsible for regulating the type, scale, and land use that may be established at a given location. Building and Safety division is responsible for structural and life safety concerns in the construction, demolition or alteration of buildings. Code Enforcement Division conducts investigations to abate code violations and public nuisance abatement.*
	X		X	Police	*For nearly 100 years, the men and women of the Sierra Madre Police Department have been committed to ensuring a safe environment for those who live, visit and work in Sierra Madre. The Sierra Madre Police Department has 20 full-time members including the Chief of Police, a Lieutenant, four sergeants, two corporals, nine officers (including detective & traffic), and four dispatchers. The Department also has several part-time employees and volunteers who contribute to maintaining a safe community.*
X	X	X	X	Public Works	*The Public Works Department and Utilities Department operate and maintain infrastructure for critical services to the City's residents and visitors. Services include providing potable water to its customers; maintaining the City's sewer system; safe streets and sidewalks; the City's urban forest; and City facilities. The Public Works Department also serves as liaison to the power and gas providers.*
X	X	X	X	Water	*The City's water quality and supply is maintained by the Water Division, a department within the Sierra Madre Public Works. By providing consistently high-quality service to the residents of Sierra Madre, the City ensures a safe and reliable method of water delivery for all users. The Water Division has two sources by which they pump, treat, and distribute water. One source of the water supply is derived from four wells drawing from the East Raymond Basin aquifer. The second source is derived from two natural spring tunnels located in the foothills.*
City Plans and Policies					
X			X	General Plan	*The City of Sierra Madre General Plan is a long-range policy document which lays out the framework for all future growth and development within the City. The General Plan is the blueprint that sets the basis for future policy decisions, in that it organizes the desires of the Sierra Madre community with respect to the physical, cultural, economic, and environmental character of the City. Most importantly, the Sierra Madre*

Capability Type				Capability Name	Capability Description and Ability to Support Mitigation
					General Plan is a community-based document that reflects the community values and character as expressed in its goals and policies, while also serving as a technical document which provides information about the City. The General Plan shall be used as a guide by the City's decision makers to achieve the community's vision and preserve the history, character and shared values of the community for future generations. *The General Plan is intended to be both a long-term and a dynamic document that must be periodically updated to respond to changing community needs. Unlike the housing element, which is required by State law to be updated every five years, a General Plan does not expire and is not required to have a specific time frame. The City recently updated its 1996 General Plan; updating the General Plan is done to ensure that the plan is a reflection of the community's values and goals. The update process also allows the City to reflect on challenges of the past years and use these experiences to shape new policy.* *On July 14, 2015, the City Council adopted the Sierra Madre General Plan (2015) and certified the General Plan Environmental Impact Report pursuant to Resolutions 15-43 and 15-44.* *Add 2023 update to Hazard Prevention Chapter.*
				Building and Fire Code	*The City re-adopts the California Building Code every three years into its Municipal Code. The most recent adoption took place in 2025.*

Expanding and Improving Capabilities

This identifies the capability categories and applicability to individual mitigation action items. Sub-category indicators are P – Planning and Regulatory; A – Administrative and Technical; F – Finance; E – Education and Outreach.

Planning and Regulatory Capabilities – The City builds and maintains its own buildings and infrastructure and regulates all construction within the community as per the International Building Code. Future plans are laid out in the General Plan and Capital Improvement Program. Some of the funding of future construction relies on successful bond measures where plans and justifications are shared with the public. Because of previous hazard mitigation plans and projects, the city is very experienced in adhering to federal and state mandates. Also, departmental protocols are in place that ensure future development projects satisfy "substantial conformance" requirements with the General Plan and Zoning Ordinance. See **Element C: Mitigation Strategy - Mitigation Actions Matrix** column "Expanding and Improving Capabilities".

Administrative and Technical - Existing capabilities are typical for a medium-sized local government. The city already has grant writing and GIS capabilities along with mutual aid agreements, and a warning/notification system. Grant writing capabilities will continue to be especially important once the mitigation plan is approved by FEMA. That approval will trigger

eligibility for a range of federal and state grants. Also, the City Council could task a sub-committee dedicated to land use matters and mitigation plan implementation. The Plan's opportunities for success will be increased by the Council's involvement. See **Element C: Mitigation Strategy - Mitigation Actions Matrix** column "Expanding and Improving Capabilities".

Finance - All local governments have a broad range of funding sources. Taxation, impact fees, bonds, grants, in-kind donations, and philanthropic donations are included in the spectrum. As such, the City needs to keep these resources in mind for future mitigation activities. See **Element C: Mitigation Strategy - Mitigation Actions Matrix** column "Expanding and Improving Capabilities".

Education and Outreach – Continue to utilize existing community groups such as CERT to support and encourage mitigation as well as home and business mitigation. Enlist the City Manager and Public Information Officer in learning and talking about the Hazard Mitigation Plan. See **Element C: Mitigation Strategy - Mitigation Actions Matrix** column "Expanding and Improving Capabilities".

National Flood Insurance Program

Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies (FIS) are often used to identify flood-prone areas. The National Flood Insurance Program (NFIP) was established in 1968 as a means of providing low-cost flood insurance to the nation's flood-prone communities. The NFIP also reduces flood losses through regulations that focus on building codes and sound floodplain management. NFIP regulations (44 Code of Federal Regulations (CFR) Chapter 1, Section 60, 3) require that all new construction in floodplains must be elevated at or above base flood level.

NFIP Participation

As discussed earlier in Element B: Risk Assessment – Flood Profile, the 2008 FIRM (Map # 06037C1400F) for Sierra Madre designates the overwhelming majority of the City as Flood Zone X, defined as "Areas determined to be outside the 0.2% annual chance floodplain." A small segment of the community, centered along the Little Santa Anita Creek channel, is classified as Zone D, an "Area in which flood hazards are undetermined, but possible."

It's important to note that the City's previous floodplain management regulations were omitted from the Municipal Code in 2008. As such, there is no designated floodplain administrator although it would arguably fall to the City Manager by default.

See the Mitigation Actions Matrix later in this Element to see a recommendation to work with FEMA on determining probabilities for the Zone D designated areas and for the City to reconsideration the need for a floodplain ordinance.

Repetitive Loss Properties and Severe Repetitive Loss Properties

Repetitive Loss Properties (RLPs) are most susceptible to flood damage; therefore, they have been the focus of flood hazard mitigation programs. Unlike a Countywide program, the Floodplain Management Plan (FMP) for repetitive loss properties involves highly diversified property profiles, drainage issues, and property owner's interest. It also requires public involvement processes unique to each RLP area. The objective of an FMP is to provide specific potential mitigation measures and activities to best address the problems and needs of communities with repetitive loss properties. A repetitive loss property is one for which two or more claims of $1,000 or more

have been paid by the National Flood Insurance Program (NFIP) within any given ten-year period. According to FEMA resources, there are no Repetitive Loss Properties (RLPs) within the City of Sierra Madre.

Goals

State Hazard Mitigation Plan Goals

The 2023 State Hazard Mitigation Plan identified the following goals that reflect State's current priorities:

Goal 1 - Significantly reduce risk to life, community lifelines, the environment, property, and infrastructure by planning and implementing whole-community risk reduction and resilience strategies.

Goal 2 - Build capacity and capabilities to increase disaster resilience among historically underserved populations, individuals with access and functional needs, and communities disproportionately impacted by disasters and climate change.

Goal 3 - Incorporate equity metrics, tools, and strategies into all mitigation planning, policy, funding, outreach, and implementation efforts.

Goal 4 - Apply the best available science and authoritative data to design, implement, and prioritize projects that enhance resilience to natural hazards and climate change impacts.

Goal 5 - Integrate mitigation principles into laws, regulations, policies, and guidance to support equitable outcomes to benefit the whole community.

Goal 6 - Significantly reduce barriers to timely, efficient, and effective hazard mitigation planning and action.

2025 City of Sierra Madre Hazard Mitigation Plan Goals

Following review of the SHMP goals, the Planning Team reviewed the 2020 HMP goals and determined that those goals are consistent with and responsive to the 2025 Element B: Risk Assessment content and that the goals continue to represent a long-term vision for hazard reduction and enhanced mitigation capabilities.

Each of the goals is supported by mitigation action items. The Planning Team developed these action items through its knowledge of the local area, risk assessment, review of past efforts, identification of mitigation activities, and qualitative analysis. See **Mitigation Actions Matrix**.

The five mitigation goals and descriptions are listed below.

Protect Life and Property

Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other properties more resistant to losses from natural, human-caused, and technological hazards.

Reduce losses and repetitive damage for chronic hazard events while promoting insurance coverage for catastrophic hazards.

Improve hazard assessment information to make recommendations for avoiding new development in high hazard areas and encouraging preventative measures for existing development in areas vulnerable to natural, human-caused, and technological hazards.

Public Awareness

Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards.

Provide information on tools, partnership opportunities, and funding resources to assist in implementing mitigation activities.

Natural Systems

Balance watershed planning, natural resource management, and land use planning with natural hazard mitigation to protect life, property, and the environment.

Preserve, rehabilitate, and enhance natural systems to serve natural hazard mitigation functions.

Partnerships and Implementation

Strengthen communication and coordinate participation among and within public agencies, citizens, non-profit organizations, business, and industry to gain a vested interest in implementation.

Encourage leadership within public and private sector organizations to prioritize and implement local, county, and regional hazard mitigation activities.

Emergency Services

Establish policy to ensure mitigation projects for critical facilities, services, and infrastructure.

Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, business, and industry.

Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.

Update the EOP and hazard annexes.

How are the Mitigation Action Items Organized?

The action items are a listing of activities in which city agencies and citizens can be engaged to reduce risk.

The action items are organized within the following Mitigation Actions Matrix, categorized by hazard. Data collection and research and the public participation process resulted in the development of these action items. The Matrix includes the following information for each action item:

Lead Department

The Mitigation Actions Matrix assigns primary responsibility for each of the action items to either a department or specific position within the city. The primary responsibility for implementing the action items falls to the entity shown as the "Lead Department". The lead department has the regulatory responsibility to address hazards, or is willing and able to organize resources, find appropriate funding, or oversee activity implementation, monitor, and evaluate. The lead department is a city staff or contracted while supporting agencies may include local governments, county, or regional agencies.

Timeline

The mitigation plan will be updated every 5 years according to FEMA regulations. However, there are projects and programs in the Mitigation Actions Matrix that will require more than 5 years to complete. Some of the actions are identified as "ongoing" since the 2020 HMP or will continue on a regular basis through the 2025 HMP. These items are indicated as either Ongoing-Annual/Quarterly/Monthly, or Ongoing-As Needed with an explanation of what triggers the action (e.g., amending the General Plan, a public agency meeting, etc.).

Funding Source

External resources could include a range of FEMA mitigation grants perhaps including the Hazard Mitigation Grant Program (HMGP).

Internal resources could include the General Fund, Capital Improvement Budget, impact fees, human capital, in-kind resources, etc.

Plan Goals Addressed

As mentioned earlier, the plan goals addressed by each action item are included as a way to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. The plan goals are organized into the following five areas:

- ✓ Protect Life and Property
- ✓ Enhance Public Awareness
- ✓ Preserve Natural Systems
- ✓ Encourage Partnerships and Implementation
- ✓ Strengthening Emergency Services

Planning Mechanism

It's important that each action item be implemented. Perhaps the best way to ensure implementation is through integration with one or many of the City's existing "planning mechanisms" including the "internal resources" including the General Plan, Capital Improvement Projects, General Fund, and "external resources" including Grants. Opportunities for integration will be simple and easy in cases where the action item is already compatible with the content of the planning mechanism. As an example, if the action item calls for the creation of a floodplain ordinance and the same action is already identified in the General Plan's policies, then the General Plan will assist in implementation. On the contrary, if preparation of a floodplain ordinance is not already included in the General Plan policies, then the item will need to be added during the next update to the General Plan.

The Capital Improvement Program, depending on the budgetary environment, is updated every 5 years. The CIP includes infrastructure projects built and owned by the city. As such, the CIP is an excellent medium for funding and implementing action items from the Mitigation Plan. The Mitigation Actions Matrix includes several items from the existing CIP. The authors of the CIP served on the Planning Team and are already looking to funding addition Mitigation Plan action items in future CIPs. The General Fund is the budget document that guides all of the City's expenditure and is updated on an annual basis. Although primarily a funding mechanism, it also includes descriptions and details associated with tasks and projects. Grants come from a wide variety of sources – some annually and others triggered by events like disasters. Whatever the source, the City uses the General Fund to identify successful grants as funding sources. Also see Element D: Plan Maintenance for discussion on integration with other planning mechanisms.

Building and Infrastructure

This addresses the issue of whether or not a particular action item results in the reduction of the effects of hazards on new and existing buildings and infrastructure.

Comments

The purpose of the "Comments" is to capture the notes and status of the various action items. Notations include:
"Revised" – some component(s) of the action item has been revised from the 2020 HMP.

Benefit/Cost Ratings

The benefits of proposed projects were weighed against estimated costs as part of the project prioritization process. The benefit/cost analysis was not of the detailed variety required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP). A less formal approach was used because some projects may not be implemented for up to 10 years, and associated costs and benefits could change dramatically in that time. Therefore, a review of the apparent benefits versus the apparent cost of each project will be performed in the future as needed. Parameters were established for assigning subjective ratings (high, medium, and low) to the costs and benefits of these projects.

Cost ratings were defined as follows:

High: Existing funding within the jurisdiction will not cover the cost of the action item so outside sources of revenue would be required.

Medium: The action item could be funded through existing jurisdictional funding but would require budget modifications.

Low: The action item could be funded under existing jurisdictional funding within the assigned lead department.

Benefit ratings were defined as follows:

High: The action item will provide short-term and long-term impacts on the reduction of risk exposure to life and property.

Medium: The action item will have long-term impacts on the reduction of risk exposure to life and property.

Low: The action item will have only short-term impacts on the reduction of risk exposure to life and property.

Priority Rating

During the 2025 planning process, the Planning Team utilized the Priority Rating system designations of “High”, Medium”, or “Low” priority were assigned to each of the action items.

Does the Action:

- ☐ solve the problem?
- ☐ address Vulnerability Assessment?
- ☐ reduce the exposure or vulnerability to the highest priority hazard?
- ☐ address multiple hazards?
- ☐ benefits equal or exceed costs?
- ☐ implement a goal, policy, or project identified in the General Plan or Capital Improvement Project?

Can the Action:

- ☐ be implemented with existing funds?
- ☐ be implemented by existing state or federal grant programs?
- ☐ be completed within the 5-year life cycle of the LHMP?
- ☐ be implemented with currently available technologies?

Will the Action:

- ☐ be accepted by the community?
- ☐ be supported by community leaders?
- ☐ adversely impact segments of the population or neighborhoods?
- ☐ require a change in local ordinances or zoning laws?
- ☐ positive or neutral impact on the environment?
- ☐ comply with all local, state and federal environmental laws and regulations?

Is there:

- ☐ sufficient staffing to undertake the project?
- ☐ existing authority to undertake the project?

As mitigation action items were updated or written the Planning Team, representatives were provided worksheets for each of their assigned action items. Answers to the criteria above determined the priority according to the following scale.

- 1-6 = Low priority
- 7-12 = Medium priority
- 13-18 = High priority

Mitigation Actions Matrix

Table C.2: Mitigation Actions Matrix
Source: City of Sierra Madre Planning Team

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
Multi-Hazard Mitigation Action Items															
MH-1 (General Plan – Safety Element Policy Hz 16.1) Integrate the goals and action items from the City of Sierra Madre Hazard Mitigation Plan into existing regulatory documents and programs, where appropriate.	City Manager's Office	Annual	X	X		X			FY, FY	Y	M	L	L	P	Revised
MH-2 (General Plan – Safety Element Policy Hz 16.2) Identify and pursue funding opportunities to develop and implement neighborhood and city mitigation activities.	Fire	Monthly	X	X	X	X	X	X	FY, FY	Y	H	L	H	F	Revised
MH-3 (General Plan – Safety Element Policy Hz 16.3) Develop inventories of Unreinforced	Planning	1-2 years	X	X	X	X	X	X	FY, FY	Y	H	H	H	P, A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
Masonry Buildings and Soft-Story Structures.															
MH-4 Strengthen emergency services preparedness by enhancing public awareness.	City Manager's Office	Monthly	X	X	X	X	X	X	FY, FY	N	H	L	H	A, E	Revised
MH-5 Develop a Multi-Hazard Emergency Evacuation Plan	Police, Fire	1 year	X	X	X	X	X		FY, FY	N	H	L	H	P	Revised
~~MH-6 (General Plan – Safety Element Policy Hz 16.4) Buy Vactor to pneumatically collect liquids, sludges, slurries, sewage or other spills from a location thereby reducing the threat of exposure to hazardous spills.~~	~~Public Works Department~~		~~X~~						~~GF, GF~~	~~N~~	~~H~~	~~H~~	~~M~~		Completed
MH-7 (General Plan – Safety Element Policy Hz 3.1) Continue to cooperate with Area C Fire Departments for second and third alarm calls and continue with the State-wide Mutual Aid Agreements	Fire	Annual	X			X	X		FY	N	H	L	H	A	Revised
MH-8 (General Plan – Safety Element Policy Hz 4.1) Update	Fire, Police t, Public Works, Community	4 years	X			X	X		FY	N	H	L	H	P, A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
the Emergency Operations Plan annually (EOC Related)	Planning and Preservation														
MH-9 (General Plan – Safety Element Policy Hz 4.2) Maintain a fully operational Emergency Operations Center (EOC Related)	Fire, Police, Public Works, IT	Monthly	X			X	X		FY	N	H	L	H	A	Revised
MH-10 (General Plan – Safety Element Policy Hz 4.3) Enlist participation from the community and City staff for emergency operations (EOC Related)	Public Works, Fire	Annual	X			X	X		FY	N	H	L	H	A, E	Revised
MH-11 (General Plan – Safety Element Hz 4.4) Provide emergency operations training and conduct test runs (EOC Related)	Public Works, Fire	Annual	X			X	X		FY	N	H	L	H	A	Revised
MH-12 (General Plan – Safety Element Hz 4.5) Review and upgrade emergency operations equipment such as 911	Police, Fire, IT	Monthly	X			X	X		FY	N	H	H	H	P, A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
equipment, and the police dispatch system as needed to maintain modern levels of service (EOC Related)															
MH-13 (General Plan – Safety Element Policy Hz 4.6) Develop and utilize emergency public communication systems	Police, Fire, IT	Annual	X			X	X		FY	N	H	H	H	P	Revised
MH-14 (General Plan – Safety Element Policy Hz 18.5) Make necessary upgrades to sewer infrastructure and overflow response actions to prevent major sewer overflows.	Public Works	3 years	X				X		GR, GR	Y	H	H	H		New
Earthquake Mitigation Action Items															
EQ-1 (General Plan – Safety Element Policy Hz 13.4) Utilize contemporary seismic maps during plan/permit review process.	Community Planning & Preservation	Monthly	X	X	X	X	X	X	FY, FY	Y	H	L	H	P, A	Revised
EQ-2 (General Plan – Safety Element Policy Hz 13.5) Incorporate the Regional	Fire	Annual	X	X	X	X	X		FY, FY	N	H	L	H	P	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
Earthquake Transportation Evacuation Route updated developed by the Area D Disaster Management Area Coordinators into the Emergency Operations Plan.															
EQ-3 (General Plan – Safety Element Policy Hz 13.6) Identify funding sources for structural and non-structural retrofitting of City-owned structures that are seismically vulnerable (e.g. City Library).	Community Planning & Preservation	1 year	X	X	X	X	X		GR, GR	Y	H	H	H	F	Revised
EQ-4 (General Plan – Safety Element Policy Hz 13.7) Encourage purchase of earthquake hazard insurance for private properties and uninsured City-owned properties.	City Manager's Office	2 years		X					FY, FY	N	H	L	H	P, A, F	Revised
EQ-5 (General Plan – Safety Element Policy Hz 13.8) Encourage hazard reduction with non-structural and structural earthquake retrofits and other	Administration	Annual	X	X			X		FY, FY	Y	H	L	H	E	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
strategies in homes, businesses, and City facilities.															
EQ-6 (General Plan – Safety Element Policy Hz 13.9) Replace water mains in fault zones with seismic pipe thereby maintaining water system integrity and reducing the threat to life and property loss by providing fire suppression.	Public Works	Annual	X	X	X		X	X	GF, GF	Y	H	H	H	P, F	Revised
EQ-7 (General Plan – Safety Element Policy Hz 13.10) Renovate main booster plant with new booster pumps and control panels thereby ensuring reliable water delivery to City's distribution system.	Public Works	Annual	X	X	X		X	X	GR, GR	Y	H	H	H	P, F	Revised
EQ-8 (General Plan – Safety Element Policy Hz 13.11) Seismic retrofit of Auburn reservoir thereby preserving stored water for domestic use and fire suppression.	Public Works	3-5 years	X	X	X		X	X	GR, GR	Y	H	H	H	P, F	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
EQ-9 (General Plan – Safety Element Policy Hz 10.1) Require that earthquake survival and efficient post-disaster functioning be a primary concern in the siting, design and construction standards for essential facilities in Sierra Madre.	Public Works	Annual	X				X	X	CIP	Y	H	H	H	P	Revised
EQ-10 (General Plan – Safety Element Policy Hz 10.2) Investigate the limitations on the location of new or altered residences and critical, sensitive and high occupancy facilities in areas near active faults, and consider conducting a comprehensive geologic investigation to show where active faults pose a hazard to structures.	Public Works, Building and Safety, Community Planning and Preservation	1 year	X			X		X	GP	Y	H	H	H	P, A	Revised
EQ-11 (General Plan – Safety Element Policy Hz 10.3) Investigate requiring that proposed new or altered	Building and Safety, Community	3 years	X					X	FY	N	H	L	H	P	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
residences and critical, sensitive, and high occupancy facilities located in areas near active faults are not approved unless necessary subsurface fault investigations have first been completed.	Planning and Preservation														
EQ-12 (General Plan – Safety Element Policy Hz 10.4) Investigate requiring a thorough subsurface fault investigation for any proposed habitable structure on private property in close proximity of an active fault zone and monitor any trenching for public buried water lines in the same area. Assign a City employee the duty of collecting and assessing of data gathered from the above listed efforts with help of a registered geologist.	Public Works, Building and Safety	Annual	X		X	X		X	GP	Y	H	H	H	P	Revised
EQ-13 (General Plan – Safety Element Policy Hz 10.5) Create a central depository of all Sierra	Public Works, Community Planning and	5 years	X	X	X	X		X	GP	N	H	L	M	P, A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
Madre geological information the City obtains through any project approvals process, including any government projects.	Preservation, Building and Safety														
EQ-14 General Plan – Safety Element Policy (Hz 11.1) Promote public awareness of the need to upgrade seismically hazardous buildings for the protection of health and safety in the City.	Community Planning and Preservation, Public Works, Building and Safety	5 years	X	X		X	X	X	GP	Y	H	H	H	E	Revised
EQ-15 (General Plan – Safety Element Policy Hz 11.2) Encourage seismic review of buildings.	Building and Safety	5 years	X	X		X	X	X	GP	Y	H	H	H	P, A	Revised
EQ-16 (General Plan – Safety Element Policy Hz 11.3) Promote seismic upgrading of older residential and commercial structures with special attention given to historic structures.	Building and Safety	5 years	X	X		X	X	X	GP	Y	H	H	H	P	Revised
EQ-17 General Plan – Safety Element Policy (Hz 12.1) Maintain and update multi-hazard emergency preparedness plan for	Public Works, Community Planning and	Annual	X			X	X		GP	N	H	H	H	P, A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
the City that includes seismic safety. (Plan known as the Emergency Operations Plan)	Preservation, Police, Fire, IT														
EQ-18 (General Plan – Safety Element Policy Hz 12.2) Maintain and upgrade the City's disaster response plans at least annually, conduct periodic tests of their practicality and effectiveness, and involve residents and business in the preparation and testing of the plans,	Public Works, Fire, Community Planning and Preservation, Police, IT	Annual	X	X		X	X		GP	N	H	M	H	A	Revised
EQ-19 (General Plan – Safety Element Policy Hz 12.3) Prepare and disseminate to residents and businesses information regarding seismic risks affecting the City, measures to protect life and property before and during an earthquake, and emergency procedures to follow after an earthquake.	Public Works, Fire, Building and Safety, Community Services, Library	Annual	X	X		X	X		GP	N	H	H	H	P, A	Revised
EQ-20 (General Plan – Safety Element Policy Hz 12.4)	Public Works, Fire, Building and	1-2 years	X				X		GP, CIP	Y	H	H	H	P, A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
Incorporate planning for potential incidents affecting critical, sensitive and high-occupancy facilities into the City's contingency plans for disaster response and recovery.	Safety, Community Services, Library														
EQ-21 (General Plan – Safety Element Policy Hz 12.5) Ensure that emergency preparedness is the mutual responsibility of City agencies, City residents and the business community.	All City Departments	Annual	X	X		X	X		GP	N	H	H	H	P, A, E	Revised
EQ-22 (General Plan – Safety Element Policy Hz 12.6) Develop and implement ongoing City-wide programs for disaster preparedness and recovery planning.	All City Departments	Annual	X				X		GP	N	H	H	H	A, E	Revised
EQ-23 (General Plan – Safety Element Policy Hz 13.1) Provide residents and business owners with a continuing awareness and expanding knowledge of the	Public Works, Community Services	Annual	X	X		X			GP	N	H	L	M	P, A, E	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
seismic hazards affecting the City.															
EQ-24 Make necessary upgrades to sewer infrastructure and overflow response actions to prevent major sewer overflows.	Public Works	3 years	X				X		GR, GR	Y	H	H	M	P, A, F, E	Revised
EQ-25 (General Plan – Safety Element Policy Hz 13.2) Adopt and maintain high standards for seismic performance of buildings, through prompt adoption and careful enforcement of the best available standards for seismic design.	Building and Safety	Every 3 years	X	X	X	X	X	X	FY, FY	Y	H	L	H	P	New
EQ-26 (General Plan – Safety Element Policy Hz 13.3) Adopt a wood soft first-story ordinance and program to retrofit potentially vulnerable buildings.	Building and Safety	1-2 years	X	X	X	X	X	X	FY, FY	Y	H	L	H	P	New
Wildfire Mitigation Action Items															
WF-1 (General Plan – Safety Element Policy Hz 2.11) Enhance emergency services to increase	Fire	4 years	X		X		X		GR, GR	Y	M	H	H	A, F	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
the efficiency of wildfire response and recovery activities through purchase of a Type 5 Vehicle.															
WF-2 (General Plan – Safety Element Hz5.a.2) Maintain contemporary collection of maps relating to the fire hazard to help educate and assist builders and homeowners in mitigating against wildfire.	Fire, Community Planning and Preservation	1-2 years	X	X	X	X	X	X	FY, FY	Y	H	L	H	A, E	Revised
WF-3 (General Plan – Safety Element Hz 5a.1) Enhance outreach and education programs (e.g. CAL FIRE, Vegetation Management) aimed at mitigating wildfire hazards.	Fire	Annual	X	X	X	X	X	X	FY, FY	Y	H	L	H	E	Revised
WF-4 (General Plan – Safety Element Policy Hz 2.8 and Hz 5.5) Develop a Vegetation Management Program and Vegetation Management Plans that manage chemise and chaparral to ensure adequate firebreaks, to provide adequate	Fire	1 year	X	X	X	X	X	X	FY, FY	Y	H	L	H	P, A, E	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
access for the fire protection water systems, and access for firefighting.															
WF-5 (General Plan – Safety Element Policy Hz 2.4) Consider water availability in terms of quantity and water pressure for safety purposes when considering the size and location of new residential construction.	Public Works	Annual	X				X	X	FY	Y	H	M	H	A	Revised
WF-6 (General Plan – Safety Element Policy Hz 2.5) Assess the impacts of incremental increases in development density and related traffic congestion on fire hazards and emergency response time, and ensure through the development review process that new development will not result in a reduction of fire protection services below acceptable levels.	Building & Safety, Fire	1-2 years	X					X	FY	Y	H	M	H	P, A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
WF-7 (General Plan – Safety Element Policy Hz 2.9) Maintain and update hillside development standards which include fire prevention design measures.	Fire, Community Planning and Preservation	Annual	X			X	X	X	FY	Y	H	L	M	P, A	Revised
WF-8 (General Plan Safety Element Policy Hz 2.10) Work with Public Works, the Police Department and residents to develop a solution to parking issues that affect Fire Department access in the canyon areas.	Public Works, Police	Annual	X			X	X	X	FY	Y	H	M	H	P	Revised
WF-9 (General Plan - Safety Element Policy Hz 5.1) Mandate annual brush removal.	Public Works, Fire	Annual	X		X			X	FY	N	M	H	M	A	Revised
WF-10 (General Plan – Safety Element Policy Hz 5.2) Work with community groups in presenting information and trainings regarding wildfire prevention and awareness.	Public Works, Fire, Library	Annual	X	X	X	X			FY	N	M	H	M	A, E	Revised
WF-11 (General Plan – Safety Element Policy Hz 2.12) All new residential developments in	Community Planning and Preservation	During permitting	X	X	X	X			FY	N	M	H	M	A, E	New

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
hazard areas shall have at least two emergency evacuation routes (i.e., points of ingress and egress)															
WF-12 (General Plan – Safety Element Policy Hz 2.16) The locations of all new essential public facilities shall be located outside of the VHFSZs, when feasible.	Community Planning and Preservation	During permitting	X	X	X	X			FY	N	M	H	M	A, E	New
WF-13 (General Plan – Safety Element Hz 5.4) Identify funds by way of a tree assessment district or "environment fund" or other source of funds to pay for vegetation trimming and removal of dead wood on public property and private properties where vegetation is creating a canopy over public rights-of-way	Finance, Public Works, Fire	1 year	X	X	X	X	X	X	GR, GR	Y	H	H	H	P, A, F, E	New
WF-14 (General Plan – Safety Element Hz 5.6) Existing non-conforming development shall be mitigated to contemporary fire	Community Planning and Preservation, Fire	1 year	X	X	X	X	X	X	FY, FY	Y	H	H	H	P, A, F, E	New

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
safe standards and vegetation hazards.															
WF-15 (General Plan – Safety Element 5.a.3) The City will require all new development to incorporate fire-safe design by requiring property owners to submit plans showing ingress/egress, evacuation routes, emergency vehicles access, and signage and fuel modification/fire –retardant zones.	Community Planning and Preservation, Fire	During permitting	X	X	X	X	X	X	FY, FY	Y	H	H	H	P, A, F, E	New
WF-16 (General Plan – Safety Element Hz 5.a.6) Long-term maintenance of fire reduction projects, including but not limited to, a roadside fuel reduction plan, defensible space clearances (including fuel breaks) around structures, subdivision, and other development in the VHFSZ.	Fire, Public Works	Annual	X	X	X	X	X	X	FY, FY	Y	H	H	H	P, A, F, E	New
WF-17 (General Plan – Safety Element Hz 5.a.7) The City shall	Fire, Public Works	During permitting	X	X	X	X	X	X	FY, FY	Y	H	H	H	P, A, F, E	New

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			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
continue to require vegetation management plans for all new development projects in the VHFHSZ.															
WF-18 (General Plan – Safety Element Hz 5.a.8 and 5.a.9) The City shall require new development projects in VHFSZ to prepare fire protection plans and to be constructed based on CBC7A standards.	Fire, Public Works	During permitting	X	X	X	X	X	X	FY, FY	Y	H	H	H	P, A, F, E	New
Landslide Mitigation Action Items															
LND-1 Improve knowledge of landslide hazard areas and understanding of vulnerability and risk to life and property in hazard-prone areas.	Community Planning and Preservation	Annual	X	X		X	X	X	FY, FY	Y	H	L	H	A, E	Revised
LND-2 To the extent feasible, provide protective measures designed to limit debris flow resulting from the fire/mudflow sequence, thereby reducing the threat to life and property relative	Public Works	Annual	X	X	X		X		GR, GR	Y	M	H	H	P, A, E	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
to existing development in threatened areas including debris basins enhancements, and property purchases.															
LND-3 Amend Hillside Management Zone.	Community Planning and Preservation	1 year	X	X	X			X	FY, FY	Y	H	L	H	P, A	Revised
LND-4 Next update to General Plan Safety Element should include analysis and policies relating to slope repose.	Community Planning and Preservation	Next update to Safety Element	X	X	X	X	X	X	GP, GR	Y	M	H	H	A, F, E	New
Flood Mitigation Action Items															
FLD-1 Identify surface water drainage obstructions for all parts of the City of Sierra Madre.	Public Works	Annual	X	X	X	X	X	X	GR, GR	Y	M	M	H	A, F, E	Revised
FLD-2 Capture flood waters to lessen the flow within the City streets.	Public Works	10 years	X	X	X	X	X	X	GR, GR	Y	L	H	H	P, A	Revised
FLD-3 (General Plan – Safety Element Policy Hz 6.1) Require that all new development incorporates sufficient measures to mitigate flood hazards,	Building and Safety, Public Works	During permitting	X		X	X		X	FY	Y	H	L	H		Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
including the design of containment systems to capture stormwater runoff on-site, and site grading that minimizes stormwater runoff from increased impervious surfaces, thereby addressing impacts to on-site structures and adjacent properties.															
FLD-4 (General Plan – Safety Element Policy Hz 6.2) Require that the landscape of open space areas provide the maximum permeable surface area to reduce site runoff, and prohibit the paving of a majority of these areas	Building and Safety, Public Works, Community Planning and Preservation	Annual	X		X	X		X	FY	N	H	L	H	P, A	Revised
FLD-5 (General Plan – Safety Element Policy Hz 7.1) In the event of a flood, coordinate Fire Department emergency operations with Police Department, Public Works Department, the Sierra Madre Volunteer Search and Rescue	Fire, Police, Public Works, Volunteer Search and Rescue	Annual	X			X	X		FY	Y	H	H	H	A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
Team, and other agencies utilizing the Incident Command and the National Incident Management System															
FLD-6 (General Plan – Safety Element Policy Hz 7.2) Encourage implementation of emergency evacuation drills to prepare for the event of floods.	Fire	Annual	X				X		FY	Y	H	L	H	A	Revised
FLD-7 (General Plan – Safety Element Policy Hz 8.1) Require that residential tract developers be responsible for construction of drainage/storm drain systems improvements that are compatible with City and County systems within or adjacent to their project site.	Public Works, Community Planning and Preservation	Annual	X			X	X	X	GP	Y	H	H	H	A	Revised
FLD-8 (General Plan – Safety Element Policy Hz 8.2) Install required public storm drainage improvements.	Public Works	5-7 years	X			X	X	X	GP, CIP	Y	H	H	H	P, A, F	Revised
FLD-9 (General Plan – Safety Element Policy Hz 8.3) To the	Public Works, LA County	Annual	X			X	X	X	FY	Y	H	H	H	A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
extent feasible, the City shall continue to cooperate with and facilitate L.A. County's maintenance efforts to keep the debris basins clean.															
FLD-10 (General Plan – Safety Element Policy Hz 9.1) Obtain and make available to the public updated flood hazard maps prepared by FEMA	Public Works, Community Planning and Preservation, Library	1-2 years	X	X	X		X	X	GP, GP	Y	H	L	H	A	Revised
FLD-11 (General Plan – Safety Element Policy Hz 9.3) Work with NFIP to have the FIRM updated for the project area.	Public Works, Administration	5 years	X	X	X	X	X	X	FY, FY	Y	H	L	H	A	Revised
FLD-12 Work with NFIP on determining probabilities for the Zone D designated areas in Sierra Madre's FIRM.	Public Works, Administration	1 year	X	X	X	X	X	X	FY, FY	Y	H	L	H	A	New
FLD-13 City will reconsider the need for a floodplain ordinance including implementation protocols for substantial improvement and substantial	Public Works, Administration	1 year	X	X	X	X	X	X	FY, FY	Y	H	L	H	A	New

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
damage as required by NFIP and now a requirement for the HMP.															
FLD-14 (General Plan – Safety Element Policy Hz 7.3) Locate, when feasible, new essential public facilities outside of flood hazard zones, (outside of any hazard or disaster area/zones) including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities.	Public Works, Community Planning and Preservation	During planning and permitting	X	X	X	X	X	X	FY, FY	Y	H	L	H	A	New
FLD-15 (General Plan – Safety Element Policy Hz 8.4) Identify surface water drainage obstructions for all parts of the City of Sierra Madre.	Public Works	Annual	X	X	X	X	X	X	FY, FY	N	H	L	H	E	New
FLD-16 (General Plan – Safety Element Policy Hz 8.5) Capture flood waters to lessen the flow within the City streets.	Public Works	Annual	X	X	X	X	X	X	FY, FY	N	H	L	H	E	New

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
Windstorm Mitigation Action Items															
WND-1 (General Plan – Safety Element Policy Hz 17.1) Develop Public Awareness Campaign: To provide public education materials to City residents pertaining to the protection of life and property before, during, and after a windstorm.	Fire, Library	1-2 years	X	X	X	X	X	X	FY, FY	N	H	L	H	E	Revised
WND-2 (General Plan – Safety Element Policy Hz 17.2) Create local City awareness of tree appropriateness in regard to the Fire Code Sections relevant to utility operations.	Public Works	Annual	X	X	X	X	X	X	FY, FY	Y	H	L	H	A, E	Revised
WND-3 (General Plan – Safety Element Policy Hz 17.3) Encourage property owners and Critical Facilities to purchase and/or test backup power facilities for use during a power failure. Create an equipment/testing log	Public Works	Annual	X	X	X	X	X	X	GR, GR	Y	H	H	H	A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
to ensure backup power equipment is in working service.															
Power Outage Mitigation Action Items															
PO-1 (General Plan – Safety Element Policy Hz 18.1) Install Public Safety protective shut-offs for power.	Public Works	2-3 years	X	X	X	X	X	X	GR, GR	Y	H	H	H	P	Revised
PO-2 (General Plan – Safety Element Policy Hz 18.2) Prepare public and emergency services for Public Safety Power Shutoffs (PSPS) by providing back-up generators for critical City facilities and at-risk members of the community. Pursue solar power and energy storage as alternative sources of power during PSPS events for critical City facilities.	Public Works	1 year	X	X			X		GR, GR	Y	H	H	H	P, A, F	Revised
Drought Mitigation Action Items															
DR-1 (General Plan – Safety Element Policy Hz 18.3) Secure	Public Works	2 years	X	X	X	X		X	GR, GR	Y	H	H	H	P, A	Revised

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
adequate water surplus and sources during drought years to meet demands of public health and safety and emergency response.															
DR-2 (General Plan – Safety Element Policy Hz 18.4) Identify alternative sources of water and distribution capabilities in the event of a system-wide contamination emergency	Public Works	2 years	X	X	X	X	X		GR, GR	Y	H	H	H	P, A	Revised
~~**Utility-Related Mitigation Action Items**~~															Deleted – no longer a medium / high hazard
~~UT-1 Install Public Safety protective shut-offs for power.~~	~~Public Works~~	~~5 years~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~GR, GR~~	~~Y~~	~~H~~	~~H~~	~~H~~	~~P, A, E~~	Moved to Power Outage
~~UT-2 Prepare public and emergency services for Public Safety Power Shutoffs (PSPS) by providing back-up generators for critical City facilities and at-risk members of the community. Pursue solar power and energy storage as alternative sources of~~	~~Public Works~~	~~1 year~~	~~X~~	~~X~~			~~X~~		~~GR, GR~~	~~Y~~	~~H~~	~~H~~	~~H~~	~~P, A, E~~	Moved to Power Outage

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
~~power during PSPS events for critical City facilities.~~															
~~UT-3 Secure adequate water surplus and sources during drought years to meet demands of public health and safety and emergency response.~~	~~Public Works~~	~~3 years~~	~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~GR, GR~~	~~Y~~	~~H~~	~~H~~	~~H~~	~~P, A, E~~	Moved to Drought
~~UT-4 Identify alternative sources of water and distribution capabilities in the event of a system-wide contamination emergency~~	~~Public Works~~	~~3 years~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		~~GR, GR~~	~~Y~~	~~H~~	~~H~~	~~H~~	~~P~~	Moved to Drought
~~UT-5 Make necessary upgrades to sewer infrastructure and overflow response actions to prevent major sewer overflows.~~	~~Public Works~~	~~3 years~~	~~X~~				~~X~~		~~GR, GR~~	~~Y~~	~~H~~	~~H~~	~~H~~		Moved to Multi-Hazard
~~**Epidemic / Pandemic / Vector-Borne Mitigation Action Items**~~															
~~EPV-1 Develop inventories of PPE, and emergency supplies for pandemic distribution.~~	~~Fire Department~~	~~Ongoing~~	~~X~~	~~X~~		~~X~~	~~X~~		~~FY~~		~~H~~	~~M~~	~~H~~		Deleted – no longer a medium/high hazard
~~EPV-2 Encourage community preventive measures, through~~	~~Public Works~~	~~Ongoing~~	~~X~~	~~X~~		~~X~~	~~X~~		~~FY~~		~~H~~	~~L~~	~~H~~		Deleted – no longer a

Action Item	Lead Department	Timeline	Goals						Funding Source and Planning Mechanisms: FY=Fiscal Year Budget, HMGP, CIP, GP=General Plan	Buildings & Infrastructure: Does the Action item involve New and/or Existing Buildings and/or Infrastructure? Yes (Y), No (N)	Benefit (L=Low, M=Med, H=High)	Cost (L=Low, M=Med, H=High)	Priority (L=Low, M=Med, H=High)	Expanding and Improving Capabilities: P-Planning & Regulatory, A-Administrative & Technical, F-Finance, E-Education & Outreach	2025 Comments: Status – Completed, Revised, Deleted, New, and Deferred
			Protect Life and Property	Public Awareness	Natural Systems	Partnerships and Implementation	Emergency Services	Regulation and Permitting							
~~implementation of signage in all public facilities.~~															medium/high hazard
~~EPV-3 Implement annual community wellness campaign, providing educational information to public, formatted to stopping the spread of illness.~~	~~Fire Department~~	~~Ongoing~~	~~X~~	~~X~~		~~X~~	~~X~~		~~FY~~		~~H~~	~~L~~	~~H~~		Deleted – no longer a medium/high hazard
~~EPV-4 Identify and purse funding opportunities to develop and implement neighborhood and city mitigation activities.~~	~~ETeam~~	~~Ongoing~~	~~X~~	~~X~~		~~X~~	~~X~~		~~FY~~		~~H~~	~~L~~	~~H~~		Deleted – no longer a medium/high hazard

Element D: Plan Maintenance

Q&A | ELEMENT D: PLAN MAINTENANCE | D1-a.
Q: Does the plan describe how communities will continue to seek future public participation after the plan has been approved? (Requirement 44 CFR § 201.6(c)(4)(iii)) **A:** See **Continued Public Involvement** below.
Q&A | ELEMENT D: PLAN MAINTENANCE | D2-a.
Q: Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process? (Requirement 44 CFR § 201.6(c)(4)(i)) **A:** See **Local Mitigation Officer, Method and Scheduling of Plan Implementation, Monitoring and Implementing the Plan, Annual Implementation Matrix** below.
Q&A | ELEMENT D: PLAN MAINTENANCE | D2-b.
Q: Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible. (Requirement 44 CFR § 201.6(c)(4)(i)) **A:** See **Evaluation** below.
Q&A | ELEMENT D: PLAN MAINTENANCE | D2-c.
Q: Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process? (Requirement 44 CFR § 201.6(c)(4)(i)) **A:** See **Formal Update Process** below.
Q&A | ELEMENT D: PLAN MAINTENANCE | D3-a.
Q: Does the plan describe each community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms? (Requirement 44 CFR § 201.6(c)(4)(ii)) **A:** See **Integration into Other Planning Mechanisms** below.
Q&A | ELEMENT D: PLAN MAINTENANCE | D3-b.
Q: Does the plan identify the local planning mechanisms where hazard mitigation information/actions may be integrated? (Requirement 44 CFR § 201.6(c)(4)(ii)) **A:** See **Planning Mechanisms** below (repeated from Element C).

The plan maintenance process includes a schedule for monitoring and evaluating the Plan annually and producing a plan revision every five years. This section describes how the City of Sierra Madre will integrate public participation throughout the plan maintenance process.

Continued Public and Stakeholder Involvement

The City of Sierra Madre is dedicated to involving the public directly in the continual review and updates to the mitigation plan. Copies of the plan will be made available at City Hall and on the City's Hazard Mitigation Plan website. The dedicated website will also contain an email address and phone number of a staff member welcoming any comments, questions, or concerns. At the discretion of the Local Mitigation Officer, a public meeting may be held after the Annual Implementation Meeting. The meeting could provide a public forum in which interested individuals and/or agencies could express their concerns, opinions, or ideas about the plan.

The Local Mitigation Officer will be responsible for using the city resources to publicize any public meetings and always free to maintain public involvement through the public access channel, web page, and newspapers.

Local Mitigation Officer

The Planning Team involved in research and writing of the Plan will also be responsible for implementation. The Planning Team will be led by the Planning Team Chair Brent Bartlett who will be referred to as the Local Mitigation Officer. Under the direction of the Local Mitigation Officer, the Planning Team will take responsibility for plan maintenance and implementation. The Local Mitigation Officer will facilitate the Planning Team meetings and will assign tasks such as updating and presenting the Plan to the members of the Planning Team. Plan implementation and evaluation will be a shared responsibility among all of the Planning Team members. The Local Mitigation Officer will coordinate with the City of Sierra Madre leadership to ensure funding for 5-year updates to Plan as required by FEMA. The Planning Team will be responsible for coordinating the implementation of plan action items and undertaking the formal review process. The Local Mitigation Officer will be authorized to make changes in assignments to the current Planning Team.

The Planning Team will meet no less than annually. Meeting dates will be scheduled once the final Planning Team has been established. These meetings will provide an opportunity to discuss the progress of the action items and maintain the partnerships that are essential for the sustainability of the mitigation plan. The Local Mitigation Officer will be responsible for contacting the Planning Team members and organizing the annual meetings.

Plan updates will need to be approved by FEMA every 5 years. However, adequate time should be allowed to secure grant funding (if necessary), allow adequate time for a thorough planning process, and time for the formal review by Cal OES and FEMA. All said, if grant funding is going to be needed, the update timeline should begin 3 years prior to the plan's due date to FEMA.

Method and Scheduling of Plan Implementation

	Year 1	Year 2	Year 3	Year 4	Year 5
Monitoring	X	X	X	X	X
Evaluating					
Internal Planning Team Evaluation	X	X	X	X	X
Cal OES and FEMA Evaluation					X
Updating					X

Monitoring and Implementing the Plan

Monitoring the Plan

The Local Mitigation Officer will hold annual meetings with representatives from the coordinating agencies (as identified in the Mitigation Actions Matrix) in order to gather status updates on the mitigation action items. These meetings will provide an opportunity to discuss the progress of the action items and maintain the partnerships that are essential for the sustainability of the mitigation plan. See the **Annual Implementation Report** (discussed below) which will be a valuable tool for the Planning Team to measure the success of the Hazard Mitigation Plan. The focus of the annual meeting will be on the progress and changes to the Mitigation Action Items.

Evaluating and Updating the Plan

Evaluation

As discussed at the beginning of this section, the representatives from the coordinating agencies (as identified in the Mitigation Actions Matrix) will meet annually to gather status updates on the mitigation action items. During that meeting, the Local Mitigation Officer will lead a discussion with the coordinating agencies on the success (or failure) of the Mitigation Plan to be effective and to meet the plan goals. Examples of measuring the plan's effective will include assessing effectiveness include evaluating whether new hazards have emerged, whether community vulnerability has shifted, and whether stated mitigation strategies are still appropriate for the community's circumstances. The plan goals are defined in the beginning of Element C: Mitigation Strategy and each of the mitigation action items is aligned with a goal or goals.

The results of that discussion will be added to the Evaluation portion of the Annual Implementation Report and inclusion in the 5-year update to the Plan. Efforts will be made immediately by the Local Mitigation Officer to address any failed plan goals.

Formal Update Process

As identified above, the Mitigation Action Items will be monitored for status on an annual basis as well as an evaluation of the plan's goals. The Local Mitigation Officer will be responsible for contacting the coordinating agency members and organizing the annual meeting which will take place based on the month of the plan's approval. Planning Team members will also be responsible for participating in the formal update to the Plan every fifth year of the planning cycle. In the event the city desires to seek grant funding for the update, the application process should begin 2 years in advance of the plan's expiration. Even without grant funding, the planning process should begin at least 1.5 years ahead of the plan's expiration.

The Planning Team will begin the update process by reviewing the goals and mitigation action items to determine their relevance to changing situations within the City of Sierra Madre as well as changes in state or federal policy, and to ensure they are addressing current and expected conditions. The Planning Team will also review Element B: Risk Assessment portion of the Plan to determine if this information should be updated or modified, given any new available data. The lead departments responsible for the various action items will report on the status of their projects, including the success of various implementation processes, difficulties encountered, success of coordination efforts, and which strategies should be revised. Amendments will be made to the Mitigation Actions Matrix and other sections in the Plan as deemed necessary by the Planning Team.

Integration with Other Planning Mechanisms

The City of Sierra Madre addresses statewide planning goals and legislative requirements through the General Fund, Capital Projects, and Grants. The mitigation plan provides a series of recommendations - many of which are closely related to the goals and objectives of existing planning programs. The city will implement recommended mitigation action items through existing programs and procedures.

In addition, the city is responsible for adhering to the State of California's Building and Safety Codes. In addition, the city may work with other agencies at the state level to review, develop and ensure Building and Safety Codes are adequate to mitigate or prevent damage by hazards. This is to ensure that life-safety criteria are met for new construction.

Some of the goals and action items in the mitigation plan will be achieved through activities recommended in the strategic and other budget documents. The various departments involved in developing the plan will review it on an annual basis. Upon annual review, the Planning Team will work with the departments to identify areas in the plan's action items that are consistent with the strategic and budget documents. This will ensure the mitigation plan goals and action items are implemented in a timely fashion.

Upon FEMA approval, the Planning Team will begin the process of incorporating risk information and mitigation action items into existing planning mechanisms including the General Fund (Operating Budget and Capital Projects - see Mitigation Actions Matrix for links between individual action items and associated planning mechanisms). The annual meetings of the Planning Team will provide an opportunity for Planning Team members to report back on the progress made on the integration of mitigation planning elements into the City's planning documents and procedures. The timing of integration will depend on the cycles of the various planning mechanisms. As an example, state regulations require the Emergency Operations Plan to be updated every 3 years while the General Plan may not be updated for another 20 years. The department representatives should be mindful of opportunities to update or implement action items assigned to their departments.

The 2020 HMP was integrated into the 2023 General Plan – Safety Element with numerous references to hazard-related content.

The Planning Team will utilize the updates of the following HMP Elements into other planning mechanisms:

- ✓ Element A: Planning Process – Stakeholders into Emergency Operations Plan, Training, and Exercises
- ✓ Element B: Risk Assessment - City Profile, Risk Assessment, Vulnerability and Impacts Assessment into Emergency Operations Plan – Hazard Analysis and General Plan – Safety Element.
- ✓ Element C: Mitigation Strategy – Capability Assessment and Mitigation Actions Matrix into General Fund, Capital Projects, and Grants.

Annual Implementation Matrix

The Annual Implementation Matrix is the same as the Mitigation Actions Matrix but with a column added to track the annual status of each Action Item. Upon approval and adoption of the Plan, the Annual Implementation Report will be added to the Plan's **Attachments**. Following is a view of the Annual Implementation Matrix:

Annual Implementation Matrix will be inserted here following FEMA approval

An equal part of the monitoring process is the need to maintain a strategic planning process which needs to include funding and organizational support. In that light, at least one year in advance of the FEMA-mandated 5-year submission of an update, the Local Mitigation Officer will convene the Planning Team (as well as any other departments with responsibilities on the Mitigation Actions Matrix) to discuss funding and timing of the update planning process. On the fifth year of the planning cycles, the Planning Team will broaden its scope to include discussions and research on all of the sections within the Plan with particular attention given to goal achievement and public participation.

Economic Analysis of Mitigation Projects

FEMA's approach to identifying the costs and benefits associated with hazard mitigation strategies, measures, or projects fall into two general categories: benefit/cost analysis and cost-effectiveness analysis.

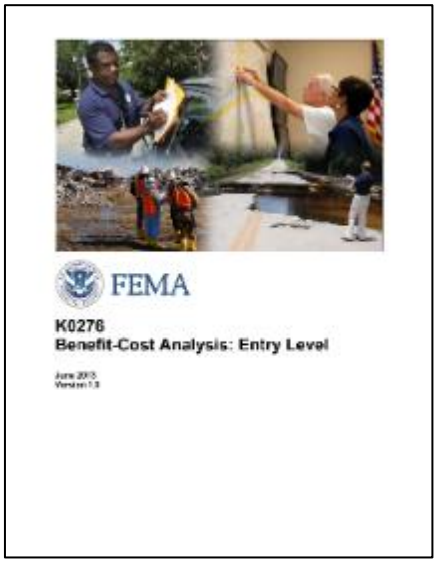
Conducting benefit/cost analysis for a mitigation activity can assist communities in determining whether a project is worth undertaking now, in order to avoid disaster-related damage later. Cost-effectiveness analysis evaluates how best to spend a given amount of money to achieve a specific goal. Determining the economic feasibility of mitigating hazards can provide decision-makers with an understanding of the potential benefits and costs of an activity, as well as a basis upon which to compare alternative projects.

Given federal funding, the Planning Team will use a FEMA-approved benefit/cost analysis approach to identify and prioritize mitigation action items. For other projects and funding sources, the Planning Team will use other approaches to understand the costs and benefits of each action item and develop a prioritized list.

The “benefit”, “cost”, and overall “priority” of each mitigation action item was included in the Mitigation Actions Matrix located in Element C: Mitigation Strategy. A more technical assessment will be required in the event grant funding is pursued through the Hazard Mitigation Grant Program. FEMA Benefit-Cost Analysis Guidelines are discussed below.

FEMA Benefit-Cost Analysis Guidelines

The Stafford Act authorizes the President to establish a program to provide technical and financial assistance to state and local governments to assist in the implementation of hazard mitigation measures that are cost effective and designed to substantially reduce injuries, loss of life, hardship, or the risk of future damage and destruction of property. To evaluate proposed hazard mitigation projects prior to funding FEMA requires a Benefit-Cost Analysis (BCA) to validate cost effectiveness. BCA is the method by which the future benefits of a mitigation project are estimated and compared to its cost. The end result is a benefit-cost ratio (BCR), which is derived from a project’s total net benefits divided by its total project cost. The BCR is a numerical expression of the cost effectiveness of a project. A project is considered to be cost effective when the BCR is 1.0 or greater, indicating the benefits of a prospective hazard mitigation project are sufficient to justify the costs.



Although the preparation of a BCA is a technical process, FEMA has developed software, written materials, and training to support the effort and assist with estimating the expected future benefits over the useful life of a retrofit project. It is imperative to conduct a BCA early in the project development process to ensure the likelihood of meeting the cost-effective eligibility requirement in the Stafford Act.

The BCA program consists of guidelines, methodologies, and software modules for a range of major natural hazards including:

- ✓ Flood (Riverine, Coastal Zone A, Coastal Zone V)
- ✓ Hurricane Wind
- ✓ Hurricane Safe Room
- ✓ Damage-Frequency Assessment
- ✓ Tornado Safe Room
- ✓ Earthquake
- ✓ Wildfire

The BCA program provides up to date program data, up to date default and standard values, user manuals and training. Overall, the program makes it easier for users and evaluators to conduct and review BCAs and to address multiple buildings and hazards in a single BCA module run.

Element E: Plan Update

Q&A | ELEMENT E: PLAN UPDATE | E1-a.
Q: Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved? (Requirement 44 CFR § 201.6(d)(3)) **A:** See **Changes in Development** below.
Q&A | ELEMENT E. PLAN UPDATE | E2-a.
Q: Does the plan describe how it was revised due to changes in community priorities? (Requirement 44 CFR § 201.6(d)(3)) **A:** See **Community Priorities** below.
Q&A | ELEMENT E: PLAN UPDATE | E2-b.
Q: Does the plan include a status update for all mitigation actions identified in the previous mitigation plan? (Requirement 44 CFR § 201.6(d)(3)) **A:** See **Status of Previous Mitigation Actions** below.
Q&A | ELEMENT E: PLAN UPDATE | E2-c.
Q: Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms? (Requirement 44 CFR § 201.6(d)(3)) **A:** See **Updates to Planning Mechanisms** below.

Updates to Planning Mechanisms

The 2023 update to the Sierra Madre General Plan – Safety Element included numerous references to the 2020 Sierra Madre Hazard Mitigation Plan. In particular, many of the mitigation action items from the HMP were incorporated into the Safety Element policies.

Changes in Development

According to the Planning Department, since the 2020 HMP there have been no significant alterations to the development pattern of the city. As to future changes in development, the city is currently contemplating two major developments: 1) Meadows at Bailey Canyon, a 42-home development; 2) Gingko Stonehouse on Grand View Ave, a 9-home development. The slight increase in density is offset by the modern building codes.

Changes in Community Priorities

Equally important are the changes in priorities to the plan update itself since the writing of the 2020 HMP. Clearly, the fact the Eaton Fire happened at the very beginning of the 2025 HMP planning process. Hazards are no longer "theoretical" to this community. Instead, it is a hard reality with reminders coming in the form of mudflows and other types of instability. A positive outcome has been the growing level of unity among the residents and businesses. Motivation to minimize or eliminate threats associated with hazards is at an all-time high.

The most important change in priorities for the plan itself was to restructure the physical organization of the plan to align with FEMA Plan Review Tool. The restructuring eliminates a great deal of redundancy and makes for an easier read – for staff, the public, and the formal reviewers at Cal OES and FEMA. In addition to the restructuring of the document, new content has been added to address the requirements of the 2025 FEMA Local Mitigation Planning Policy Guide.

- Executive Summary: new section summarizes the planning process and community outreach activities, and
- Element A: Planning Process - several stakeholder categories were added along with a much more robust community outreach strategy, and
- Element B: Risk Assessment – now delivered in two parts with one part focusing on hazards and the one part focusing on vulnerability and impacts. The recent availability of an updated Fire Hazard Severity Zone map resulted in an increased hazard ranking for wildfire, and
- Element C: Mitigation Strategy – now includes the capability assessment, plan goals, and a more detailed Mitigation Actions Matrix, and
- Element D: Plan Maintenance – added details about integrating the mitigation plan into other documents, and
- Element E: Plan Update - a new section summarizing the details involved in scheduling, funding, and executing future updates to the plan, and
- Element F: Plan Adoption – a new section documenting the role of the City Council.

Status of Previous Mitigation Actions

Refer to Element C: Mitigation Strategy – Mitigation Actions Matrix far right column (Comments) for information on the status of each action item.

Authority

Federal Authority

The city is not required to prepare a Mitigation Plan, but state and federal regulations encourage it with financial incentives. The federal Robert T. Stafford Disaster Relief and Emergency Act, amended by the Disaster Management Act of 2000, creates a federal framework for local hazard mitigation planning. It states that jurisdictions that wish to be eligible for federal hazard mitigation grant funding must prepare a hazard mitigation plan that meets a certain set of guidelines and submit this plan to FEMA for review and approval. The following regulations and guidelines apply to this plan:

Federal Laws

Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended.

Federal Regulations

44 CFR Part 201 Mitigation Planning.

44 CFR, Part 60, Subpart A, including § 60.3 Floodplain management criteria for flood-prone areas.

44 CFR Part 77 Flood Mitigation Grants.

44 CFR Part 206 Subpart N. Hazard Mitigation Grant Program.

Federal Guidance

FEMA Local Mitigation Planning Policy Guide, April 19, 2023.

FEMA Local Mitigation Planning Handbook, May 2023

State Authority

California Government Code Sections 8685.9 and 65302.6

California Government Code Section 8685.9 (also known as Assembly Bill 2140) limits the State of California's share of disaster relief funds paid out to local governments to 75 percent of the funds not paid for by federal disaster relief efforts unless the jurisdiction has adopted a valid hazard mitigation plan consistent with the Disaster Management Act of 2000 and has incorporated the hazard mitigation plan into the jurisdiction's general plan. In these cases, the State may cover more than 75 percent of the remaining disaster relief costs.

All cities and counties in California must prepare a General Plan, including a Safety Element that addresses various hazard conditions and other public safety issues. The Element may be a stand-alone chapter or incorporated into another section, as the community wishes. California Government Code Section 65302.6 indicates that a community may adopt a mitigation plan into its Safety Element if the mitigation plan meets applicable state requirements. This allows communities to use the mitigation plan to satisfy state requirements for Safety Elements. As the General Plan is an overarching long-term plan for community growth and development, incorporating the mitigation plan into it creates a stronger mechanism for implementing the mitigation plan.

California Government Code Section 65302 (G)(4)

California Government Code Section 65302 (g)(4), also known as Senate Bill (SB) 379, requires that the General Plan Safety Element address the hazards created or exacerbated by climate change. The Element must identify how climate change is expected to affect hazard conditions in the community and include measures to adapt and be more resilient to these anticipated changes. Because the mitigation plan can be incorporated into the Safety Element, including these items in the mitigation plan can satisfy the state requirement. SB 379 requires that climate change be addressed in the Safety Element when the mitigation plan is updated after January 1, 2017, for communities that already have a mitigation plan, or by January 1, 2022, for communities without a FEMA-approved mitigation plan.

Passed in 2006, Assembly Bill No. 2140 (AB 2140) allows California counties and cities to be considered for additional state cost-share on eligible Public Assistance projects by adopting their current, FEMA-approved local hazard mitigation plans (LHMPs) into the Safety Element of their General Plan. This adoption, along with other requirements, makes the county or city eligible to be considered for part or all of its local-share costs on eligible Public Assistance projects to be provided by the state through the California Disaster Assistance Act (CDAA).

AB 2140 compliance is not a requirement; however, if the City is compliant, it is eligible to be considered for up to an additional 6.25% local share to be funded by the state, essentially covering the entire local-share cost for eligible Public Assistance projects in the future. It's important to note that AB 2140 compliance expires when the 2020 HMP expired and in order to continue compliance, the City of Sierra Madre must re-adopt the 2025 HMP itself and adopt the HMP into the City's General Plan – Community Safety Element when the HMP is updated. Each time, the jurisdiction must provide the necessary documentation when seeking AB 2140 compliance – e.g. resolution(s) and direction to the appropriate section(s) of the General Plan – Community Safety Element.

In order to issue a letter of AB 2140 compliance, Cal OES will review and verify that the City of Sierra Madre has performed the following:

- ✓ Has a current, FEMA-approved or approvable pending adoption (APA) HMP.
- ✓ Formally adopted the HMP via resolution.

- ✓ Formally adopted the most current, approved HMP into the General Plan – Safety Element via resolution.
- ✓ Included language within the General Plan – Safety Element that references the HMP.
- ✓ Included a web link, appendix, or language within the Community Safety Element that directs the public to the most current, approved HMP in its entirety.
- ✓ E-mailed the link to the updated General Plan – Safety Element web page along with the signed, adoption resolution(s) to the Cal OES AB 2140 inbox ab2140@caloes.ca.gov for review and approval.

In closing, the City of Sierra Madre's 2025 HMP is consistent with current standards and regulations, as outlined by the California Office of Emergency Services (Cal OES) and FEMA. It uses the best available science, and its mitigation actions/strategies reflect best practices and community values. It meets the requirements of current state and federal guidelines and makes the city eligible for all appropriate benefits under state and federal law and practices. Note that while FEMA is responsible for reviewing and approving this mitigation plan, and Cal OES is responsible for conducting a preliminary review, it does not grant FEMA or Cal OES any increased role in the governance of the City or authorize either agency to take any specific action in the community.

Element F: Plan Adoption

Q&A | ELEMENT F: PLAN ADOPTION | F1-a.

Q: Does the participant include documentation of adoption? (Requirement 44 CFR § 201.6(c)(5))
A: See **Plan Adoption Process** below.

Plan Adoption Process

Adoption of the plan by the local governing body will demonstrate the City of Sierra Madre's commitment to meeting mitigation goals and objectives. Governing body approval legitimizes the plan and authorizes responsible agencies to execute their responsibilities.

The Second Draft Plan was submitted to Cal OES and FEMA for review and approval. When Cal OES determines the plan to be compliant, the document will be forwarded to FEMA. When FEMA determined the plan to be compliant, an Approvable Pending Adoption notice was issued. That now triggers the City Council to conduct a public meeting. Staff will recommend adoption of the Final Draft Plan. Assuming adoption by the City Council, the signed resolution will be forwarded to FEMA along with a request for a FEMA Letter of Approval.

In preparation for the public meeting with the City Council, the Planning Team will post the Final Draft Plan on the City's website. Notification of the Plan's availability will also be announced via the mediums utilized during the community outreach activities. Also, the Team will prepare a staff report including an overview of the Planning Process, Risk Assessment, Mitigation Goals, and Mitigation Actions. The staff presentation will include a summary of the input received during the community outreach activities. The meeting participants will be encouraged to present their views and make suggestions on possible mitigation actions.

The City Council heard the item on _____. The City Council voted to _____ the Final Draft of the Hazard Mitigation Plan. The Resolution of adoption by the City Council is below:

Insert

Plan Approval

Upon adoption by the City Council, the resolution was forwarded to FEMA. The FEMA Letter of Approval was issued on _____ and is below:

insert

Attachments

Dedicated Website Postings – March 12, 2025

HAZARD MITIGATION PLAN



City Of Sierra Madre Hazard Mitigation Plan Update

The City of Sierra Madre is in the process of updating its Hazard Mitigation Plan (HMP) to enhance community resilience and maintain eligibility for mitigation-related funding before and after major disasters. This update, required every five years, allows the City to reassess risks, refine existing preparedness strategies, and develop new mitigation actions to protect lives and property.

As part of the 2025 HMP update, the Planning Team has identified six key hazards that pose risks to Sierra Madre: earthquakes, drought, flooding, power outages, wildfires, and windstorms. The next phase of the planning process includes assessing the vulnerabilities and potential impacts of these hazards. This involves evaluating critical infrastructure at risk and updating mitigation strategies to reduce future threats.

Community Involvement And Plan Resources

Public participation is an essential part of this process. This webpage will serve as a central resource where residents can stay informed about the plan's progress and access key documents. Meeting materials, including agendas, presentations, draft plans, and other relevant resources, will be made available here as they become accessible.

Residents and stakeholders are encouraged to complete the **Hazard Mitigation Survey**, which will help the Planning Team better

Flyer

CITY OF SIERRA MADRE

Hazard Mitigation Plan

TAKE THE HAZARD MITIGATION SURVEY TO HELP SHAPE THE PLAN

The City of Sierra Madre is currently updating its **Local Hazard Mitigation Plan (LHMP)**, and community involvement is essential in guiding efforts to strengthen resilience against major disasters. This updated plan will help the City evaluate and reduce risks from natural hazards, improve existing strategies, and develop new actions to protect lives and property.



To learn more and stay informed, visit the City's Hazard Mitigation Planning website for project materials, meeting information, and updates.

https://www.sierramadreca.gov/HMP

We're Committed to Community Involvement and Need Your Input.

Participate in the survey on SurveyMonkey
https://www.surveymonkey.com/r/9WW2FVK or scan the QR code

Stay informed & participate!
Together, we can build a safer, more resilient Sierra Madre.

For any questions or further assistance, please contact
Amy Hsu, Fire Department Administrative Analyst,
at (626) 836-0246 or via email at ahsu@sierramadreca.gov.

Flashcards

WHAT IS HMP

- Long-term strategy for reducing risks from disasters
- Updates every 5 years.
- Identify hazards that threaten Sierra Madre
- Assess who and what is at risk
- Develop actionable solutions to prevent or reduce future damage

WHY

- Saves lives and protects property
- Helps us build a safer community
- Helps us recover faster from future events
- Lower community-wide risk
- Improve emergency communication and planning
- Qualify for state and federal grant funding

HAZARDS

- Wildfires
- Earthquakes
- Floods
- Windstorms
- Power Outages
- Drought
- Landslides

Critical facilities—like fire station, schools, and reservoirs—are assessed for each of these risks

KEY COMPONENTS

- Hazard Identification & Risk Assessment
- Vulnerability Analysis – what's most at risk (people, property, infrastructure)
- Mitigation Goals & Actions – strategies to reduce risks
- Implementation Strategy – how and when actions will be carried out
- Public Participation – YOUR input helps shape this plan

WHAT IS MITIGATION

- Taking action before disaster strikes
- Creating defensible space around homes
- Upgrading storm drains to prevent flooding
- Retrofitting buildings for earthquakes
- Installing backup power systems
- and more

BENEFITS

- Safer homes and infrastructure
- Faster disaster recovery
- Reduces long-term recovery costs
- Guides improvements in infrastructure and emergency response
- Access to state and federal disaster funds

YOUR ROLE

- Take the 5-minute community survey

www.surveymonkey.com/r/9WW2FVK

- Share your hazard concerns and priorities
- Sign up for NIXLE & Smart911
- Join Fire Safe Council (gavinsmfsc@icloud.com)
- Attend public meetings

INFO

- www.sierramadreca.gov/HMP
- fire@sierramadreca.gov
- 626-836-0246

City of Sierra Madre Hazard Mitigation Survey

What is a Local Hazard Mitigation Plan?

A Local Hazard Mitigation Plan is a framework that guides our community in making decisions and developing policies to reduce or eliminate risks to life and property. The plan identifies the types of natural hazards that threaten our community, evaluates our vulnerability to those threats, and outlines a strategy to reduce or eliminate the risk posed by those threats.

Why is my input needed?

In order to identify and plan for future disasters, we need your feedback. The City wants to hear your experiences and priorities for our community.

How long will the survey take?

The survey should take approximately 10 minutes to complete and is anonymous. Your information will be kept confidential. The results of the survey will be included within the plan.

1. Do you (check all that apply)

- ☐ Live in the jurisdiction
- ☐ Work in the jurisdiction

2. What is your age group?

- ○ Under 18
- ○ 18-24
- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65+
- ○ prefer not to answer

3. If a large earthquake were to strike tomorrow...

- ○ I feel confident that I know how to protect myself during an earthquake
- ○ I am unsure how to protect myself during an earthquake
- ○ Other (please specify)

4. How prepared is your household for a natural hazard (for example, wildfire, flood, earthquake) on a scale of 1 to 5 with 1 being not prepared and 5 being very prepared?

1 3 5

5. The City's Mitigation Planning Team has identified a range of natural hazards that could pose a threat to the City. Select the one natural hazard that concerns you the most?

- ○ Earthquake
- ○ Drought
- ○ Flood
- ○ Landslide
- ○ Power Outage
- ○ Wildfire
- ○ Windstorm

6. What steps has your household taken to Mitigate against natural hazards? (Check all that apply)

- ☐ Bought a backup generator
- ☐ Trim trees to prevent limbs from falling onto the house during storms
- ☐ Anchor water heaters and other large appliances to prevent tipping
- ☐ Bought earthquake and/or flood insurance
- ☐ Install automatic shutoff valves for gas and water
- ☐ Other (please specify)

7. According to FEMA's Guide for Expanding Mitigation: Making the Connection to Equity, social vulnerability is defined as the potential for loss within an individual or social group. The term recognizes that some traits influence an individual's or group's resilience. This is their ability to prepare, respond, cope or recover from an event. Please select if you fall into any of the following groups.

- ☐ Low socioeconomic status
- ☐ People of color
- ☐ Tribal and indigenous communities
- ☐ Women
- ☐ Members of the LGBTQ+ community
- ☐ People experiencing homelessness or displacement
- ☐ Rural communities
- ☐ The elderly and youth
- ☐ Groups with limited English proficiency
- ☐ Service workers and migrant laborers
- ☐ Those with limited cognitive or physical abilities
- ☐ Institutionalized populations, such as those in prisons and nursing homes
- ☐ Renters
- ☐ Those without access to personal transportation

8. Choose the ways you prefer to seek information about how to make your home and neighborhood more resilient from hazards?

- ○ Social media (X, Facebook, Instagram)
- ○ Local Government Website
- ○ Community Notification (Nixle)
- ○ Other (please specify)

9. Please provide any additional comments or insight below into how local natural hazards should be mitigated.

10. If you have any questions or additional information you would like to share regarding local natural hazards, we invite you to provide your information. This survey and your comments are completely confidential.

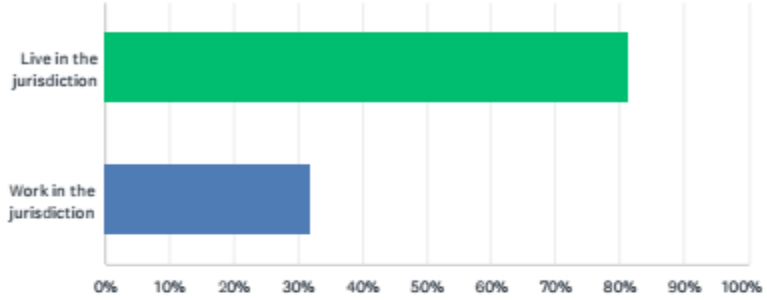
11.
If you would like to stay up to date on future hazard mitigation and/or
emergency management efforts in the City, we invite you to provide your email address.

Survey Monkey Results

City of Sierra Madre Hazard Mitigation Survey

Q1 Do you (check all that apply)

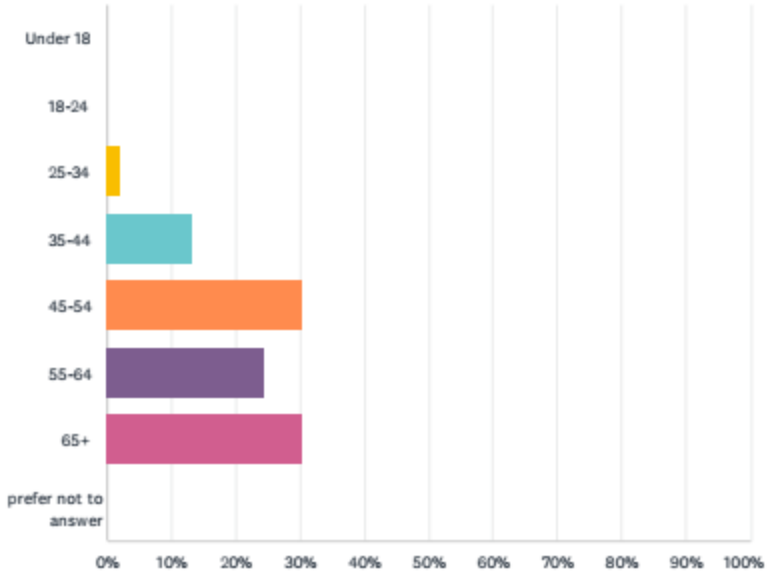
Answered: 53 Skipped: 0



ANSWER CHOICES	RESPONSES	
Live in the jurisdiction	81.13%	43
Work in the jurisdiction	32.08%	17
Total Respondents: 53		

Q2 What is your age group?

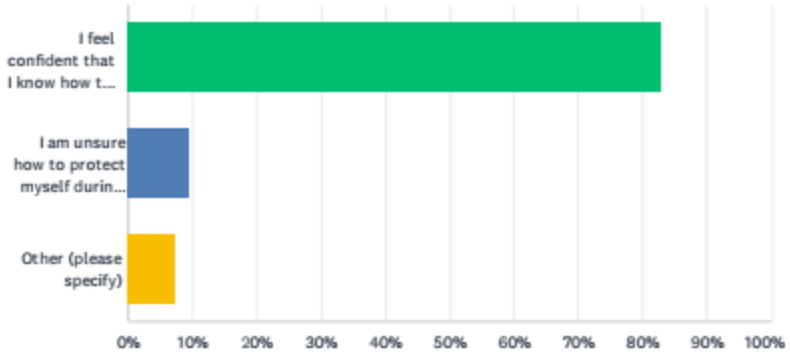
Answered: 53 Skipped: 0



ANSWER CHOICES	RESPONSES	
Under 18	0.00%	0
18-24	0.00%	0
25-34	1.89%	1
35-44	13.21%	7
45-54	30.19%	16
55-64	24.53%	13
65+	30.19%	16
prefer not to answer	0.00%	0
TOTAL		53

Q3 If a large earthquake were to strike tomorrow...

Answered: 53 Skipped: 0

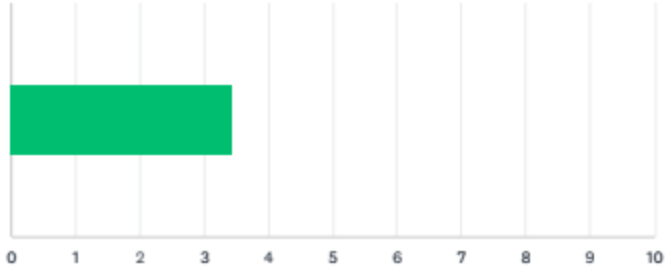


ANSWER CHOICES	RESPONSES	
I feel confident that I know how to protect myself during an earthquake	83.02%	44
I am unsure how to protect myself during an earthquake	9.43%	5
Other (please specify)	7.55%	4
TOTAL		53

#	OTHER (PLEASE SPECIFY)	DATE
1	Depends	5/21/2025 10:28 PM
2	I know all the rules - but no one is ready for a major earthquake	4/14/2025 12:02 PM
3	I am somewhat prepared but know local resources would be impacted	4/1/2025 7:10 PM
4	confident in a small earthquake - not confident in a large one	3/18/2025 11:40 AM

Q4 How prepared is your household for a natural hazard (for example, wildfire, flood, earthquake) on a scale of 1 to 5 with 1 being not prepared and 5 being very prepared?

Answered: 53 Skipped: 0



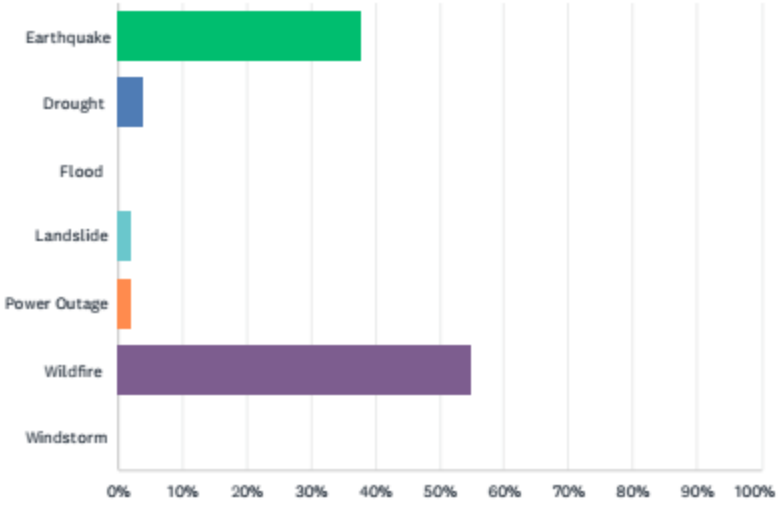
ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	3	182	53
Total Respondents: 53			

#		DATE
1	4	6/10/2025 4:13 PM
2	3	6/2/2025 5:01 PM
3	5	6/2/2025 8:25 AM
4	4	6/1/2025 5:55 PM
5	4	6/1/2025 3:46 PM
6	4	6/1/2025 1:17 PM
7	3	6/1/2025 10:07 AM
8	3	6/1/2025 9:30 AM
9	3	5/27/2025 3:47 PM
10	3	5/27/2025 2:24 PM
11	3	5/21/2025 10:28 PM
12	4	5/21/2025 10:05 PM
13	4	5/21/2025 9:34 PM
14	3	5/18/2025 3:41 PM
15	2	5/2/2025 10:57 AM
16	3	4/21/2025 8:42 PM
17	3	4/21/2025 8:57 AM
18	4	4/14/2025 12:02 PM

19	3	4/10/2025 10:55 AM
20	3	4/3/2025 1:11 AM
21	3	4/2/2025 2:37 PM
22	4	4/1/2025 7:10 PM
23	3	3/31/2025 8:42 AM
24	3	3/25/2025 5:42 PM
25	3	3/24/2025 7:25 PM
26	3	3/24/2025 3:14 PM
27	4	3/24/2025 3:02 PM
28	3	3/24/2025 1:13 AM
29	4	3/22/2025 10:34 AM
30	3	3/21/2025 1:27 AM
31	4	3/20/2025 12:11 PM
32	4	3/19/2025 6:13 PM
33	4	3/19/2025 12:09 PM
34	3	3/19/2025 10:31 AM
35	4	3/18/2025 5:16 PM
36	3	3/18/2025 4:07 PM
37	4	3/18/2025 4:05 PM
38	2	3/18/2025 4:04 PM
39	3	3/18/2025 3:20 PM
40	4	3/18/2025 2:59 PM
41	4	3/18/2025 2:25 PM
42	5	3/18/2025 2:08 PM
43	3	3/18/2025 12:45 PM
44	2	3/18/2025 12:21 PM
45	4	3/18/2025 12:19 PM
46	4	3/18/2025 12:01 PM
47	3	3/18/2025 11:40 AM
48	3	3/18/2025 11:40 AM
49	4	3/18/2025 11:11 AM
50	4	3/17/2025 2:08 PM
51	5	3/17/2025 10:13 AM
52	2	3/13/2025 8:23 AM
53	3	3/12/2025 8:15 PM

Q5 The City's Mitigation Planning Team has identified a range of natural hazards that could pose a threat to the City. Select the one natural hazard that concerns you the most?

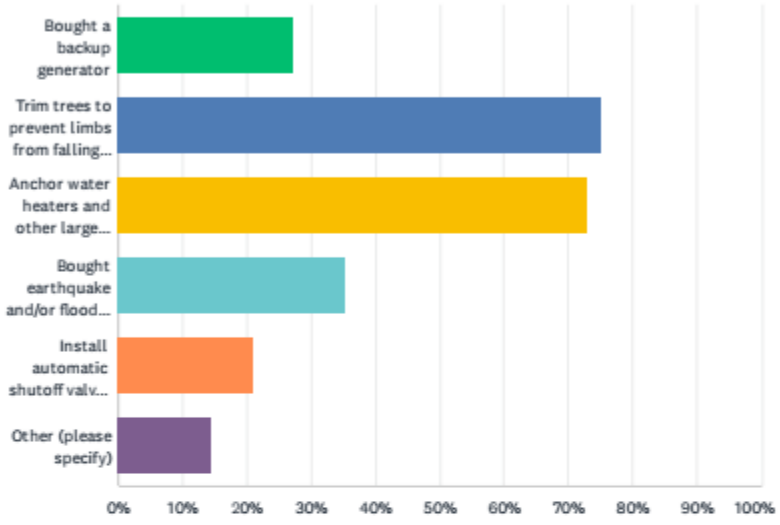
Answered: 53 Skipped: 0



ANSWER CHOICES	RESPONSES	
Earthquake	37.74%	20
Drought	3.77%	2
Flood	0.00%	0
Landslide	1.89%	1
Power Outage	1.89%	1
Wildfire	54.72%	29
Windstorm	0.00%	0
TOTAL		53

Q6 What steps has your household taken to Mitigate against natural hazards? (Check all that apply)

Answered: 48 Skipped: 5



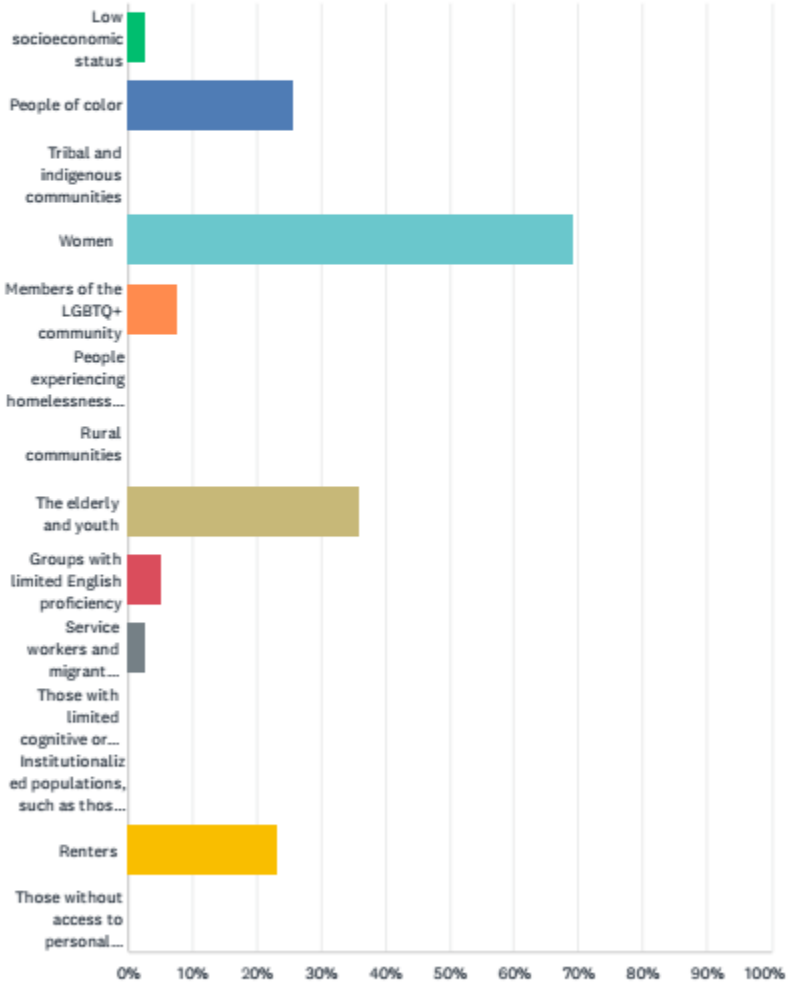
ANSWER CHOICES	RESPONSES	
Bought a backup generator	27.08%	13
Trim trees to prevent limbs from falling onto the house during storms	75.00%	36
Anchor water heaters and other large appliances to prevent tipping	72.92%	35
Bought earthquake and/or flood insurance	35.42%	17
Install automatic shutoff valves for gas and water	20.83%	10
Other (please specify)	14.58%	7
Total Respondents: 48		

#	OTHER (PLEASE SPECIFY)	DATE
1	Brace & Bolt Seismic retrofit of house foundation	6/1/2025 5:55 PM
2	Have my go bag and always have bottled water (don't trust SM water anyway), try to get City Council to actually look out for residents' safety	4/14/2025 12:02 PM
3	implemented home hardening steps; utilized plastic sheeting and sandbags to mitigate debris flow; organized important documents and items for evacuation; utilize apps that provide hazard notifications	4/1/2025 7:10 PM
4	Store 5 days of drinking water	3/22/2025 10:34 AM
5	na	3/19/2025 10:31 AM

6	fine screening openings to the home, buying a pump to pump pool water, removing vegetation within 5 feet of home.	3/18/2025 5:16 PM
7	Solar Panels and Batteries	3/18/2025 11:11 AM

Q7 According to FEMA's Guide for Expanding Mitigation: Making the Connection to Equity, social vulnerability is defined as the potential for loss within an individual or social group. The term recognizes that some traits influence an individual's or group's resilience. This is their ability to prepare, respond, cope or recover from an event. Please select if you fall into any of the following groups.

Answered: 39 Skipped: 14

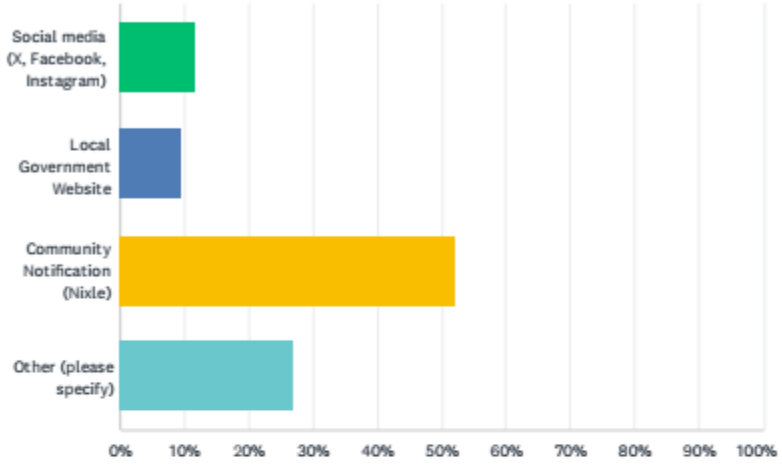


City of Sierra Madre Hazard Mitigation Survey

ANSWER CHOICES	RESPONSES	
Low socioeconomic status	2.56%	1
People of color	25.64%	10
Tribal and indigenous communities	0.00%	0
Women	69.23%	27
Members of the LGBTQ+ community	7.69%	3
People experiencing homelessness or displacement	0.00%	0
Rural communities	0.00%	0
The elderly and youth	35.90%	14
Groups with limited English proficiency	5.13%	2
Service workers and migrant laborers	2.56%	1
Those with limited cognitive or physical abilities	0.00%	0
Institutionalized populations, such as those in prisons and nursing homes	0.00%	0
Renters	23.08%	9
Those without access to personal transportation	0.00%	0
Total Respondents: 39		

Q8 Choose the ways you prefer to seek information about how to make your home and neighborhood more resilient from hazards?

Answered: 52 Skipped: 1



ANSWER CHOICES	RESPONSES	
Social media (X, Facebook, Instagram)	11.54%	6
Local Government Website	9.62%	5
Community Notification (Nixle)	51.92%	27
Other (please specify)	26.92%	14
TOTAL		52

#	OTHER (PLEASE SPECIFY)	DATE
1	Email. I would say Nixle but it is too tied in with Arcadia	6/10/2025 4:13 PM
2	Door to door alerts during emergency situations	6/1/2025 10:07 AM
3	All of the above	6/1/2025 9:30 AM
4	Written Guidelines sent with Water/Trash bill	5/27/2025 3:47 PM
5	Perhaps Nixle that then guides us to city website	5/21/2025 10:28 PM
6	govt apps	5/21/2025 10:05 PM
7	Email	4/14/2025 12:02 PM
8	I utilize all of the above to gather information and also participate in a neighborhood group	4/1/2025 7:10 PM
9	na	3/19/2025 10:31 AM
10	research online	3/18/2025 5:16 PM

11	All of the above	3/18/2025 3:20 PM
12	personal engagement	3/18/2025 2:08 PM
13	FEMA	3/18/2025 11:11 AM
14	This shouldn't be an either/or but several ways to get information.	3/17/2025 2:08 PM

Q9 Please provide any additional comments or insight below into how local natural hazards should be mitigated.

Answered: 25 Skipped: 28

#	RESPONSES	DATE
1	Get more code enforcement 7 days a week. too often rogue rebuilding is going on Fridays - Sunday . All construction shouldn't start before 8(am is too early when it goes on for a year) and stop at 6PM so we can eat dinner in peace. PLEASE	6/10/2025 4:13 PM
2	Encourage residents to apply for the CEA Earthquake Retrofit Grant.	6/1/2025 5:55 PM
3	As renters we are POWERLESS to employ REAL mitigation efforts. Our landlord and is not interested in protecting either our safety or the safety of her property. She REFUSES to do even the most basic of repairs. We are on our own !!!!!	6/1/2025 3:46 PM
4	1. Plan for a major wind and fire event, followed by mud every 10 years. Planning prioritization should place fire hardening first. We are one community, if we don't encourage everyone to reduce their risk, our risk of being the next Altadena is high (way too high). 2. Plan and manage public lands so that the threat from public lands (overgrown fuel, etc.) is addressed and the community is aware of those plans	5/27/2025 3:47 PM
5	education	5/21/2025 10:28 PM
6	Update our tree ordinances to prevent palm trees being planted in our city...	5/21/2025 10:05 PM
7	We need to increase the communication on hazards. We should leverage opportunities to incentivize people to increase their preparedness. We should communicate this on a quarterly basis.	5/21/2025 9:34 PM
8	What happened to the Fire Safe Council? So many residents were interested - now not a word.	4/14/2025 12:02 PM
9	More regular information from city/county, reminders to prepare	4/3/2025 1:11 AM
10	Extreme heat should be another hazard to which the City of Sierra Madre has a response. Plan for designated cooling centers. Not everyone has access to air conditioning or can afford to run their cooling systems.	4/1/2025 7:10 PM
11	Undergrounding utilities and other infrastructure improvements (cost upfront but save communities later). Increasing social connection to build resilience.	3/22/2025 10:34 AM
12	Require households to Trim foliage and trees and parkway trees.	3/21/2025 1:27 AM
13	The City should take advantage of the current situation of having recent disaster events and drive momentum towards preparedness.	3/19/2025 12:09 PM
14	There is only a single escape path from the upper canyon. There used to be accessible stairs over by the dam but the have been blocked by gates on both ends. Reopening this or creating some other path into the lower canyon could prevent major loss of life.	3/19/2025 10:31 AM
15	power should be shut off in high risk fire situations.	3/18/2025 5:16 PM
16	9.1. Wildfires (High-Risk Hazard) 9.1.1 Vegetation Management / Defensible Space Inspections: Expand public outreach and inspection programs for brush clearance and defensible space, especially in hillside neighborhoods. Consider incentives for compliance. 9.1.2 Community Risk Reduction Officer: Utilize this role (proposed in the Fire Department) to conduct fire safety education, enforce fire code compliance, and coordinate fuel reduction projects. 9.1.3 Fire-Resistant Infrastructure: Promote fire-hardened building materials and retrofits in vulnerable zones through updated codes and potential grant support (e.g., FEMA's Hazard Mitigation Grant Program). 9.2. Earthquakes 9.2.1 Soft-Story Retrofit Program: Develop and implement a retrofit ordinance or voluntary incentive program for soft-first-story buildings (deferred but critical). 9.2.2 Critical Facility Resilience: Assess City Hall, Fire, and Police for seismic upgrades. Explore grant funding for structural improvements. 9.2.3 Public	3/18/2025 4:04 PM

	Preparedness: Expand CERT (Community Emergency Response Team) training and promote home preparedness workshops. 9.3. Flooding / Mudslides 9.3.1 Debris Basin Maintenance: Continue contracts (e.g., Northwest Excavating) for cleanouts before storm seasons. Coordinate closely with LA County Flood Control. 9.3.2 Stormwater Management: Evaluate infrastructure capacity for intense storm events. Implement green infrastructure (bioswales, retention basins) to reduce surface runoff. 9.3.4 Community Alerts: Improve early warning systems and public awareness for areas prone to debris flow or mudslide risk. 9.4 Power Outages (PSPS Events) 9.4.1.1 Backup Power for Critical Facilities: Ensure generators are operational and maintained for emergency services and shelters. 9.4.1.2 Public Charging Sites: Establish resilience hubs or designate locations where residents can access power, cooling/heating, and information during extended outages. 9.5. Windstorms 9.5.1 Urban Forestry Management: Regularly inspect and trim public trees, especially near power lines and public infrastructure. 9.5.2 Infrastructure Resilience: Secure public signage, utilities, and equipment against high-wind events to prevent service disruptions. 9.5.3 Insight: Cross-Cutting Strategies 9.5.4 Social Vulnerability Index (SVI): Use SVI data to prioritize equity in mitigation, ensuring at-risk populations receive tailored outreach and support. 9.5.5 Public Engagement: Leverage the City's Hazard Mitigation Plan website and survey tools to maintain transparency and encourage community-driven solutions. 9.5.6Grants and Funding: Position the City to access state and federal mitigation grants by updating plans and documenting vulnerabilities (e.g., FEMA BRIC, CalOES funds).	
17	We need a city wide plan that residents understand. We need county level standards. Fire needs to enforce fire codes and safety - like cutting back trees	3/18/2025 3:20 PM
18	Firetrucks should actually come up into the canyons, or fire department should at least be willing to help. Or, if not, provide neighbors with resources to help themselves	3/18/2025 2:59 PM
19	Assistance from Fire Dept and/or C C C removing dead/burnt wood from city property above our home but below the Mt Wilson Trail.	3/18/2025 2:25 PM
20	through joint collaboration with other larger agencies.	3/18/2025 2:08 PM
21	NA	3/18/2025 12:01 PM
22	More proactive work by first responders.	3/18/2025 11:11 AM
23	Non-profit groups should be encouraged to join the Fire Safe Council and CERT. The City needs to sponsor such training programs by advertising including information at Council meetings and other city meetings.	3/17/2025 2:08 PM
24	With funding resources, such as FEMA and Cal OES.	3/17/2025 10:13 AM
25	Power should be turned off when strong winds are predicted.	3/13/2025 8:23 AM

Q10 If you have any questions or additional information you would like to share regarding local natural hazards, we invite you to provide your information. This survey and your comments are completely confidential.

Answered: 12 Skipped: 41

#	RESPONSES	DATE
1	Do better monitoring of the trucks hauling trash from clean ups or coming into town. Stop them coming in as early as 5 AM. Enough is enough. Make the take alternate routes and not ALL on Michillinda or use Grandview to race around. Make them use Sunny side, Sierra Madre Blvd, Highland Alegria	6/10/2025 4:13 PM
2	We no longer have a fire department that is willling to fight the fires. Get a fire department that will fight fires.	6/2/2025 5:01 PM
3	There should be some way for the city to force landlords to be at least minimally compliant with state standards without the landlords retaliating against tenants by either raising the rent or evicting them on false grounds. This scenario was common prior to the fire, but now that housing is so in demand post Eaton Fire, tenants are at the mercy of landlords good and bad.	6/1/2025 3:46 PM
4	What is our community earthquake plan? Can we share a plan for core disasters with the community in advance of any event?	5/27/2025 3:47 PM
5	Concerns for the trees in Sierra Madre	5/21/2025 10:28 PM
6	I hope the City of Sierra Madre has implemented debriefings from recent hazardous events and updated its emergency planning documents. I suspect we have learned a great deal.	4/1/2025 7:10 PM
7	We would love to know what the City is doing in general to protect against wildfires and what we can expect from insurance companies and the like - will our properties be insurable? What is the current anticipated fire line etc? Steph Carroll 168 E. Sierra Madre Blvd, 310 570 7853,	3/24/2025 3:14 PM
8	I am proud of how the city and its agencies performed during the Eaton Fire. There is no way a small city can be 100% prepared or self-sufficient, but long-standing relationships with partners made the difference.	3/22/2025 10:34 AM
9	Sierra Madre, like many small cities, relies heavily on federal support through FEMA for both pre-disaster mitigation funding (e.g., Hazard Mitigation Grant Program, Building Resilient Infrastructure and Communities [BRIC]) and post-disaster recovery assistance. The elimination of FEMA would have a significant impact on our ability to implement and fund critical mitigation strategies outlined in the City's Hazard Mitigation Plan (HMP). This would include: - Loss of access to federal grants for wildfire risk reduction, seismic retrofits, and flood mitigation. - Reduced capacity to recover financially after major disasters such as earthquakes, wildfires, or mudslides. - Increased burden on local resources, requiring the City to rely solely on limited General Fund revenues or seek state-level support, which may not fully replace FEMA's role. Without FEMA, cities like ours may need to restructure emergency planning to focus more on cost-effective, locally funded efforts, increase regional collaboration, and advocate for state contingency funding. This would likely slow or scale down some of our planned mitigation projects, leaving certain high-risk areas more vulnerable. Maintaining FEMA's support is critical for small communities to remain resilient, responsive, and fiscally prepared for major hazard events.	3/18/2025 4:04 PM
10	NA	3/18/2025 12:01 PM
11	N/A	3/17/2025 10:13 AM
12	Provide adequate emergency services. In the case of the Eaton Fire, SMFD told me they could not send trucks up my road because it was too narrow. So if a taxpayer in the city cannot receive emergency services, there's a problem. If there are streets in the city that fire trucks or emergency service crews cannot access, there's city needs to invest in a fleet of smaller trucks, for example.	3/13/2025 8:23 AM

Village View Newsletter – May 2025

CITY OF SIERRA MADRE

Hazard Mitigation Plan

Take the Hazard Mitigation Survey to Help Shape the Plan





https://www.surveymonkey.com/r/9WW2FVK

Stay informed & participate!
Together, we can build a safer, more resilient Sierra Madre.

To Learn More About the Hazard Mitigation Plan Update
https://www.sierramadreca.gov/HMP

Village View Newsletter – June 2025

Mission

The Sierra Madre Fire Department is committed to protecting life, property, and our environment through compassionate service.

Vision

The Sierra Madre Fire Department is dedicated to remaining a progressive, cost-effective, and innovative fire department that ensures a safe and inclusive environment for our community through exceptional customer service.

Core Values

Honor – adhering to the highest standard, both morally and ethically.
Integrity – based on trust and accountability through service.
Respect – to self and community, maintaining a department of teamwork and growth.
Compassion – treating everyone with kindness and empathy.

Contact Us

For emergencies, please dial 9-1-1
Sierra Madre Fire Department
242 W. Sierra Madre Blvd.
Sierra Madre, CA 91024
Business Line – (626) 355-3611
E-mail – fire@sierramadreca.gov

Sign Up For Emergency Alert:







First Draft Plan Outreach -September 24, 2025

Home / Residents / Emergency Management / Hazard Mitigation Plan

Hazard Mitigation Plan

HAZARD MITIGATION PLAN



City Of Sierra Madre Hazard Mitigation Plan Update– Public Review Draft Now Available

The City of Sierra Madre is in the process of updating its **Hazard Mitigation Plan (HMP)** to enhance community resilience and maintain eligibility for mitigation-related funding before and after major disasters. This plan is updated every five years to reassess risks, refine existing strategies, and develop new actions to reduce the impact of future disasters.

As part of the 2025 HMP update, the Planning Team has identified six key hazards that pose risks to Sierra Madre: earthquakes, drought, flooding, power outages, wildfires, and windstorms. The next phase of the planning process includes assessing the vulnerabilities and potential impacts of these hazards. This involves evaluating critical infrastructure at risk and updating mitigation strategies to reduce future threats.

The First Draft of the Hazard Mitigation Plan is now available for public review. We invite residents, stakeholders, and partner agencies to review the draft and share their feedback by emailing **fire@sierramadreca.gov** no later than October 8, 2025.

Planning Team Meeting Minutes

February 11, 2025

Minutes
PowerPoint attached separately
City of Sierra Madre
Planning Team Meeting #1 (Virtual)

Attendees
Carolyn Harshman (Emergency Planning Consultants)
Brent Bartlett, Chair
Anthony Rainey
Clare Lin
Laura Aguilar
Miguel Hernandez
Bob Spears

1. Reviewed the purpose of hazard mitigation and examples of mitigation activities.

2. Discussed the concepts and terms related to hazard mitigation planning.

3. Project Schedule – Five virtual meetings lasting 2-hours will be held on a monthly basis.

4. Community Outreach Strategy – New FEMA regulations require a robust outreach campaign. Carolyn provided details on need to develop a stakeholder list and build an outreach strategy that ensures contact with the public and socially vulnerable populations.

5. Request for Pertinent Documents:

6. Capital Improvement Program, Strategic Plan, Emergency Response Plan.

February 19, 2025

Minutes
PowerPoint attached separately
City of Sierra Madre
Planning Team Meeting #2 (Virtual)
February 19, 2025

Attendees
Carolyn Harshman (Emergency Planning Consultants)
Brent Bartlett, Chair
Anthony Rainey
Clare Lin
Gustavo Barrientos
James Carlson
Jose Reynoso
Miguel Hernandez
Amy Hsu

1. Recapped Meeting #1 including project schedule and community outreach strategy.

2. Hazard Overview - Discussed hazards identified in the Los Angeles County's All-Hazard Mitigation Plan, the City's General Plan - Safety Element, and the State Hazard Mitigation Plan. The Team used the Calculated Priority Risk Index to rank hazards that will be profiled in the plan's update. Ranking yielded the following as "high" hazard: earthquake, wildfire, power outage, and flood. Windstorm, landslide, and drought were rated as "medium".

3. Introduced draft Capability Assessment drawn from information on the District's website. Minor changes were provided by the Team.

4. Introduced need to update the Critical Facilities List.

5. Introduced need to update the Mitigation Actions Matrix. Team members were asked to confirm details including timeline, funding source, status, etc. for projects that would likely be assigned to their department.

March 26, 2025

Minutes
PowerPoint attached separately
City of Sierra Madre
Planning Team Meeting #3 (Virtual)
March 26, 2025

Attendees
Carolyn Harshman (Emergency Planning Consultants)
Brent Bartlett, Chair
Anthony Rainey
Clare Lin
James Carlson
Miguel Hernandez
Bob Spears
Amy Hsu

1. Recapped Meeting #2 including profiled hazards, Capability Assessment, Critical Facilities List, and Mitigation Actions Matrix.

2. Team members provided updates to Carolyn on each of the items.

3. Amy Hsu is in charge of the community outreach activities. She distributed a Public Forum Tracker for Team members to use following delivery of a briefing or flyers to public venues.

4. Carolyn summarized information gathered to date in Survey Monkey.

Public and Stakeholder Input Documentation

It's important to note that both of these documents mention the City of Sierra Madre Eaton Fire Response After Action Report and Improvement Plan (June 30, 2025). Although the AAR/IP was not yet complete when the Initial Draft Plan was provided to the Planning Team, relevant contents and implementation measures have been added to the Second Draft Plan. The Planning Team wishes to express its gratitude to both authors for their time, knowledge, and dedication to the safety and well-being of the City of Sierra Madre.

Author: Bob Spears – October 7, 2025

LHMP Feedback

Page 16 & 17	No Public and Stakeholder input entered
Page 27	Add "2011" to Previous Significant event for windstorm See page 43 paragraph 4 for reference.
Page 29	Consider adding "Modified" to the title as in Modified Mercalli Scale. See Appendix 2
Page 46	One of the local conditions that magnifies Landslides, Mudflows, Flooding, etc. in Sierra Madre is the angle of repose of the San Gabriel Mountains. (see Appendix 1) Above Sierra Madre the angle is mostly above 65% which increases the velocity of any debris or water moving downhill into the town. The same amount of rainfall in most cities will not have the impact that it does above Sierra Madre.
Page 47	Add "pm" after the 6 in paragraph 2
Page 56	Rather than reference the fact that "garbage bins were pushed out and damaged" in the February debris flow, reference how much debris (truckloads, tons, cubic feet) was removed by the City AND by Los Angeles County Flood Control. (see Appendix 3) The trucks were working for many weeks to clear the debris. Much more impactful than damaged trash bins.
Page 72	The Planning Dept says that over 75% of the buildings in Sierra Madre were built before 1975. There have been many, many updates to the UBC since then. This also means that seismic reinforcement was not as common. These factors lead to a much more vulnerable housing stock during an earthquake.
Page 78	In paragraph 1 please add that in Sierra Madre the water department is a city operated utility. Sierra Madre must manage water usage at a local level so the response to drought conditions is not the responsibility of another outside utility.

Page 78	In Paragraph 5 please reference the “angle of repose” from page 46.
Page 80	In Paragraph 1 please add the fact that two Sierra Madre city operated historical structures, Lizzie’s Traill Inn and museum and the Richardson House are in the “designated fire hazard severity zones”.
Page 82	Please add “of casual dining restaurants” between “Flooding” and “is” in paragraph 5. The current sentence is misleading.
Page 84	Please add “of local convenience stores” between “Flooding” and “is” in paragraph 3. The current sentence is misleading.
Page 91	Please add the fact that two Sierra Madre city operated historical structures, Lizzie’s Traill Inn and museum and the Richardson House are in the “designated fire hazard severity zones”.
Page 92	In Paragraph 2 please include the fact that Sierra Madre has two public hiking trails that begin in town and go through the national forest to Mt. Wilson. These trails are used by thousands of hikers and runners every year.
Page 94	Sierra Madre hosts the second oldest trail race in California every May and this year it was cancelled when landslides blocked the Mount Wilson Trail. The race is a major city event.
Page 95	Please add that both the Bailey Canyon Trail, Bailey Canyon Wilderness Park and the Mount Wilson Trail were closed this year because of wildfire damage. The trails are used by thousands of hikers and runners every year; the park is a Sierra Madre City park.
Page 104	Under Emergency Services, please add “update the EOP and hazard annexes”
Page 109	Second Action Item. Shouldn’t it say, “Area C and D”?

Appendix 1

The angle of repose in the San Gabriel Mountains is a critical geological concept that varies across the range, with many slopes being at or even steeper than the angle of repose for their constituent materials. The region's active tectonics and frequent fires make it prone to destabilized slopes and catastrophic debris flows. [1, 2, 3, 4, 5]

Angle of repose and slope steepness

- **Highly varied:** The exact angle of repose, defined as the steepest angle at which loose material can remain stable without moving, varies locally throughout the San Gabriel Mountains depending on factors like soil type, rock strength, and shape.
- **Average slope:** Studies have shown that the average slope gradient in the San Gabriels is often well over 30° to 45°, with some research citing an average of over 65% (approximately 33°).
- **Over steepened slopes:** Due to rapid tectonic uplift along faults like the Sierra Madre, many slopes in the mountains are considered "over steepened"—exceeding the natural angle of repose.
- **Range of slope angles:** While average slopes are very steep, catchment-mean slopes across the range can vary considerably, from around 15° to over 48°. Slopes of bare bedrock are often steeper than those that are soil-mantled. [1, 2, 3, 4, 6, 7, 8]

Contributing factors to slope instability

The San Gabriel Mountains' geology creates a dangerous combination of factors that contribute to high erosion rates and slope instability.

- **Earthquake activity:** The range is at the intersection of the Pacific and North American plates along the San Andreas Fault. Uplift from faults, like the one that caused the 1971 Sylmar earthquake, shatters the bedrock, making it prone to erosion.
- **Wildfires:** Native chaparral vegetation holds soil in place on steep slopes, but wildfires destroy it and can make the soil water-repellent (hydrophobic). This allows rain to run off the surface instead of soaking in, greatly increasing the risk of landslides and debris flows.
- **Heavy rainfall:** Once stripped of vegetation, heavy rains can saturate the soil, triggering fast-moving and destructive debris flows.

- **Oversteepening:** Because many slopes are already at or beyond their angle of repose, it takes less of a trigger to cause failure, especially after a fire. [1, 2, 5, 9, 10, 11, 12]

Impact on debris flows

The unstable nature of the San Gabriel Mountains' slopes directly results in destructive debris flows and mudslides, which are well-documented in the region's history. The combination of steep slopes, unstable soil and rock, and intense rainfall, especially after a wildfire, allows large torrents of mud and boulders to rush down canyons and impact communities below. This necessitates extensive infrastructure, such as debris basins, to manage the immense amounts of sediment. [5, 13, 14, 15, 16]

AI responses may include mistakes.

[1] https://laist.com/news/climate-environment/how-debris-flows-endanger-fire-ravaged-communities
[2] https://www.newyorker.com/magazine/1988/09/26/los-angeles-against-the-mountains-i
[3] https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2010JF001878
[4] https://www.newyorker.com/magazine/1988/09/26/los-angeles-against-the-mountains-i
[5] https://calmatters.org/environment/wildfires/2025/02/debris-flows-eaton-fire-la-montecito/
[6] https://www.sciencedirect.com/science/article/abs/pii/S0012821X19303449
[7] https://pubs.geoscienceworld.org/gsa/gsabulletin/article/136/7-8/3353/633749/Fault-activity-in-the-San-Gabriel-Mountains
[8] http://ladpw.org/wmd/watershed/sg/mp/docs/eir/04.04-Geology.pdf
[9] https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/TR035i002p00264
[10] https://calmatters.org/environment/wildfires/2025/02/debris-flows-eaton-fire-la-montecito/
[11] https://ceo.lacounty.gov/wp-content/uploads/OEM/HazardsandThreats/Landslides/HAZARDS%20AND%20THREAT%20FLOODS%20-%20MUDSLIDES%20-%20LANDSLIDES%20HISTORY.pdf
[12] https://www.ecnca.org/rocks-of-eaton-canyon/
[13] https://www.latimes.com/visuals/graphics/la-g-how-debris-flows-happen-20151016-htmlstory.html
[14] https://laist.com/news/climate-environment/how-debris-flows-endanger-fire-ravaged-communities
[15] https://pw.lacounty.gov/core-service-areas/uploads/2024/08/Sediment-Strategic-Plan-425.pdf
[16] https://www.latimes.com/california/story/2021-01-28/what-are-these-atmospheric-rivers-that-bring-heavy-rain-and-snow-to-california

Appendix 2

The Modified Mercalli Intensity (MMI) Scale is **a 12-point system used to measure the local intensity of an earthquake by assessing the observed effects on people, buildings, and the environment**. It assigns Roman numerals from I (not felt) to XII (total destruction), with higher numbers indicating greater damage and shaking. The MMI scale describes the intensity at a particular location, which can vary from place to place for the same earthquake, unlike magnitude, which measures the earthquake's total energy. [1, 2, 3, 4]

How it Works

- **Observations:** The scale relies on observable data, such as how many people felt the shaking, whether windows and dishes rattled, and the extent of damage to buildings and other structures. [2, 5]
- **Site-Specific:** Unlike magnitude, which is a single value for an entire earthquake, MMI is a measure of intensity at a specific geographic point. [1, 4]
- **Subjective Data:** Because it is based on observable effects, the MMI scale can involve subjective interpretations of the damage and felt effects. [2, 6]

Examples of MMI Levels

- **MMI I (Not felt):** Not felt by most people, except under especially favorable conditions. [5]
- **MMI IV (Light Damage):** Felt by many indoors, few outdoors. Dishes and windows disturbed; walls make cracking sounds. [3, 5]
- **MMI VI (Moderate Damage):** Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. [3, 5, 7, 8]
- **MMI X (Extensive Damage):** Most masonry and frame structures destroyed with foundations; ground badly cracked. [3, 9, 10, 11]
- **MMI XII (Total Destruction):** Total damage; waves seen on the ground surface; objects thrown into the air. [3, 12]

AI responses may include mistakes.

[1] https://abag.ca.gov/sites/default/files/making_sense_of_the_modified_mercalli_intensity_scale.pdf
[2] https://www.youtube.com/watch?v=vL0b_YIVrDE
[3] https://www.mtu.edu/geo/community/seismology/learn/earthquake-measure/intensity/
[4] https://www.thoughtco.com/mercalli-earthquake-intensity-scale-1441136
[5] https://www.scc-ares-races.org/operations/forms/go-kit-doc/mercalli
[6] https://dxs.fandom.com/wiki/Modified_Mercalli_intensity_scale

[7] https://www.scirp.org/journal/paperinformation?paperid=21664
[8] https://link.springer.com/rwe/10.1007/978-3-319-73568-9_101
[9] https://earthguide.ucsd.edu/mystery_detectives/teach/epicenter/ia_mercalli.html
[10] http://www.sdgs.usd.edu/earthquakes/mercalli.html
[11] https://www1.wsrb.com/blog/the-modified-mercalli-intensity-scale-for-earthquake-insurance-underwriting
[12] https://www.sciencedirect.com/topics/engineering/richter-scale

Appendix 3

In 2025, **over 2,500** truckloads of debris were removed from the Sierra Madre Dam debris basin, prioritizing areas affected by burn zones to mitigate mudflow risks, according to the City of Sierra Madre website. [1]

Debris Removal Details

- **Amount:** More than 2,500 truckloads of debris were cleared from the dam's debris basin. [1]
- **Reasoning:** The removal efforts focused on debris from burn zones to reduce the risk of mudflows and flooding in downstream areas. [1]
- **Context:** The 2025 effort was part of mudflow mitigation to prevent blockages in storm drains and potential property damage. [1, 2]

AI responses may include mistakes.
[1] https://www.cityofsierramadre.com/cms/One.aspx?portalId=212393&pageId=20697792
[2] https://pw.lacounty.gov/core-service-areas/uploads/2024/08/Sediment-Strategic-Plan-425.pdf

Author: Glenn Hickman – October 8, 2025

October 8, 2025

To: Fire@SierraMadreCa.gov
City of Sierra Madre
Fire Department
242 W. Sierra Madre Boulevard
Sierra Madre, Ca. 91024

Attn: **Brent Bartlett, Fire Chief, Planning Team Chair**
bbartlett@sierramadreca.gov
626.355-3611 x601

From: **Glenn Hickman**
480 Fairview Ave.
Sierra Madre, Ca. 91024

Cc: **City Manager: Michael Bruckner:** mbruckner@sierramadreca.gov
City Clerk: Laura Aguilar: publiccomment@cityofsierramadre.com

Re: **Sierra Madre Hazard Mitigation Plan (HMP) 2025 Draft**
Hickman Comments

Dear Chief Bartlett,
Thank You for the opportunity to provide public comment as found below. I find it remarkable Chief Bartlett, that you, our City Leadership and the HMP Planning Team have accomplished so much in an area with such complexity. Please retain a copy for the administrative record **and redact my personal information where required by statute**. A written reply to my comments is always welcome.

There are numerous instruments used by a City to address Risk, and as such my comments might be for consideration for integration into other Risk related documents such as amendments to: 1) the City of Sierra Madre Eaton Fire Response After Action Report and Improvement Plan, June 30, 2025 (which indicates "For Official Use Only" but appears to have been posted for release for public comment.....but unclear If it was released for public comment); 2) the Sierra Madre Fire Department Master Plan (part of the SMFD Annual Report 2024-2025) and other City Documents.

Public Outreach: Outreach Methods and Activities (Element A: Planning Process: pg. 16) & Use of Exiting Data (pg. 18): Consider Integration of the **City of Sierra Madre Eaton Fire Response After Action Report and Improvement Plan, June 30, 2025**, to additionally support the HMP planning and implementation process. It appears to have been overlooked. It should be reviewed to determine if specific content therein might be for incorporation into the HMP, or by specific reference to source the After Action Report in the HMP.

- In the After Action Report there is very relevant actionable and accountable content. Noteworthy, the After Action Report expands the HMP Public Outreach: Public Comment. I would argue that City Stakeholders may have inadvertently thought the May 19 and June 10, 2025 Public Meetings "Sierra Madre Listening ....." for After Action, after the Eaton Fire and Mud Flows, represented respective Public Comment regarding City Hazard and visa versa. The MHP, Survey Monkey with only 53 responses out of 11268 people appears statistically low and any other credible sources should be considered to only enable the HMP to be the better.

- The After Action Report unfortunately is remiss to have addressed (and as such should be revised): 1) the numerous Sierra Madre Canyon Stakeholders who advised they believed to have been Underserved and at Risk, during the Eaton Fire and the subsequent mudflows. The gravity of the Public Forum comments would suggest a focused Sierra Madre Canyon specific mitigation measure(s) for inclusion into the HMP and enhanced SMFD Master Plan (ref. 2025 SMF Annual Report); and 2) my specific comments regarding the apparent inadequacy of road water supply infrastructure to fight the fire, which appears to have failed in several sections during the fire; and that northern Sierra Mader fire water pipe should be replaced as a matter of priority.

Structures: Vulnerability of Structures (Element B: Risk Assessment: pg. 75-77, Table B.11 Hazard Vulnerability to Critical and Essential Structures; pgs. 86,87; Element C: Mitigation Strategy: pg. 111-117 Earthquake Mitigation Action Items): Seismic Safety and Resilience of Buildings with Public Risk due to Seismic Earth Movement Hazard Mitigation: Concrete Ductile Frame & Masonry Infilled Reinforced Concrete Ductile Frame (not to be confused with Soft Story structural issues): The MHP appears to have minimized, and not completely and comprehensively addressed All and or Other Public Assembly – Vulnerable Structures (to earthquake, wildfire, etc. etc.): such as all Places of Worship (which Sierra Madre has many), and only singled out the Sierra Madre Playhouse and Episcopal Church of the Ascension, under the heading of "Vulnerability of Natural, Historic, and Cultural Resources". I would recommend this be re-reviewed for a more complete, coordinated and comprehensive integration of All Assembly Structures…….irrespective of critical, essential and or economic FEMA dogma……because one life lost, if it could have been avoided with best practice governance, is one too many. The impacts of my comments with findings and recommendations (cost impacts), could be offset with a long term "Transition Plan" to assist the impacted parties, like invoking a CASp ADA "Transition Plan" and cost reduction from the FEMA Grant Program.

- Several Jurisdictions (LA City for example) have incorporated Seismic Safety and Resilience Ordinances which serve as precedent and Cities leading by example. I have had professional and personal experience with Seismic Modernization Issues, noting possible exposure of $50-$100million to comply, for just one specific property in LA City which I have a personal interest in……..so I do understand the relevance to property owners.
- The 1991 Sierra Madre Earthquake, resulting from the Clamshell-Sawpit Fault, and resulting damage, including the more expansive earth movement science and risk modeling 34 years later, suggests Seismic Safety Resilience be for more detailed assessment and implementation.
    - For example: the Sierra Madre Playhouse (pg 87), Christ Church, Mater Dolorosa Passionist Retreat Center, St. Rita Catholic Church, and other structures providing public assembly uses may or may not be current with defensible best practices. Liken this to the change and evolution in governance deploying the Wild Fire Hardening with the eminent Zone Zero Public Resources Code, which I am involved at a State Level.

Landslide: Slope Stabilization at Public Roads & Sidewalks (Element B: Risk Assessment: pg. 36): The HMP does not address the Landslide Slope Stabilization Hazardous Risk at Public Road & Sidewalks in Northern Sierra Madre which might occur due to earthquake, storm water, wildfire, and possibly due to pre-existing inadequate road design and or residential slope stabilization. The Sierra Madre Canyon specifically, other Canyons and Foothill topographies at roads used for Emergency Response and Evacuation present a measurable risk not addressed, but real enough for the City of Sierra Madre to have apparently started code enforcement. It should be noted that the Wild Fire Urban Interface (WUI) legislated Public Resources Code, including the forthcoming Zone Zero language, may result in severe impacts to slope stabilization and as such impact slopes next to roads.

- Slope Stabilization at Public Road: Risk Assessment and Mitigation Plan: would be recommended, noting that AI and GIS tools, possibly CalFire's Modeling Tools……might enable a cost effective assessment and mitigation plan.
- For Example: 351 West Carter at N. Lima, the City of Sierra Madre imposed a code enforcement requirement for that individual property owner to implement a Slope Stabilization Project (2022 to 2024), at a cost of $800,000 to that property owner, to stabilize the slope adjacent to the West Carter Road, which was cut through a pre-existing slope in the 1940's, presumably by the City without road/slope stabilization at that time. This is but one example of other road/slope conditions in northern Sierra Madre which might put the City at odds with its Stakeholders.

Calculated Priority Risk Index Ranking for the City of Sierra Madre: Source: City of Sierra Madre Planning Team (Element B: Risk Assessment: pg. 24 Table B.3): The planning Team as a source for results found in Table B.3, does not appear to represent a correct statistical sampling and may render a false visual/relevance for the Reader to come to rely on. As such, the table should be removed, or clearly qualified to be a small sample opinion (not just a source reference as the SM Planning Team), or revised with proper statistically rendered metrics.

- Reading the more credible content found elsewhere in the MHP, most readers might conclude the ranking numbers for Earthquake and Wildfire should push up one to two points. Noteworthy, for example: there are three seismic faults impacting the city, with the 3rd seismic Clamshell fault , the source for the Sierra Madre Earthquake of 1991.

Changes in Development Impacts Missed (Element E: Plan Update: pg. 133): Meadows at Bailey Canyon, a 42-home development (including Land Conservation Easements ref. Development Agreement Oct.25, 2022): The MHP appears to be incomplete in regards to addressing the multi-hazard risk associated with the two land conservation easements (parcels 5760-027-013 and 5761-001-001) proposed for transfer to the City of Sierra Madre. This acreage, possibly including the "private canyon" referenced in the HMP appears to be a hazard risk shift to the City of Sierra Madre and should not be overlooked.

Author: Allen Ma, Resident – September 23, 2025

From: Allen Ma
To: fire
Subject: [EXTERNAL] City of Sierra Madre Hazard Mitigation Plan Update– Public Review Comments
Date: Tuesday, September 23, 2025 6:17:51 PM

CAUTION: This message is from an EXTERNAL SENDER - be CAUTIOUS, particularly with links and attachments.

To whom it may concern

Please see the following comments. I am available to expand and further explain any comments below if needed. Thank you in advance for accepting these comments.

Page 18 Use of Existing Data
Does a prior approved Sierra Madre Hazard Mitigation Plan exist and could it have been also used as a reference? Was there another city's (of comparable size, hazards, and other critical characteristics) Hazard Mitigation Plan available to be used as reference?

Page 22 Table B.1: Federal Disaster Declarations 2018-2024 Los Angeles County
Notes Los Angeles County experienced 15 federal disaster declarations from 2018 – 2024 but Table indicates only 11 State of Emergency Declaration Issued by California

Page 26 Table B.5: Hazard Profile of Location, Extent, Probability, Previous Significant Event
Debris Flow should be included as an independent Hazard to be assessed.

Page 76 Table B.11: Hazard Vulnerability to Critical and Essential Structures
Of the listed Facilities, does any Facility have any recent redevelopment, improvement, and/or upgrade that also addressed the noted Hazard Vulnerability?

General Comments and Questions
Are there opportunities to share resources/mitigation efforts with adjacent communities?

How does this Hazard Mitigation Plan align with the asset owners (i.e. dams, debris basins, power lines, phone lines, cellular towers, radio towers etc) responsibilities and operation and maintenance activities and hazard mitigation plan of these assets?

Was risks for failure of assets owned by others accounted for in Hazard Mitigation Plan?

Will there be a CEQA review and determination on this Hazard Mitigation Plan?

Allen

Author: Allen Ma, Resident – September 27, 2025

I have the following additional comment on the Hazard Mitigation Plan Update in light of the recent release of the After-Action Review of Alert Notification Systems and Evacuation Policies for the Eaton and Palisades Fires.

Does this update incorporate appropriate applicable portions and is aligned with the After Action Review of Alert Notification Systems and Evacuation Policies for the Eaton and Palisades Fires? Copy of this After-Action Review is available at the following link: https://lacounty.gov/aar/.
Thank you in advance for accepting this comment.
Allen

Author: Loni Eazell, Los Angeles County Public Works, Disaster Services Specialist – October 7, 2025 (email)

Good afternoon,
Thank you for the opportunity for Los Angeles County Public Works to review the City of Sierra Madre's draft Hazard Mitigation Plan. Below are our comments:

1. On page 36, the term "mudslide" is used to describe a type of landslide. However, according to the USGS' *The Landslide Handbook* (Section1.pdf**,** p.16)**,** the term "mudslide" is considered an inappropriate term. The USGS recommends using "debris flow" instead, as it more accurately reflects the geologic process involved. I suggest replacing "mudslide" with "debris flow" throughout the document to align with USGS terminology.

2. On page 41, add the highlighted cities… ***Previous Wildfires Impacting Los Angeles County*** The Eaton Fire, which began on January 7, 2025, had a significant impact on Los Angeles County, particularly affecting the San Gabriel Mountains and nearby communities like Altadena, Pasadena, Sierra Madre, Arcadia, and Duarte.

3. On page 49, the last sentence of the second paragraph refers to "special flood hazard areas." This term is FEMA-specific for 1% annual chance flood areas. There are no FEMA-mapped Special Flood Hazard Areas in the City.

4. On page 51, "Sierra Madre Dam…contains water only during rain as a flood control device"; as it fulfils its flood control function, the dam may attenuate flows during storm/rain events, however, PW does not currently operate it as a flood control facility, but rather as a debris control facility.

5. On page 56, The March 1938 storm was one of the worst in Los Angeles County history. A USGS report has a table with data indicating over 60,000 cubic yards of debris deposited in the basin behind Sierra Madre Dam (*Water Supply Paper 844, Floods of March 1938 In Southern California*, U.S. Department of the Interior, U.S. Geological Survey, 1942, Pg 374). According to the LACFCD's report *Flood of March 2, 1938*, (dated May 1938) this volume amounts to over 80 percent of the basin's capacity (see attached document). This link is to a City web page that notes a debris flow event in 1954: Mudflows/Flood - Sierra Madre. This link is to a Sierra Madre Historical Preservation Society newsletter referring to the 1969 storms: SMHPS_Nov2018_aas.qxp_Layout 1. The LACFCD's *Hydrologic Report on Storms of 1969*, dated June 1969, had the following information specific to the City of Sierra Madre. The January 1969 Storm dropped between 20.5 and almost 25.8 inches of rain in Sierra Madre (Pgs. 73, 74, 76). The February 1969 storm dropped between 7.6 and 9.5 inches (Pgs. 204, 205, 207) in Sierra Madre. The January and February 1969 storms delivered approximately 110,000 cubic yards of debris in the basin behind Sierra Madre Dam (approximately 72 percent of the basin's capacity). Flows at the dam went over spillway level during the February storm. The trapping of this debris prevented extensive damage to the city neighborhoods immediately downstream of the

dam (Pgs. 23, 39, 115, 239). This link is to a CalMatters news article referring to a mudflow at Bailey Debris Basin in the City in 1994: Deadly boulders and mud: How debris flows endanger LA's fire-ravaged towns - CalMatters

Please let me know if you have any questions or would like to discuss any of the comments.

Loni Eazell, CA-PEM
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Author: William Patzert, City of Sierra Madre Energy, Environment and Natural Resources Commission, Commissioner – September 23, 2025 (email)

From: William Patzert
To: Amy Hsu; James Carlson; Robert Parkhurst; Eric Lozick; Kelly Kriebs; Gene Goss
Subject: [EXTERNAL] Re: City of Sierra Madre – Draft Hazard Mitigation Plan Now Available for Review
Date: Tuesday, September 23, 2025 9:00:58 PM
Attachments: The Problematic Fire History of Eaton Canyon.docx

CAUTION: This message is from an EXTERNAL SENDER - be CAUTIOUS, particularly with links and attachments.

Hiya Amy:

I have reviewed the updated Sierra Madre Hazard Mitigation Plan. I realize that this long document was difficult to compile, but I respectfully note that your group omitted to include what I consider to be near the top of my list of hazards. This is the role that the Eaton Canyon Natural Area has contributed to our long history of destructive fires near and in Sierra Madre. Most recently, January 2025.

I submit that Eaton Canyon is a threat when unmanaged. It's time for serious,
science-backed discussions and action on:

- Eaton Canyon fuel and vegetation density,
- Urban brush clearing near Eaton Canyon,
- Pre-fire planning and evacuation protocols,
- Ending the "all-natural" approach in Eaton Canyon, it's a high-risk fire zone.

Stop admiring Eaton Canyon and ignoring the fire danger. Manage it — or
risk reliving disasters like the January 2025 fire again and again.

Attached are my thoughts on the problematic fire history of Eaton Canyon and my
recommendations on how to prevent Eaton Canyon generated fires from repeating
the horrors of January 2025.

Thanks for considering my warnings.

Respectfully, Bill Patzert
Member of the SM Energy, Environment and Natural Resources Commission

Author: Debbie Roberts, City of Sierra Madre, Associate Librarian – October 16, 2025 (email)

From: Debbie Roberts <droberts@sierramadreca.gov>
Sent: Thursday, October 16, 2025 3:40 PM
To: fire <fire@sierramadreca.gov>; Brent Bartlett <bbartlett@sierramadreca.gov>
Cc: Leila Regan <lregan@sierramadreca.gov>
Subject: HMP comments

Hello SM Fire Department,

I am a bit late with comments but wanted to share them anyway in case the revision is still underway.

- I noticed that there was no mention of the Library as a participant in the development of the HMP (pages 5 and 9) although Leila Regan was an active participant in the plan per Team Credits (page 2) and Planning Team Participation (page 11).
- I am guessing that the third outreach event hasn't happened yet and that is why the highlighted blank (page 13).
- I noticed that the City of Sierra Madre General Plan 2015 is one of the cited resources (page 17). Is there not a more current version of the plan?
- Why is Dam Inundation not considered a hazard when the Canyon Dam has overflowed several times since its construction in 1928. Does its age (pre Long Beach Earthquake) not make it a hazard since construction standards were overhauled after that event? (page 25)
- Why are Heat Waves not considered a hazard when there are more high heat days (+100 degrees F) and we have opened City facilities as cooling centers? (page 25)
- Riverine Flooding is listed twice – once as an identified a high hazard and once as no hazard. Which is it? (page 25)
- Who are tornadoes not considered a hazard since they are occurring more frequently during storms with climate change? (page 26)

- Should you add the Santa Anita Fire April 2008 to Table B5 (page 26)?
- Previous Earthquakes (page 37) – The Sierra Madre Earthquake had a 5.8 magnitude measurement, correct? In Table B7 (page 38) it is listed as a 5.6. This is an inconsistency. Sierra Madre does have its faults.
- April 2008 fire is mentioned (page 41). Do you want to insert name, Santa Anita Fire (started 4/26/2008)? Also in second paragraph there is mention of a "voluntary evacuation order." Do you mean to say "voluntary evacuation warning"?
- Libraries are NOT listed by FEMA as an Infrastructure Indicator (page 67) - ☹
- Turtle Park is listed (page 76) but I believe this is a colloquial name for Mount Wilson Trail Park.
- B13 (page 87) Hazard Vulnerability to Natural, Historic, and Cultural Resources - This table needs many additions – Richardson House Museum, Lizzie's Trail Inn, Bailey Canyon Wilderness Park, Bailey Canyon Trail, Mount Wilson Trail Park, Mount Wilson Trail, Willis House, etc.
- Great to see the Library listed as an existing resource in the Capability Assessment but its role in supporting mitigation needs revision. (page 100) During the Eaton Fire event, the Library was open extended hours because we had power, wifi, PPE, and snacks, as well as social infrastructure. We also serve as an information resource and are good communicators.
- City of Sierra Mesa? (page 164)
- Overall lots of good data to work with for planning purposes! We have learned a lot by compiling this information and met the mandate.

Hope this is somewhat helpful. Do let me know if I may be of further assistance, especially with historical information.

Best,

Sierra Madre Public LIBRARY
Read • Discover • Connect

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