



City of Hesperia

HAZARD MITIGATION PLAN

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Chapter 1 – Introduction

Plan Purpose and Authority

Hazard events can lead to injuries or death, affect a community's overall health and safety, damage or destroy public and private property, harm ecosystems, and disrupt key services. Although the hazard event itself often gets the most attention, it is only one part of a larger emergency management cycle.



Emergency planners and responders can take steps during the response, recovery, mitigation, and preparedness phases of the cycle to minimize the harm caused by a disaster. This Local Hazard Mitigation Plan (LHMP) focuses on optimizing the mitigation phase of the cycle. Mitigation involves making a community

more resilient to disasters so that when hazard events do ultimately occur, the community suffers less damage and can recover more effectively. It differs from preparedness, which involves advanced planning for how best to respond when a disaster occurs or is imminent. For example, a policy to make homes structurally stronger so they suffer less damage during an earthquake is a mitigation action, while fully equipping shelters to accommodate people who lose their homes in an earthquake is a preparedness action. Some activities may qualify as both.

Like other communities, the City of Hesperia (City) could potentially suffer severe harm from hazard events. Although large disasters may cause widespread devastation, even smaller disasters can have substantial effects. The City cannot make itself completely immune to hazard events, but this LHMP can help make the community a safer place to live, work, and visit. This LHMP provides a comprehensive assessment of the threats that the City faces from natural and human-caused hazard events and a coordinated strategy to reduce these threats. It identifies resources and information that can help community members, City staff, and local officials understand local threats and make informed decisions. The LHMP can also support increased coordination and collaboration

HAZARD EVENT:

an emergency due to a natural or human-caused event that has the potential to cause harm.

HAZARD MITIGATION:

any sustained action taken to reduce or eliminate long-term risk to people and property from natural or human-caused hazards and their effects.

RESILIENCE:

the capacity of any entity (an individual, a community, an organization, or a natural system) to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience.

between the City, other public agencies, local employers, service providers, community members, and other key stakeholders.

Federal Authority

The City is not required to prepare an LHMP, but state and federal regulations encourage it. 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 the Federal Emergency Management Agency (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 Flood plain 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

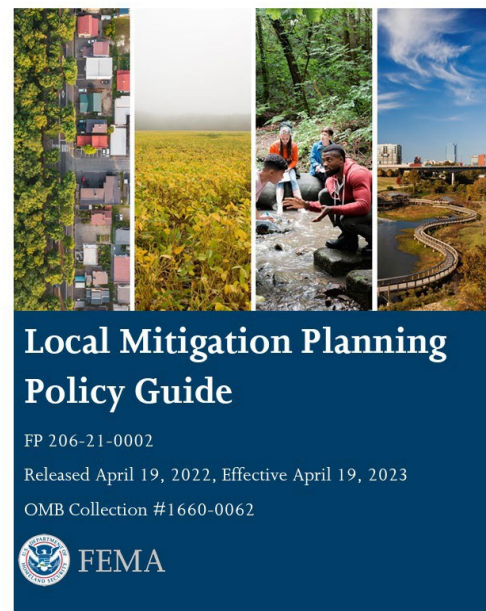
- FEMA Local Mitigation Planning Policy Guide (FP 206-21-0002), effective April 19, 2023

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 safety 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 an LHMP into its safety element if the LHMP meets applicable



FEMA Local Mitigation Planning Policy Guide provides the official policy and interpretation of the applicable statutes and mitigation planning regulations in 44 Code of Federal Regulations

state requirements. This allows communities to use the LHMP to satisfy state requirements for safety elements. As the General Plan is an overarching long-term plan for community growth and development, incorporating the LHMP into it creates a stronger mechanism for implementing the LHMP.

CALIFORNIA GOVERNMENT CODE SECTION 65302 (G)(4)

California Government Code Section 65302 (g)(4), also known as Senate Bill (SB) 379, requires that the safety element of a community's general plan address the hazards created or exacerbated by climate change. The safety 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 LHMP can be incorporated into the safety element, including these items in the LHMP can satisfy the state requirement. SB 379 requires that climate change be addressed in the safety element when the LHMP is updated after January 1, 2017, for communities that already have an LHMP, or by January 1, 2022, for communities without an LHMP.

This LHMP 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 certifying this LHMP, 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.

Plan Organization and Use

The Hesperia LHMP is both a reference document and an action plan. It has information and resources to educate readers and decision-makers about hazard events and related issues and a comprehensive strategy that the City and community members can follow to improve its resilience. It is divided into the following chapters:

- **Chapter 1: Introduction.** This chapter describes the background of the Plan, its goals and objectives, and the process used in its development.
- **Chapter 2: Community Profile.** This chapter discusses the history of Hesperia, its physical setting and land uses, its demographics, and other important community characteristics.
- **Chapter 3: Hazard Assessment.** This chapter identifies and describes the hazards that pose a threat to Hesperia and discusses past and future events and the effects of climate change.
- **Chapter 4: Vulnerability Assessment.** This chapter describes the threat of each hazard on Hesperia's key facilities and community members, including socially vulnerable individuals.

- **Chapter 5: Mitigation Strategy.** This chapter lists the mitigation actions to reduce Hesperia's vulnerability to hazard events and provides an overview of the community's existing capabilities to improve hazard resilience.
- **Chapter 6: Plan Maintenance.** This chapter summarizes the process for implementing, monitoring, and updating the LHMP and opportunities for continued public involvement.

Previous Hesperia LHMP

The 2017 Hesperia LHMP was adopted by the Hesperia City Council on March 20, 2018. This LHMP is a "living document" that should be reviewed, monitored, and updated to reflect changing conditions and new information. As required, an LHMP must be updated every (5) years to remain in compliance with regulations and Federal mitigation grant conditions. In that spirit, this LHMP is an update of the 2017 City of Hesperia Local Hazard Mitigation Plan, approved by FEMA on March 5, 2018. This LHMP presents updated information regarding hazards being faced by the City of Hesperia. This LHMP will also reference the goals and policies in the Safety Element of the 2024 focused City of Hesperia General Plan update.

Key updated elements from the previous Hesperia LHMP include the following:

- Updated Plan Goals below, were modified to better suit the changing priorities of the City, and to streamline with the General Plan update.
- Updated hazard profiles and vulnerability assessment that integrates the General Plan, Housing Element, and Climate Adaptation Vulnerability Assessment.
- Incorporation of updated demographics and development trends into the Community Profile.
- Updated hazard profiles with additional historic events information.
- Updated Capabilities Assessment to meet new FEMA requirements and guidance.
- Updated Mitigation Actions and Strategies (Table 5-4), which includes progress on previous actions (Table 5-5).

Plan Goals

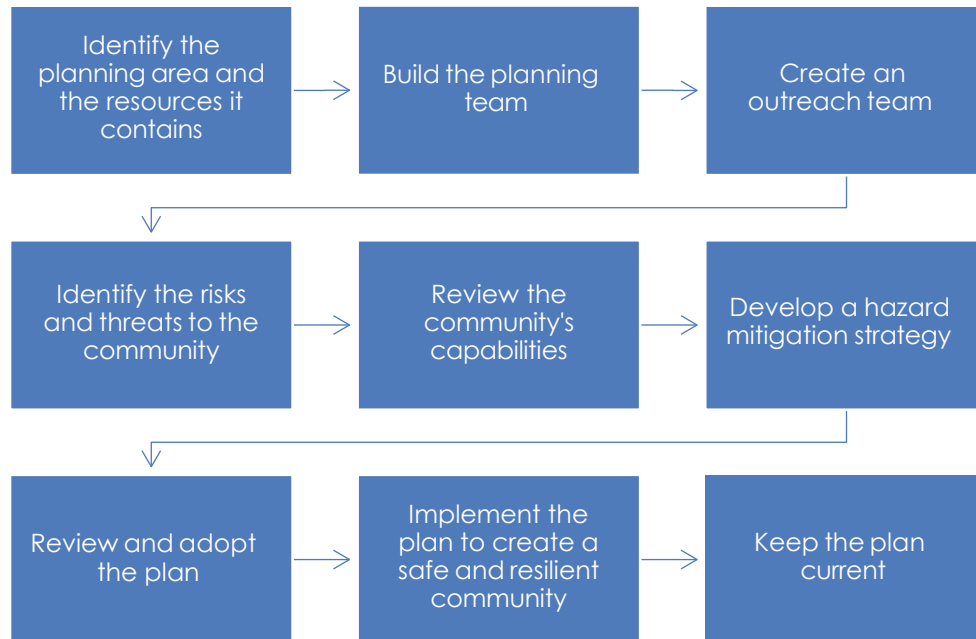
This Plan was developed to broadly increase resilience in Hesperia. The following key goals were developed for the City's LHMP:

- A community prepared to withstand and recover from natural disasters, human health hazards, and other emergencies.
- Minimize injury, loss of life, property damage, economic and social disruption caused by seismic shaking and other earthquake induced hazards.
- Minimize injury, loss of life, property damage and economic and social disruption caused by flooding and inundation hazards.
- Minimize injury, loss of life, property damage and economic and social disruption caused by wildland and urban fires.
- A community resilient to drought, extreme heat, severe weather events, and other climate-related hazards.
- Reduce the impacts of climate change on the city.

These goals are very similar to the 2017 goals; however, some modifications were made to streamline the language, and ensure greater consistency with the City's Safety Element of the General Plan and align with the community's priorities.

Planning Process

State and federal guidance for LHMPs do not require that jurisdictions follow a standardized planning process. FEMA encourages communities to create their own planning process that reflects local values, goals, and characteristics. FEMA does suggest a general planning process that follows these general milestones:



For the City of Hesperia, the planning process used to create this plan is described below.

Hazard Mitigation Planning Committee

The City established a Hazard Mitigation Planning Committee (hereafter referred to as the HMPC). The HMPC comprises representatives from key City departments and stakeholder members, including representatives from local and regional agencies and companies that are key to hazard mitigation activities. **Table 1-1** identifies the members that were invited and/or attended HMPC meetings.

Table 1-1: Hesperia HMPC Members

Name	Title	Department
Jacquelyn Castillo (Project Manager, POC)	Management Analyst	City Manager's Office
Melinda Sayre	Deputy City Manager	City Manager's Office
Tammy Pelayes	Assistant to the City Manager	City Manager's Office
Kelly Brady	Public Relations Analyst	City Manager's Office
Ryan Leonard	Principal Planner	Community Development (Planning Department)
Andrew Lemke	Building Official	Community Development (Building and Safety)
Rubi Arellano	Community Development Supervisor	Community Development (Building and Safety)
Cassandra Sanchez	City Engineer	Community Development (Engineering)
Benjamin Leslie	GIS Technician	GIS/Information Technology Program
Brian Blackwell	Operations Manager/Streets Division	Public Works
April Antonio	Administrative Analyst	Economic Development
Keith Cheong	Senior Accountant	Finance
Kelly Anderson	Assistant Fire Chief	San Bernardino County Fire Department
Steve Tracy	Battalion Chief	San Bernardino County Fire Department
Steve Allen	Lieutenant	Police Department

The HMPC held and attended several meetings throughout the plan development process to lay out the methods and approach for the Plan, draft and review content, make revisions, and engage members of the public.

The LHMP Project Manager and members of the HMPC frequently participated in General Plan Update Meetings. The City contracted PlaceWorks consulting firm to conduct a focused update on areas such as Land Use, Circulation, Safety, and Environmental Justice. HMPC Members and the consulting firm discussed information sharing opportunities to streamline vulnerability assessment data, stakeholder initiatives to address hazard events, public safety, goals and policies. Where related topics between the Safety Element and LHMP aligned, HMPC team members participated in applicable meetings.

HMPC Pre-Planning Meeting (February 13, 2024): The HMPC members engaged in a pre-planning meeting. Discussed project overview and background. Reviewed Local Mitigation Planning Policy Side-by-Side Comparison Tool. Established a preliminary project timeline. Discussed plan for internal kick-off meeting and potential stakeholders. Discussed next steps for retrieving local map data and statistics. Discussed plan for launching public outreach.

HMPC Meeting #1 (March 7, 2024): Members held a detailed discussion about the LHMP standards for approval, planning process phases, forecasted schedule, LHMP goals. Assigned data gathering for critical documents/studies/data. Discussed potential hazards for the City, and distributed risk assessment matrix assignment.

HMPC Stakeholder Meeting #2 (June 3, 2024): Members of the HMPC met with PlaceWorks, consulting firm to discuss components of the Safety Element, which is currently being updated as part of a focused General Plan Update. Members of the HMPC team included San Bernardino County Sheriff's Department - Lieutenant, and Principal Planner. The LHMP Project Manager was briefed on the meeting. The meeting included a focused discussion on local knowledge of hazard potential, hazard reduction strategies, and climate resilience goals. HMPC Members and the consulting firm discussed potential information sharing opportunities to streamline vulnerability assessment data. The meeting discussion included focused questions to the Sheriff's department regarding vulnerable populations, infrastructure, and community assets and initiatives to address hazards, public safety, and climate adaptation.

HMPC Stakeholder Meeting #3 (June 4, 2024): Members of the HMPC met with PlaceWorks, consulting firm to discuss components of the Safety Element, which is currently being updated as part of a focused General Plan Update. Members of the HMPC team included the Fire Chief, Principal Planner, and the LHMP Project Manager. The meeting included a focused discussion on local knowledge of hazard potential, hazard reduction strategies, and climate resilience goals. HMPC Members and the consulting firm discussed potential information sharing opportunities to streamline vulnerability assessment data. The meeting discussion included focused questions to the fire department regarding vulnerable populations, infrastructure, and community assets and initiatives to address hazards, public safety, and climate adaptation.

HMPC Stakeholder Meeting #4 (June 6, 2024): Members of the HMPC met with PlaceWorks, consulting firm to discuss components of the Safety Element, which is currently being updated as part of a focused General Plan Update. Members of the HMPC team included the Deputy City Engineer, Public Works Supervisor, and Principal Planner. The LHMP Project Manager was briefed on the meeting. The meeting included a focused discussion on local knowledge of hazard potential. HMPC Members and the consulting firm discussed potential information sharing opportunities to streamline vulnerability assessment data. The meeting discussion included focused questions to public works and engineering departments regarding hazard concerns, flooding during winter storms, preparing/responding/recovering from natural hazards such as wildfires, severe storms, flooding, extreme heat, etc. Discussion on population, infrastructure and community assets vulnerable to hazards.

HMPC Meeting #5 (July 11, 2024): PlaceWorks hosted a community meeting to discuss City Goals and Policies, including but not limited to Safety Element goals and policies. The updated goals and policies will be reflected in the LHMP. Members of the HMPC team who attended the meeting included the LHMP Project Manager, Principal Planner, City Engineer, and Building Official. The Planning Commission and members of the public were also in

attendance.

Invitations to HMPC meetings, as well as agendas/materials, were provided via email. **Appendix A** contains copies of HMPC meeting materials including meeting agendas, sign-in sheets, and other relevant materials distributed to attendees for these meetings.

Public Engagement

Under FEMA guidelines, local hazard mitigation planning processes should create opportunities for members of the public to be involved in plan development—at a minimum, during the initial drafting stage and during plan approval. The HMPC developed a community engagement and outreach strategy to guide all public engagement activities. To ensure all residents were aware of the project, Hesperia staff promoted and included a description of the project and ways to get involved on the City's website; this is discussed in more detail in the online engagement section.

STAKEHOLDER ENGAGEMENT

Stakeholder Engagement Opportunity #1 (August 22, 2024): This engagement opportunity was conducted via email correspondence, refer to **Appendix B**. City staff emailed Stakeholder's, providing them the opportunity to participate in a second survey for LHMP planning and engagement purposes. The data collected from the responses to the survey were used to update the LHMP.

Stakeholder Engagement Opportunity #2 (November 4, 2024): The City conducted a stakeholder meeting with representatives from surrounding cities (City of Victorville, City of Barstow, City of Adelanto, and the Town of Apple Valley). Information regarding this opportunity to include key members from surrounding communities is located in **Appendix B**. Although not all attended, the following is a list of stakeholders invited to the meeting.

- Hesperia Unified School District
- SBC Fire Department
- SCC Sheriff's Department
- SBC Office of Emergency Services
- SBC Animal Control
- Hesperia Parks and Recreation
- Hesperia Animal Control
- Hesperia Code Enforcement
- High Desert Chamber of Commerce
- High Desert Events Center
- Victor Valley Transit Authority
- Arizona Pipeline
- Hesperia Branch Library
- St. Mary's Hospital
- Desert Valley Hospital
- BNSF Railway
- Advance Disposal
- Southwest Gas
- So Cal Edison
- Mojave Water
- Victor Valley Community College

VULNERABLE POPULATIONS OUTREACH

In addition to the stakeholders, the City also conducted outreach to the following organizations that represent/ support vulnerable populations. The following were invited to participate in the LHMP planning and review process:

- San Bernardino County 4-H Non-Profit Organization – youth development program to teach future generations techniques they can use in the real world, such as, citizenship, leadership, and life skills.
- High Desert Homeless Services – assist people who have been displaced from long-term housing due to natural disaster or loss of income and empower homeless, men, women and children by providing the necessary skills to become self-sufficient.
- High Desert Second Chance - is a nonprofit organization serving the homeless individuals and families in need in the High Desert community.
- Victor Valley Rescue Mission – provides homeless men with opportunities for spiritual and physical recovery from addictions, job training, and job placement,
- Red Cross – prevent and alleviate human suffering in the face of emergencies by mobilizing the power of volunteers and generosity of donors.

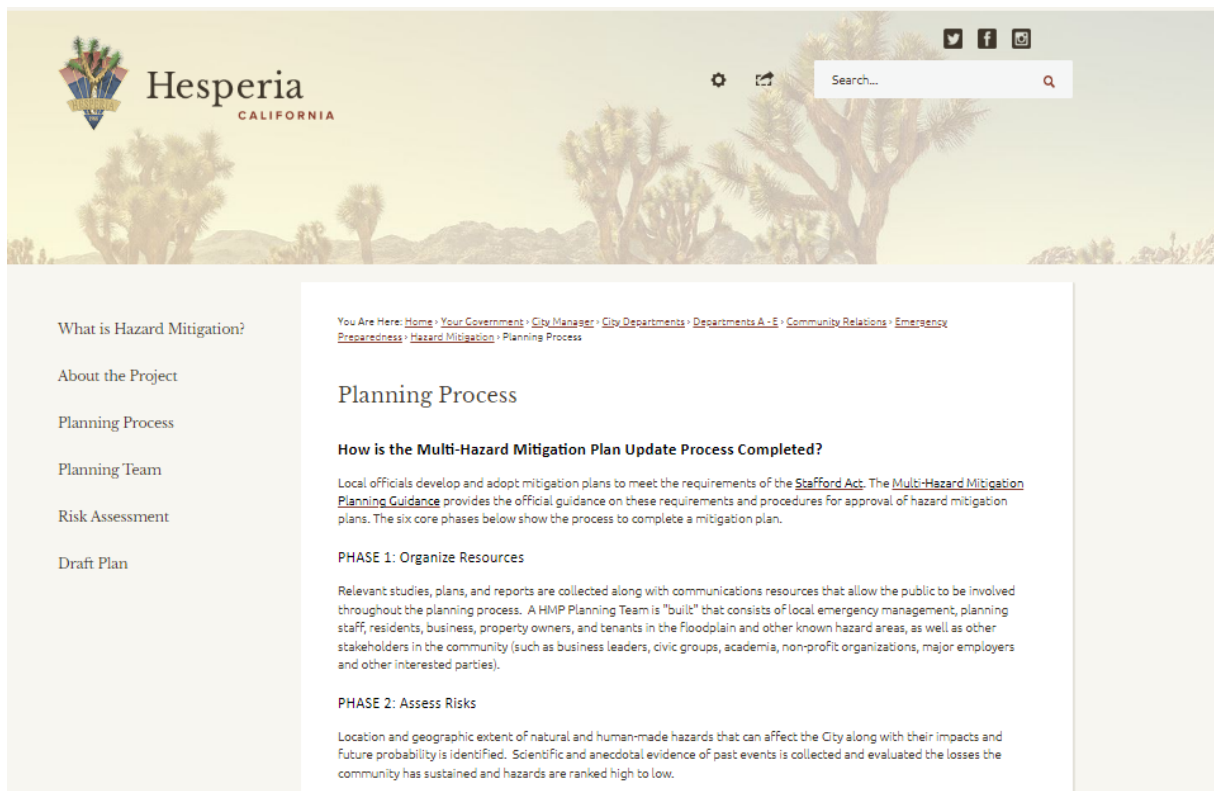
PUBLIC ENGAGEMENT OPPORTUNITIES

In-person engagement opportunities were a central component of the City's engagement efforts. These meetings provided an opportunity for members of the public to learn about the hazards of concern identified by the HMPC during this update. Additionally, City staff advertised the online survey on the City's social media platforms. Notices of each meeting were widely distributed in advance in accordance with City notification requirements, the engagement strategy, legal requirements, and best practices.

Public Engagement Opportunity #1 (August 6, 2024): This engagement opportunity was conducted at National Night Out, a community event known for bringing together diverse residents, including those from historically underserved and equity-priority groups. City staff distributed emergency preparedness materials, including a flier on the LHMP Update, and promoted a second survey for LHMP planning and engagement purposes. Attendees were encouraged to scan QR codes leading to an online survey, designed to gather input on hazard identification and mitigation efforts. Recognizing that some community members, particularly those from low-income backgrounds or those without access to technology, may not have smartphones or internet access, paper copies of the survey were also available. For individuals without phones, staff provided the option to fill out the survey on-site or take a paper copy to complete at home. In order to ensure inclusivity, volunteers were on hand to assist with survey completion, offering help in both English and Spanish, and providing additional support as needed. This approach ensured that no community member was excluded from the feedback process, regardless of language, technology access, or disability. The data collected from these efforts were used to update the LHMP, incorporating the input of diverse populations into the final plan.

Appendix B includes a copy of the materials used to promote these engagement opportunities.

ONLINE ENGAGEMENT



City of Hesperia LHMP Webpage

The City recognized that not all community members are able to attend public meetings and conducted public engagement through social media and online platforms. To assist with engagement, the City set up a project website as a simple, one-stop location for community members to learn about the LHMP. The website included information about what an LHMP is and why the City prepared one. It had links to materials and Plan documents as they became available and allowed members of the public to receive notifications about upcoming events.

The City also promoted the planning process through the following online methods:

- Hesperia's City Website
- Social Media (Facebook, Twitter)
- Community E-newsletter

ONLINE SURVEY

A central part of the engagement strategy was an online survey. This survey asked community members about their experience and familiarity with emergency conditions, their level of preparedness for future emergencies, and preferred actions for the City to take to increase resiliency. The survey was promoted on the City's Facebook and Twitter pages. A summary of these responses is provided here:

- Nearly 61% of respondents live in Hesperia, with an additional 21% that live and work in Hesperia.
- Approximately 75% of respondents had been impacted by a disaster in their current

residence.

- The top three hazards of concern for respondents were Severe/Extreme Weather (High winds, Extreme Heat Days, Severe Rainstorms), Flooding, and there was a draw between Earthquake/Geologic Hazards and Wildfires. These responses confirmed that the concerns identified by City staff during the planning process were similar to residents that responded.
- Approximately 68% of respondents showed concern regarding climate change affecting future hazards. This response reinforced the value of the General Plan Climate Adaptation Vulnerability Assessment and how it was integrated into this update.

As part of the outreach strategy, a QR code was created that could be used on promotional materials and handouts. This QR Code provided quick access to the City's Online Survey.



Appendix B contains copies of all materials used for public outreach, including the full results of the community survey.

Public Review Draft

On November 12, 2024, the City released the draft of the Local Hazard Mitigation Plan (LHMP) for public review and comment. The draft was made available electronically on the City's website, accompanied by a Public Survey to gather additional feedback from the community. Notifications about the draft were shared through the City's social media accounts and other online platforms to ensure broad awareness.

The LHMP draft was also presented at the City Council Advisory Committee meeting on December 9, 2024. This meeting was open to the public, providing an opportunity for community members to share additional input. Refer to **Appendix B**.

Plan Revision and Adoption

The public review period for the City's LHMP ended on December 9, 2024. Since none of the comments required significant edits or modification to the plan content, the City submitted the plan to Cal OES and FEMA, initiating the agency review process on December 19, 2024.

Upon completion of the formal agency review process, City staff submitted the LHMP for final adoption. The Hesperia City Council adopted the final LHMP on May 6, 2025. **Appendix C** contains a copy of the adoption resolution and the FEMA Approval Letter.

Plan Resources

The City used several different plans, studies, technical reports, datasets, and other resources to prepare the hazard assessment, mapping, threat assessment, and other components of this Plan. **Table 1-2** provides some of the primary resources the HMPC used to prepare this Plan.

Table 1-2: Key Resources for Plan Development

Section	Key Resources Reviewed	Data Incorporated from Resource
Multiple	• Cal-Adapt • California Department of Conservation • California Geological Survey • California Office of Emergency Services • California State Hazard Mitigation Plan • 2017 City of Hesperia Hazard Mitigation Plan. • 2010 Hesperia Plan (General Plan) • FEMA Local Hazard Mitigation Plan Guidance • National Oceanic and Atmospheric Administration • National Weather Service • US Geological Survey • 2024 City of Hesperia Vulnerability Assessment	• Science and background information on different hazard conditions • Records of past disaster events in and around Hesperia • Current and anticipated climate conditions in and around Hesperia • Projections of future seismic conditions and events
Community Profile	• 2020 US Census Bureau Decennial Census • US Census Bureau 2016-2020 American Community Survey • 2010 Hesperia Plan (General Plan) • 2024 Focused Hesperia Plan Update • 2021-2029 Housing Element Update • Background Reports • California Energy Commission	• Demographic information for Hesperia and San Bernardino County • History of the region • Economic trends in Hesperia • Commute patterns in Hesperia • Local land-use patterns • Background information on utilities serving Hesperia
Hazard Assessment (Dam Failure)	• California Department of Water Resources • San Bernardino County Flood Control District • US Army Corps of Engineers	• Mapping of dam failure inundation areas • Profiles and conditions of dams in and around Hesperia

Hazard Assessment (Flood Hazards)	• FEMA Map Service Center • San Bernardino County Flood Control District • California Levee Database • Hazus User & Technical Manuals	• Records of past flood events in and around Hesperia • Locations of flood-prone areas in Hesperia
Hazard Assessment (Wildfire Hazards)	• FEMA Map Service Center • San Bernardino County Fire District	• Records of past wildfire events in and around Hesperia • Locations of fire-prone areas in Hesperia
Hazard Assessment (Seismic Hazards)	• California Geological Survey • United States Geological Survey • Hazus User and Technical Manuals	• Science and background information on seismic hazards • Historical record of seismic hazard events in and around Hesperia
Hazard Assessment (Severe Weather Hazards)	• NOAA • National Weather Service	• Records of past weather events
Note: Sections not individually identified in this table relied primarily on sources identified in multiple sections.		

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Chapter 2 – Community Profile

The Community Profile section of the LHMP is a summary of Hesperia, including information about the community's physical setting, history, economy and demographics, current and future land uses, and key infrastructure. The Community Profile helps to establish the baseline conditions in Hesperia, which inform the development of the hazard mitigation actions in Chapter 5.

Setting and Location

The City of Hesperia is located in the Victor Valley, situated in the High Desert of San Bernardino County, approximately 35 miles north of the City of San Bernardino. The City is bordered by the neighboring cities of Adelanto, Apple Valley, Victorville, and the San Bernadino unincorporated areas of Oak Hills and Summit Valley.

Hesperia Quick Facts

Elevation:

3,186 ft above sea level

Area:

74.77 square miles

Incorporated:

1988

Government Type:

City Council/City Manager

Population (2022 Census estimate)²:

100,744

Nearest cities:

Victorville, CA – 7.9 miles
 Apple Valley, CA – 11.2 miles
 Adelanto, CA – 16.5 miles
 Fontana, CA – 22 miles
 Crestline, CA – 25.5 miles
 Ontario, CA – 28 miles
 Rancho Cucamonga, CA – 32 miles
 San Bernardino, CA – 35.2 miles
 Rialto, CA – 37.1 miles
 Highland, CA – 39.3 miles

Nearest city with population 200,000+^{*}:

San Bernardino, CA (35.2 miles, pop. 220,328)

Nearest city with population 1,000,000+^{*}:

Los Angeles, CA (80 miles, pop. 3.820 million)

^{*} California Department of Finance

Figure 2-1: City of Hesperia Location



² The 2022 Census population estimate is 100,744. Due to available datasets, the demographics used for the demographics and risk assessment sections of this plan rely on 2020 Decennial Census data.

History

Hesperia began as a Spanish land grant: Rancho San Felipe, Las Flores y El Paso del Cajon, founded in 1781. The land was sparsely inhabited desert during Spanish-Mexican rule in the 19th century. The U.S. annexed the region along with Southern California after the Mexican-American War in 1848.

In 1869, Max Stobel purchased 35,000 acres (14,000 ha) from the United States Government Land Office for \$40,000. While several attempts were made to subdivide and encourage colonization, the land was primarily used for agricultural purposes, with raisin grapes the primary product.

The town site was laid out in 1891 by railroad company land developers of the Santa Fe Railroad, which was completed that year. Hesperia was named for Hesperus, the Greek god of the West. The railroad land developers published pamphlets distributed across the country with boosterism of Hesperia, California, as a potential metropolis, to become "the Omaha of the West" or projections to have over 100,000 people by 1900, but only 1,000 moved in.

Hesperia grew relatively slowly until the completion of US Routes 66, 91, and 395 in the 1940s, followed by Interstate 15 in the late 1960s. About 30 square miles (78 km²) of land were laid out for possible residential development.

In the early 1950s, land developer M. Penn Phillips and his silent financial partner, boxer Jack Dempsey, financed the building of roads and land subdivisions, promoting lots sales on television. They built the Hesperia Inn and golf course, which attracted a variety of Hollywood celebrities. The Hesperia Inn also housed the Jack Dempsey Museum.

The main wave of newcomers, though, arrived at Hesperia in the 1980s. Suburban growth transformed the small town of 5,000 people in 1970 to a moderate-sized city with a population over 60,000 by 2000, and an estimated population over 95,000 as of July 1, 2018.³

Demographics

The data used in this section comes from the most comprehensive American Community Survey (ACS 5-Year Estimates 2016-2020), administered by the United States Census Bureau (US Census) completed in 2020, the 2020 Decennial Census, and 2022 Census estimates. Based on these datasets, Hesperia's 2020 population was estimated to be 99,878 with a median age of 32.6, which is 1.3 years younger than the rest of San Bernardino County (33.9 years old). Comparatively, the number of senior residents aged 65 and older is 10.6%, while Hesperia residents have a slightly higher income than the median San Bernardino County income. In addition, a higher proportion of Hesperia's residents are owner-occupied compared to San Bernardino County. **Table 2-1** shows the basic demographics for Hesperia and San Bernardino County. It should be noted that more recent population estimates place the city's population at 100,744 residents, which is an increase of about 12% from the last census in 2010 (90,262), showing that the city has experienced population growth over the last decade.

³ https://en.wikipedia.org/wiki/Hesperia,_California

According to the 2023 San Bernardino County Continuum of Care Homeless Count and Survey, the city has a homeless population of 64 people (59 unsheltered, 5 sheltered, and 0 in transitional housing). The 2023 count shows a 21% increase in homeless population from 2022. It can be assessed that the number of homeless people in the city are likely to be higher than reported, as it is extremely difficult to count people living in cars, abandoned buildings, and other deserted places. Additionally, some of the homeless population may not wish to be found.

Table 2-1: Basic Demographics, Hesperia, and San Bernardino County

Demographics	Hesperia	San Bernardino County
Total Population	99,878	2,181,654
Percent of children who are less than 10 years old	15.3%	14.3%
Percent of residents who are senior citizens (65+)	10.6.%	12.1%
Median Age	32.6	33.6
Total households	28,687	640,090
Median household income	\$67,698	\$65,761
Percent of rental households	37%	39.9%
Note: Percentage values are rounded to the nearest tenth decimal. Source: 2020 US Decennial Census, US Census ACS Survey 2016-2020		

In terms of its racial and ethnic composition, Hesperia is comprised of a 61.43% (White-Hispanic and White-Non-Hispanic), 3.95% Black or African American, 1.99% Asian, 1.03% Native American, 0.19% Native Hawaiian or Pacific Islander, 16.08% two or more races, 0.47% some other race alone, and 15.33% other races. This population makeup mirrors greater San Bernardino County due to a high proportion of White-Hispanic and White Non-Hispanic and some other race populations. **Table 2-2** shows the racial and ethnic composition for all groups in Hesperia and San Bernardino County.

Hesperia residents have attained slightly lower higher education levels in comparison to San Bernardino County. Comparatively, a smaller proportion of the population has attained bachelor's and professional degrees, 10.9% of the city's residents versus roughly 21.3% of the County's residents. Other categories also differ, such as a larger percentage of people not having education past 9th grade and a slightly larger percentage of people not having graduated high school. **Table 2-3** shows all levels of educational attainment of residents 25 years of age or older in both Hesperia and San Bernardino County.

Table 2-2: Racial and Ethnic Composition, Hesperia and San Bernardino County

Race or Ethnicity	Hesperia		San Bernardino County	
	Population	Percentage	Population	Percentage
White	61,355	61.43%	782,691	35.9%
Black	3,943	3.95%	184,558	8.6%
American Indian and Alaskan Native	1,026	1.03%	41,663	1.9%
Asian	1,992	1.99%	182,287	8.4%
Native Hawaiian and Other Pacific Islander	191	0.19%	7,461	0.3%
Some Other Race Alone	465	0.47%	621,140	28.5%
Two or more races	16,056	16.08%	361,854	16.6%
Lantinx (of any race) *	14,850	14.87%	1,224,685	56.1%
Total	99,878	100%	2,181,654	100%

* The US Census Bureau does not currently count persons who identify as Latinx as a separate racial or ethnic category. Persons who identify as Hispanic or Latinx are already included in the other racial or ethnic categories Note: Percentage values are rounded to the nearest tenth decimal.

Source: 2020 US Decennial Census, US Census ACS Survey 2016-2020

Table 2-3: Educational Attainment of Residents 25+ Years of Age

Educational Attainment	Hesperia		San Bernardino County	
	Number	Percentage	Number	Percentage
Less than 9 th grade	5,823	9.75%	116,664	8.5%
9 th grade to 12 th grade (no diploma)	7,303	12.23%	147,371	10.8%
High school graduate or equivalent	20,263	33.93%	361,289	26.4%
Some college (no degree)	14,923	24.98%	332,044	24.3%
Associate degree	4,882	8.17%	118,673	8.7%
Bachelor's degree	4,538	7.6%	190,544	13.9%
Graduate or professional degree	1,996	3.34%	101,693	7.4%
Total	59,728	100%	1,368,278	100%

Note: Percentage values are rounded to the nearest tenth decimal.

Source: 2020 US Decennial Census, US Census ACS Survey 2016-2020

Hesperia has a wide range of non-English languages spoken at home among its residents, with varying levels of proficiency. Generally, Spanish is the second most-spoken language at home other than English in Hesperia, with approximately 34.6% who are not fluent in English and speak it less than "very well." This is approximately 1% higher than the countywide population of Spanish language speakers. Asian and Pacific Islander languages are the third most-spoken languages in Hesperia, with almost half, 48.3% of these speakers unable to speak English fluently. This is like the rest of San Bernardino

County, where approximately 46.8% of Asian and Pacific Islander language speakers are unable to speak English fluently. **Table 2-4** shows the most spoken languages in Hesperia and the levels of fluency among speakers aged five and older in Hesperia and San Bernardino County.

Table 2-4: English Proficiency and Languages Spoken at Home (2020)				
Languages	Hesperia		San Bernardino County	
	Number of Speakers	Speak English Less Than "Very Well"	Number of Speakers	Speak English Less Than "Very Well"
English only	59,514	-	1,171,425	-
Spanish	31,963	11,058 (34.6%)	689,338	232,270 (33.7%)
Indo-European*	333	111 (33.3%)	27,134	7,379 (27.2%)
Asian and Pacific Islander*	1,004	485 (48.3%)	104,417	48,824 (46.8%)
All other languages	214	60 (28%)	17,498	6,487 (37.1%)
Total	93,028	11,714**	2,009,812	294,960**

*Census data does not break down the specific languages for languages spoken in these regions
 **Due to these figures only being a percentage of the overall number of speakers, they will not add up to 100%. Note: Percentage values are rounded to the nearest tenth decimal.
 Source: 2020 US Decennial Census, US Census ACS Survey 2016-2020

Economy and Commute Patterns

Hesperia has a diverse economy of employers from various sectors, educational services, retail trade, accommodation and food services, health care, and construction. With a total employment base of 73,876 employees. The top employer in the City is Hesperia Unified School District. The second-largest employer is the County of San Bernadino. The next top three employers are Wal-Mart Supercenter, Stater Bros (3 locations), and Super Target.



Hesperia Unified School District. Image from vvdailynews.com

Table 2-5 shows the top five employers in Hesperia for FY 2023-24.

As of 2021, 37,073 Hesperia residents are employed, with approximately 4,279 (11.5%) working within the city. The local workforce accounts for 27.3% of the entire workforce, approximately 15,648 employees (2021), with the remaining workforce coming from surrounding cities throughout the region. **Table 2-6** shows the top five cities that

contribute to Hesperia's workforce, which accounts for over 55.9% of those employed within the city.

Table 2-5: Top Employers in Hesperia

Employer	Number of Employees
Hesperia Unified School District	1,000 – 4,999
County of San Bernardino	500 - 999
Wal-Mart Supercenter	100-499
Stater Bros (3 locations)	100-499
Super Target	100-499
*Per EDD, employment numbers are confidential; therefore, only the data for the range of numbers of employees are available. Source: City of Hesperia Annual Comprehensive Financial Report Fiscal Year 2023-24	

Table 2-6: Top Five Cities-of-Origin for Hesperia's Workforce (2021)

Cities-of-Origin for Hesperia's Workforce	Number of Employees	Percentage
Hesperia	4,279	27.3%
Victorville	2,027	13%
Apple Valley	1,642	10.5%
Adelanto	420	2.7%
Los Angeles	380	2.4%
Total	8,748	55.9%

Source: <https://onthemap.ces.census.gov/>

While the majority of Hesperia's residents commute outside the city for work, most of those residents (55%) travel less than 10 miles to reach their place of employment. Approximately 19.9% of commuters traveled 50 miles or more, with most of those trips heading into the Los Angeles area. **Table 2-7** shows the outflow of workers from Hesperia to other regional worksites.

Table 2-7: Work Commute Distances for Hesperia's Residents (2021)

Work Destinations for Hesperia's Residents	Number	Percentage
Less than 10 miles	8,611	55%
10 to 24 miles	1,683	10.8%
25 to 50 miles	2,234	14.3%
Greater than 50 miles	3,120	19.9%
Total	15,648	100%

Source: <https://onthemap.ces.census.gov/>

Development Trends

Hesperia has experienced significant growth and development over the past 30 years. The population of the City has grown by approximately 13,500 since 2010. With land still available and numerous active developments ongoing within the City, population growth is expected to continue throughout the City.

The Regional Housing Needs Assessment (RHNA) is mandated by State Housing Law as part of the periodic update of General Plan housing elements. Through the RHNA process a community decides how to address existing and future housing needs resulting from population, employment, and household growth.¹

The City recently completed a Housing Element Update 2021-2029 and is currently in the process of a focused update to the City's General Plan. Hesperia's land use controls are designed to maintain the predominantly low-profile residential nature of the community. Nevertheless, the City has adopted multiple specific plans to provide for future residential growth, including Summit Valley Ranch, Tapestry, and Main Street and Freeway Corridor.

Per the Housing Element Update 2021-2029, the City has achieved several accomplishments since the 2014-2021 RHNA:

- 1,580 units have been constructed since January 1, 2014, most of which are market-rate single-family residences affordable to above moderate-income households. A total of 95 affordable units built in the City during this timeframe, a senior apartment complex (Villas Apartments West).
- The City has approved, or is in the process of reviewing, the development of another 362 housing units; these projects are affordable ownership units or affordable rental housing projects.
- The City of Hesperia utilized CDBG funding to improve City conditions for special needs populations. These improvements included public facility and infrastructure improvements, including multiple street improvement projects. Street improvement projects improve accessibility for residents with disabilities.
- The City has allocated general fund dollars to support local service providers that provide homelessness prevention services, homeless shelter, and shelter-related services.
- The County Sheriff's Department created a Homeless Outreach Proactive Enforcement (HOPE) Unit with a goal to reduce the number of homeless individuals.
- San Bernardino County's Department of Aging and Adult Services serves the senior population in cities throughout the County. Programs include meal delivery for elderly residents, caregiver services, employment assistance, and more.

The City of Hesperia's long-term housing goal is to provide housing that fulfills the diverse needs of the community. In the short term, this will be accomplished with the objectives, policies, and programs set forth in this Housing Plan. The goals, policies, and programs in the

¹ What is RHNA? <https://scag.ca.gov/rhna>

Housing Plan build upon the identified housing needs in the community, constraints confronting the City, and resources available to address the housing needs, and will guide City housing policy through the 2021-2029 planning period.

To make adequate provision for the housing needs of all economic segments of the community, the programs in the Housing Plan aim to:

- Assist in the development of housing for low- and moderate-income households;
- Conserve and improve the condition of the existing affordable housing stock;
- Promote energy conservation to ensure development of sustainable housing;
- Identify adequate sites to encourage the development of a variety of types of housing for all income levels;
- Address and, where appropriate and legally possible, reduce governmental constraints to the maintenance, improvement, and development of housing;
- Promote revitalization of existing substandard housing to increase the quality of life for those unable to do so without assistance; and
- Promote housing opportunities for all persons.

Table 2-8 depicts the City's quantified objectives for various housing programs by income/eligibility during the planning period of this Housing Element. These quantified objectives are estimates based on program guidelines, funding sources, and past accomplishments, among other factors. Changes in market conditions and funding availability may affect the City's ability in achieving these objectives.

Table 2-8 Summary of Quantified Objectives for Housing Programs

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Total
New Construction (RHNA)	961	960	1,222	1,406	3,587	8,155
Rehabilitation						
Code Enf. Assistance	0	10	10	0	0	20
HRLP	0	2	3	5	0	10
CDBG-HRLP	0	2	3	0	0	5
Conservation ¹	0	269	656 (w/ 87 at risk of conversion)	28	0	866
Housing Assistance						
Section 8 ²	200	95	0	0	0	295
FTHB	0	0	10	10	0	20

Notes:

1. A total of 87 affordable housing units are at risk of converting to market rate housing during the planning period of this Housing Element. The City has 718 affordable units. Affordability levels of the units at this new project are to be determined and are assumed to be evenly distributed between very low- and low-income categories in this table.
2. The Section 8 program is required by federal regulations to target 70 percent of the assistance to extremely low-income households.

Figure 2-2 displays the areas of proposed land use changes that support the Housing Element goals.

Vulnerability and Risk Reduction

All new development occurring in the areas of change identified in **Figure 2-2** will provide hazard vulnerability and risk reduction for the city. This reduction will occur due to the anticipated improvements and investments implemented in the older parts of the City. In addition, the new developments that will be built will comply with the most up-to-date building codes and use the latest techniques, further reducing vulnerabilities throughout the City.

Major Community Elements

Hesperia Commerce Center

At the hub of thriving economic activity is the Hesperia Commerce Center. Situated on the west side of the I-15 freeway along Caliente Road, this expansive complex covers an impressive 3.5 million square feet. Building 1 is complete with Modway Furniture Wholesaler Peloton Exercise Equipment, and Fellowship Logistics as occupants. Building 2 is complete with Maersk, a global logistics and supply chain company, as occupants. The Covington Group, a nationwide leader in real estate development, received entitlement approval to develop three large industrial buildings totaling over two million square feet. Building and grading plans are in plan check for these buildings, which will be located south of Main Street between Highway 395 and the I-15.²

Notably, 13 million square feet of industrial development throughout the City is currently complete or in Hesperia's permitting or entitlement process.

Hesperia Airport

Hesperia Airport is a public-use and privately owned airport located three nautical miles south of the central business district of Hesperia, California. Silverwood Aviation INC is the owner of the airport. The national plan of integrated airport system classified it as a general aviation, basic utility airport. The nearest flight service station (FSS) is located in Riverside. The airport also has a 16-unit motel with swimming pool, restaurant, bar and additional land for extensions. Mercy Air, a well-known med-evac company, has a fixed base at the airport, including permanent medical and flight crews and their maintenance; they have serviced critical care transportation throughout California and Nevada for over 25 years.³

Hesperia Golf and Country Club

The Hesperia Golf & Country Club is an 18-hole, championship golf course designed by acclaimed golf course architect William F. Bell Jr. in 1957. Hesperia G&CC has been designed with three sets of tees per hole, playing from 6,136 to 7,001 yards. Located amidst the High Desert area of Southern California, the picturesque Hesperia Golf & Country Club is an outstanding locale for private tournaments, golf outings, as well as weddings, banquets, and other social activities utilizing the exquisite Ponderosa ball room and restaurant. The facility includes a 3,000 square foot restaurant and bar with a 2,500 square foot outdoor patio area. Amenities include indoor-outdoor restaurant and bar, grass driving range, pitching green, and putting greens. Banquet room, patio, and outdoor gazebo garden area can accommodate up to 300 persons.⁴

² <https://www.cityofhesperia.us/213/Site-Selectors>

³ https://en.wikipedia.org/wiki/Hesperia_Airport

⁴ <https://www.hesperiaclub.com/history/>

Hesperia Lake

Hesperia Lake is a popular recreational destination located in Hesperia, California. The water for the lake was first found in 1866 when the Deep Creek flume was tapped into. A leak in the pipe formed Hesperia Lake in 1917 and it is still providing the water from the underground well beneath.⁵ The lake offers a variety of outdoor activities, including camping, fishing, picnics, soccer fields, a community center, and an equestrian camp.

Hesperia Parks

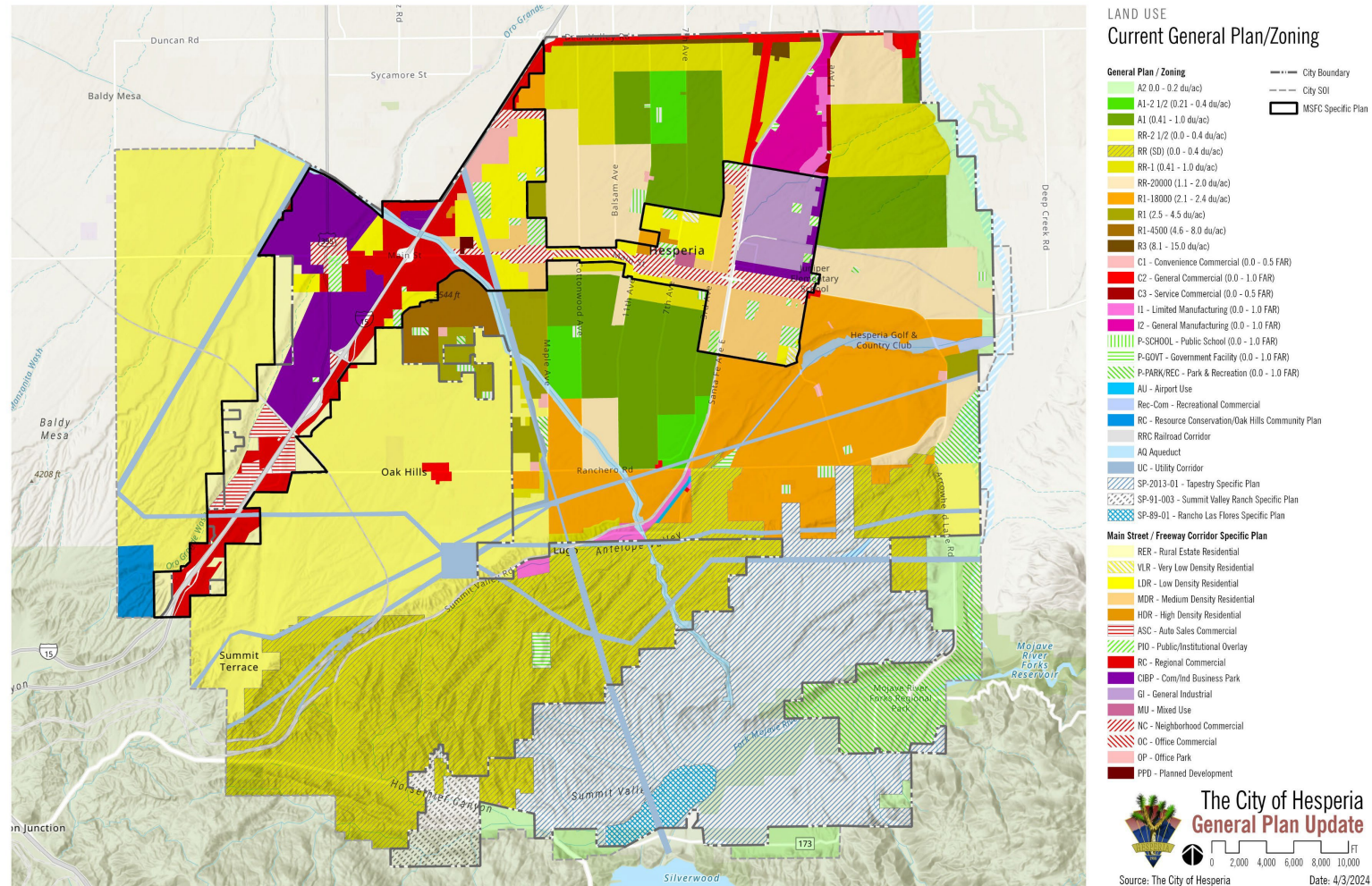
The City of Hesperia and the Hesperia Recreation and Park District (HRPD) share responsibilities in providing open space recreation and activities to the residents of the City, with most public recreational facilities provided by the HRPD. The HRPD is an independent special district within the County of San Bernardino. The HRPD encompasses approximately 100 square miles, including the City of Hesperia and portions of the unincorporated areas of Oak Hills, Summit Valley, and Phelan. The HRPD constructs and maintains parks, recreation facilities, landscape maintenance districts, and streetlights as well as providing services and programs to the community.

Community parks are those facilities that are approximately 10 to 20 acres in size. Lime Street Park, along with the use of facilities at Hesperia High School and Hesperia Junior High School, Palm Street Park, Hesperia Community Park, Malibu Park, Live Oak and Timberlane Parks are considered community parks, for a total of 114 acres of community parks.

The Park District's Master Plan identifies neighborhood parks as approximately 2 to 5 acres in size. These parks are intended to be located in areas of more intense development and to be within walking distance for residents of the neighborhood they serve. In 1988, there were two parks that were considered neighborhood parks: Timberlane and Live Oak Parks. Both parks have since been expanded or improved and are now considered community parks. Today, there are three neighborhood parks totaling 49 acres in Hesperia: Maple, Belmont, and Sapphire Parks. In addition to those parks developed by the HRPD, the City has added an approximately 7-acre park site at the west side of the Civic Center, which includes the City Hall and library and is located on Seventh Avenue. The park includes an amphitheater, water features, and hardscape display areas that facilitate its use as a community gathering place.

⁵ <https://www.sbsun.com/2014/05/24/hesperia-lake-park-a-great-catch/>

Figure 2-2: Housing Element – Proposed Land Use Changes



Land Use Changes (Per Focused General Plan Update Recommendations):
Multiple Family Residence (R3) - Amend to increase density range to 8.1 to 30 units per acre
General Commercial (C2) - Amend to allow mixed-use and 100% residential development
Regional Commercial (RC) - Amend to allow 100% residential development by right

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Infrastructure Assessment

Infrastructure plays a vital role in mitigating the effects of hazard events. When infrastructure fails, it can exacerbate the extent of certain hazards or create complications for rescue workers trying to reach victims. For example, fallen utility poles, because of strong winds or seismic activity, can obstruct roadways and prevent emergency vehicles from reaching affected areas. The following are electrical, fossil fuel, hydrologic, and transportation infrastructure networks in Hesperia.

Electricity

Hesperia receives its electrical supply from Southern California Edison (SCE), located at 12353 Hesperia Road in Victorville. A substation is located within the City, connecting 500 kV powerlines that run north to south. These lines bring power to Hesperia and the surrounding cities and connect to other regional power sources.

San Bernardino County has a rich history of renewable energy development. The Desert Region of the County is home to the first large scale solar projects in the State.⁶ These connections help Hesperia access auxiliary electricity sources should any of its immediate infrastructure fail. However, a larger and more regional failure of the power grid would likely disrupt power transmission to Hesperia for an extended time until power can be restored.

Natural Gas

Hesperia, like many other municipalities, relies on a combination of local distribution companies and interstate pipelines to meet its natural gas needs. Southwest Gas Corporation, located at 13471 Mariposa Road in Victorville, provides natural gas to most of the City. So Cal Gas and Pacific Gas and Electric also provide gas services to Hesperia residents. For those areas in which there are no service lines available, many residents rely on propane offered by private companies.

Hesperia Water District

Hesperia Water District provides water and sewer services for the city. The Hesperia Water District serves as a subsidiary special district of the City of Hesperia.

The city's water service area encompasses an area of approximately 74 square miles. According to the 2020 Hesperia Water District Urban Water Management Plan, they provide over 27,000 connections for a diverse population exceeding 97,000 people. The District's service area population continues to grow, estimated to reach over 130,000 by 2045.

Pursuant to CWC Section 10631.1, retail suppliers are required to include the projected water use for lower income households in 2020 UWMPs. Per California Health and Safety Code Section 50079.5, a lower income household has an income below 80 percent of area median income, adjusted for family size. For purposes of Hesperia's UWMP, annual median income is assumed to be about \$46,000 for the District, with the entire service area recognized by the state as a qualified Disadvantage Community.⁷

Water use in the region has historically been derived from surface supplies derived from the Mojave River and groundwater supplies from the Upper Mojave River Groundwater Basin (Mojave Basin). The rapid expansion of groundwater pumping from the Mojave Basin and

⁶ <https://lus.sbcounty.gov/renewable-energy/>

⁷ <https://gis.water.ca.gov/app/dacs/>

increased use from the surface water supplies to serve the region's growing population led to the Mojave Basin Area Adjudication.

The Victor Valley Wastewater Reclamation (VWWR) Authority is a Joint Powers Authority that provides treatment and distribution of recycled water for its members and entities, which include the Town of Apple Valley, the cities of Hesperia and Victorville, and San Bernardino County Service Areas. A portion of Hesperia's wastewater is treated by the VWWR. The wastewater not treated by VWWR is treated by individual septic systems. The City owns, operates, and maintains a wastewater collection system. The City's sewer system connects to VWWR's 3-mile interceptor that runs along the northeast boundary of the City, and ultimately flows to the Regional Wastewater Treatment Plant that is owned and operated by the VWWR.

The City of Hesperia has future plans to expand its sewer collection system and, in conjunction with VWWR, construct sub-regional wastewater treatment plants to treat the City's future wastewater flows and create a supply source for its planned recycled water system. Currently none of the wastewater is treated or disposed of within the District service area. All of the flows are treated and disposed of at the VWWR's RWWTP.

Waste Management Services

Trash collection is provided to all city residences via the City's franchise waste hauler Advance Disposal. As the City of Hesperia grows, so does Advance Disposal in order to meet the community's needs. In 1992, the state mandated recycling laws requiring cities to reduce their total waste stream by 25% by January 1st. The state has expanded these laws to 50% by 2000 and 75% by 2020. To meet these diversion requirements, city-wide mandatory trash pickup was also established. With this in mind, Advance Disposal Company constructed the first Material Recovery Facility (MRF) in San Bernardino County. The City of Hesperia continues to meet or exceed the 75% landfill diversion rate that will be implemented in 2020. Billing services and information on programs promoting waste minimization and locations for recycling efforts are provided on Advance Disposal's website.⁸

Transportation

Much of the transportation infrastructure in Hesperia consists of roadways for automobiles, but there are other modes of travel into and out of the city, including freeways, buses, and railways.

BNSF Railroad bisects Hesperia along the rail line on which Hesperia was founded. The City's rail development makes Hesperia one of the few viable locations in Southern California able to provide rail accessibility.

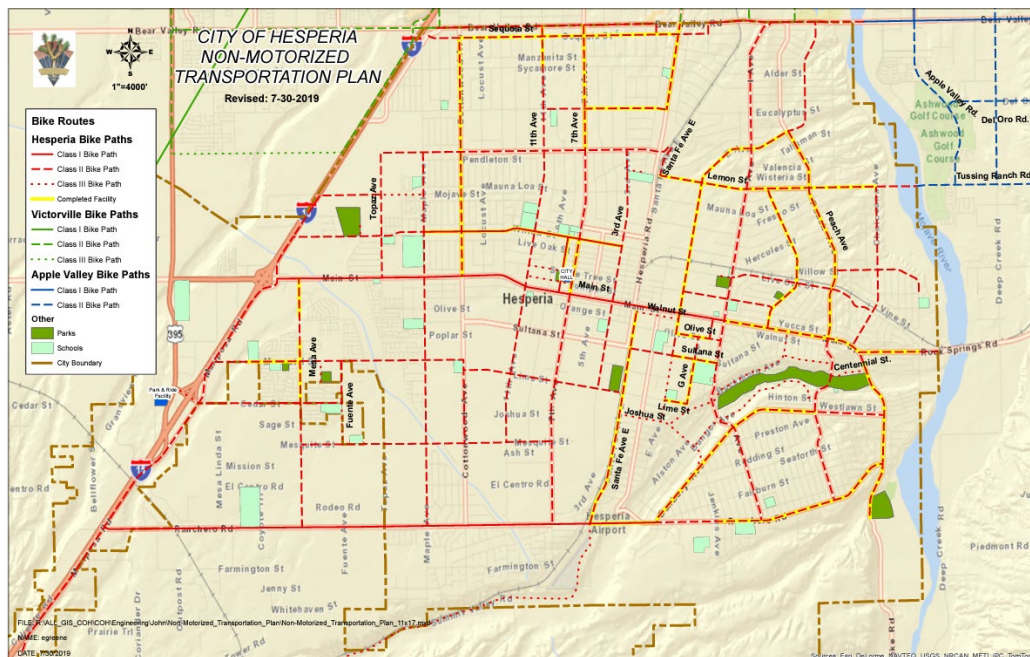
A proposed 49-mile rail system is expected to connect Hesperia to Rancho Cucamonga at speeds of 140 mph through the Cajon Pass. DesertXpress Enterprises, LLC (dba "Brightline West") proposes to construct and operate the Cajon Pass High-Speed Rail Project. At its completion, Brightline West will connect 260 miles between Nevada to Southern California, utilizing high-speed electric trainsets powered by an overhead catenary wire system. The future passenger station in Hesperia will be constructed at the I-15/Joshua St interchange and will offer limited services for select southbound AM and northbound PM weekday train coaches. To accommodate the rail alignment, the existing US-395 northbound connector

⁸ <https://www.advancedisposal.com/>

and the existing Joshua Street bridge will be replaced within the existing right-of-way. The Joshua Street bridge will be reconstructed at a higher elevation, requiring the raising of the I-15 ramps and Mariposa Road. As part of the project design, the northbound on-ramp to Joshua Street will be realigned closer to the freeway, and a station parking area will be added on the north side of Joshua Street with parking accessible at the location of the existing northbound ramp intersection, closest to the Pilot Gas Station, providing accommodation for 360 vehicles, including bus drop off areas. The proposed rail alignment will connect to the DesertXpress Project alignment approximately one mile south of the Victor Valley station in Apple Valley. From this point, the alignment will continue south within the I-15 median, requiring several modifications to accommodate the project. Trains are expected to operate daily on 45-minute headways between Victor Valley and Rancho Cucamonga. The trip between Victor Valley and Rancho Cucamonga would be approximately 35 minutes.⁹

For non-motorized travel, the city has pedestrian trails and bicycle paths. **Figure 2-3** identifies the City of Hesperia's Non-Motorized Transportation Plan as of July 30, 2019.

Figure 2-3 Non-Motorized Transportation Plan



Hesperia is sited on Interstate Highway 15, and Highway 395, a major corridor linking Southern California with Northern California, Nevada, Oregon, and Washington to the Canadian border.

State Route 138 (SR 138) is an east–west state highway in the U.S. state of California that generally follows the northern foothills of the San Gabriel Mountains and the western Mojave Desert. State Route 138 descends through the West Cajon Valley and crosses Interstate 15 in

⁹ <https://www.vvng.com/hesperia-passenger-station-proposed-for-cajon-pass-high-speed-rail-system-connecting-hesperia-to-rancho-cucamonga/>

the Cajon Pass. From Interstate 15 to State Route 173, near the northwest corner of Silverwood Lake, traffic on State Route 138 is rather sparse.¹⁰

SR 173 begins at SR 138 just inside the Hesperia city limits and travels east near the shore of Silverwood Lake, passing near Cedar Springs Dam, several houses and ranches, and the historic Las Flores Ranch site. The road briefly turns north further into the Hesperia city limits, leaving the San Bernardino National Forest. SR 173 leaves the city and enters Mojave River Forks Regional Park, where it turns east and intersects Arrowhead Lake Road, which leads to the urban center of Hesperia.¹¹

U.S. Route 395 (US 395) is a United States Numbered Highway, stretching from Hesperia, California to the Canadian border in Laurier, Washington. The California portion of US 395 is a 557-mile (896 km) route which traverses from Interstate 15 (I-15) in Hesperia, north to the Oregon state line in Modoc County near Goose Lake. The route clips into Nevada, serving the cities Carson City and Reno, before returning to California.¹²

Table 2-9 identifies these major routes that connect to the City's local transportation network.

Table 2-9: City of Hesperia Transportation Infrastructure		
Freeways/Highways in Hesperia	Direction	Exits/Entrances/Routes Serving the City of Hesperia
1-15	North-South	Exit (143) Main Street – Hesperia, Phelan Exit (147) Bear Valley Road – Lucerne Valley Exit (148) Ranchero Rd Exit (150) D Street, runs parallel to Main Street Exit (151) Hesperia Rd Exit (152) Joshua Street
SR-138	East-West	State Route 138 descends through the West Cajon Valley and crosses Interstate 15 in the Cajon Pass.
SR-173	East-West	SR 173 begins at SR 138 inside the Hesperia city limits and travels east near the shore of Silverwood Lake, passing near Cedar Springs Dam.
SR-395	North-South	US 395 North – Bishop, Adelanto (Northbound exit and southbound entrance; southern end of US 395) Joshua Street to US 395 north (Southbound exit and northbound entrance)
Sources: iExitapp.com , https://en.wikipedia.org/wiki/Interstate_15_in_California#Exit_list		

Public transportation options within Hesperia are provided by the Victor Valley Transit Authority (VVTA), which operates local bus services. VVTA is regulated by the San Bernardino County Transportation Authority (SBCTA). Serving more than 2.1 million residents of San Bernardino County, the SBCTA is responsible for cooperative regional planning and furthering an efficient multi-modal transportation system countywide. The SBCTA administers Measure I, the half-cent transportation sales tax approved by county voters in 1989, and supports freeway construction projects, regional and local road improvements, train and bus transportation, railroad crossings, call boxes, ridesharing, congestion management efforts,

¹⁰ https://en.wikipedia.org/wiki/California_State_Route_138

¹¹ https://en.wikipedia.org/wiki/California_State_Route_173

¹² https://en.wikipedia.org/wiki/U.S._Route_395_in_California

and long-term planning studies.¹³

VVTA provides five routes servicing local Hesperia neighborhoods, neighboring cities, including Adelanto, Apple Valley, Victorville, and San Bernardino County. VVTA also offers on-demand shared community transportation services through Micro-Link. The Micro-Link Hesperia Southwest Zone operates in the Hesperia area between Main St., 3rd Ave., Ranchero Rd., and Mariposa Rd. The area has been extended to serve passengers to the High Desert Gateway Shopping Center and other destination points within the City.



Photo Courtesy of Victor Valley Transit Authority

¹³ [San Bernardino County Transportation Authority](#)

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Chapter 3 – Risk Assessment

This chapter discusses the types of hazards that might reasonably occur in Hesperia. It describes these hazards and how they are measured, where in Hesperia they may occur, a history of these hazards in and around Hesperia, and the future risk they pose. The discussion of future risks includes any changes to the frequency, intensity, and/or location of these hazards due to climate change. This chapter also discusses how the HMPC selected and prioritized the hazards in this Plan.

Hazard Identification

FEMA guidance identifies several hazards that communities should evaluate for inclusion in a hazard mitigation plan. Communities may also consider additional hazards for their plans. The HMPC reviewed the previous hazards in the 2017 plan and discussed other potential hazards, excluding ones that do not pose a threat or are not a significant concern to Hesperia. **Table 3-1** lists the hazards considered and explains the reasoning for inclusion/exclusion. For context, this table also shows if a hazard is recommended for consideration by FEMA, if it is included in the 2018 California State Hazard Mitigation Plan (SHMP), the San Bernardino County Hazard Mitigation Plan (SBC HMP), or the 2017 Hesperia LHMP.

Table 3-1: Hazard Evaluation for Hesperia LHMP			
Hazard	Recommended for Consideration	Included in LHMP?	Reason for Inclusion or Exclusion
Agricultural Pests	SHMP 2017 LHMP	No	A limited number of agricultural activities have affected the City. The issue is mitigated through the San Bernardino County's robust agricultural programs and initiatives. The HMP Planning Team does not identify agricultural pests/infestation as a natural hazard of concern for the City at this time.
Active Shooter/ Mass Shooting <i>(Terrorism)</i>	SHMP 2017 LHMP	No	Active Shooter/Mass Shooting incidents pose a threat to public safety. The issue may be more appropriately addressed in the City's Emergency Operations Plan (EOP).
Climate Change	SHMP SBC HMP 2017 HMP	Yes	Climate change can exacerbate weather events causing them to become more severe. While not an issue on its own, it should be mentioned in the HMP.
Cyber Threats	SHMP	No	With the increase in cyber threats occurring throughout California and throughout the nation, there is concern about their effects on communications. However, the issue may be more appropriately addressed in the City's EOP.
Dam Failure	FEMA guidance SHMP	Yes	The three dams near Hesperia that can inundate portions of the City should they

	SBC HMP 2017 LHMP		fail catastrophically including the Mojave Forks Dam, Cedar Springs Dam and Lake Arrowhead Dam. The hazard should be addressed in the HMP.
Drought	SHMP SBC HMP 2017 LHMP	No	The current hydrologic infrastructure and supply for the City are satisfactory. The HMP Planning Team does not consider drought to be a local issue alone, but rather a regional one. Drought is addressed in both the State and SBC County HMP's.
Epidemic, Pandemic, Vector-Borne Disease	SHMP	No	Hesperia is in San Bernardino County, which has experienced several health-related incidents in the past. The City, along with the rest of the county, has responded to the COVID-19 pandemic which has impacted staff and resources. However, the issue may be more appropriately addressed in the City's EOP.
Extreme Heat	FEMA guidance SHMP 2017 LHMP	Yes	Extreme heat occurs often in Hesperia and is a natural hazard. Extreme heat can cause fires and several other issues that can negatively impact the City.
Flooding	FEMA guidance SHMP 2017 LHMP	Yes	Several water courses transect the City and are identified within FEMA flood hazard zones. The presence of flood zones indicates the potential for future hazards. Flooding is a hazard concern and may be addressed in the Flooding Profile.
Hazardous Materials release	SHMP 2017 LHMP	No	Several major roadways, freeways, and rail lines transecting the City allow for the transport of hazardous material that could endanger the community if a release into the environment were to occur. The issue may be more appropriately addressed in the City's (EOP) and/or the Safety Element portion of the General Plan.
High Wind/Severe Wind	FEMA Guidance 2017 HMP	Yes	Severe weather includes discussions regarding extreme heat, severe/high wind, and rain, which are all weather-related hazards that are most common in Hesperia.

*High Wind is considered gusts between 39 mph and 57 mph (between 34 knots and 49 knots). To be considered severe, associated wind gusts must be 58 mph or greater (50 knots or greater).
Source: National Weather Service*

Geologic Hazards/ Seismic Shaking	FEMA guidance SHMP SBC HMP 2017 LHMP	Yes	Hesperia is a seismically active area where shaking can be severe enough to damage property, injury, or loss of life. This hazard should be addressed in the plan.
Severe Weather Events	FEMA guidance SHMP SBC HMP 2017 LHMP	Yes	Severe weather includes discussions regarding extreme heat, severe/high wind, and rain, which are all weather-related hazards that are most common in Hesperia.
Terrorism	SHMP 2017 LHMP	No	Terrorist incidents pose a threat to public safety. The issue may be more appropriately addressed in the City's EOP.
Transportation Accidents	SHMP	No	A transportation incident such as an airplane crash, train derailment, trucking accident and/or freeway closure could impact areas within the city. The issue may be more appropriately addressed in the City's EOP.
Wildfire	FEMA guidance SHMP	Yes	Wildfire events are a major concern to the City due to topography, fuels, and weather. This hazard should be addressed in the plan.

After hazard evaluation and the organizational changes made by the HMPC, this Plan discusses seven broad hazard types with their respective sub-categories:

Hazard Type	Sub-Categories
Earthquake/Geologic Hazards	Seismic Shaking
Flooding	
Severe/Extreme Weather	Severe Winds Extreme Heat Severe Rainstorm
Dam Failure/Inundation	
Wildfire	
Human-Caused Hazards*	Hazardous Materials Release Cyber Threats Terrorism Active Shooter/Mass Shooting Epidemic/Pandemic/Vector-Borne Diseases
Climate Change	Discussed in all Hazard Categories

**Human caused hazards will not be addressed in the Hazard Mitigation Plan. Overall, the HMPC acknowledged that Hazardous Materials Release, Cyber Threats, Terrorism, Active Shooter/Mass Shootings, and Epidemic/Pandemic/Vector-Borne Diseases are risks of concern but agreed that these humans caused hazard risks are better addressed in the City's Emergency Operations Plan. The LHMP will focus on natural hazards unique to Hesperia's jurisdiction.*

Hazard Scoring and Prioritization

Once the hazards for Hesperia have been identified, the hazards are then given a priority ranking. In the Hazard Assessment Matrix below, the "Red" zone represents the highest priority hazards, the "Orange" zone represents significant priority, the "Yellow" represents moderate priority, and the "Green" zone represents the lowest priority hazards. As shown in Hazard Assessment Matrix, the hazards considered the greatest priority are earthquake, flood, and wildfire followed closely by cyber threats and severe/extreme weather (SW) events. The hazard profiles and risk assessment that follow describe these hazards in-depth, reviews the exposure of assets to these hazards, and estimate losses or assess risk for significant events associated with these hazards.

The risk assessment results were derived from the consolidated averages of individual assessments conducted by the HMP Planning Team. The team identified five human-caused hazard categories of concern: Hazardous Materials Release, Cyber-threats, Terrorism, Active Shooter/Mass Shooting, and Epidemic/Pandemic/Vector-Borne Disease. It was collectively agreed that these issues are better addressed in the City's Emergency Operations Plan and/or the Safety Element of the General Plan, as the focus of the LHMP is natural hazard events. These five human-caused hazard categories were included in the Hazard Prioritization Worksheet and Hazard Assessment Matrix for contextual purposes.

Hesperia Hazards Assessment Matrix

CITY OF HESPERIA HAZARD ASSESSMENT MATRIX					
2024 HMP		IMPACT			
		Extensive/Extreme	Significant/Severe	Limited/Moderate	Negligible/Weak
PROBABILITY	Highly Likely	Earthquake/Geologic Hazards	Flooding Wildfire		
	Likely		Cyber Threat	EW-Severe/High Winds EW-Extreme Heat EW-Severe Rain Storm/Thunderstorm	
	Occasional		Terrorism		
	Unlikely		Dam Failure/Inundation Epidemic, Pandemic, Vector-Borne Disease	Hazardous Materials Release Active Shooter/Mass Shooting	
Climate Changes addressed under each hazard					

In addition to the simple prioritization exercise, the HMPC followed FEMA guidance (see **Table 3-2**) for hazard mitigation plans and prioritized each of the hazards identified. In the initial step, it assigned a score of 1 to 4 for each of the hazards for the following criteria:

- **Probability:** The likelihood that the hazard will occur in Hesperia in the future.
- **Location:** The size of the area that the hazard would affect.
- **Maximum probable extent:** The severity of the direct damage of the hazard to Hesperia.
- **Secondary impacts:** The severity of indirect damage of the hazard to Hesperia.

The HMPC assigned a weighting value to each criterion, giving a higher weight to the criteria deemed more important, and multiplied the score for each criterion by weighing the factor to determine the overall score for each criterion. These weighting values were recommended by FEMA:

- Probability: 2.0
- Location: 0.8
- Maximum probable extent: 0.7
- Secondary impacts: 0.5

Table 3-2 shows the Criterion Scoring used to assign a score for each criterion.

After calculating the total impact score for each hazard (sum of the location, maximum probable extent, and the secondary impact). FEMA guidance recommends multiplying the total impact score by the overall probability to determine the final score for each hazard. A final score between 0 and 12 is considered a low-threat hazard, 12.1 to 42 is a medium-threat hazard, and a score above 42 is considered a high-threat hazard. This final score determines the prioritization of the hazards.

In compliance with the Disaster Mitigation Act (and as further specified by Interim Final Rule 44 CFR Section 206.401(c)(2)(ii)), this LHMP addresses, in substantial detail, the primary hazards facing the City. Lower priority hazards are addressed at a lesser level of detail due to their relatively reduced impacts, as identified in the hazard assessment discussion.

Disaster Declaration Connections

Since the previous update the following major disasters, emergency declarations, and fire management events have been issued by the FEMA. Past events identified in this plan have been identified in connection with these events in the “Past Events” sections within each Hazard Profile.

Disaster Declaration - San Bernardino County (2019-2023)					
Year	Declaration Number	Declaration Title	Incident Type	Affected Hesperia	Activated EOC / Requested PA
2023	DR-4699-CA	SEVERE WINTER STORMS, STRAIGHT-LINE WINDS, FLOODING, LANDSLIDES, AND MUDSLIDES	Severe Storm	Yes	Yes
2023	EM-3591-CA	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	Flood	No	No
2023	EM-3592-CA	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, AND MUDSLIDES	Flood	No	No
2021	DR-4569-CA	WILDFIRES	Fire	No	No
2021	FM-5381-CA	BLUE RIDGE FIRE	Fire	No	No
2020	DR-4482-CA	COVID-19 PANDEMIC	Biological	Yes	Yes
2020	EM-3428-CA	COVID-19	Biological	Yes	Yes
2020	FM-5350-CA	EL DORADO FIRE	Fire	No	No
2020	FM-5325-CA	APPLE FIRE	Fire	No	No
2020	FM-5301-CA	HILLSIDE FIRE	Fire	No	No
2019	EM-3415-CA	EARTHQUAKES	Earthquake	No	No

Table 3-2: Hesperia Hazard Prioritization Worksheet

Hazard Type	Probability	Impact			Total Score	Hazard Planning Consideration
		Location	Primary Impact	Secondary Impacts		
Earthquake / Geologic Hazards	4	4	4	4	64.00	High
Flood	4	3	2	3	42.40	High
Severe/High Winds	3	3	2	2	28.80	Medium
Extreme Heat	3	3	2	2	28.80	Medium
Severe Rainstorm/Thunderstorm	3	3	2	2	28.80	Medium
Dam Inundation	1	3	3	3	12.00	Low
Cyber Threat	3	3	3	3	36.00	Medium
Active Shooter/Mass Shooting	1	2	1	2	6.60	Low
Hazardous Materials Release	1	3	2	2	9.60	Low
Terrorism	2	3	3	3	24.00	Medium
Epidemic, Pandemic, Vector-Borne Disease	1	3	3	2	11.00	Low
Wildfire	4	3	2	3	42.40	High

* Climate Change considerations discussed as appropriate within this hazard.

Probability	Importance
<i>Based on estimated likelihood of occurrence from historical data</i>	2.0
<u>Probability</u>	<u>Score</u>
Unlikely - less than 1% chance each year	1
Occasional - a 1 to 10% chance each year	2
Likely - a 10 to 90% chance each year	3
Highly Likely - more than 90% chance each year	4

Secondary Impacts	Importance
<i>Based on estimated secondary impacts to community at large</i>	0.5
<u>Impact</u>	<u>Score</u>
Negligible - no loss of function, downtime, and/or evacuations	1
Limited - minimal loss of function, downtime, and/or evacuations	2
Moderate - some loss of function, downtime, and/or evacuations	3
High - major loss of function, downtime, and/or evacuations	4

Location	Importance
<i>Based on size of geographical area of community affected by hazard</i>	0.8
<u>Affected Area</u>	<u>Score</u>
Negligible	1
Limited	2
Significant	3
Extensive	4

Maximum Probable Extent (Primary Impact)	Importance
<i>Based on percentage of damage to typical facility in community</i>	0.7
<u>Impact</u>	<u>Score</u>
Weak - little to no damage	1
days	2
months	3
conditions	4

Total Score = Probability x Impact, where:
Probability = (Probability Score x Importance)
Impact = (Affected Area + Primary Impact + Secondary Impacts), where:
Affected Area = Affected Area Score x Importance
Primary Impact = Primary Impact Score x Importance
Secondary Impacts = Secondary Impacts Score x Importance

Hazard Planning Consideration			
Total Score	Range	Distribution	Hazard Level
0.0	12.0	5	Low
12.1	42.0	8	Medium
42.1	64.0	5	High

The probability of each hazard is determined by assigning a level, from unlikely to highly likely, based on the likelihood of occurrence from historical data. The total impact value includes the affected area, primary impact and secondary impact levels of each hazard. Each level's score is reflected in the matrix. The total score for each hazard is the probability score multiplied by it's importance factor times the sum of the impact level scores multiplied by their importance factors. Based on this total score, the hazards are separated into three categories based on the hazard level they pose to the communities: High, Medium, Low.

Hazard Profiles

Earthquake / Geologic Hazards

Earthquake and geologic hazards of concern in Hesperia include seismic shaking, liquefaction, surface fault rupture, and earthquake-induced landslides.

DESCRIPTION

An earthquake is a sudden slip on an active fault, and the resulting shaking and radiated seismic energy caused by the slip (USGS, 2009). The majority of major active faults in the Hesperia area are strike-slip faults. For this type of fault, during an earthquake event, one side of a fault line slides past the other. The rupture from this type of fault extends almost vertically into the ground.

Earthquakes strike suddenly and without warning. Earthquakes can occur at any time of the year and at any time of the day or night. On a yearly basis, 70 to 75 damaging earthquakes occur throughout the world. Estimates of losses from a future earthquake in the United States could approach \$200 billion.

Earthquakes are a significant concern to the City. The area around Hesperia is seismically active since it is situated on the boundary between two tectonic plates. Earthquakes can cause serious structural damage to buildings, overlying aqueducts, transportation facilities, utilities, and can lead to loss of life. In addition, earthquakes can cause collateral emergencies including dam and levee failures, fires, and landslides. Seismic shaking is by far the single greatest cause of damage from an earthquake in Hesperia, followed by liquefaction.

SEISMIC SHAKING

Seismic shaking is the shaking felt on the surface caused by an earthquake. In most cases, earthquakes are not powerful enough to feel the shaking. However, powerful earthquakes can generate significant shaking, causing widespread destruction and property damage. As previously discussed, earthquakes are considered a major threat to the City of Hesperia due to the proximity of several regional fault zones. A significant earthquake along one of the major faults could cause substantial casualties, extensive damage, and other threats to life and property. The shaking of the ground can also damage or destroy underground utilities or pipelines, potentially leading to a loss of power, conceivable fires should any natural gas pipelines be damaged, and possible release of hazardous materials and flooding if water lines are breached. These regional fault zones are displayed in **Figure 3-1**.

Liquefaction

Liquefaction is a geologic process that occurs when loosely packed sandy or silty materials saturated with water are shaken hard enough to lose strength and stiffness causing various types of ground failure. It typically occurs in loose, saturated sediments primarily of sandy composition, in the presence of ground accelerations over 0.2g (Borchardt and Kennedy, 1979; Tinsley and Fumal, 1985). When liquefaction occurs, the sediments involved behave like a liquid or semi-viscous substance and are responsible for tremendous damage in an earthquake. The excess hydrostatic pressure generated by ground shaking can result in the formation of sand boils or mud spouts and/or seepage of water through ground cracks. For example, it can cause buildings to collapse, pipes to leak, and roads to buckle. For

liquefaction to occur, three conditions must be met:

- 1) Loose, recently deposited sediments typically sandy in composition.
- 2) Shallow groundwater, typically within 50 feet of the ground surface.
- 3) Seismic shaking with ground accelerations over $0.2g$.

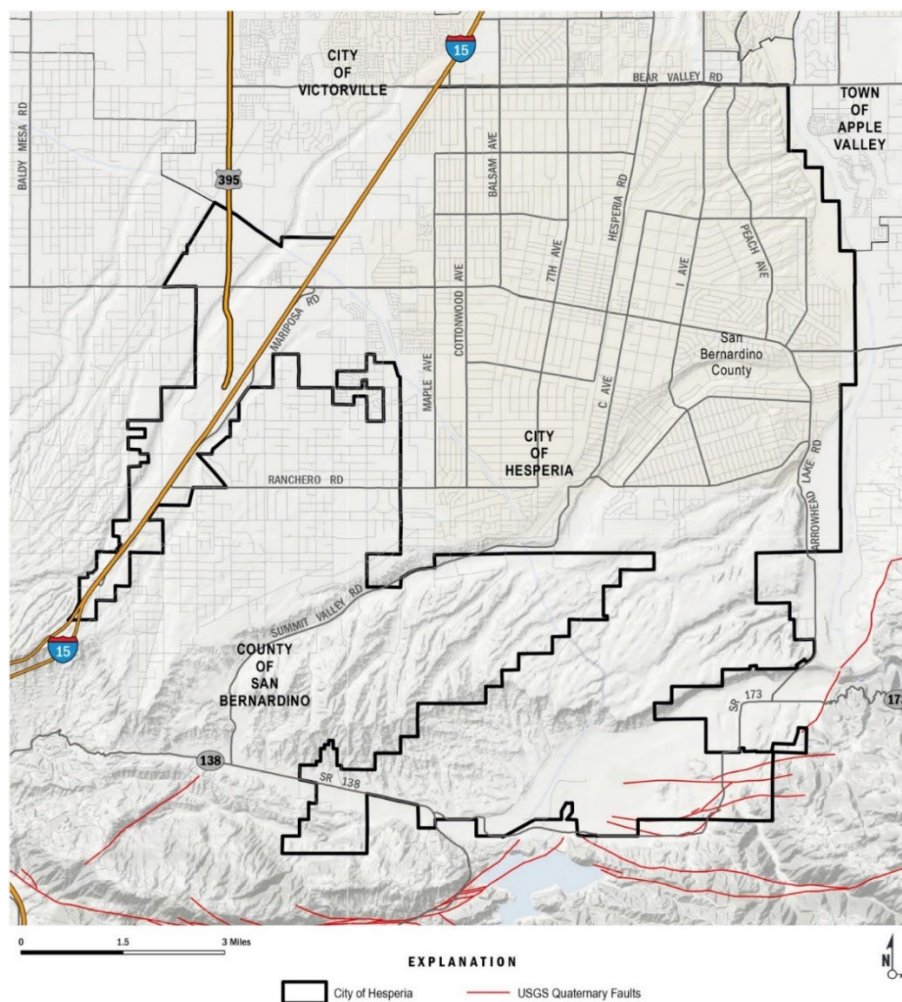
Surface Fault Rupture

Surface fault rupture occurs when movement on a fault deep within the earth breaks through to the surface. Fault rupture almost always follows pre-existing faults, which are zones of weakness. Ruptures may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden ruptures are more damaging to structures because they are accompanied by shaking.

Earthquake-Induced Landslides

Earthquake-induced landslides are secondary earthquake hazards that occur from ground shaking. They can destroy the roads, buildings, utilities, and other critical facilities necessary to respond and recover from an earthquake and are common in areas with steep slopes.

Figure 3-1: Regional Faults and Fault Zones



LOCATION AND EXTENT

SEISMIC SHAKING

Hesperia lies across the boundary of two very distinct geomorphic provinces, each having a unique landscape that reflects the geologic, seismic, and climatic processes that have impacted this region in the last few million years. The very southern edge of the City encroaches into the Transverse Ranges Province, a region whose characteristic features are a series of east-west trending ranges that include the San Gabriel and San Bernardino Mountains. The ranges are called "transverse" because they lie at an oblique angle to the prominent northwesterly grain of the Southern California landscape, a trend that is aligned with the San Andreas Fault. The Transverse Ranges are being intensely compressed by active tectonic forces; therefore, they are some of the fastest rising (and fastest eroding) mountains in the world. The rocks that form these mountains have been sheared and fractured under the strain of tectonic movement.

North of the mountains, the greater part of Hesperia lies within the Mojave Desert Province, an arid region of overlapping alluvial fans, desert plains, dry lakebeds, and scattered mountain ranges. Faults in the Mojave Desert Province have a predominant northwesterly trend; however, some faults aligned with the Transverse Ranges are also present. The east-west trending Garlock Fault defines the northern boundary of the province, whereas the northwest-trending San Andreas Fault roughly defines its western boundary. Hesperia is near the San Andreas Fault and several other seismically active earthquakes sources, including the North Frontal, Cleghorn, Cucamonga, Helendale, and San Jacinto Faults. All of these have the potential to generate moderate to large earthquakes that will shake Hesperia. The North Frontal fault, given its location relative to Hesperia, has the potential to cause the most severe shaking in the City; loss estimation modeling indicates that a maximum magnitude 7.2 earthquake on this fault would be a worst-case scenario for the City.

The intensity of seismic shaking occurs in relation to the amount of energy discharged by the seismic event, which is dictated by the length and depth of the fault. The longer and nearer the surface the fault rupture is, the greater the seismic shaking. In most cases, areas nearest to the fault rupture experience the greatest seismic shaking, while areas more distant experience less shaking. Seismic shaking can damage or destroy structures leading to partial or even total collapse. The shaking of the ground can also damage or destroy underground utilities or pipelines, potentially leading to releases of hazardous materials and flooding if water lines are breached.

Southern California is a highly seismic area because of the major faults that run through the region and the frequency of seismic events in the region. The intensity of seismic shaking is usually measured with the Modified Mercalli Intensity (MMI) scale based on the amount of observed damage. Seismic shaking may also be measured using the more widely known moment magnitude scale (MMS, denoted as M_w or sometimes M), which measures the amount of energy the earthquake releases. The MMS begins at 1.0 and increases as more energy is released. This scale is based on a logarithmic scale, meaning that the difference in energy between two measurements is substantially greater than the difference between the measurements themselves. For example, a M_w 6.5 earthquake releases approximately 1.4 times as much energy as a M_w 6.4 earthquake and 1,000 times as much energy as a M_w 4.5 earthquake. The MMS replaces the Richter scale, which is similar but less reliable when measuring large earthquakes. Since the degree of shaking and consequential

damage generally decreases as the seismic energy travels farther away from the event's point of origin, different sections of a city or region can report different MMI measurements in different locations. Given Hesperia's size, it is likely that different sections of the city would report different MMI measurements. The MMI scale depicted in **Table 3-3** uses Roman numerals on a 12-point scale to measure and describe the effects of the shaking event. **Figure 3-2** shows seismic shaking potential within the city. **Table 3-4** shows estimated horizontal peak ground accelerations and seismic intensities in Hesperia.

Figure 3-2: Seismic Shaking Potential

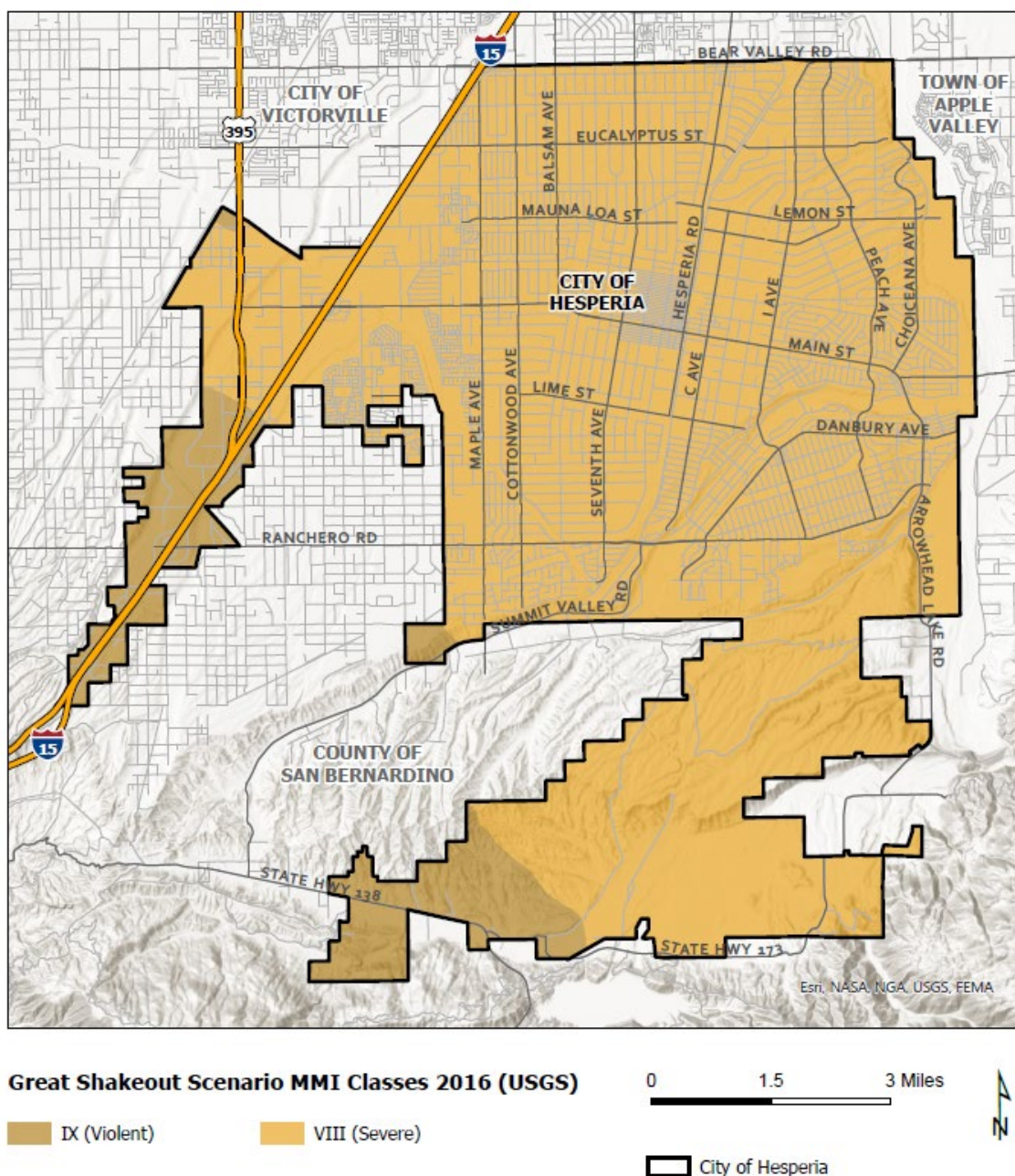


Table 3-3: Modified Mercalli Intensity Scale ¹

Intensity	Description	Description
I	Instrumental	Felt only by very few people under especially favorable conditions.
II	Feeble	Felt only by a few people at rest, especially on the upper floors of buildings.
III	Slight	Noticeable by people indoors, especially on upper floors, but not always recognized as an earthquake.
IV	Moderate	Felt by many indoors and by some outdoors. Sleeping people may be awakened. Dishes, windows, and doors are disturbed
V	Slightly Strong	Felt by nearly everyone, and many sleeping people are awakened. Some dishes and windows broken, and unstable objects overturned.
VI	Strong	Felt by everyone. Some heavy furniture is moved, and there is slight damage.
VII	Very Strong	Negligible damage in well-built buildings, slight to moderate damage in ordinary buildings, and considerable damage in poorly built buildings.
VIII	Destructive	Slight damage in well-built buildings, considerable damage and partial collapse in ordinary buildings, and great damage in poorly built buildings.
IX	Ruinous	Considerable damage in specially designed structures. Great damage and partial collapse in substantial buildings, and buildings are shifted off foundations.
X	Disastrous	Most foundations and buildings with masonry or frames are destroyed, along with some well-built wood structures. Rail lines are bent
XI	Very Disastrous	Most or all masonry structures are destroyed, along with bridges. Rail lines are greatly bent.
XII	Catastrophic	Damage is total. The lines of sight are distorted, and objects are thrown into the air.

¹ United States Geological Survey. 2019. The Modified Mercalli Intensity Scale. <https://earthquake.usgs.gov/learn/topics/mercalli.php>

Table 3-4 Estimated Horizontal Peak Ground Accelerations and Seismic Intensities in Hesperia

Fault Name	Distance to Hesperia miles	Magnitude of MMax	PGA (g) from MMax	MMI from MMax
North Frontal Fault (West)	2 – 14.5	7.2	0.58 – 0.23	X – IX
San Andreas (Whole Southern)	4 – 16.5	8.0	0.49 – 0.34	X – IX
San Andreas (San Bernardino – Coachella)	4 – 16.5	7.7	0.47 – 0.29	X – IX
San Andreas (1857 Rupture or Cholame – Mojave)	7 – 17.5	7.8	0.46 – 0.3	X – IX
San Andreas (San Bernardino)	5.5 – 16.5	7.5	0.45 – 0.26	IX
Cleghorn	3 – 12	6.5	0.42 – 0.18	X – VIII
San Andreas (Mojave)	7 – 17.5	7.4	0.42 – 0.23	X – IX
Cucamonga	9 – 19	6.9	0.35 – 0.16	IX – VIII
Helendale – South Lockhart	13 – 24	7.3	0.27 – 0.16	IX – VIII
San Jacinto (San Bernardino)	9 – 20	6.7	0.26 – 0.12	IX – VII
Sierra Madre	20 – 29	7.2	0.18 – 0.12	VIII – VII
Lenwood – Lockhart Old Women Springs	28 – 39	7.5	0.15 – 0.10	VIII – VII
San Jacinto	23 – 31.5	6.9	0.11 – 0.08	VII

Source: City of Hesperia 2017 HMP

Liquefaction/Surface Fault Rupture

In addition to ground shaking, earthquakes may generate surface fault rupture, and secondary ground failure, either in the form of liquefaction or slope failure. Fault rupture refers to offset of the ground surface along a rupturing fault during an earthquake. Structures that straddle a rupturing fault generally do not perform well. Thus, the Alquist-Priolo Earthquake Fault Zoning Act prohibits the construction of new habitable structures astride an active fault, and requires geologic studies that locate and evaluate whether the fault has moved in the Holocene to be conducted prior to development. The state geologist has identified (zoned) several faults in California for which these studies are required, but there are several other active faults that have not yet been zoned that should be evaluated in the same way. There are no faults zoned by the State of California within the Hesperia General Plan area. The closest zoned faults include the North Frontal approximately 2 miles east of Hesperia, and the San Andreas, located at its closest approximately 4 miles to the southwest. However, some of the faults on the east side of Summit Valley, within and just south of the General Plan area, may be active.

Liquefaction is a secondary effect of seismic shaking that can cause various types of ground failure. Soils that liquefy lose the ability to support structures; buildings may sink or tilt, with the potential for extensive structural damage. Geologically young, loose, unconsolidated sediments occur throughout the Hesperia area, but shallow groundwater occurs only within the Mojave River floodplain, where water at depths of less than 30 feet has been recorded. Ground shaking of 0.2g and relatively long duration can be expected in the Hesperia area as a result of an earthquake on any of several faults in the region. Based on this information, the Mojave River floodplain has been identified as a liquefaction-susceptible area. Liquefaction-related lateral spreads (landslides that form on gentle slopes) can occur adjacent to stream channels and deep washes that provide a free face along which the liquefied mass of soil fails. Lateral spreads can cause extensive damage to pipelines, utilities, bridges, roads and other structures.

Earthquake-Induced Landslides

Seismic shaking can also cause loose, geologically young deposits to become more tightly packed, resulting in a reduction of the soil column, and differential settlement at the ground surface. Several areas in Hesperia are underlain by unconsolidated, young alluvial deposits and artificial fill that may be susceptible to settlement. Geotechnical studies prior to development should address this hazard on a site-specific basis. Seismically induced slope failure is a common secondary effect of seismic shaking. Although most of Hesperia is on relatively level to gently sloping terrain, there are a few natural slopes in the City that could be vulnerable to this hazard.

The hazards of sidehill fill deformation, ridgetop fissuring and shattering, and seiching may occur locally only in a few areas of Hesperia. Sidehill deformation could potentially occur along some of the approaches to the bridges that extend across Interstate 15 or the Mojave River, where minor settlement of the bridge embankment could result in a step-up of a few inches to the actual bridge. Failure of sidehill fills could also occur locally in the foothills of the San Bernardino Mountains, on lots where grading involved the placement of fill to make a level building pad. Ridgetop shattering may occur locally in the southern part of Hesperia, in the San Bernardino Mountains, and in the foothills at the base of the mountains, to the south and east of Summit Valley Road. Seiches due to seismic shaking could occur in Silverwood Lake, Hesperia Lake, and any recharge basin in the City, if filled with water at the time of the earthquake. In unlined lakes and basins, sloshing of water against the basin sides could result in erosion and even some surficial slope failures. Water in swimming pools is also known to slosh during earthquakes, although in most cases, the sloshing water does not cause any significant damage. Given its distance from the ocean, Hesperia does not have a tsunami hazard.

PAST EVENTS

SEISMIC SHAKING

There were no major federal or state disaster declarations for earthquakes in the planning area since the last update. While no significant earthquake has originated within Hesperia within the last 100 years, the city has felt the shaking of regional earthquakes. The most recent major seismic shaking event near Hesperia was the Ridgecrest Sequence of Earthquakes on July 4, 2019. The event was a sequence of multiple earthquakes registered as an M_w 6.4 followed by an M_w 7.1.² The event caused over 25 injuries, resulted in one death, and caused over \$5 billion in damage.³ The next most recent event occurred on January 17, 1994, in Northridge, registering as an M_w 6.7⁴ causing 57 deaths, more than 8,700 injuries, and approximately \$20 billion in damage costs, plus an additional economic loss of \$40+ billion.

On June 6, 1992, there were multiple large events in Big Bear and Landers, California, with a rating of M_w 6.5 and M_w 7.3, respectively. These events resulted in 3 deaths, nearly 500 injuries, and approximately \$1.52 billion in damages.⁵

² California Earthquake Authority. 2020. List of Notable and Major California Earthquakes. <https://www.earthquakeauthority.com/California-Earthquake-Risk/California-Earthquake-History-Timeline>

³ National Centers for Environmental Information. 2020. Global Significant Earthquake Database, 2120 B.C. to present. <https://www.ngdc.noaa.gov/hazard/earthqk.shtml>

⁴ California Department of Conservation. N.d. Northridge Earthquake, January 17, 1994. <https://www.conservation.ca.gov/cgs/earthquakes/northridge>

⁵ National Centers for Environmental Information. 2020. Global Significant Earthquake Database, 2120 B.C. to present.

Many major faults are located throughout Southern California, including some well-known ones like the San Andreas and San Jacinto Fault Zones. Proximity to a variety of active faults ensures that seismic hazards will continue to be a major concern for the city. **Table 3-5** identifies the major earthquakes that have occurred within 100 miles of the City. **Table 3-6** identifies earthquakes, M_w 4.0+, which have occurred in San Bernardino County. The LHMP Planning Team noted the following regional and local events for seismic activity in the City of Hesperia.

Table 3-5: Significant Earthquakes ($5.0+M_w$) Within 100 Miles of Hesperia	
Event Name	Magnitude
7/16/1985	M_w 5.2 - Lucerne Valley
2/28/1990	M_w 5.7 - Claremont
6/28/1992	M_w 7.3 – Landers
6/28/1992	M_w 6.3 - Big Bear
11/27/1992	M_w 5.0 - Fawnskin
12/4/1992	M_w 5.2 – Lucerne Valley
2/22/2003	M_w 5.2 - Fawnskin
7/4/2019	M_w 6.4 - Ridgecrest
7/5/2019	M_w 7.1 - Ridgecrest
*Distance between the epicenter and Hesperia.	

Table 3-6: Earthquakes (Greater than $4.0+M_w$) In San Bernardino County		
Date	Name	Magnitude
9/14/2011	Calimesa	M_w 4.1
1/15/2014	Fontana	M_w 4.4
7/5/2014	Running Springs	M_w 4.6
7/25/2015	Fontana	M_w 4.2
9/16/2015	Big Bear Lake	M_w 4.0
12/30/2015	Muscoy	M_w 4.4
1/6/2016	Banning	M_w 4.4
7/29/2024	Barstow	M_w 4.9

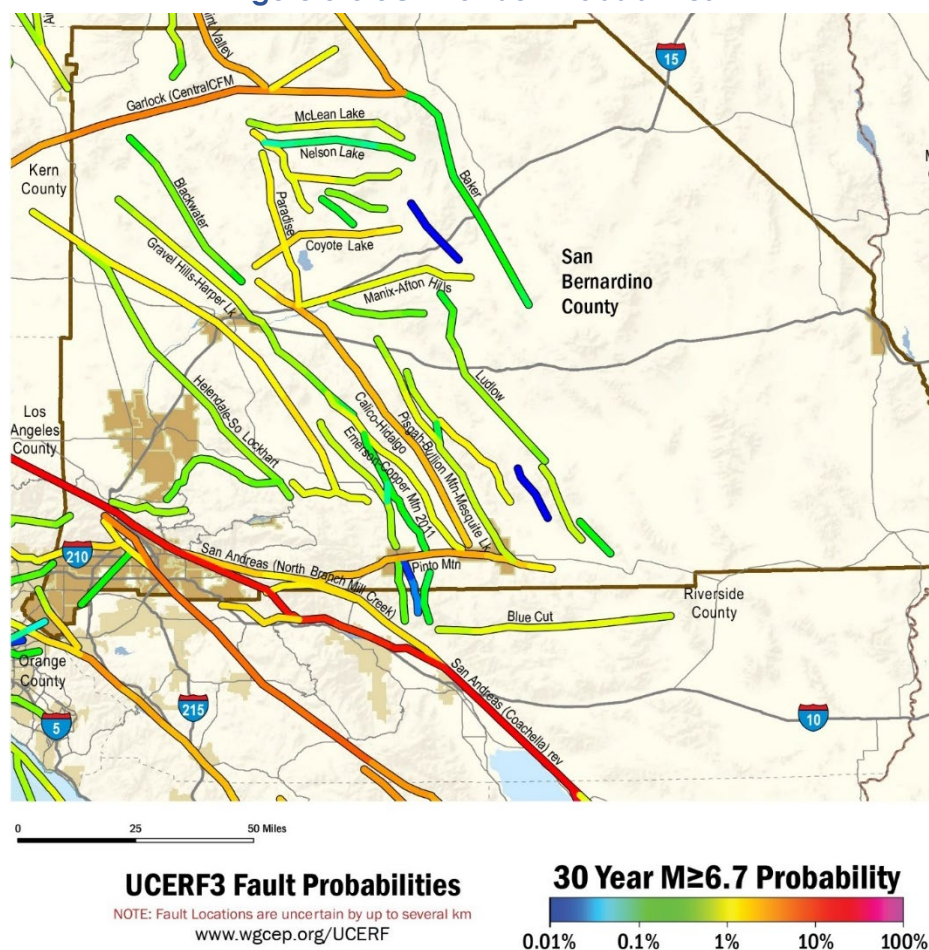
It should be noted that hundreds of smaller ($<M_w$ 4.0) earthquakes within San Bernardino County were not listed.

<https://www.ngdc.noaa.gov/hazard/earthqk.shtml>

RISK OF FUTURE EVENTS

Hesperia is in a seismically active area with many faults in the surrounding area and region-at-large. There will be an ever-present danger, of course, posed by any seismic shaking, which could potentially cause damage to buildings and/or infrastructure. It is almost inevitable that an earthquake will occur along one of the adjacent or regional fault lines and cause a major seismic event. The Third Uniform California Earthquake Rupture Forecast (UCERF3) was released in 2015 and is the most recent assessment of the probability of a major earthquake on various faults between 2015 to 2044. **Figure 3-3** shows the locations of major faults in Southern California in relation to San Bernardino County region. These faults are the Southern San Andreas, the San Jacinto, the Elsinore, and the Garlock Faults. There are also many smaller faults within San Bernardino County capable of producing significant earthquakes. However, these four faults are considered by the United States Geological Survey (USGS) and the California Geological Survey (CGS) to be the most dangerous in the County. (California Geological Survey Special Publication 42, Interim Revision 2007, "Fault-Rupture Hazard Zones in California" - Alquist-Priolo Earthquake Fault Zoning Act).

Figure 3-3 UCERF3 Fault Probabilities



In addition to UCERF3 forecasts, which project the odds of a major earthquake on local and regional faults, the U.S. Geological Survey forecasts that the probability of an earthquake occurring over the next 30 Years in the Southern California with a magnitude of 6.7 or greater is 93 percent. **Table 3-7** from the USGS lists Average repeat time between earthquakes in the Southern California region together with the likelihood of having one or more such earthquakes in the next 30 years. "Readiness" indicates the factor by which likelihoods are currently elevated, or lower, because of the length of time since the most recent large earthquakes. The values from the USGS include aftershocks. It is important to note that actual repeat times will exhibit a high degree of variability and will almost never exactly equal the average listed in the table.

Table 3-7: Southern California Region Earthquake Probability			
Magnitude (< or =)	Average repeat time (yrs.)	30-year likelihood of one or more events	Readiness
5	.7	100%	1.0
6	2.3	100%	1.0
6.7	12	93%	1.0
7	25	75%	1.1
7.5	87	36%	1.2
8	522	7%	1.3

Source: USGS UCERF3: A New Earthquake Forecast for California's Complex Fault System FS 2015-3309

CLIMATE CHANGE CONSIDERATIONS

SEISMIC SHAKING

There is no direct link between climate change and seismic activity that could impact Hesperia, so climate change is not expected to cause any changes to the frequency or intensity of seismic shaking.

Liquefaction

As our climate shifts, some locations will experience more extreme rains, which can make slopes more prone to land sliding and wide river valleys more prone to liquefaction during an earthquake.⁶

Surface Fault Rupture

As our climate shifts, some locations will experience more extreme rains, which can saturate soil and increase the potential for lateral spread.⁷

Landslides

Climate change is leading to changes in precipitation patterns and more frequent extreme weather events such as intense rainfall or prolonged droughts. Heavy rainfall can increase the likelihood of landslides triggered by earthquakes by saturating soil and destabilizing slopes.

⁶ <https://www.geohaz.org/post/climate-change-can-amplify-earthquake-and-volcano-impacts#:~:text=As%20our%20climate%20shifts%2C%20some,during%20an%20earthquake%2Dtriggered%20tsunami.>

⁷ Chrome extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.fhwa.dot.gov/engineering/geotech/pubs/hif23008.pdf

Flood

DESCRIPTION

Floods are a common hazard in many parts of California, including Hesperia. Ultimately, a flood occurs when there is too much water on the ground to be held within local water bodies, causing water to accumulate in naturally dry areas. They are often caused by heavy rainfall, though floods can also occur after a long period of moderate rainfall or if unusually warm weather causes mountain snow to melt faster than expected. Floods that develop quickly, known as flash floods, are especially dangerous because there may be little warning that one is occurring, but floods can also build over a more extended period.

A flood, as defined by FEMA's National Flood Insurance Program (NFIP), is: "A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (at least one of which is the policyholder's property) from:

- Overflow of inland or tidal waters, or
- Unusual and rapid accumulation or runoff of surface waters from any source, or Mudflow, or
- Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels."

Floods can be slow or fast rising but generally develop over a period of hours or days. Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Investing in mitigation measures now, such as: engaging in floodplain management activities, constructing barriers such as levees, and purchasing flood insurance will help reduce the amount of structural damage and financial loss from other types of property damage should a flood or flash flood occur.

Floods are dangerous for several reasons. The floodwaters can be deep enough for people to drown and moving fast enough to sweep people away. The moving water can damage buildings with its force (in extreme cases, it may move entire structures) or carry large debris that damages objects with which it collides. When water gets into buildings, it can cause extensive damage to personal property, ruining building materials, furniture, electronics, and numerous other items. Both standing and moving water can be barriers to movement, isolating people and hindering evacuation, rescue, or relief efforts.

LOCATION AND EXTENT

Like most of Southern California, Hesperia is subject to unpredictable seasonal rainfall. Every few years, the region is subjected to periods of intense and sustained precipitation. Most of the flooding occurs in the numerous washes, natural drainage courses, drainage easements, and floodways. Construction of the Mojave Forks Dam in 1971 greatly reduced the impact of flooding along the Mojave River, although a few parcels adjacent to the river are still at risk. Most of Hesperia is located on alluvial fans, relatively flat to sloping areas covered with sediment deposited by shallow, intermittent streams that spread out away from their source in the mountains to the south. The historical and geological records show that alluvial fan

flooding is unpredictable, and floodwaters can travel at dangerously high speeds, be highly erosive, and can carry large amounts of sediment and other debris. These characteristics make it difficult to assess the flood risk and develop reliable mitigations for alluvial fans.

Hesperia has participated in the National Flood Insurance Program since 1989. The extent of flooding in the Mojave River, Antelope Wash, the Oro Grande Wash, and the Summit Valley area has been analyzed through Flood Insurance Studies, but the entire Hesperia area has not been studied, and the flood zones are incomplete. Inundation due to a 100-year flood (a flood that has a 1 percent probability of being equaled or exceeded in any given year) can occur along the Mojave River, Antelope Valley Wash, and Summit Valley. Several structures in the Antelope Valley Wash area are located within this zone. In the Summit Valley area, most homes are above the flood zone, but access to these homes can be cut off during severe flooding of the West Fork of the Mojave River. Highways 138 and 173 and several major roadways, including I Avenue, Rock Springs Road and Ranchero Road, extend across these 100-year flood zones. Federally subsidized flood insurance is available to all Hesperia residents. Owners of all structures with the 100-year flood zone are required to purchase and maintain flood insurance as a condition of receiving a federally related mortgage or home equity loan on that structure. Residents outside the 100-year flood zone but in areas of recurrent flooding should consider flood insurance also.

Development in the Hesperia area began gradually and in a piecemeal fashion, without the benefit of a planned drainage network. Development occurred with only minor alterations to the natural topography. As a result, natural drainage courses meander through developed areas, and most streets follow the natural contours of the land, often without culverts or bridges across drainage channels. Underground pipelines, culverts, bridges, and basins are present, but are not common. This leads to localized flooding, road closures, erosion damage, and sedimentation during and following strong storms, particularly if the ground is already saturated. More recent developments, since the City's incorporation, include on-site retention basins and other engineered structures, as needed. Furthermore, in the last decade, the City has constructed several drainage facilities. Asphalt berms along several roadways control surface flows, and a nearly 2-mile-long channel with levees affords some protection to the homes near the bottom of the Antelope Valley Wash.

Flood events are measured by their likelihood of occurrence. For instance, a 100-year flood is a flood that has a 1 in 100 (1.0 percent) chance of occurring in any given year. A 500-year flood is a flood that has a 1 in 500 (0.2 percent) chance of occurring in any given year. The 100-year flood has been designated as the benchmark for major flood events. Thus 100-year floods are referred to as "base floods."

Floodplains are areas that are prone to flooding and often experience frequent flooding. While it is possible for areas outside of these designated floodplains to experience flooding, the most likely locations to experience future flooding are low-lying areas near bodies of water. FEMA is the governmental body responsible for designating which areas of the United States can be classified as floodplains.

The three most common designations are:

- Special Flood Hazard Area: The area within a 100-year floodplain.

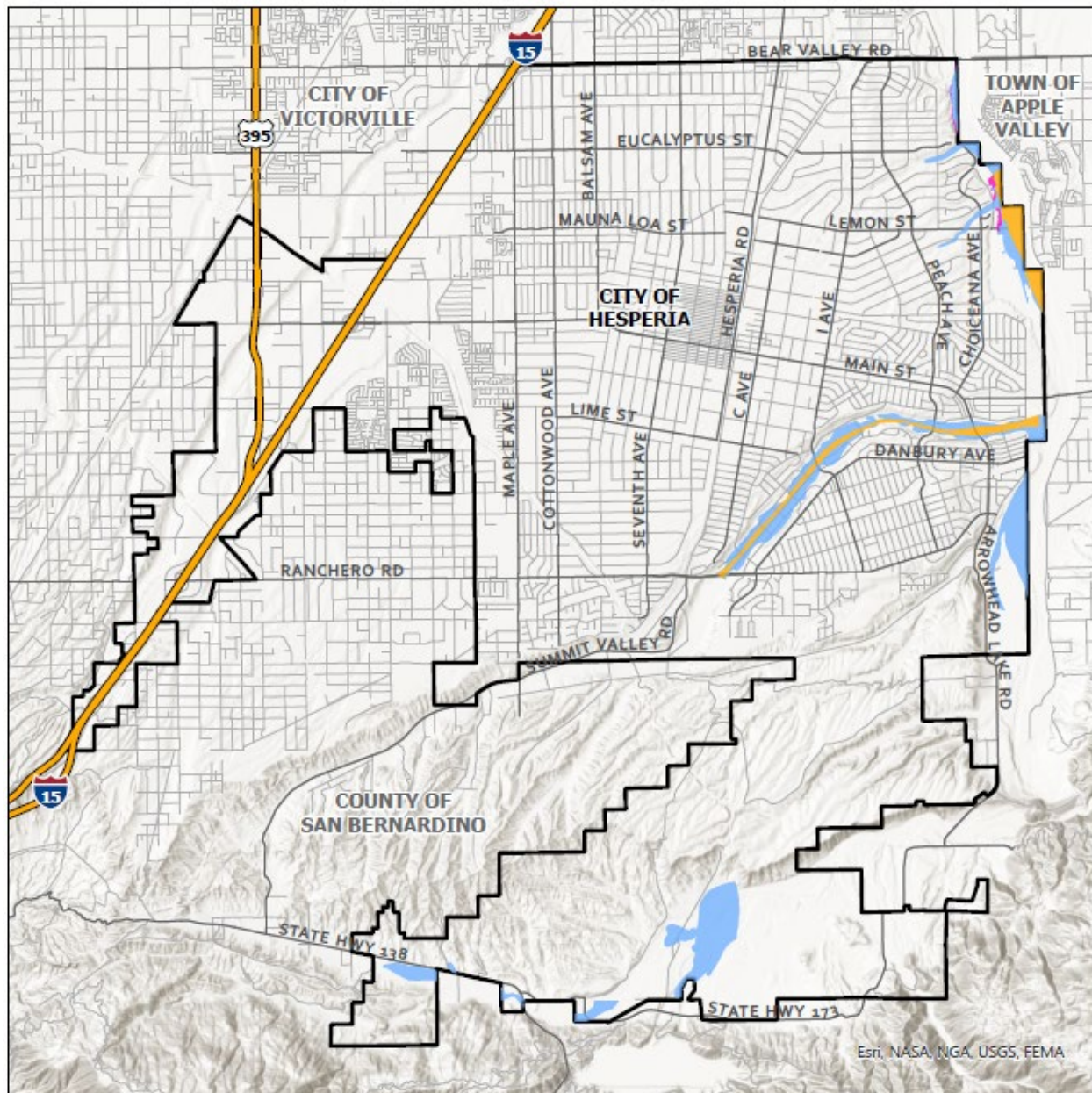
- Moderate Flood Hazard Area: The area outside the 100-year floodplain but within the 500-year floodplain.
- Minimum Flood Hazard Area: The area outside of the 500-year floodplain.

FEMA has multiple floodplain categories for each unique environment within these three designations. **Table 3-8** shows these detailed floodplain categories. FEMA classifies Hesperia under several floodplain categories: A, A01-A30, A99, AE, AH, AO, AR, B, C, D, V, V01-V30, and VE; the location of these floodplains can be seen on the FEMA Flood Hazard Zone Map depicted in **Figure 3-4**.

Flooding hazards can potentially impact a significant amount of the community; however, less than 10% of this area is subject to a 100-year event. Development within flood hazard areas is expected to comply with flood protection standards that reduce vulnerability to flood impacts and ensure safe use and occupation of structures.

Table 3-8: FEMA Floodplain Categories

Category	Description
A	Within a 100-year floodplain, but the water height of the 100-year flood is not known.
A1-30 or AE	Within a 100-year floodplain and the water height of the 100-year flood is known.
AO	Within a 100-year floodplain, and the water height of the 100-year flood is between one and three feet but not specifically known.
A99	Within a 100-year floodplain, it is protected by flood protection infrastructures such as dams or levees.
AH	Within a 100-year floodplain, and the water height of the 100-year flood is between one and three feet and is specifically known.
AR	Within a 100-year floodplain, it is protected by flood protection infrastructure that is not currently effective but is being rebuilt to provide protection.
V	Within a 100-year floodplain for coastal floods, but the water height of the flood is not known.
V1-30 or VE	Within a 100-year floodplain for coastal floods and the water height of the flood is known.
VO	Within a 100-year floodplain for shallow coastal floods with a height between one and three feet.
B	Within a 500-year floodplain, or within a 100-year floodplain with a water height less than one foot (found on older maps).
C	Outside of the 500-year floodplain (found on older maps).
X	Outside of the 500-year floodplain (found on newer maps).
X500	Within a 500-year floodplain or within a 100-year floodplain with a water height less than one foot (found on newer maps).
D	Within an area with a potential and undetermined flood hazard.
M	Within an area at risk of mudslides from a 100-year flood event.
N	Within an area at risk of mudslides from a 500-year flood event.
P	Within an area at risk of mudslides from a potential and undetermined flood event.
E	Within an area at risk of erosion from a 100-year flood event.
Source: 24 CFR, Section 64.3	

Figure 3-4: Flood Hazard Zones in Hesperia**100 Year Flood Zone (FEMA 2016)**

- 100 Year Flood Zone (Floodway)
- 100 Year Flood Zone
- 500 Year Flood Zone

0 1.5 3 Miles

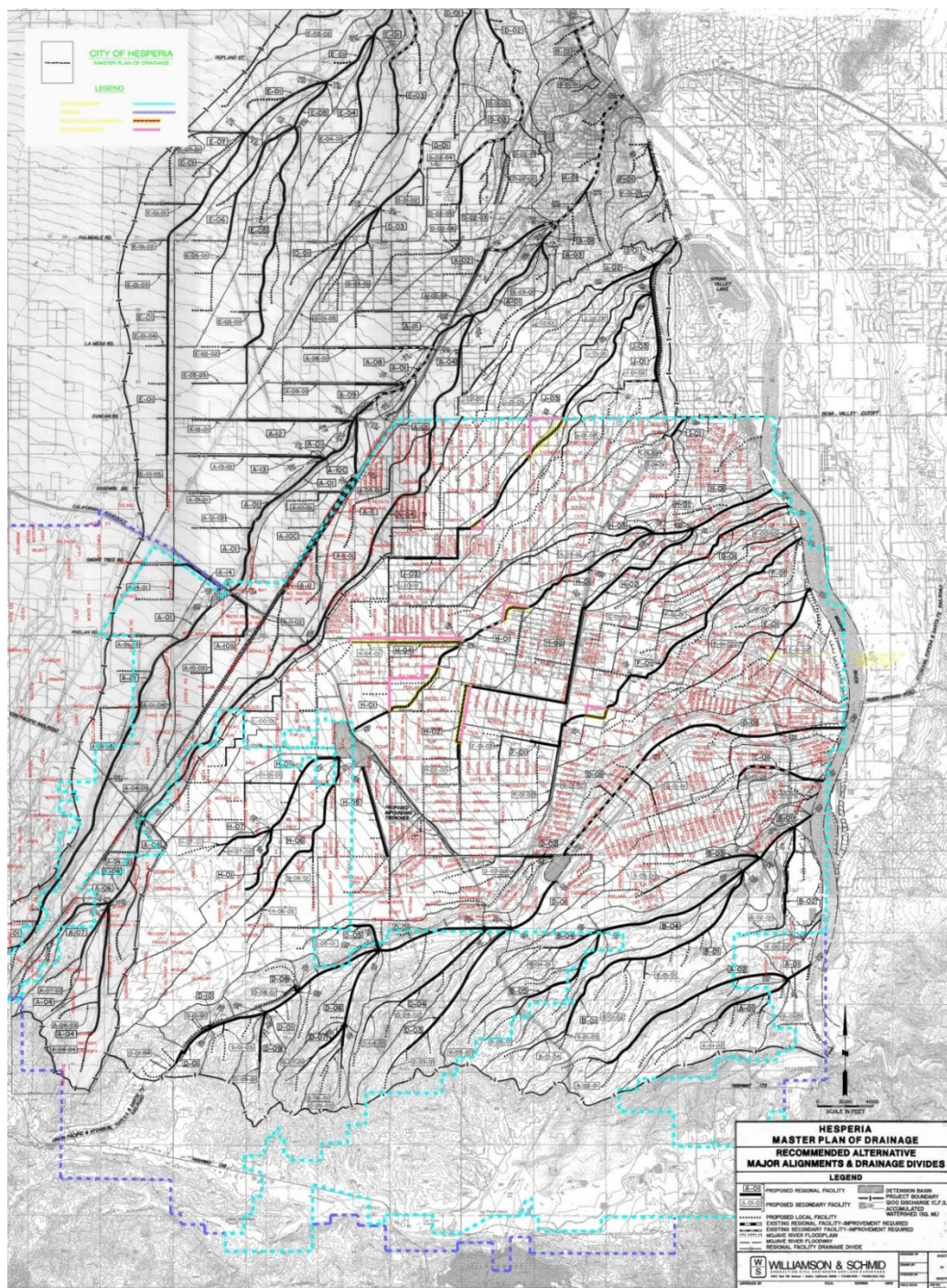
City of Hesperia



Source: GIS Department

Figure 3-5, Master Plan of Drainage, shows flood corridors within city limits. The Master Plan floodplain mapping is consistent with a previous study of the floodplain by the U.S. Army Corps of Engineers.

Figure 3-5: Master Plan of Drainage



The City has also identified a number of locations where flooding can occur during precipitation events. **Table 3-9** identifies these locations as problematic areas for surface flow flooding due to precipitation events that require flooding signage and debris clean up measures by the City's Public Works Division.

Table 3-9 Flooding Hotspots in Hesperia			
Location			
Maple Ave	Sycamore St	11668 Maple Ave (property line)	S/B
Maple Ave	Eucalyptus St	N/E corner	N/B
Eucalyptus St	Maple Ave	N/W corner	W/B
Eucalyptus St	Tamarisk Ave	south side	E/B
Maple Ave	Hercules St	10280 Maple Ave (property line)	S/B
Maple Ave	Willow St	N/E corner	N/B
Riverside St	Maple Ave	S/E corner	E/B
Riverside St	Cottonwood Ave	N/W corner	W/B
Live Oak St	Datura Rd	N/W corner	W/B
Live Oak St	E/of Mount Shasta Dr	13851 Live Oak St (property line)	E/B
Locust Ave	Eucalyptus St	N/E corner	N/B
Locust Ave	Birch St	S/W corner	S/B
Eleventh Ave	Riverside St	S/W corner	S/B
Eleventh Ave	Cashew St	N/E corner	N/B
Seventh Ave	Verde St	N/E corner	N/B
Seventh Ave	Mesa St	S/W corner	S/B
Third Ave	Mauna Loa St	S/W corner	S/B
Third Ave	Mojave St	N/E corner	N/B
Hesperia Rd	Sultana St	450ft. N/of Sultana St	S/B
Hesperia Rd	Sultana St	450ft. S/of Sultana St	N/B
Third Ave	Sultana St	450ft. S/of Sultana St	N/B
Third Ave	Sultana St	450ft. N/of Sultana St	S/B
Fifth Ave	Sultana St	450ft. S/of Sultana St	N/B
Fifth Ave	Sultana St	450ft. N/of Sultana St	S/B
Seventh Ave	Sultana St	450ft. S/of Sultana St	N/B
Seventh Ave	Sultana St	450ft. N/of Sultana St	S/B
Eighth Ave	Sultana St	450ft. S/of Sultana St	N/B
Eighth Ave	Sultana St	450ft. N/of Sultana St	S/B
Ninth Ave	Sultana St		N/B
Ninth Ave	Sultana St		S/B
Eleventh Ave	Sultana St	450ft. S/of Sultana St	N/B
Eleventh Ave	Sultana St	450ft. N/of Sultana St	S/B
Cottonwood Ave	Sultana St	450ft. S/of Sultana St	N/B
Cottonwood Ave	Sultana St		S/B

Cottonwood Ave	Orange St	S/W corner	S/B
Orange St	Cottonwood Ave	15305 Orange St (property line)	E/B
Orange St	Hickory Ave	15242 Orange St (property line)	W/B
Walnut St	Cottonwood Ave	15201 Walnut St (property line)	E/B
Walnut St	Hickory Ave	N/W corner	W/B
Maple Ave	Sultana St		N/B
Maple Ave	Sultana St		S/B
Ranchero Rd	Primrose Ave	S/W corner	E/B
Ranchero Rd	Maple Ave	S/E corner	E/B
Ranchero Rd	Lincoln Ave	N/W corner	W/B
Maple Ave	Arthur St	S/W corner	S/B
Maple Ave	Aspen St	N/E corner	N/B
Main St	Pyrite Ave	N/W corner	W/B
Main St	Wal-Mart Fuel Station	East property line	E/B
Santa Fe Ave E	Spruce St		S/B
Santa Fe Ave E	Yucca St	N/E corner	N/B
Spruce St	C Ave	N/W corner	W/B
Spruce St	Santa Fe Ave E	S/E corner	E/B
C Ave	Smoke Tree St	N/E corner	N/B
C Ave	Hercules St	450ft. Before RR tracks	S/B
E Ave	Lemon St	N/E corner	N/B
E Ave	G Ave	N/W corner	S/B
E Ave	W/of Peach Ave	North side	W/B
Lemon St	C Ave	North side	W/B
Lemon St	Santa Fe Ave E	S/E corner	E/B
Lemon St	I Ave	N/W corner	W/B
Lemon St	G Ave	South side	E/B
Talisman St	Valencia St		N/B
Talisman St	Cactus Ave		S/B
Orchid Ave	Lilac St	N/E corner	N/B
Orchid Ave	Eucalyptus St	S/W corner	S/B
Orchid Ave	Verano St	N/E corner	N/B
Orchid Ave	Talisman St	S/W corner	S/B
Pitache St	W/of Peach Ave	17983 Pitache St (property line)	E/B
Pitache St	Peach Ave	N/W corner	W/B
Peach Ave	Sumac Ave		N/B
Peach Ave	S/of Live Oak St	9402 Peach Ave	S/B
Santa Fe Ave E	Ranchero Rd	S/W corner	S/B
Summit Valley Rd	S/of Santa Fe Ave E	Across from runway	N/B
Danbury Ave	Sherborn Ave	S/E corner	E/B
Danbury Ave	Hinton St	N/W corner	W/B

Rock Springs Rd	Quincy Ave		E/B
Rock Springs Rd	Glendale Ave	N/W corner	W/B
Arrowhead Lake Rd	Golf Course		N/B
Arrowhead Lake Rd	Golf Course		S/B
Peach Ave	Hinton St	8500 Peach Ave (property line)	S/B
Peach Ave	Danbury Ave	N/E corner	N/B
Peach Ave	Fairburn St/ Mecca St		N/B
Santa Fe Ave E	Sultana St	N/E corner	S/B
Santa Fe Ave E	Muscatel St	8655 Santa Fe Ave E (property line)	N/B

Source: Public Works Department

PAST EVENTS

In 2023, there was a California Disaster Declaration, DR-4699-CA, related to severe storms and flooding caused by atmospheric river events that occurred in late 2022 and early 2023. There were severe storms, including significant flooding, high winds, and heavy rain caused by atmospheric rivers. This disaster declaration applied to multiple counties across California, including areas in Northern, Central, and Southern California, such as Monterey, Santa Barbara, Santa Cruz, and San Luis Obispo counties, as well as others impacted by flooding and storm-related damage. Major rivers and streams exceeded their banks, leading to widespread flooding and damage to homes, infrastructure, and agricultural lands. **Table 3-10** identifies past events of flooding in the city.

Table 3-10: History of Flooding in Hesperia

Date	Description and Effect
4/2/1958-4/3/1958	A heavy rainstorm struck the northern Inland Empire. 2.80" fell in San Bernardino, 2.25" in Redlands. Heavy runoff caused flooding in San Bernardino, Fontana and in Hesperia. Creeks exceeded banks and numerous roads were blocked by water, mud and boulders.
2/18/1993-2/20/1993	Heavy rain: 13" in Lake Arrowhead, 9" at Palomar Mountain, 6+" at Cuyamaca, 2-5" in coastal areas. Urban and river flooding occurred across the region. In Crestline, Lake Gregory overflowed, flooding a portion of the city. Two people died as a result of the flooding in the region. Flooding occurred from Oceanside to Encinitas. Homes were damaged along the Mojave River in Hesperia.
8/29/1998-8/31/1998	Strong thunderstorms. 0.77" in 45 minutes at Wrightwood, 1.5" at Apple Valley, 0.68" in 30 minutes at Forest Falls. Flash flooding in Hemet. Homes and roads flooded with 4 to 6" of water in Hesperia and Apple Valley.
2/11/2003-2/14/2003	A storm off the coast tapped subtropical moisture and pulled it northward to produce heavy rain: Hesperia, 3.87". Localized flooding. On 2.13 a man drowned when he attempted wade across the rain-swollen Tijuana River.
3/15/2003	A slow moving cold front dropped 37" of rain across Southern California. Over 1,000 traffic accidents and six deaths were attributed to standing water on roads. Some freeways were covered by water two to three feet deep. In the desert, the Mojave River overflowed its banks, flooding several major roads between Hesperia and Apple Valley.

8/13/2004- 8/14/2004	Monsoon thunderstorms produced 0.71" in 30 minutes in Phelan, 0.63" in 8 minutes at Volcan Mountain (north of Julian), 0.66" in 11 minutes in San Felipe Valley (south of Borrego Springs). On 8.14 severe flash flooding of homes in Spring Valley Lake (Victorville) and Hesperia. Vehicles trapped in 5' water. Water 8' deep inundated a railroad causing major delays (a 60 train backup extending to Cajon Pass).
12/28/2004- 12/29/2004	Heavy rain from a big storm. 1.10 in 40 minutes at San Diego Country Estates (east of Ramona). Flooding on Lytle Creek road and Hesperia.
1/7/2005- 1/11/2005	Five consecutive days of heavy precipitation all over Southern California. This followed heavy storms in late December and early January. Widespread and catastrophic flooding and damage totaling \$100 million. A state of emergency was declared for all four counties. The Mojave River flooded 3 homes and other structures, and caused extensive damage in Hesperia and Oro Grande.
1/18/2010- 1/22/2010	A very wet and dynamic series of storms dropped two to four inches of rainfall in the deserts, to four to eight inches west of the mountains, to six to 12 inches on the coastal slopes. Widespread flooding resulted across the region. Some of the worst flash flooding occurred in the high desert on the 1.21 due to the prolonged heavy rainfall. Scores of homes and several schools sustained damage, and many roads were washed out in Hesperia, Apple Valley, Victorville and Adelanto. Numerous swift water rescues were needed, one of which likely saved four teens trapped in a storm water drain. Two deaths in Tijuana were attributed to the flooding.
12/23/2021- 12/24/2021	A series of storms paraded through the region, each bringing heavy rain during late December. Two-day totals for this storm reached 6" in the mountains, but Lytle Creek alone achieved just over 8". The northern Inland Empire got 2-5", while most other lower elevation stations received 0.75-3". Even parts of the lower deserts got more than one inch. Flooding was observed in the Mojave River in Hesperia.
1/9/2023 – 1/10/2023	An atmospheric river brought heavy rain from Santa Barbara County to Orange, northern Riverside and San Bernardino Counties. Rainfall in the mountains of San Bernardino County got 4 to 9.50" (Lytle Creek). Flooding and debris blocking roadways resulted in Hesperia. There were several swiftwater rescues, one in Desert Hot Springs.
2/2/2024 – 2/6/2024	San Bernardino County declared a Local Emergency due to extreme weather. Governor Newsom issued a State of Emergency for several counties, including San Bernardino.
Source: A History of Significant Weather Events in Southern California	

RISK OF FUTURE EVENTS

There is no indication that the severe rainfall that leads to flooding will abate in the future, either in Hesperia or the greater region of Southern California. While Hesperia may experience prolonged periods of dry or wet years, flood events will likely continue to impact the city. For areas within the 100-year and 500-year flood hazard zones, the likelihood of flooding to occur annually is 1% and 0.2%, respectively.

Because the City is vulnerable to flooding during the winter storm season, it is an active participant in the FEMA National Flood Insurance Program (NFIP). Through this program, "Special Flood Hazard Areas" within the city are identified and mapped on Flood Insurance Rate Maps (FIRMs), identifying the areas that require flood insurance. FIRMs generally describe flooding in terms of a 100- or 500-year flood event, which translates into the probability (1.0% or 0.2%, respectively) that flooding could occur within the designated zone in any given year. In addition to the federal requirements within the NFIP, the City has adopted flood protection standards requiring minimum building elevation,

flood-proofing, and anchoring of buildings in areas prone to flooding. **Figure 3-4** identifies the FEMA Flood Hazard Zones mapped within the City.

CLIMATE CHANGE CONSIDERATIONS

Climate change is expected to affect California's precipitation patterns, which are likely to influence future flood events. A 2017 study found that the number of very intense precipitation days in California is projected to more than double by the end of the century, increasing 117 percent, making it likely that flood events will become more frequent.⁸ More flood events could increase the frequency of maintenance and repair activities and require operational changes to City function. Much of the City's infrastructure may require modification and retrofit to better accommodate changes anticipated from climate change.

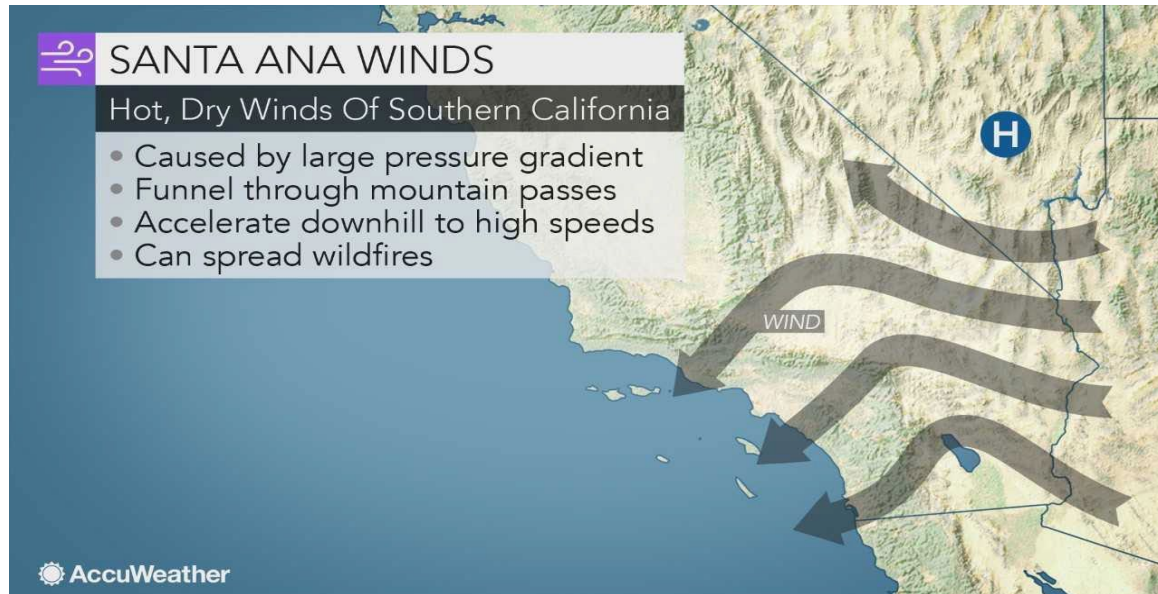
Extreme Weather (Severe Winds, Extreme Heat, Severe Rainstorms)

DESCRIPTION

SEVERE WINDS

Wind is simply the movement of air caused by differences in atmospheric pressure and temperature. High-pressure air will naturally move to areas of low pressure. Usually, the distance between these high-and low-pressure zones is far; however, these low-and high-pressure zones occasionally may be near one another. When this happens, air will flow dramatically, creating high-speed winds. The most common wind events in southern California are the "Santa Ana" winds. **Figure 3-6** depicts the typical conditions that occur in the fall and winter to create these events. When winds are fast enough, they can damage homes, public facilities, utilities, and other infrastructure. They can also uproot or topple mature trees, pick up debris, and send it careening through the air. This debris can injure or even kill bystanders who may find themselves stranded outside. High-speed winds can deposit this debris in the middle of rights-of-way, such as roads, freeways, and railways, blocking exit routes for would-be evacuees or impeding access to first responders trying to reach wounded people.

⁸ Polade, S.D., Gershunov, A., Cayan, D.R., Dettinger, M.D., & Pierce, D.W. 2017. *Precipitation in a warming world: Assessing projected hydro-climate changes in California and other Mediterranean climate regions*. Scientific Reports. <https://www.nature.com/articles/s41598-017-11285-y>

Figure 3-6: Santa Ana Winds

Source: <https://www.accuweather.com/en/weather-news/what-are-santa-ana-winds-2/343027>

EXTREME HEAT

Extreme heat is a period when temperatures are abnormally high relative to the normal temperature range. There are generally three types of extreme heat events:

- **Extreme Heat Days:** Defined as the 98th percentile value of historical daily maximum/minimum temperatures (from 1961–1990, between April and October) observed at a location.
- **Warm Nights:** Defined as the 98th percentile value of historical daily maximum/minimum temperatures (from 1961–1990, between April and October) observed at a location.
- **Extreme Heat Waves:** a successive series of extreme heat days and warm nights where extreme temperatures do not abate; while no universally accepted minimum length of time for a heatwave event exists, Cal-Adapt considers four successive extreme heat days and warm nights to be the minimum threshold for an extreme heatwave.

SEVERE RAINSTORMS

During severe weather events such as strong storms, rain can fall at such a high rate that it cannot drain away fast enough. The resulting heavy rain can cause flooding, leading to inundation and potential damage to buildings, road networks, public areas, utilities, and other critical pieces of infrastructure. In California, heavy rainfall events are often short, intense bursts of rain, but in some cases, heavy rain can persist for multiple days

LOCATION AND EXTENT

SEVERE WIND

In Southern California, the most common type of severe wind event is called the Santa Ana winds. High pressure over Nevada and Utah, often during the fall and winter months, forces air down from the high desert toward the ocean. As the winds descend, they heat

up and increase in speed, sometimes carrying particulate matter and aggravating the respiratory health of those who have allergies. Hesperia is often affected by Santa Ana winds blowing through the San Gabriel and San Bernardino Mountain ranges via the Cajon Pass. Santa Ana winds are a contributing factor to the threat and spread of wildfires in California. Santa Ana winds can damage the electrical distribution infrastructure, creating wildfire ignitions due to arcing or downed power lines. Santa Ana winds can also result in rapid fire spread from ordinarily contained or small fires such as vehicle fires or fires caused by discarded smoking materials. Depending on the severity of the wind event, any part of the city can be affected by severe winds.

Generally, winds are measured using the Beaufort scale, developed in 1805, which categorizes wind events on a force scale from 0 to 12 using their speed and impacts. Any wind classified as force nine or above is generally considered a severe wind event. **Table 3-11** identifies the Beaufort scale, which classifies wind events in detail.

Table 3-11: Beaufort Scale		
Force	Speed (mph)	Description
0	0 to 1	Calm: Smoke rises vertically
1	1 to 3	Light air: The direction of the wind is shown by smoke drift but not wind vanes.
2	4 to 7	Light breeze: Wind is felt on the face, leaves rustle, and wind vanes are moved.
3	8 to 12	Gentle breeze: Leaves and small twigs are in motion, and light flags are extended.
4	13 to 18	Moderate breeze: Dust and loose paper become airborne, and small branches are moved.
5	19 to 24	Fresh breeze: Small trees begin to sway
6	25 to 31	Strong breeze: Large branches are in motion, and using an umbrella becomes difficult.
7	32 to 38	High wind: Whole trees are in motion and walking against the wind can be hard.
8	39 to 46	Strong wind: Walking is difficult, and twigs break off trees.
9	47 to 54	Severe wind: Slight structural damage.
10	55 to 63	Storm: Trees are uprooted and considerable damage to structures.
11	63 to 72	Violent storm: Widespread damage.
12	73 and above	Hurricane: Devastating damage.
Source: https://www.weather.gov/mfl/beaufort		

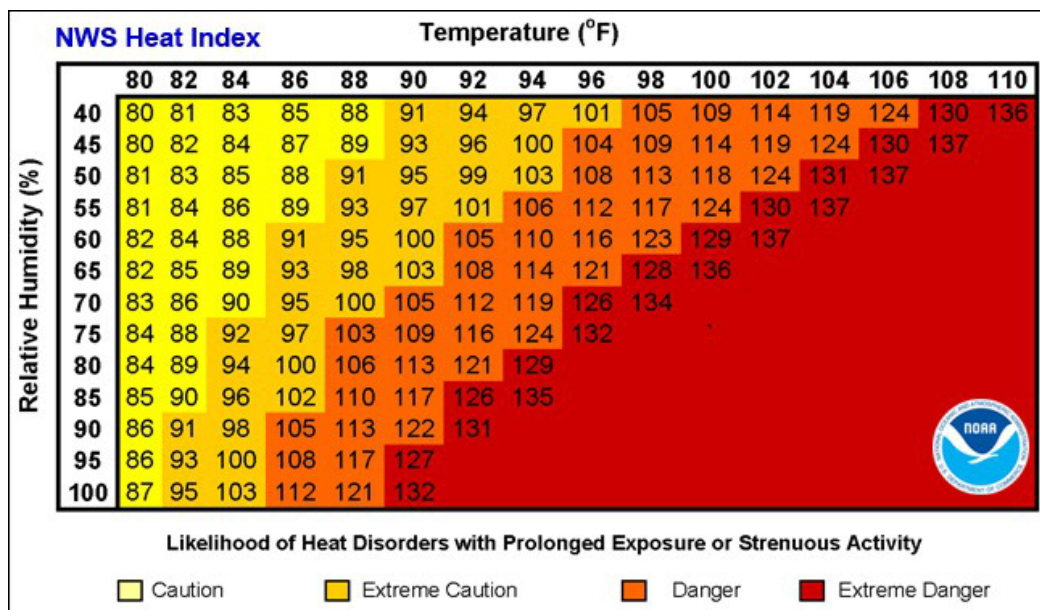
EXTREME HEAT

Extreme heat events will feel different from region to region since different areas have different historic high temperatures. For example, an extreme heat day on the coast will feel different than an extreme heat day in the High Desert. The reason for this is how humidity affects the perceived heat that people feel. Humid conditions will make a day feel hotter than non-humid conditions, even though the temperature may be the same. The difference between the perceived and actual temperatures is known as the "heat index." To illustrate the effect of the heat index, a 90-degree day with 50 percent humidity feels like 95°F, whereas a 90°F Day with 90 percent humidity feels like 122°F. **Figure 3-7**

illustrates the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service Heat Index.

Extreme heat events are not limited to any part of the city. They occur with the same intensity and duration at the same time across all locations in Hesperia. For Hesperia, an extreme heat day involves a temperature that exceeds **100.4°F**, and a warm night involves a temperature that exceeds **68.1°F**.⁹

Figure 3-7: NOAA's National Weather Service Heat Index



SEVERE RAINSTORM

The location and size of a rain event vary depending on regional geography and regional and global weather events. For example, small precipitation events may occur in only one section of Hesperia. In contrast, a large rain event could inundate a majority of San Bernardino County and other parts of southern California.

California's precipitation varies from year to year, depending on how much moisture the state receives from atmospheric rivers. Atmospheric rivers are corridors along which wet air travels from the tropics to continents. When the moisture arrives in California, it may precipitate as rain or snow. One of California's most known atmospheric rivers is the "Pineapple Express," which brings moist air from the ocean surrounding Hawaii to California. An immense amount of moisture may be transported along the atmospheric rivers that cross over California during certain years, leading to severe rains.¹⁰

Another weather phenomenon influencing rainfall in southern California is "El Niño," officially referred to as the "Southern Oscillation" or "El Niño-Southern Oscillation (ENSO)." ENSO can cause increased rainfall, particularly during the winter months, caused by

⁹ <https://cal-adapt.org/tools/local-climate-change-snapshot/>

¹⁰ "What are atmospheric rivers?" <https://www.noaa.gov/stories/what-are-atmospheric-rivers>

warming of the surface of the eastern tropical Pacific Ocean, leading to the evaporation of warm, moist air into the atmosphere. Winds bring this moisture to the eastern Pacific and the American continents, where it falls as rain. ENSO does not always lead to increased rainfall by default, but in general, it can increase the chances of winter with higher-than-usual precipitation.^{11 12}

Rain events are usually measured by the amount of precipitation that falls.¹³ **Table 3-12** categorizes rain events by the amount of precipitation per hour.

Table 3-12: Measuring Heavy Rain Events

Rain Type	Description
Heavy Rain	More than 4 mm per hour but less than 8 mm per hour
Very Heavy Rain	Greater than 8 mm per hour
Moderate Shower	Greater than 2 mm, but less than 10 mm per hour
Heavy Shower	Greater than 10 mm per hour, but less than 50 mm per hour
Violent Shower	Greater than 50 mm per hour
Source: https://water.usgs.gov/edu/activity-howmuchrain-metric.html	

PAST EVENTS

SEVERE WIND

There were no major federal or state disaster declarations for severe winds in the planning area since the last update. However, severe wind incidents are a common occurrence in the city. Annually the city is subjected to Santa Ana Wind conditions that can cause significant damage to trees, buildings, and vehicles. While the effects of Santa Ana Winds are often overlooked, it should be noted that in 2003, two deaths in Southern California were directly related to the fierce condition. A falling tree struck one woman in San Diego. The second death occurred when a passenger in a vehicle was hit by a pickup truck cover launched by the Santa Ana Winds.

The following are significant events that have affected the city and region in the past:

- **May 11, 1997** – Severe thunderstorms developed over Apple Valley and Hesperia during the afternoon, resulting in a tornado, dust storm, and downburst winds. Catastrophic damage to buildings, structures, trees, and power lines.
- **June 6, 1997** – Tornado in Hesperia destroyed a large fountain.
- **November 26, 1997** – An approaching storm system brought strong winds to the coast and deserts. In Victor Valley, toppled trees and power poles cut power to 3,000 customers and led to school cancellations. A business in Hesperia lost a 3,000 square foot section of roof.
- **March 13-14, 1998** - Numerous waterspouts between Long Beach, Huntington Beach and Catalina. Funnel clouds in Phelan and Hesperia.

¹¹ NOAA. 2014. "What Is the El Niño–Southern Oscillation (ENSO) in a Nutshell?" [https://www.climate.gov/news-](https://www.climate.gov/news-features/understandingclimate/el-ni%C3%B1o-and-la-ni%C3%B1a-frequently-asked-questions)

¹² NOAA. 2016. "El Niño and La Niña: Frequently Asked Questions." [https://www.climate.gov/news-features/understandingclimate/el-ni%C3%B1o-and-la-ni%C3%B1a-frequently-asked-questions.](https://www.climate.gov/news-features/understandingclimate/el-ni%C3%B1o-and-la-ni%C3%B1a-frequently-asked-questions)

¹³ <https://www.climate.gov/enso>

- **April 22, 1999** – Strong winds developed in Apple Valley, Yucca Valley, and the Coachella Valley. Blowing dust and sand produced zero visibility, resulting in road closures, damage to car windshields, and exceptionally high air pollution readings. A roof was partially torn from a house in Palm Springs and trees/powerlines were downed along Oro Grande Wash between Hesperia and Victorville.
- **July 10, 1999** – Funnel cloud in Hesperia.
- **June 23, 2000** – Two funnel clouds around Hesperia.
- **July 3, 2001** –
 - A microburst hit Hesperia creating a wall of sand and dust and a moaning sound. A radio tower was toppled, and other property was damaged.
 - Dust devil in Hesperia (may be a microburst or other thunderstorm wind). Blows off roof.
- **May 29, 2009** – Strong thunderstorms produced a microburst or gustnado in Hesperia. The winds damaged four horse shelter roofs in Hesperia. One roof was completely removed from the shelter. Winds also knocked over power lines in Hesperia and Victorville.
- **September 8, 2015** - severe thunderstorm warning for Apple Valley, Hesperia and Victorville. The National Weather Service said the thunderstorm was capable of producing damaging winds in excess of 60 mph and hail the size of a quarter.
- **August 18, 2023** - Tropical Storm Hilary brought heavy rain, flooding, lightening and gusty winds to Southern California, including a series of flood watches to San Bernardino County. The storm resulted in storm related damages.
- **February 4-6, 2024** – A strong atmospheric storm produced strong winds in the High Desert. A reported 1.4 million customers were without power at various points throughout the state.

EXTREME HEAT

There were no major federal or state disaster declarations for extreme heat in the planning area since the last update. Based on Cal Adapt's Data, Hesperia experiences an average five extreme heat days per year, when the daily maximum temperature is above a threshold temperature of 100.4° F. For the same period, Hesperia experiences an average of four warm nights per year, when the daily minimum temperature is above a threshold temperature of 68.1° F. The annual average maximum temperature is 71.7° F.

Overall, Hesperia is expected to see an increase in the average daily high temperatures. Depending on the future severity of climate change, the state Cal-Adapt database indicates the annual average maximum temperature is expected to increase from a historical annual average of 71.7°F to an average of up to 77.6°F by the middle of the century (2035 to 2064), and an average of up to 80.9°F by the end of the century (2070 to 2099). Although the temperature increases may appear modest, the projected high temperatures are substantially greater than historical norms. These increases make it more likely that an above-average high temperature will cross the extreme heat threshold.

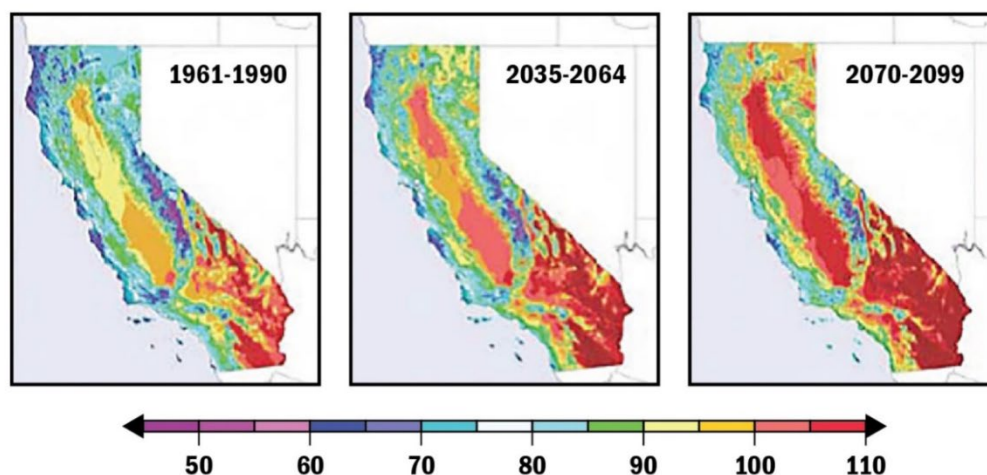
Warm nights in Hesperia are expected to rise from a historical annual average of 4 to 35 nights by the middle of the century (2035 to 2064), and to an average of 66 nights by the end of the century (2070 to 2099).

Cal-Adapt Climate Projections for the Desert Region, anticipates that three to five more heat waves will be experienced by 2050, increasing to 12 to 16 in the western part of the region to more than 18 to 20 in the eastern parts of the region.¹⁴

According to the California State Hazard Mitigation Plan (SHMP), the worst single heat wave event in California occurred in Southern California in 1955, when an eight-day heat wave resulted in 946 deaths. The July 2006 heat wave in California caused approximately 140 deaths over a 13-day period. In 2022, California experienced one of the worst heatwaves it has ever experienced. From September 1st through September 9th, 2022, temperature records for September were shattered across the western portion of the United States, including Hesperia, where temperatures reached 106° F.

The California Climate Adaptation Strategy (CAS), citing a California Energy Commission study, states that “over the past 15 years, heat waves have claimed more lives in California than all other declared disaster events combined.” This study shows that California is getting warmer leading to an increased frequency, magnitude, and duration of heat waves. These factors may lead to increased mortality from excessive heat, as shown in Figure 3-8 below.

Figure 3-8 California Historical and Projected Temperature Increases (1961 – 2099)



Source: Dan Cayon: *California Climate Adaptation Strategy*

SEVERE RAINSTORMS

In 2023, there was a California Disaster Declaration, DR-4699-CA, related to severe storms and flooding caused by atmospheric river events that occurred in late 2022 and early 2023. There were severe storms, including significant flooding, high winds, and heavy rain caused by atmospheric rivers. This disaster declaration applied to multiple counties across California, including areas in Northern, Central, and Southern California, such as Monterey, Santa Barbara, Santa Cruz, and San Luis Obispo counties, as well as others

¹⁴ Public Interest Energy Research 2011; <https://cal-adapt.org/>

impacted by flooding and storm-related damage. Major rivers and streams exceeded their banks, leading to widespread flooding and damage to homes, infrastructure, and agricultural lands.

Hesperia and San Bernardino County have experienced heavy rain events that have inundated many communities. Some significant historical events include (it should be noted that past events of major flooding in the region are generally directly tied to severe rainstorms):

- **February 18-20, 1993** - Heavy rain: 13" in Lake Arrowhead, 9" at Palomar Mountain, 6+" at Cuyamaca, 2-5" in coastal areas. Urban and river flooding occurred across the region. In Crestline, Lake Gregory overflowed, flooding a portion of the City. Two people died as a result of the flooding in the region. Flooding occurred from Oceanside to Encinitas. Homes were damaged along the Mojave River in Hesperia.
- **August 29-31, 1998** - Strong thunderstorms. 0.77" in 45 minutes at Wrightwood, 1.5" at Apple Valley, 0.68" in 30 minutes at Forest Falls. Flash flooding in Hemet. Homes and roads flooded with 4 to 6" of water in Hesperia and Apple Valley. Rockslides in Mill Creek. Flooding of roads in Sugarloaf and Forest Falls.
- **February 11-14, 2003** - A storm off the coast tapped subtropical moisture and pulled it northward to produce heavy rain: 10.15" at Forest Falls, 9.75" Lytle Creek, 8.47" Lake Arrowhead, 7.60" Santiago Peak, 6.86" Mira Loma, 5.15" Wrightwood, 3.95" Hesperia, 3.87" Lake Elsinore, 3" Lindbergh Field. Localized flooding. On 2.13 a man drowned when he attempted wade across the rain-swollen Tijuana River.
- **March 15, 2003** - A slow moving cold front dropped 37" of rain across Southern California. Over 1,000 traffic accidents and six deaths were attributed to standing water on roads. Some freeways were covered by water two to three feet deep. In the desert, the Mojave River overflowed its banks, flooding several major roads between Hesperia and Apple Valley.
- **August 13-14, 2004** - Monsoon thunderstorms produced 0.71" in 30 minutes in Phelan, 0.63" in 8 minutes at Volcan Mountain (north of Julian), 0.66" in 11 minutes in San Felipe Valley (south of Borrego Springs). Flash flooding. On 8.13 flash floods in Wildomar, Sage, and La Quinta. Hwy. 78 near Yaqui Pass closed. On 8.14 severe flash flooding of homes in Spring Valley Lake (Victorville) and Hesperia. Vehicles trapped in 5' water. Water 8' deep inundated a railroad causing major delays (a 60-train backup extending to Cajon Pass).
- **December 28-29, 2004** - Heavy rain from a big storm. 1.10 in 40 minutes at San Diego Country Estates (east of Ramona). Flash flooding in Waterman Canyon and other mountain areas. Debris flow in San Diego Country Estates. Flooding on Lytle Creek road and Hesperia.
- **January 7-11, 2005** - Five consecutive days and heavy precipitation all over Southern California. More than 30" of precipitation in the San Bernardino Mountains. 4-10" at lower elevations. 31.75" of precipitation fell at Lake Arrowhead, 29.37" at Lytle Creek, 19.86" at Devore, and 15.09" at Palomar Mountain. This followed heavy storms in late December and early January. By 1.11 numerous highways in the San Bernardino Mountains were closed. The Mojave River flooded 3 homes and other structures, and caused extensive damage in Hesperia and Oro Grande.
- **January 18-22, 2010** - A very wet and dynamic series of storms dropped two to four inches of rainfall in the deserts, to four to eight inches west of the mountains, to six to 12 inches on the coastal slopes. Widespread flooding resulted across the region. Some

of the worst flash flooding occurred in the high desert on the 1.21 due to the prolonged heavy rainfall. Scores of homes and several schools sustained damage, and many roads were washed out in Hesperia, Apple Valley, Victorville and Adelanto. Numerous swift water rescues were needed, one of which likely saved four teens trapped in a storm water drain. Two deaths in Tijuana were attributed to the flooding.

- **January 23-24, 2021** - A series of storms paraded through the region, each bringing heavy rain during late December. Two-day totals for this storm reached 6" in the mountains, but Lytle Creek alone achieved just over 8". The northern Inland Empire got 2-5", while most other lower elevation stations received 0.75-3". Even parts of the lower deserts got more than one inch. Several mountain roadways were washed out, including Highways 18 and 243. Flooding was observed in the Mojave River in Hesperia, along Indian Canyon Road near Palm Springs, in San Bernardino, in Cherry Valley just below the Apple Fire burn scar, and in nearby Oak Glen. Debris flows inundated parts of Silverado Canyon within the Bond Fire burn scar.
- **January 12, 2023** - Winter Storm Event was an extreme winter storm system that impacted the City of Hesperia by causing flooding and several inches of snow. The storm resulted in several road closures and storm related damages.
- **August 18, 2023** - Tropical Storm Hilary brought heavy rain, flooding, lightening and gusty winds to Southern California, including a series of flood watches to San Bernardino County. The storm resulted in storm related damages.
- **February 4-6, 2024** - A strong atmospheric brought heavy rain and flooding, and approximately 1.5" – 2" inches of rain in the High Desert. Hesperia activated its EOC to a level 2. The storm resulted in several road closures and storm related damages which continue to be assessed by the City.

RISK OF FUTURE EVENTS

SEVERE WIND

Given Hesperia's history of severe wind events, it is very likely that wind events will continue to impact the city. The most probable source of these events in the future will likely originate from the Santa Ana winds or extreme storms. All expectations are that the probability they will occur again in the future is highly likely.

EXTREME HEAT

San Bernardino County is projected to experience major increases in extreme heat days, including Hesperia. Southeastern, Valley and low-lying desert locations in the county – including the area near Big Bear Lake – could experience as many as 50 additional extreme heat days per year by mid-century. Furthermore, all areas of the county are projected to experience at least 27 additional extreme heat days (defined as days exceeding the 95th percentile of daily maximum temperatures over the historical baseline time period between 1976 and 2005).¹⁵

SEVERE RAINSTORMS

There is no indication that rainfall or severe rain hazards will abate either in Hesperia or the greater region of Southern California in the future. While Hesperia may experience prolonged periods of dry or wet years, all expectations are that the probability they will

¹⁵ San Bernardino County Resilience Strategy

occur again in the future is highly likely and anticipated to increase in the future.

CLIMATE CHANGE CONSIDERATIONS

SEVERE WIND/ SEVERE RAINSTORMS

It is anticipated that the atmospheric rivers that deliver storms to Southern California may intensify because of climate change. While the average number of storms in Southern California will remain the same, storms are expected to increase in intensity by 10 to 20 percent.¹⁶ This increase in storm intensity may also bring more intense winds to the Southern California region, including Hesperia.

Regarding Santa Ana winds, however, studies indicate that these events may be affected in varying ways. According to one study that examined two global climate models, there is a projected increase in future Santa Ana events. However, other studies have found that the number of Santa Ana events may decrease by about 20% in the future.¹⁷ Given the anticipated increases in temperatures throughout the region, future events are anticipated to become more severe in some cases, even if the total number of events decreases.

Regarding severe storms, climate change is expected to alter rainfall patterns in Southern California, including Hesperia. As the climate warms, rain events are predicted to become more intense. Hesperia will likely experience more rain inundation events that lead to flooding and increase the potential threat of dam failure, tree mortality, and other potential hazards.

EXTREME HEAT

The primary effect of climate change is warmer average temperatures. The hottest years on record have occurred since 2000, with 2016 and 2020 being tied.¹⁸ As climate change accelerates in the 21st century, it is anticipated that extreme heat events will become more frequent and intense in the city. With the projection that extreme heat days could increase between 22 and 35 days annually by 2100, the city can expect a shift in residential and business needs for cooling and addressing heat-related issues.

Wildfire

DESCRIPTION

As defined in the California Fire Protection (CAL FIRE) 2019 Strategic Fire Plan (2024 Strategic Plan is in development), a wildfire event is an unwanted wildland fire including unauthorized human-caused fires, escaped wildfire use events, escaped prescribed wildfire projects, and all other wildfires.

¹⁶ Atmospheric Rivers to Soak California as Climate Warms. <https://www.livescience.com/49225-atmospheric-rivers-double-climate-change.html>

¹⁷ Hall, Alex, Neil Berg, Katharine Reich. (University of California, Los Angeles). 2018. Los Angeles Summary Report. California's Fourth Climate Change Assessment. https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf

¹⁸ Rebecca Hersher and Lauren Sommer. 2020. "2020 May be the Hottest Year on Record. Here's the Damage it did." NPR. <https://www.npr.org/2020/12/18/943219856/2020-may-be-the-hottest-year-on-record-heres-the-damage-it-did>

There are three different classes of wild land or wildfires:

- 1) A surface fire is the most common type and burns along the floor of a forest, moving slowly and killing or damaging trees.
- 2) A ground fire is usually started by lightning and burns on or below the forest floor.
- 3) Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildfires are usually signaled by dense smoke that fills the area for miles around. Wildfires present a significant potential for disaster in the southwest, a region of relatively high temperatures, low humidity and low precipitation during the summer and spring and moderately strong daytime winds. Combine these severe burning conditions with people or lightning and the stage is set for the occurrence of large, destructive wildfires.

Wildfires are a necessary part of the natural ecosystem in Southern California, but they become a hazard when they extend out of control into developed areas, with the resultant of loss of property, injuries or the loss of life. The wildfire risk in the United States has increased in the last few decades with the increasing encroachment of residences and other structures into the wild land environment and the increasingly larger number of people living and playing in wild land areas.

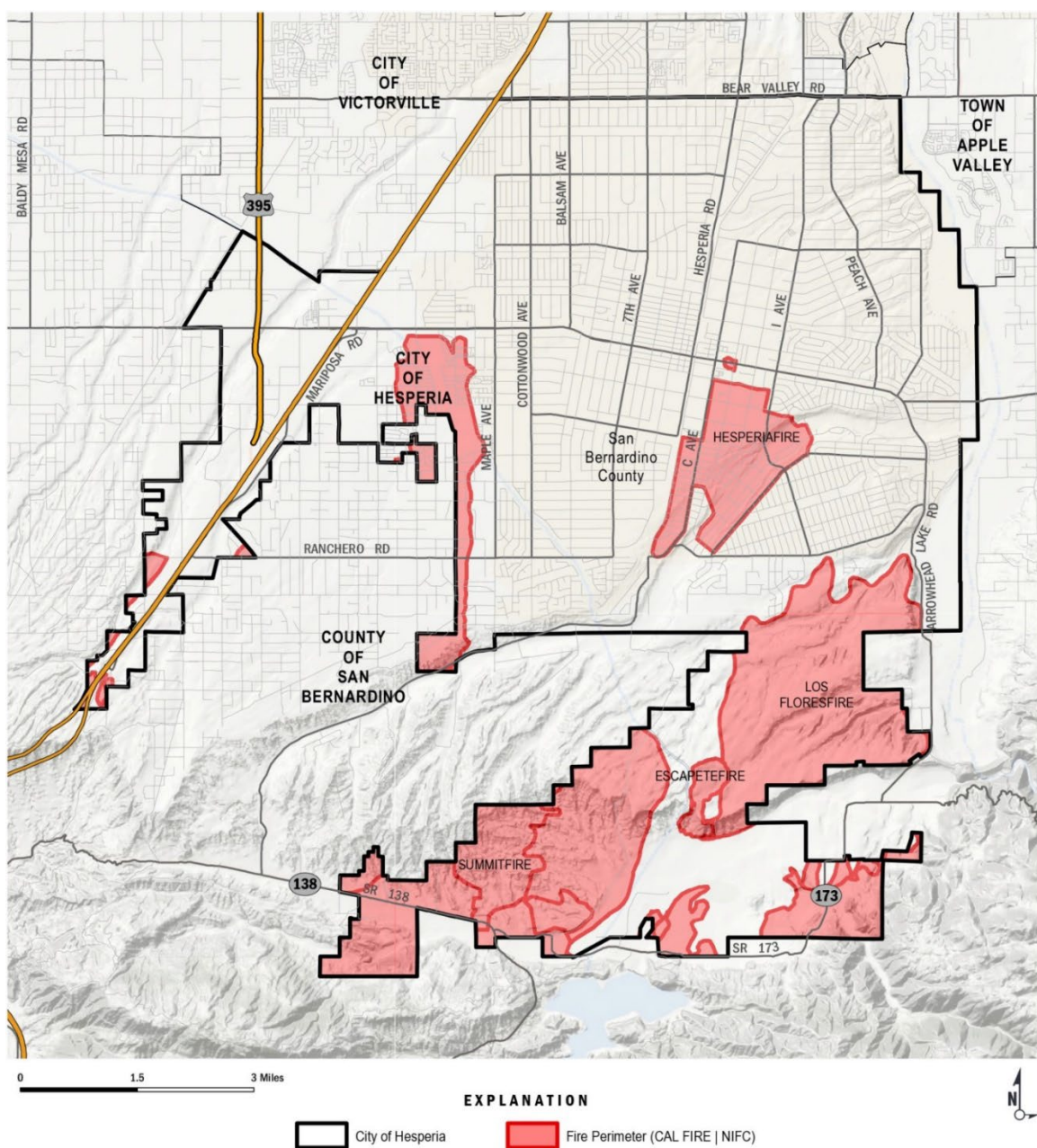
Dozens of small vegetation fires, typically less than one acre in size, are reported in Hesperia annually. There are a relatively small number of structure fires reported annually in Hesperia, but depending on the size, age and occupancy of the structure, the economic and social losses can be substantial.

LOCATION AND EXTENT

Hesperia is located in the lower Mojave section of the Southeastern Deserts Bioregion; an area characterized by isolated, steep-sided mountain ranges separated by broad alluvial basins. The predominate vegetation assemblages in this area include, desert shrub, creosote brush shrub and succulent shrub. Other important vegetation types include Joshua Trees, woodland, shad-scale scrub, black brush scrub and desert scrub-steppe. About one-third of the desert floor in the Mojave section is devoid of vegetation, limiting amount of surface fuel loads available to burn. Variations in the annual precipitation for the Mojave region have led to a significant variation in the frequency and extent of wildland fires in the area. Several historical wildland fires have occurred primarily in the southern part of Hesperia and its sphere of influence between 1930 and 2008.

Using information from the California Department of Forestry (CAL FIRE) **Figure 3-9** Wildfire History Map, illustrates the areas at risk to a wildfire event. The area with the highest risk of wildfire is in the southern portion of the City.

Figure 3-9 Wildfire History Map



The magnitude and severity of a wildfire event is measured by calculating the number of acres burned in a specific wildfire event. CAL FIRE adopted Fire Hazard Severity Zone maps for LRA in June 2008. The Fire Severity Zones for Hesperia identify areas of Very High, High, and Moderate fire hazard severity throughout the County and are mapped in **Figure 3-10**. Fire Severity Zones are used in determining additional protective measures required when building new structures or remodeling older structures within the particular zone. Additional measures must be taken on the property around a structure in the higher ranked fire Severity Zones.

Fire hazard mapping is a way to measure the physical fire behavior to predict the damage a fire is likely to cause. Fire hazard measurement includes vegetative fuels, probability of speed at which a wildfire moves the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front.

The model used to develop the information in accounts for topography, especially the steepness of the slopes (fires burn faster as they burn up-slope.). Weather (temperature, humidity, and wind) also has a significant influence on fire behavior. The areas depicted as moderate and high in are of particular concern and potential fire risk in these are constantly increasing as human development, and the wildland urban interface areas expand.

Earthquakes can cause multiple ignitions distributed over a broad geographic area. Fires can be ignited by a variety of sources, including arcing downed electrical lines, sparks near ruptured gas pipelines, overturned electrical appliances, such as water heaters and spills of reactive chemicals. If the earthquake has also impaired the water distribution system, limiting the water available to fight these fires and fire personnel are busy conducting search and rescue operations, earthquake induced fires have the potential to be the worst case fire-suppression scenarios for the City.

PAST EVENTS

There were no major federal or state disaster declarations for wildfires in the planning area since the last update. Wildfire events are of major concern to the City of Hesperia. Cal FIRE maintains a database of wildfire perimeters. **Table 3-13** gives the dates and fire names of the historical wildfires that have burned within Hesperia city limits. **Figure 3-10** shows where those historical burn areas in the City have occurred. Those wild land areas that have not burned in more than 30 years are at higher risk of burning again in the near future, due to the high density and continuity of the fuel load. Many smaller wildfires in the City are not captured by the Cal Fire database. In the past twenty-five years there have been (27) significant wildland fires within Hesperia. These fires are listed in **Table 3-13**, and several of the more damaging fires are discussed below.

Table 3-13 Wildfire Occurrences 1999-2024

Date	Location	Description
July 6, 1999	11 miles south of Hesperia	The fire burned 2,576 acres, destroyed one mobile home and two sheds. Residents from Summit Valley and Oak Hills were forced to evacuate. Highway 138 was closed. There was \$100 K in property damage.
August 28 - September 9, 1999	Lucerne and Apple Valleys, east Hesperia	This fire consumed 63,486 acres starting three miles south of Lucerne Valley and extending to within four miles northwest of Fawnskin. Thirteen firefighters sustained minor injuries. Property damage was estimated at \$11.7 million.
May 11, 2001	Mojave River, Apple Valley	This fire started on the riverbed and burned 25 acres. One nearby school was evacuated. One firefighter was treated for heat exhaustion. There was no structure damage.
June 19, 2001	Cajon Pass	The Baldy Fire started near the intersection of Interstate 5 and Highway 138. 125 acres were burned forcing the closure of both

		roads and the Union Pacific rail tracks.
July 22, 2002	Hesperia	Strong winds and extremely dry conditions fanned a house fire in Hesperia. Five outbuildings were destroyed for an estimated \$55 K in property damages.
June 15, 2003	Hesperia	A brush fire burned 80 acres. One firefighter was injured when a boulder rolled down the hill and broke his leg.
July 27, 2003	Hesperia	This brush fire burned 10 acres.
September 17, 2003	Hesperia	A brush fire consumed 40 acres and briefly threatened several homes in Oak Hills.
October 1, 2003	Mojave Riverbed, three miles east of Victorville	This brush fire burned 10 acres. No structures were damaged.
October 25- November 14, 2003	Six miles south of Hesperia to seven miles north of Lake Arrowhead	The Old Fire was started by an arsonist consuming 91,200 acres before it was fully contained. The fire destroyed 993 homes and damaged another 35, 10 commercial buildings, 1,460 power poles, 220 electrical transformers and several miles of highway and utility infrastructure. Six deaths and 12 injuries were directly attributed to the fire. An estimated 80,000 people were evacuated. Over the next few days, the communities of Silverwood Lake, south Hesperia, Oak Hills, Summit Valley, Telephone Canyon and Las Flores were evacuated. On the second day, the fire merged with the Grand Prix fire. On the third day, the fire burned through the Cajon Pass and onto the foothills towards Hesperia. Rain, sleet and snow that fell between November 11 and 13 slowed fire growth. The fire caused an estimated \$975 million in property damage; the cost of firefighting the fire was more than \$42.3 million.
September 7, 2004	Cajon Pass to Baldy Mesa	The Runway Fire was started by a car accident and eventually burned 1,700 acres of brush in the San Bernardino National Forest. The fire forced the closure of seven miles of Highway 138. One was damaged slightly, causing about \$1,000 in property damage.
April 1, 2007	Hesperia	This fire burned more than 1,400 acres and forced the evacuation of more than 500 residents. Damage was limited to the roof of one residential structure and the destruction of one outbuilding.
November 5, 2012	Devore/Cajon Pass	The Devore Fire burned 350 acres along Interstate 15 in the San Bernardino National Forest.
May 5, 2014	Ranchero Road Bridge Fire	The fire began Monday afternoon when a blowtorch being used to cut metal reinforcing bars ignited support timbers. The new bridge was under construction at the time.
April 1, 2015	River Bottom Fire in Apple Valley	The county regional park was conducting a controlled burn that grew out of control when the winds shifted. Only a shed and a vehicle were destroyed in the fire. 185 total acres were burned.
August 7th – 16th, 2016	Pilot Rock & Hwy 138, southeast of Hesperia	The Pilot Fire started at about 12:10 pm near the Miller Canyon OHV area off of Highway 138. 8,110 total acres burned, with no structures destroyed or injuries reported. Schools were closed due to poor air quality.
August 16th – 23rd, 2016	Cajon Pass along Old Cajon Blvd. north of Kenwood Ave. west of I-15	The Blue Cut Fire started on August 16, 2016 at 10:36 AM. The fire quickly spotted across Cajon Creek and grew into a large wildland fire. The Blue Cut Fire burned 36,274 acres, destroying an estimated 105 single family residences and 216 outbuildings, including the historic Summit Inn. In addition, 3 single family residences and 5 other structures were damaged.
June 9th, 2021	Ranchero Road and Caliente	On June 9, 2021, San Bernardino County Fire crews were dispatched to a reported vegetation fire near Caliente Road and Ranchero

	Road in Oak Hills Community of Hesperia	Road in Hesperia. The fire continued to burn north along a large drainage, ultimately spreading to 250 acres by nightfall. San Bernardino County Fire responded with 16 Engines, 4 Water Tenders, 2 Hand Crews, a Dozer, 5 Chief Officers, and multiple overhead personnel. CALFIRE San Bernardino Unit sent a full response including Engines, Fixed and Rotor Wing Aircraft, Hand Crews, and multiple Chief Officers. USFS San Bernardino National Forest also sent a full ground response. Victorville and Apple Valley Fire also assisted (Source: https://4newsplus.com/farm-fire-burns-250-acres-in-hesperia/).
June 6th, 2022	Hwy 138 and Hwy 173, Hesperia	The Hesperia Fire Incident was reported at about 4:44pm, on Monday, June 6, 2022, just south of Highway 173 near Silverwood Lake in the Los Flores Ranch area of Hesperia. The winds were gusting about 20 mph in heavy brush fanning the flames. Two helicopters and four airtankers were called to the scene to do some drops. Structures were threatened and Highway 173 was closed at the time due to the fire jump the highway. At 5:30pm one person was reported to have critical burns and was transported to a local hospital. The fire burned approximately 95 acres. One out-building was destroyed.
June 15th, 2024 – June 18th, 2024	Hwy 173, Hesperia	The Hesperia Fire was reported on June 15, 2024 just after 6:00pm, along the 18000 block of Highway 173, east of Arrowhead Lake Road. The brushfire scorched 1,131 acres. Resources assigned were (2) helicopters, (16) engines, (3) dozers, (2) water tenders, and (6) crews.
June 16th, 2024	Summit Fire Near Old Dump Road	Around 2:14 PM on June 16, 2024, a brush fire ignited off Summit Valley Road near Old Dump Road in Hesperia. Quick responses from the San Bernardino County Fire Department and CAL Fire helped contain the blaze, which had spread to approximately 10 acres by 2:30 PM. Utilizing both ground forces and an air attack, the firefighters managed to prevent significant damage to any structures in the area despite the fire's rapid spread due to slope and wind conditions. Summit Valley Road was closed in both directions before fully reopening around 11 pm.
June 16th, 2024	Brook Fire in Cajon Pass	On June 16, 2024, a small brush fire ignited near Lost Lake off Swarthout Canyon Rd and Cajon Blvd in the Cajon Pass. Reported at 2:32 PM, the Brook Fire was quickly addressed by San Bernardino County Fire Department, San Bernardino National Forest firefighters, and CAL Fire crews. The fire's forward progression was halted at around 3:30 PM, with just one acre burned.
June 16th, 2024	Chase Fire	On June 16, 2024, at about 9 PM, firefighters tackled a five-acre brush fire known as the Chase Fire. This blaze occurred behind Chase Avenue and in front of Danbury Ave south of I Ave in Hesperia. Fire crews acted promptly to contain the fire, which initially threatened several homes along Danbury Ave. By 9:45 PM, the fire was surrounded by containment lines, and its forward advance was halted.
June 20, 2024	Hesperia Fire	The Hesperia Fire started near Arrowhead Lake Road in Hesperia and burned more than 1,078 acres. Quick action from agencies like the San Bernardino County Fire Protection District and Cal Fire prevented injuries and property damage.

July 2, 2024	Hwy 173, Lake Arrowhead Road	On July 2, 2024, at about 2:30 pm in the area of Lake Arrowhead Road and Highway 173 a brush fire was reported. Approximately 1-2 acres burned, producing minimal smoke and was mostly under control. The forward spread was stopped and all incoming aircraft and additional resources were cancelled.
July 3, 2024	Santa Fe Fire	On July 3, 2024, at about 5:46 pm, a vegetation fire was reported by Santa Fe Ave E near Muscatel St in Hesperia. The fire was contained to 17 acres. San Bernardino County Fire responded with four engines, one truck, two chief officers, one hand crew, and one dozer for a total of 40 firefighters.
August 24, 2024	Summit Fire	On August 24, 2024 at about 3:59pm, a wind-driven fire was reported North of Highway 173, South of Hesperia. The fire was contained at 76 acres. San Bernardino County Fire responded with 19 engines, 3 water tenders, 3 helicopters, 2 dozers, and 5 hand crews.

Source: CAL Fire

In addition to the data from CAL FIRE, the Planning team noted details on major fires to occur in or near the City, some are mentioned because they affected major roadways that provide either access in and out of the City or had an impact on the air quality.

Lake Fire: In 2015 The Lake Fire burned 31,359 acres and was the cause of 6 minor firefighter injuries and 1 residence and 3 outbuildings were destroyed.

North Fire/Pines Fire: In 2015 these fires burned a total of 4,250 acres, destroying 7 homes, 16 outbuildings and 44 vehicles in the community of Baldy Mesa. No injuries were reported.

Line Fire: Forest Service Firefighters along with firefighters from other agencies including the City of Highland and San Bernardino County responded to a reported wildland fire on Baseline Road at about 6:00 PM on September 5, 2024. Damage Inspection Teams (DINS) identified structures that were damaged and destroyed. Their inspections included residences, multi-family dwellings, outbuildings, and commercial buildings. About 56,100 structures were threatened, including 11,400 under Evacuation Orders and 44,700 under Evacuation Warnings. Governor Gavin Newsom announced that the California National Guard would support the state's ongoing response to the Line Fire. Through its activation, authorized under the Line Fire State of Emergency, the California National Guard deployed:

- Four UH-60 Blackhawk helicopters for water bucket dropping operations
- Two C-130 aircraft with Modular Airborne Fire Fighting Systems (MAFFS)
- Four 20-person hand crews (80 soldiers). They will be assigned to the Line Fire on Thursday in support of CAL FIRE.
- One military police company to support the San Bernardino County Sheriff's Department with traffic control points in evacuated areas.

The Line Fire was allegedly set intentionally by a 34-year-old man from Norco.

Bridge Fire: The Bridge Fire was reported on September 8, 2024, burning in both Los Angeles and San Bernardino counties. About 13 structures were damaged and 54 were destroyed

as of the latest damage assessment, although Cal Fire noted that upwards of 12,100 structures remained threatened by the fire. Three injuries have been reported because of the Bridge Fire. The blaze stood at 54,658 acres. Governor Gavin Newsom announced a Fire Management Assistance Grant (FMAG) from the Federal Emergency Management Agency (FEMA) to help ensure the availability of vital resources to Los Angeles and San Bernardino counties.

RISK OF FUTURE EVENTS

The fire hazard of an area is typically based on the combined input of several parameters. These conditions include:

- Fuel loading - type of fuel or vegetation, its density and continuity
- Topography - elevation and slope
- Weather
- Dwelling density
- Wildfire history
- Existing mitigation measures in place that help reduce the zone's fire rating, for example, an extensive network of fire hydrants, fire-rated construction, fuel modification zones, etc.

Hesperia is predominantly dry due to the rain-shadow effect caused by the Peninsular Ranges. Average annual precipitation in Hesperia is 5 to 6 inches, with nearly 70 percent of this precipitation measured in the winter months, between December and March. Approximately 10 percent of the precipitation falls in the summer, between July and September, associated with thundershowers triggered by the North American monsoon that originates in the Gulfs of California and Mexico. Variations in the annual precipitation for this region is relatively high compared to other California regions, however and as a result, there is a significant variation in the frequency and extent of wildfires in the area. In years when rainfall is above average, an increased amount of fine fuels in the desert floor can result in an increase of fire spread.

In San Bernardino County, wildfire season commences in the summer when temperatures are high, humidity is low, and conditions remain dry. The season continues into the fall, when the City experiences high velocity, very dry winds.

Long-term variations in rainfall rates have also been noted in this region, with alternating periods of high rainfall and drought. For example, a mid-century drought was reported between 1946 and 1977, followed by a high-rainfall period between 1977 and 1998. More recently, below-average rainfall was recorded between 1999 and 2004 and on January and February of 2010; the City received 5.5 inches of rain in three days, with the total rainfall a two week period of approximately 8.6 inches. A statewide drought beginning in 2011 has caused the state to be the driest it's been since record keeping began back in 1895 (California 2016). This has caused extremely dry conditions in Hesperia creating plentiful fuel sources for wildfires.

CAL FIRE adopted Fire Hazard Severity Zone maps for LRA in June 2008. Fire hazard mapping is a way to measure the physical fire behavior to predict the damage a fire is likely to cause. Fire hazard measurement includes vegetative fuels, probability of speed at which a wildfire moves the amount of heat the fire produces, and most importantly, the burning

fire brands that the fire sends ahead of the flaming front.

The model used to develop the information in accounts for topography, especially the steepness of the slopes (fires burn faster as they burn up-slope.). Weather (temperature, humidity, and wind) also has a significant influence on fire behavior. The areas depicted as moderate, high and very high risk are of particular concern and potential fire risk in these are constantly increasing as human development, and the wildland urban interface areas expand.

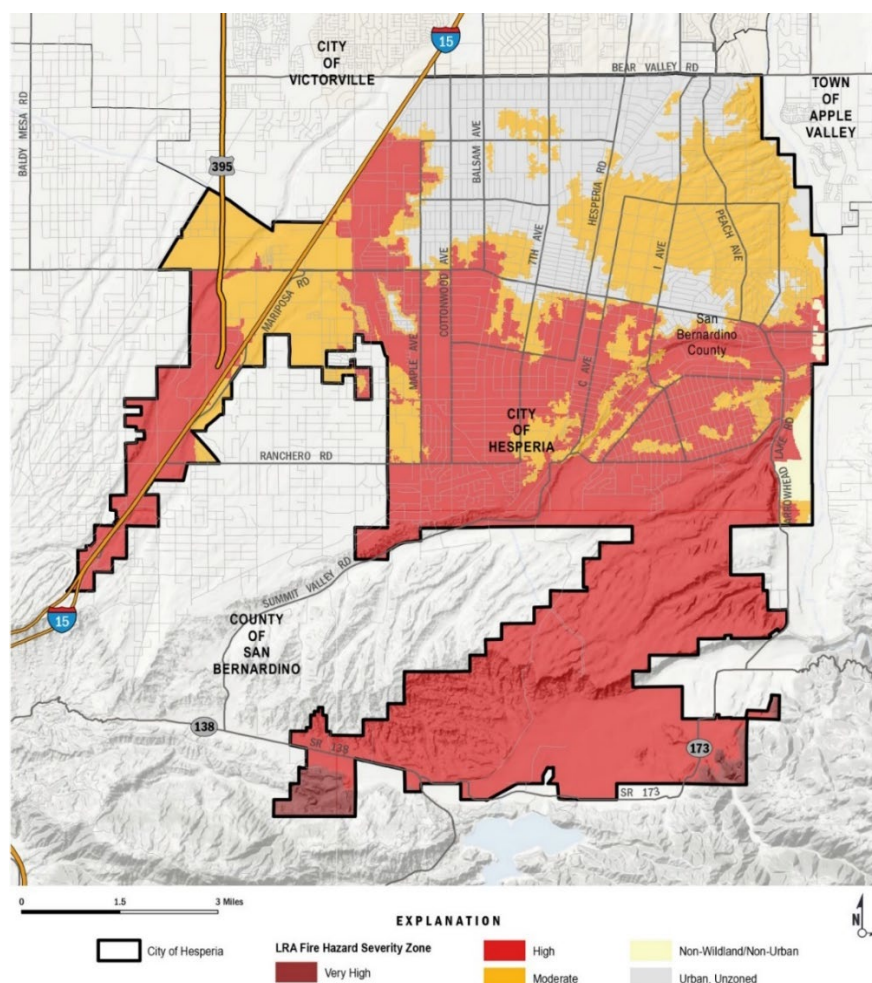
Figure 3-10 shows the very high, high and moderate LRA Fire Hazard Severity Zones in and around the City of Hesperia. The risk categories are defined as follows:

Very High: probability of a fire is 1% per year or greater

High: probability of a fire is 0.33% - 1% per year

Moderate: probability of a fire is less than 0.33% per year

Figure 3-10 Wildfire Hazard Severity Zones



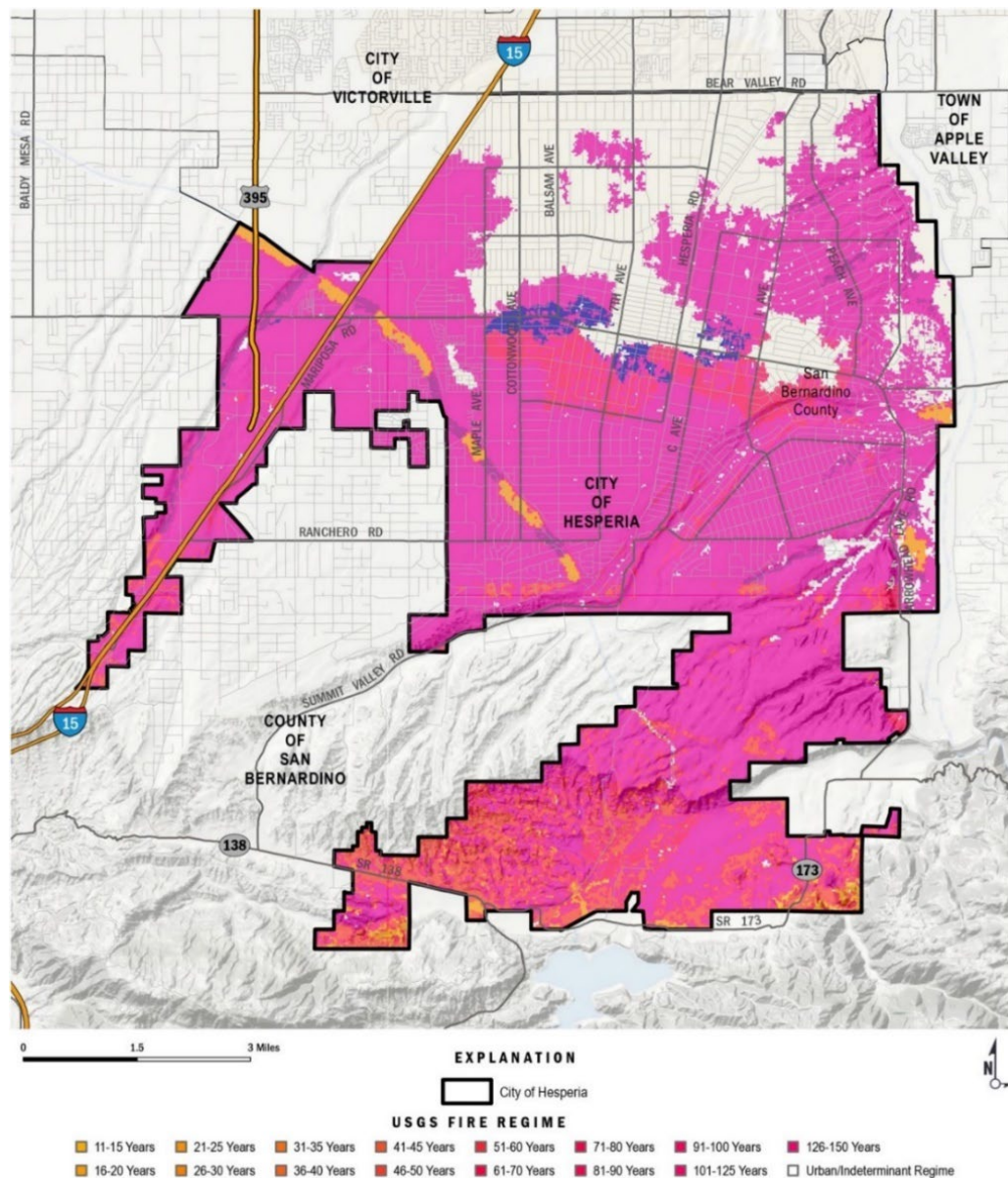
Source: Cal Fire 2016

USGS LANDFIRE (Landscape Fire and Resource Management Planning Tools), is a shared program between the wildland fire management programs of the U.S. Department of Agriculture Forest Service and U.S. Department of the Interior, providing landscape scale geo-spatial products to support cross-boundary planning, management, and operations. Historical fire regimes, intervals, and vegetation conditions are mapped using the Vegetation Dynamics Development Tool (VDDT). This USGS data supports fire and landscape management planning goals in the National Cohesive Wildland Fire Management Strategy, the Federal Wildland Fire Management Policy, and the Healthy Forests Restoration Act.

As part of the USGS Landfire data sets, the Mean Fire Return Interval (MFRI) layer quantifies the average period between fires under the presumed historical fire regime. MFRI is intended to describe one component of historical fire regime characteristics in the context of the broader historical time period represented by the LANDFIRE Biophysical Settings (BPS) layer and BPS Model documentation.

MFRI is derived from the vegetation and disturbance dynamics model VDDT (Vegetation Dynamics Development Tool) (LF_1.0.0 CONUS only used the vegetation and disturbance dynamics model LANDSUM). This layer is created by linking the BpS Group attribute in the BpS layer with the Refresh Model Tracker (RMT) data and assigning the MFRI attribute. This geospatial product should display a reasonable approximation of MFRI, as documented in the RMT. See **Figure 3-11** for predicted fire return interval for the jurisdictional area.

Figure 3-11 Wildfire Return Interval Map



Source: USGS 2016

CLIMATE CHANGE CONSIDERATIONS

Climate change, including increased heat, extended drought, and a thirsty atmosphere, has been a key driver in increasing the risk and extent of wildfires. Wildfires require the alignment of several factors, including temperature, humidity, and the lack of moisture in fuels, such as trees, shrubs, grasses, and forest debris. All these factors have strong direct or indirect ties to climate variability and climate change. Research shows that changes in climate create warmer, drier conditions, leading to longer and more active fire seasons. If these conditions occur, wildfire could increase over time.¹⁹

¹⁹ (<https://www.noaa.gov/noaa-wildfire/wildfire-climate-connection>)

Dam Failure/Inundation

DESCRIPTION

Dam failure can result from several causes, such as earthquakes, rapidly rising floodwaters, and structural design flaws. These hazards can occur instantaneously or very gradually, depending on the source of the failure. Inundation associated with these events can potentially cause loss of life, damage property, and other ensuing hazards, as well as the displacement of persons residing in the inundation path.

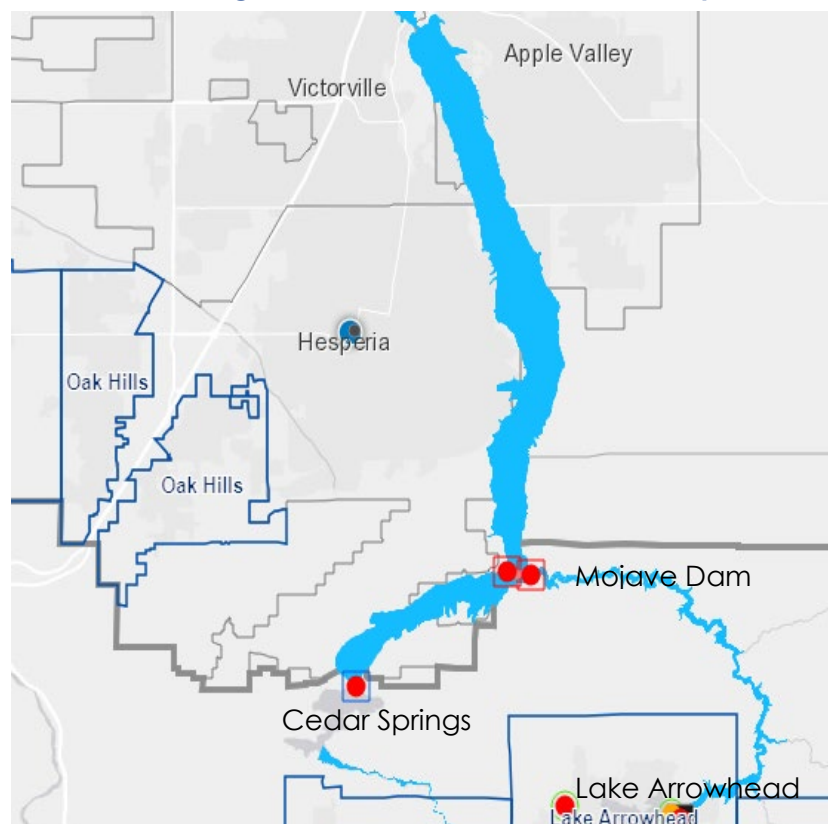
According to the California Division of Safety of Dams (DSOD), a dam falls under their jurisdiction if its height is greater than 6 feet and impounds more than 50 acre-feet of water or its height is greater than 25 feet and impounds 15 acre-feet of water. Based on these criteria, 1,537 dams fall under DSOD jurisdiction, 39 of which are located within San Bernardino County.

LOCATION AND EXTENT

There are dams that provide flood protection and water storage south of the City. Failure of these dams would potentially inundate parts of the City. **Figure 3-12** depicts the location of these dams. These dams include:

Mojave Forks Dam, which is a 200-foot-high earthen dam built in 1974 by the U.S. Army Corps of Engineers. The main embankment, a rolled earthfill design contains 5,310,000 cubic yards of material.

Figure 3-12 Dam Locations Near Hesperia



A smaller auxiliary dam is located directly west of the main dam. The reservoir controls runoff from a rugged drainage basin of 215 square miles on the north slope of the San Bernardino Mountains. Although the entire Mojave River basin covers 4,700 square miles, the comparatively small area behind the dam contributes the vast majority of the water in the river, the remaining 95 percent of the watershed being desert. The towns of Victorville, Hesperia and others in the Victor Valley region along the Mojave River, as well as towns further downstream such as Barstow, are the primary beneficiaries of the

project.²⁰

The primary purpose of the dam is flood risk reduction. USACE completed a risk assessment of the Dam in 2018. Mojave Dam currently has a Dam Safety Action Classification (DSAC2) "high urgency of action" rating. If the dam failed, over 10,000 people who live below the dam in Hesperia, Apple Valley, and Victorville would be at risk; economic damages over \$1.2 billion would be possible.²¹ **Refer to Table 3-14 Dam Safety Action Classification (DSAC) Rating System**

Cedar Springs Dam, is a large reservoir in San Bernardino County, California, United States, located on the West Fork Mojave River, a tributary of the Mojave River in the San Bernardino Mountains. It was created in 1971 as part of the State Water Project by the construction of the Cedar Springs Dam as a forebay on the 444 mi long California Aqueduct (consequently inundating the former town of Cedar Springs), and has a capacity of 73,000 acre ft. Silverwood Lake is located on the East Branch of the California Aqueduct. It is operated by the California Department of Water Resources and provides a major water source for agencies serving nearby San Bernardino Mountain and Mojave Desert areas. Some 2,400 acres of recreation land surround the lake. At an elevation of 3,355 ft, Silverwood Lake is the highest reservoir in the State Water Project.²²

Downward Hazard potential classification is High as failure of the dam is expected to cause loss of at least one human life. Condition Assessment was Satisfactory; no existing or potential dam safety deficiencies recognized. Acceptable performance under all loading conditions (static, hydrologic, seismic) in accordance with minimum federal criteria and tolerable risk guidelines.²³ **Refer to Table 3-15 Downstream Classifications.**

Lake Arrowhead Reservoir, an artificial lake located in the San Bernardino Mountains on Little Bear Creek, a tributary of Deep Creek and the Mojave River. It has a surface area of approximately 780 acres and a capacity of 48,000 acre ft). It is surrounded by the unincorporated community of Lake Arrowhead in San Bernardino County, California. The lake was originally intended to serve as part of a major waterworks project to provide irrigation water to the San Bernardino Valley, and construction of the Lake Arrowhead Dam began toward that end in 1904. However, the original project was halted due to litigation over water supplies to land owners on the desert side of the mountains. Construction of the dam was completed in 1922 by the Arrowhead Lake Company, a Los Angeles syndicate, as part of a plan to develop the area into a resort.²⁴

Downward Hazard Potential Classification is Significant; no probable loss of human life but can cause economic loss, environment damage, disruption of lifeline facilities, or impact other concerns. Condition assessment was rated poor; remedial action is necessary (lack of maintenance, critical design info needed, investigations and studies necessary).²⁵ **Refer to Table 3-15 Downstream Classifications.**

²⁰ https://en.wikipedia.org/wiki/Mojave_Forks_Dam

²¹ <https://usace.contentdm.oclc.org/digital/collection/p16021coll7/id/23165>

²² https://en.wikipedia.org/wiki/Silverwood_Lake

²³ Dams within Jurisdiction of the State of California – California Department of Water Resources (Division of Safety of Dams) – September 2023

²⁴ https://en.wikipedia.org/wiki/Lake_Arrowhead_Reservoir

²⁵ Dams within Jurisdiction of the State of California – California Department of Water Resources (Division of Safety of Dams) – September 2023

Table 3-14: Dam Safety Action Classification (DSAC) Rating System

URGENCY OF ACTION (DSAC)	ACTIONS FOR DAMS IN THIS CLASS***	CHARACTERISTICS OF THIS CLASS
VERY HIGH (1)	Take immediate action to avoid failure. Communicate findings to sponsor, local, state, Federal, Tribal officials, and the public. Implement interim risk reduction measures, including operational restrictions. Ensure the emergency action plan is current and functionally tested for initiating event. Conduct heightened monitoring and evaluation. Expedite investigations to support remediation using all resources and funding necessary. Initiate intensive management and situation reports.	CRITICALLY NEAR FAILURE: Progression toward failure is confirmed to be taking place under normal operations. Dam is almost certain to fail under normal operations to within a few years without intervention. OR EXTREMELY HIGH INCREMENTAL RISK**: Combination of life or economic consequences with likelihood of failure is very high. USACE considers this level of life-risk to be unacceptable except in extraordinary circumstances.
HIGH (2)	Communicate findings to sponsor, local, state, Federal, Tribal officials, and the public. Implement interim risk reduction measures, including operational restrictions as warranted. Ensure the emergency action plan is current and functionally tested for initiating event. Conduct heightened monitoring and evaluation. Expedite confirmation of classification. Give very high priority for investigations to support the need for remediation.	FAILURE INITIATION FORESEEN: For confirmed and unconfirmed dam safety issues, failure could begin during normal operations or be initiated as the consequence of an event. The likelihood of failure from one of these occurrences, prior to remediation, is too high to assure public-safety. OR VERY HIGH INCREMENTAL RISK**: The combination of life or economic consequences with likelihood of failure is high. USACE considers this level of life-risk to be unacceptable except in extraordinary circumstances.
MODERATE (3)	Communicate findings to sponsor, local, state, Federal, Tribal officials, and the public. Implement interim risk reduction measures, including operational restrictions as warranted. Ensure the emergency action plan is current and functionally tested for initiating event. Conduct heightened monitoring and evaluation. Prioritize investigations to support the need for remediation informed by consequences and other factors.	MODERATE TO HIGH INCREMENTAL RISK**: For confirmed and unconfirmed dam safety issues, the combination of life, economic, or environmental consequences with likelihood of failure is moderate. USACE considers this level of life-risk to be unacceptable except in unusual circumstances.
LOW (4)	Communicate findings to sponsor, local, state, Federal, Tribal officials, and the public. Conduct elevated monitoring and evaluation. Give normal priority to investigations to validate classification, but do not plan for risk reduction measures at this time.	LOW INCREMENTAL RISK**: For confirmed and unconfirmed dam safety issues, the combination of life, economic, or environmental consequences with likelihood of failure is low to very low and the dam may not meet all essential USACE guidelines. USACE considers this level of life-risk to be in the range of tolerability but the dam does not meet all essential USACE guidelines.
NORMAL (5)	Continue routine dam safety activities and normal operations, maintenance, monitoring, and evaluation.	VERY LOW INCREMENTAL RISK**: The combination of life, economic, or environmental consequences with likelihood of failure is low to very low and the dam meets all essential USACE guidelines. USACE considers this level of life-safety risk to be tolerable.

*At any time for specific events a dam, from any action class, can become an emergency requiring activation of the emergency plan.
 ** INCREMENTAL RISK is used to inform the decision on the DSAC assignment; NON-BREACH RISK is not reflected in this table.
 ***DSAC 1 and 2 dams with no life loss will be referred to the appropriate business line program and are given lower priority in the dam safety program.

Table 3-15: California Department of Water Resources Division of Safety of Dams – Downstream Hazard Classifications

Downstream Hazard Potential Classifications	Potential Downstream Impacts to Life and Property
Low	No probable loss of human life and low economic and environmental losses. Losses are expected to be principally limited to the owner's property.
Significant	No probable loss of human life but can cause economic loss, environmental damage, impacts to critical facilities, or other significant impacts.
High	Expected to cause loss of at least one human life.
Extremely High	Expected to cause considerable loss of human life or would result in an inundation area with a population of 1,000 or more.

PAST EVENTS

There were no major federal or state disaster declarations for dam inundation in the planning area since the last update. Despite some significant flooding events in the late 1800s and early 1900s, including one in 1862 that wiped out the tiny Santa Ana River hamlet

of Agua Mansa near present-day Colton, regional flood management and mitigation was not given a great deal of consideration in San Bernardino County until the Great Flood of March 1938. That deluge claimed 14 lives, left hundreds homeless, and caused an estimated \$12 million (\$220 million in 2020 dollars) in property damage.

In 1939, the State Legislature passed the San Bernardino County Flood District Act, which empowered the County to begin developing regional flood protection facilities to protect life and property. Today, San Bernardino County Flood Control operates and maintains 14 dams, 119 basins, 82 levees, and more than 250 miles of flood control channels. The dams, levees, and channels are designed to convey runoff around homes and businesses in the valley safely.²⁶

RISK OF FUTURE EVENTS

Seismically induced inundation refers to flooding that results when water retention structures, such as dams, fail due to an earthquake. Water released by the Mojave Forks Dam would be confined to the Mojave River bed, the mouth of Antelope Valley Wash channel, and several other smaller tributaries. Water released by the Cedar Springs Dam would flood a significant portion of eastern Summit Valley, an area for the most part presently undeveloped, except for Highway 173. Water from Lake Arrowhead Dam would most likely be contained within the Mojave Forks reservoir.

With the adoption of SB 92 in 2017, new dam safety requirements mandate that dam owners map the downstream inundation areas for dams governed by the California Department of Water Resources (DWR). In addition to the mapping, owners must prepare Dam Emergency Action Plans that identify the emergency management plans and procedures in place for these facilities. **Figure 3-13** identifies the inundation areas. For inundation to occur, as depicted in this map, it is assumed the reservoirs behind these dams are full, and failure occurs suddenly, releasing water in a relatively short amount of time. Failures typically occur from an earthquake, erosion, design flaw, or water overflow condition during intense storms.

CLIMATE CHANGE CONSIDERATIONS

Overall, engineers say that most dams that were built decades ago in the United States are unsuited to a warmer world and stronger storms.²⁷ Some recent dam episodes have been shown to have a climate change link. In February 2017, at Oroville Dam in California, the tallest in the nation, heavy mountain runoff into the reservoir led to an emergency spillway near failure and severe damage to the main spillway. Nearly 200,000 people were evacuated as a precaution, and repairs cost more than \$1 billion. A later study found that an increase in early-season Sierra Nevada runoff contributed to the dam's high-water

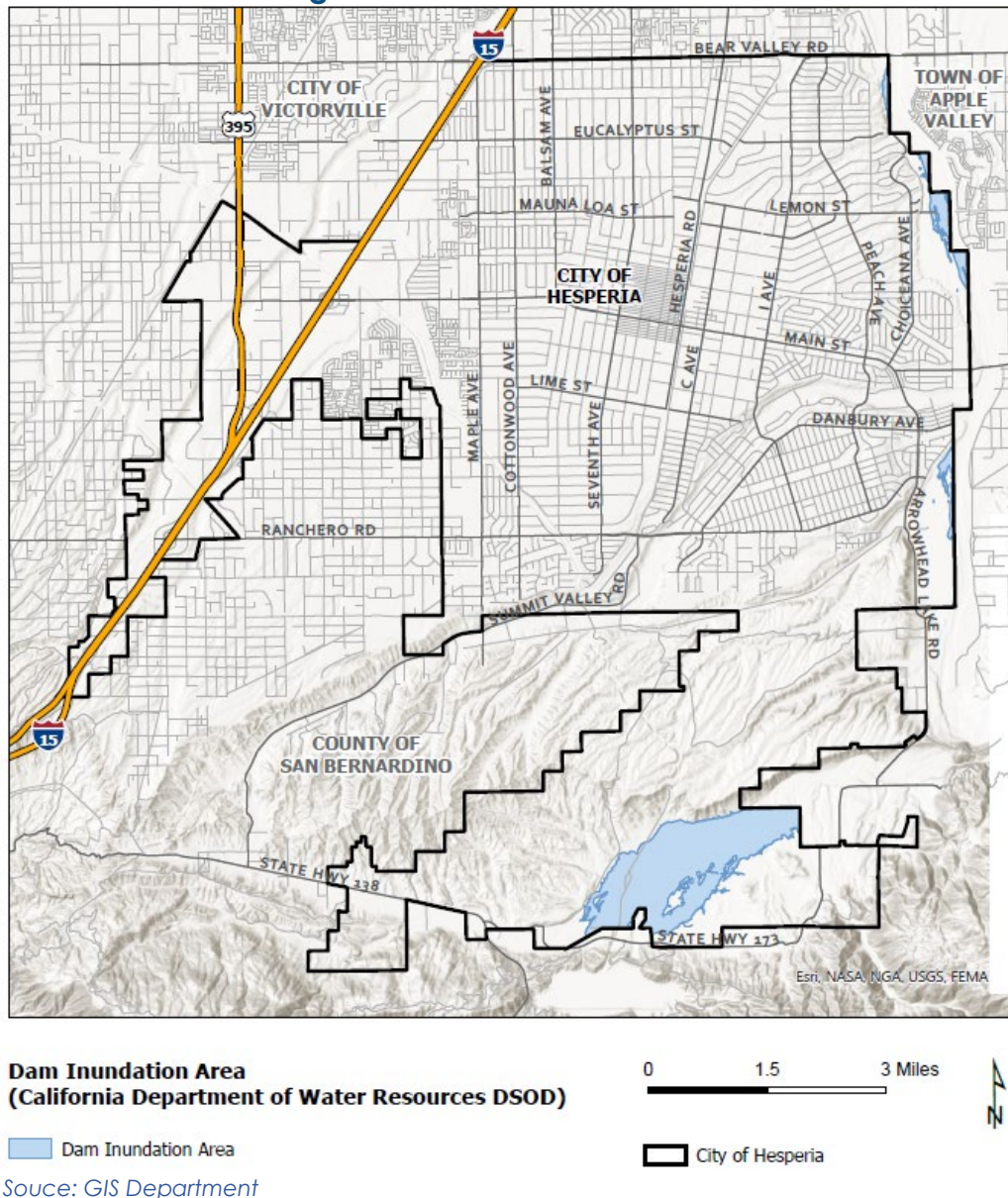
²⁶ Ibid.

²⁷ Fountain, H. 2020. "'Expect More': Climate Change Raises Risk of Dam Failures." New York Times. <https://www.nytimes.com/2020/05/21/climate/dam-failure-michigan-climate-change.html#:~:text=the%20main%20story,'Expect%20More'%3A%20Climate%20Change%20Raises%20Risk%20of%20Dam%20Failures,warmer%20world%20and%20stronger%20storms.&text=The%20dam%20that%20failed%20in,It%20was%20overwhelmed%20by%20water>

levels. This early season runoff can be attributed to human-caused warming.²⁸

In addition to short-duration extreme precipitation, rainfall of longer duration but less intensity—an overall wetter climate, which climate models forecast for parts of the United States in the coming decades—can contribute to the risk.²⁹ Overall, the main consideration will be the weather patterns and how rainfall will affect the city and the county, as many of the catch basins and dams in the region connect multiple cities and counties.

Figure 3-13: Dam Inundation Areas



²⁸ Fountain, 2020.

²⁹ Fountain, H. 2020. 'Expect More': Climate Change Raises Risk of Dam Failures. *The New York Times*. <https://www.nytimes.com/2020/05/21/climate/dam-failure-michigan-climate-change.html>

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Chapter 4 – Vulnerability Assessment

The information in this section provides an explicit representation of what a community stands to lose in a disaster. This is useful for City Staff and other decision makers who will need to balance the costs of mitigation against the potential harm to residents and damage to property. It provides comparable measurements of community natural hazard exposure* and assists in determining which hazards and/or what parts of the City to focus on making resilient to disaster first. Based upon possible assets at risk, hazard mitigation resources can be directed where need be, in-part, by a vulnerability assessment and information presented in this section.

The vulnerability assessment is developed by developing quantitative and qualitative information for each hazard. Through an exposure analysis, quantitative data is developed for each hazard. An exposure analysis provides quantities of people and assets at risk to particular hazards. Qualitative data has been developed and presented in this section for hazards without measurable data. Qualitative data provides information beyond quantities of people and assets at risk, but rather a description of how the hazard could affect the region around the City of Hesperia.

****The hazard exposure analysis has been developed with best available data and follows methodology described in the FEMA How to Guide #2 (Publication No. 386-2) “Understanding Your Risks—Identifying Hazards and Estimating Losses”.***

Methodology

A vulnerability assessment was conducted for each of the identified priority hazards. Geospatial data is essential in determining population and assets exposed to particular hazards. Geospatial analysis can be conducted if a natural hazard has a particular spatial footprint that can be overlaid against the locations of people and assets. In Hesperia, wildfire, flood, earthquakes, severe weather, and dam failure have known geographic extents and corresponding spatial information about each hazard.

Several sources of data are necessary to conduct a vulnerability analysis. **Figure 4-1** provides an exhibit of the data inputs and outputs used to create the vulnerability analysis results presented in this section. U.S. Census data is the primary source in determining natural hazard exposure to residents. Census data has been used to determine the population at risk, which is generally referred to as population exposure. Furthermore, GIS allows for the spatial analysis and mapping of vulnerable populations such as elderly individuals, people with disabilities, low-income communities, etc. Census data, demographic surveys, and other sources provide the necessary information, which GIS can visualize and overlay with hazard maps. Population exposure is provided for wildfire, flood, earthquakes, severe weather, and dam failure as potential hazards later in this section.

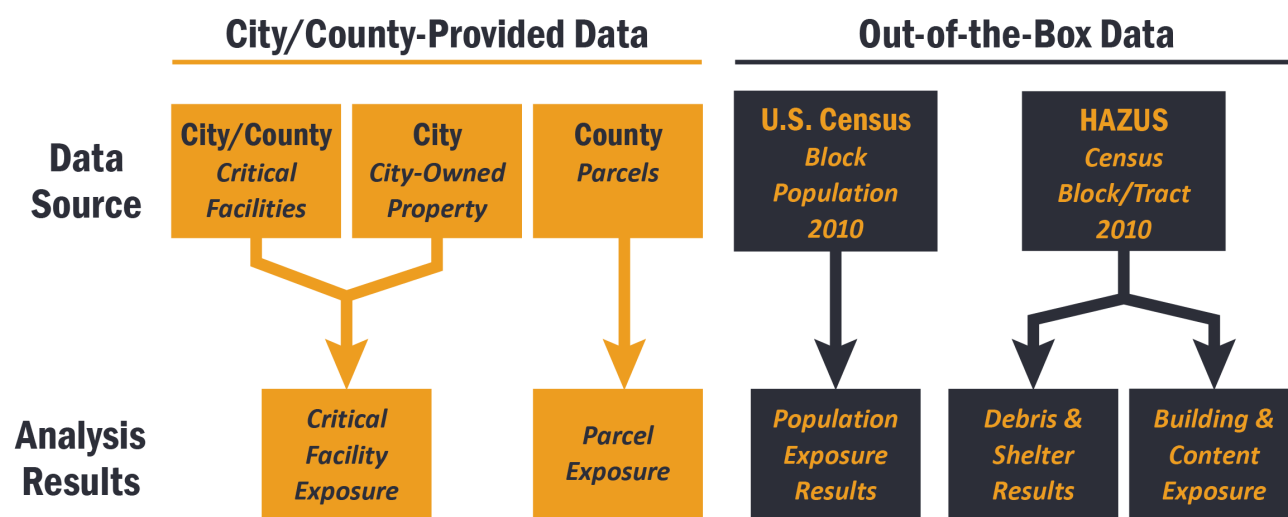
Together with the U.S. Census data, asset data was used to provide a snapshot of how City assets are affected by natural hazards. For purposes of this vulnerability analysis, asset data includes parcels and critical infrastructure within the City boundaries. Critical infrastructure is described as assets that are essential for people and a community to function. Critical infrastructure includes utilities such as, city-owned facilities, bridges, schools, and other community facilities that provide essential services to residents.

Critical facilities data was developed from a variety of sources including City owned and

maintained data, state and federal government datasets, and private industry datasets. A critical infrastructure spatial database was developed to translate critical facilities information into georeferenced¹ points. Critical facility points are intersected with the spatial hazard layers to develop a list of “at risk” critical facilities. The City critical facilities that intersect with natural hazards are referred to as facilities with hazard “exposure”. Exposure results are presented later in this section.

** Elements at risk; Risk inventory; Exposure encompasses all elements, processes, and subjects that might be affected by a hazardous event. Consequently, exposure is the presence of social, economic, environmental or cultural assets in areas that may be impacted by a hazard.*

Figure 4-1: Data Source and Methodology



Source: mitigatehazards.com

Lastly, FEMA’s Hazus-MH MR5 (Multi-Hazard) is a software tool developed by FEMA that is used for estimating potential losses from earthquakes, floods and hurricanes. Hazus-MH software was utilized to conduct detailed loss estimation for flood and earthquake. Hazus uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. For purposes of this planning effort, Hazus was used to graphically illustrate the limits of identified high-risk locations due to possible earthquakes and floods.

Hazus User and Technical Manuals were relied on to provide accurate descriptions and narratives of the figures and tables provided throughout Chapter 4.

Population and Asset Exposure

To describe vulnerability for each hazard, it is important to understand the “total” population and “total” assets at risk. The exposure for each hazard described in this section will refer to the percent of total population or percent of total assets. This provides the possible significance or vulnerability to people and assets for the natural hazard event and the

¹ To georeference something means to define its existence in physical space. That is, establishing its location in terms of map projections or coordinate systems. The term is used both when establishing the relation between raster or vector images and coordinates, and when determining the spatial location of other geographical features.

estimated damage and losses expected during a “worst case scenario” event for each hazard. The sections below provide a description of the total population, critical facilities, and parcel exposure inputs.

POPULATION EXPOSURE

To develop hazard-specific vulnerability assessments, population near natural hazard risks should be determined to understand the total “at risk” population. We can understand how geographically defined hazards may affect the City by analyzing the extent of the hazard in relation to the location of population. For purposes of the vulnerability assessment approximately 99,878 (100%) of the City’s population is exposed to one or more hazards within or near the City boundaries. Each natural hazard scenario affects the City’s residents differently depending on the location of the hazard and the population density of where the hazard could occur. Vulnerability assessment sections presented later in this section summarize the population exposure for each natural hazard.

VULNERABLE POPULATIONS

Factors such as age, physical and/or mental condition, socioeconomic status, access to key services, and many other factors affect the ability of people to prepare for and protect themselves and their property from a hazard event. Even though some hazard events may impact all parts of Hesperia with equal severity, different people may experience the impacts differently. Higher-income households, for instance, are likely more able to afford the cost of retrofitting their homes to resist flooding or, alternatively, move to a location that is less prone to flooding than a lower-income household. As a result, the higher-income household is less likely to experience significant damage during a flood event than the lower-income household, even if the same amount of rain falls on both.

A social threat analysis examines how hazard events are likely to impact different demographic populations in Hesperia and where these different demographic populations live in the city. This includes assessing whether the people in an area of an elevated hazard risk are more likely than the average person to be considered a threatened population. The social threat analysis uses the following criteria to assess the threat to vulnerable populations:

- **Disability status:** Persons with disabilities may often have reduced mobility and experience difficulties living independently. As a result, they may have little or no ability to prepare for and mitigate hazard conditions without assistance from others.
- **Income levels:** Lower-income households are less likely to have the financial resources to implement mitigation activities on their residences. They may also struggle with having the necessary time to find and access educational resources discussing hazard mitigation strategies. Furthermore, lower-income households are less likely to be able to move to safer areas that are less at risk of being impacted by a hazard. The national poverty limit standard for the U.S. for a four-person family is approximately an income of \$26,500 or less. For San Bernardino County, the FY 2021 Low-Income Limit for a four-person family is \$63,200. **Figure 4-2** shows the median household income distribution for the City, using Census 2020 geographies. The “median” is the value that divides the distribution of household income into two equal parts (e.g., the middle).
- **Age:** Children and the elderly tend to be more vulnerable during an extreme natural

disaster. They have less physical strength to survive disasters and are often more susceptible to certain diseases. The elderly often also have declining vision and hearing and often miss reports of upcoming natural hazard events. Children, especially young children, have the inability to provide for themselves. In many cases, both children and the elderly depend on others to care for them during day to day life.

Finally, both children and the elderly have fewer financial resources and are frequently dependent on others for survival. In order for these populations to remain resilient before and after a natural hazard event, it may be necessary to augment city residents with resources provided by the City, state and federal emergency management agencies and organizations. See **Figure 4-3** and **Figure 4-4** for location of vulnerable population by age within the City.

Table 4-1 shows the amounts of people in Hesperia who meet at least one of the criteria for threatened, vulnerable populations. For more detailed demographic information, please refer to **Chapter 2**.

The social threat analysis also shows the threat other populations may encounter. For example, people experiencing homelessness or people without access to lifelines (vehicles or communication networks) may experience greater hardship in evacuating or recovering from a disaster. Since data for these groups are not readily available, there is no definitive way to determine the amount of these persons in areas of elevated risk, so this assessment will discuss how these other threatened groups may be affected on a general level.

Table 4-1: Hesperia Threatened-Population Metrics	
Threatened Population Metric	Community-Wide Data
Population	99,878
Households	28,687
Median household income	\$67,698
Renter Households	37.17%
Percentage of households with at least one person living with a disability	8.5%
Percentage of households living under the poverty limit	18.1%
Percentage of households with one-member aged 65+	9.9%
Source: US Census Bureau, 2016-2020 American Community Survey and 2022 Estimates	

Data Limitations and Notes on Vulnerability Tables

Due to data limitations, the data comparing the hazard zone population with the citywide population comes from two separate sources. The citywide data comes from the US Census Bureau's American Community Survey, and the hazard zone population data comes from ESRI's Business Analyst reports. As a result, there may be discrepancies in comparing the two data sets. The data that should be considered correct for this plan is the ACS data reported in Chapter 2.

Figure 4-2: Median Household Income Distribution Map

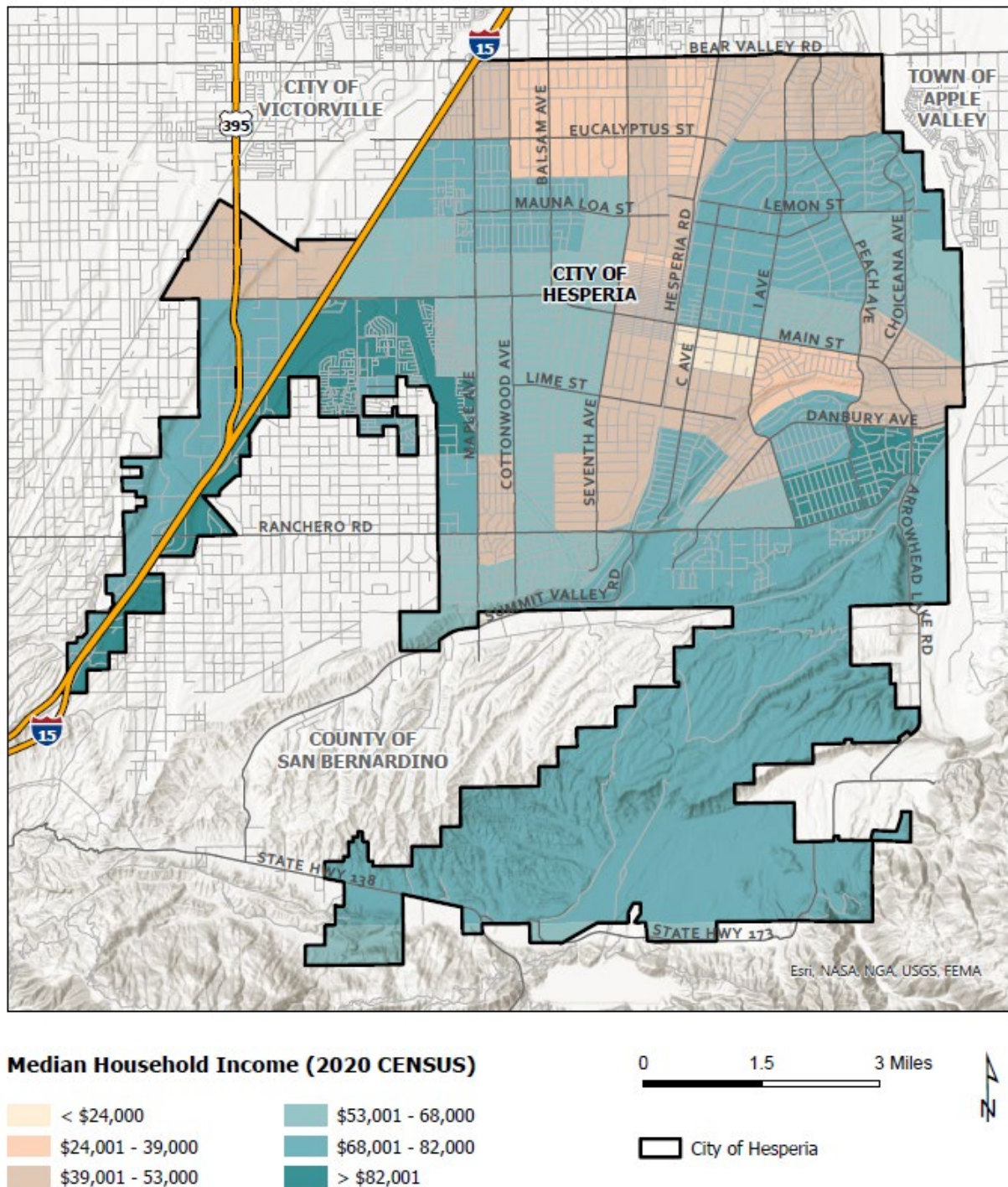


Figure 4-3: Population Under 18

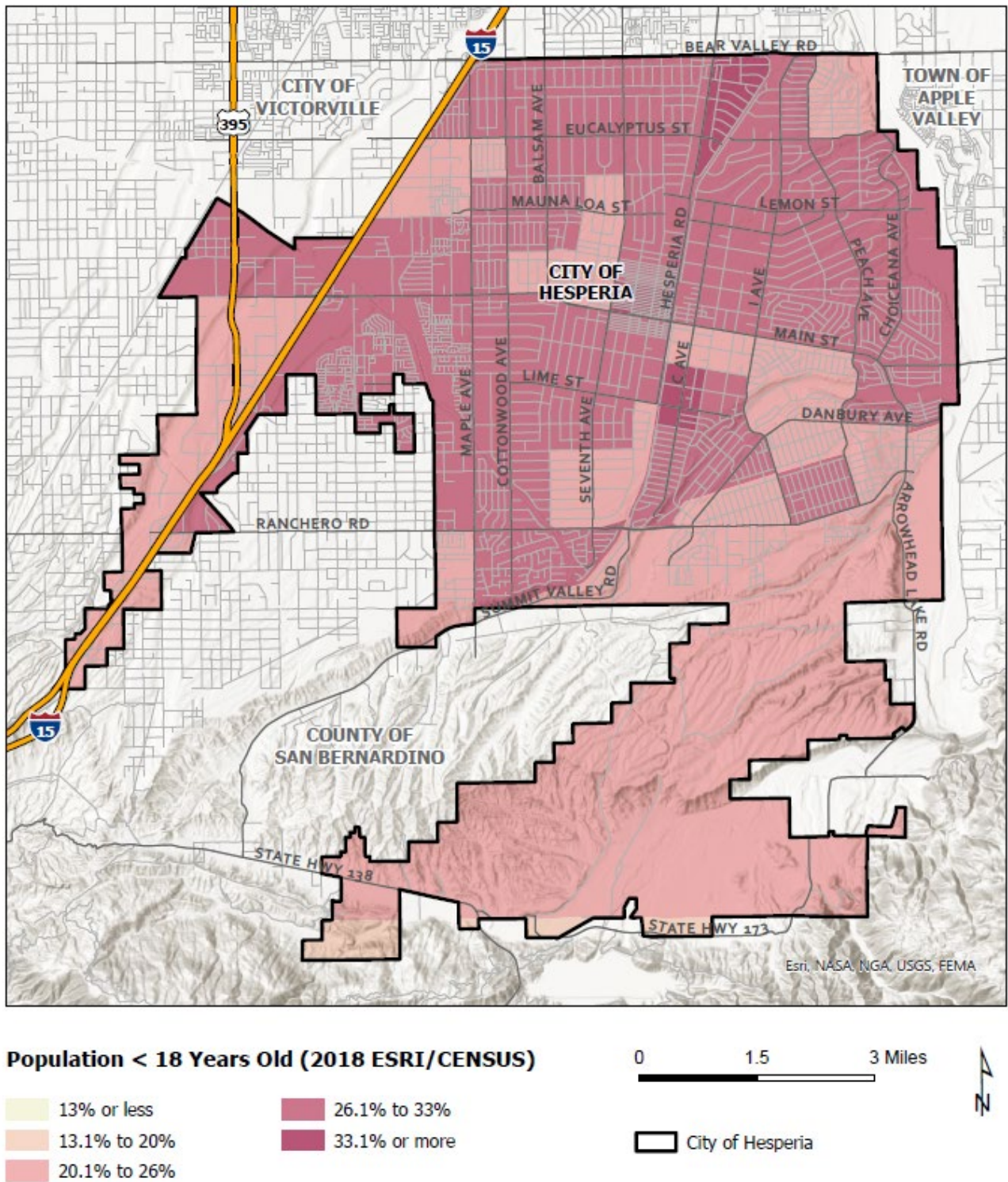
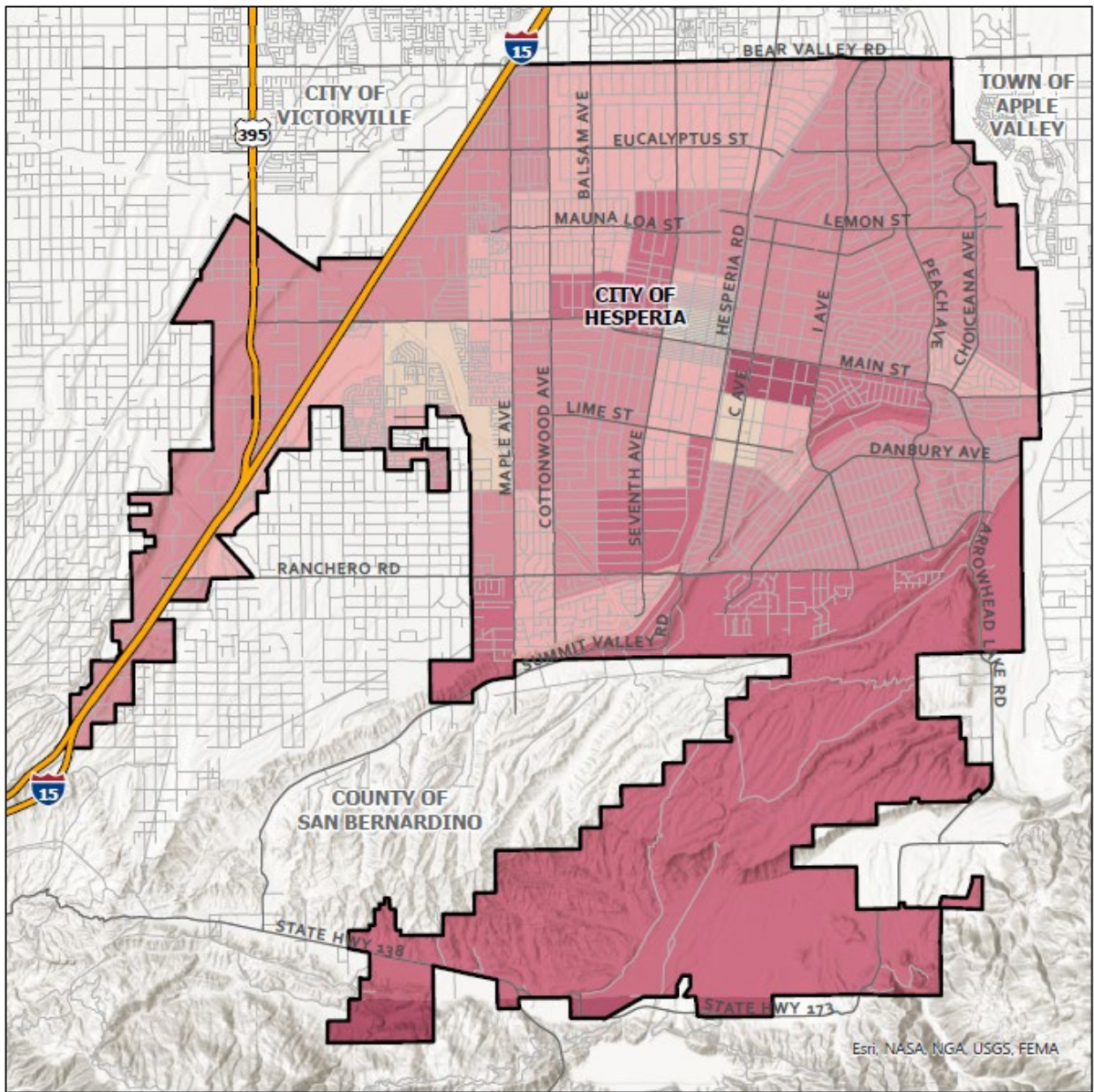
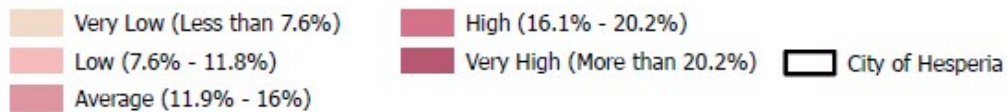


Figure 4-4: Population Over 65



Population age 65 or more (2018 ESRI/CENSUS)



HAZUS-MH INPUTS

The Hazus-MH (Hazards US – Multi-Hazard) software version 5.0 is a tool developed by FEMA to assess and analyze potential impacts from natural hazards, primarily focusing on earthquakes, floods and hurricanes. Hazus contains a database of economic, demographic, building stock, transportation facilities, local geology, and other information that can be used for several steps in the risk assessment process.

Hazus software operates on structure square footage, structure replacement, and content replacement costs aggregated to the census block and tract levels depending on type of hazard analysis. Hazus 5.0 was used in 2024 to analyze the City's building risk to flood and earthquake hazards.

Hazus utilizes hazard modeling and spatial analysis techniques to assess the exposure of each occupancy type to natural hazards. The analysis considers factors such as hazard intensity, building vulnerability, proximity to hazard zones, and local building codes and standards.

For each occupancy type, Hazus estimates potential damage and losses from hazard events, including structural damage, contents damage, business interruption, and economic losses. Loss assessment provides insights into the financial impact on different sectors of the economy and helps prioritize mitigation efforts and emergency response planning.

Table 4-2 and **Figure 4-5** provide value data for building categories at the census block and census tract levels. Census block and census tracts are used to provide input information for the Hazus analysis presented in this report. The Census Building Stock Exposure by General Occupancy refers to the analysis of building stock categorized by general occupancy types within the 100-year flood zone. Occupancy types include residential, commercial, industrial, institutional, and governmental buildings.

Table 4-2: Hazus Census Block 2010 Building Stock Exposure by General Occupancy



FEMA

Building Stock Exposure by General Occupancy

RiskMAP
Increasing Resilience Together

June 17, 2024

All values are in thousands of dollars

	Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
California								
San Bernardino	6,911,295	627,270	177,632	9,682	72,250	10,451	63,708	7,872,288
Total	6,911,295	627,270	177,632	9,682	72,250	10,451	63,708	7,872,288
Study Region Total	6,911,295	627,270	177,632	9,682	72,250	10,451	63,708	7,872,288

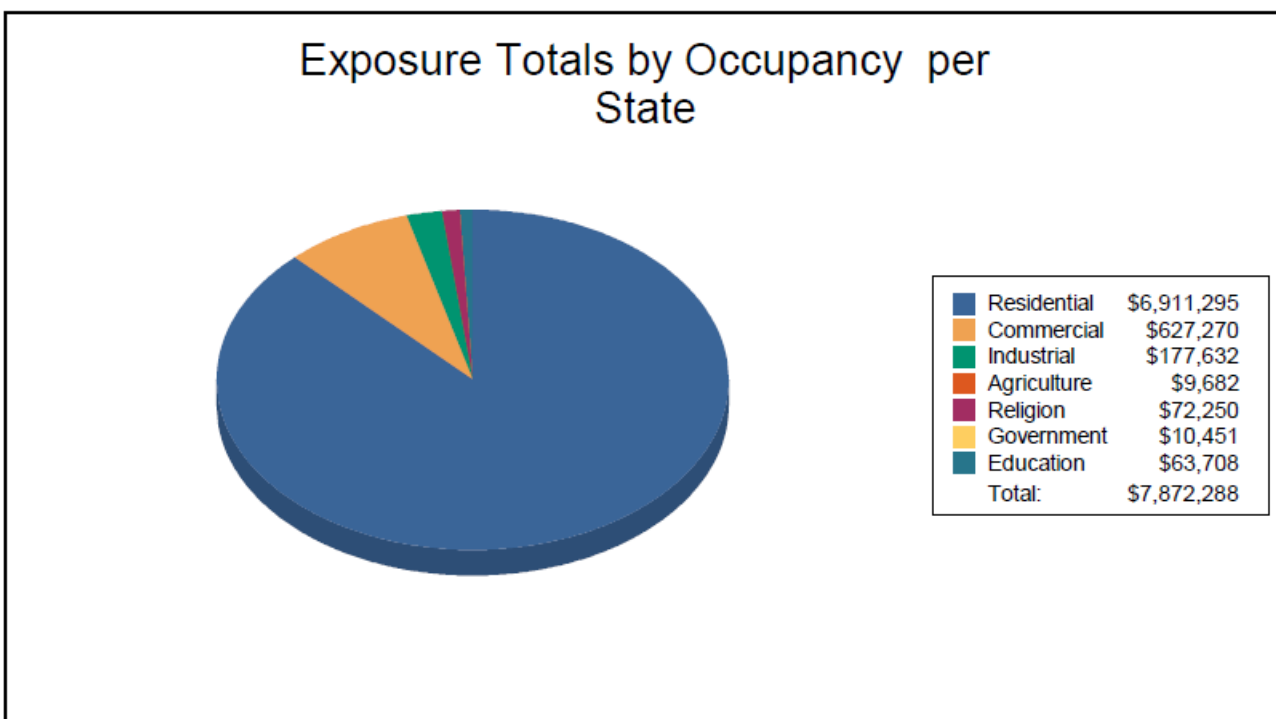
Figure 4-5: 2010 Census Building Stock Exposure by General Occupancy

Table 4-2 and **Figure 4-5** above exemplify valuable insight into building stock exposure by general occupancy types, supporting informed decision-making, emergency management, and resilience planning efforts to protect communities from natural hazards. The software's integration of geographic information system (GIS) technology with hazard modeling and building inventory data enables comprehensive risk assessment and mitigation strategies across various sectors of the built environment.

PARCEL EXPOSURE

The total count and value of parcels within the City of Hesperia which could be exposed to a hazard event is referred to as parcel exposure in this plan. A standardized hazard overlay was conducted to develop hazard exposure results for improved city parcels presented later in this section. The spatial overlay method identifies improvement value², land value, total assessed value for building and content replacement costs for a hazard's geographic extent. In the event of a disaster, it is generally the value of the infrastructure or improvements to the land that is of concern or at risk. Generally, the land itself is not a total loss and structures can be rebuilt. The San Bernardino County Assessor's data is pivotal to developing parcel values exposed to each hazard. Replacement cost is the value of both material, labor, and design time to reconstruct a residential building. It is important to note that replacement cost is different than assessed market value for taxation purposes and is not related to housing market conditions.

² A long-term asset which indicates the cost of the constructed improvements to land, such as buildings, driveways, walkways, lighting, and parking lots.

The City parcel information is summed and provided in **Table 4-3: City Parcel Information as of March 2024**.

Table 4-3: City Parcel Information as of March 2024			
Improved Parcel Count	Improvement Value Exposure (\$)	Land Value Exposure (\$)	Total Exposure (\$)
26,772	\$6,604,053,629	\$1,621,095,642	\$8,225,149,271

- Table 4-3 includes all parcels within the city that have an improved value over \$20,000.
- Based on San Bernardino County Parcel Data

CRITICAL FACILITIES

Critical facilities are of particular concern when conducting hazard mitigation planning. Critical facilities are defined as essential services, and if damaged, would result in severe consequences to the health, safety, and welfare of the public.

An inventory of critical facilities within the City was used to develop a comprehensive inventory of facility points and lifelines. Critical facility points include fire stations, police stations, government buildings, schools, transportation, utilities, etc. Lifelines include transportation routes only. A current representation of the critical facilities and lifelines are provided in **Table 4-4** and **Table 4-5**. The tables only include data that the GIS Department was able to map within the City. Some critical facility information has been omitted from documentation due to national security purposes. The Hesperia City Manager's Department manages and maintains a complete list of critical facilities.

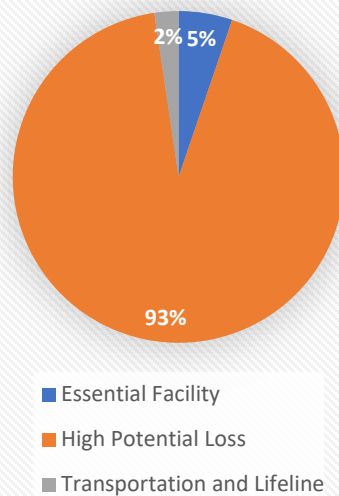
Table 4-4: Critical Facility Points; 2024	
Infrastructure Type	Feature Count
Essential Facility	37
EOC (City Hall)	1
Fire Department/ Fire Station	3
Police Station	1
School	30
Public Works – Mojave	
Corporate Yard	1
Hesperia Animal Control/Code Enforcement	1
High Potential Loss	671
Historical/Cultural Resource	2
Major Employers	14
Child Care Centers	41
Foster Family Agency/ Adoption Agency	2
Adult Care/Adult Residential Care	18
Home Care Organization	3
Elder Residential Care	18
Mobile Home Parks	12

Table 4-4: Critical Facility Points; 2024

Infrastructure Type	Feature Count
Dam	3
EPA FRS Facility/Hazmat	342
Federal Communications Commission – Antenna Structure Registration	6
Electrical Utility Property	135
Potable Water Facility	75
Transportation and Lifeline	17
Airport/Runway	1
Bus Facility	1
Highway Bridge	11
Railway Bridge	4
Grand Total	725

Source: Multiple Sources; refer to Critical Facilities Workbook

Critical Facility Points

**Table 4-5: Linear Transportation; 2024**

Infrastructure Type	Total Linear Mileage
Interstate Highways	18
US / State / County Highways	9
Local Road, Major	71
Local Road	559
Interstate Highways	18
Grand Total	675

Source: City of Hesperia GIS Department, 2024

By identifying and prioritizing high potential loss critical facilities, the City can enhance its disaster resilience, protect essential services, and minimize societal impacts during natural hazard events. The City has also identified its critical linear transportation infrastructure. Linear transportation systems, such as railways, roads, and highways, are also exposed to various natural hazards that can impact their operation, safety, and infrastructure integrity. By utilizing Hazus' analytical capabilities and integrating this information with the City's geographic information system (GIS) technology, the City was able to gather valuable insights for informed decision-making and proactive risk management.

Hazard Specific Vulnerability

The Disaster Mitigation Act regulations require that the City of Hesperia evaluate the risks associated with each of the hazards identified in the planning process. This section summarizes the possible impacts and quantifies, where data permits, the City's vulnerability to each of the priority hazards identified in the hazard profiles. The hazards evaluated as part of this vulnerability assessment include:



Flooding



Earthquake



Wildfire



Severe Weather

An estimate of the vulnerability of the City to each identified hazard, in addition to the estimate of risk of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, by qualitative terms and is a summary of the potential impact based on past occurrences, geographic extent, and damage and casualty potential. It is categorized into the following classifications:

- **Low**—Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**—Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**—Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- **Extremely High**—Very widespread with catastrophic impact.

Vulnerability can be quantified in those instances where there is a known, identified hazard area, such as a mapped floodplain. In these instances, the numbers and types of buildings subject to the identified hazard can be inventoried and their values tabulated. Other information can be collected in regard to the hazard area, such as the location of critical community facilities, historic structures, and valued natural resources. Together, this information conveys the vulnerability of that area to a hazard.

Flooding

Flooding is a significant problem in Hesperia as described in the flood hazard profile. Historically, the operational area has been subject to flooding during periods of heavy rainfall, falling primarily between the months of October through April, which causes streams and drainage canals to become overwhelmed and overflow their banks and/or inundate storm drainage systems. Occasionally, overbank flows in Hesperia have resulted in flooding of residential properties, road blockages, and traffic disruptions. In urbanizing areas, the increase in paved areas associated with new development decrease the amount of open land available to absorb rainfall and runoff, thus increasing the volume of water that must be carried away from by waterways. Flooding has damaged or destroyed commercial and residential structures; flooded bridges and streets and caused stream channels and flood control works to erode.



Community Vulnerability: Highly Likely, Significant/Severe impact.

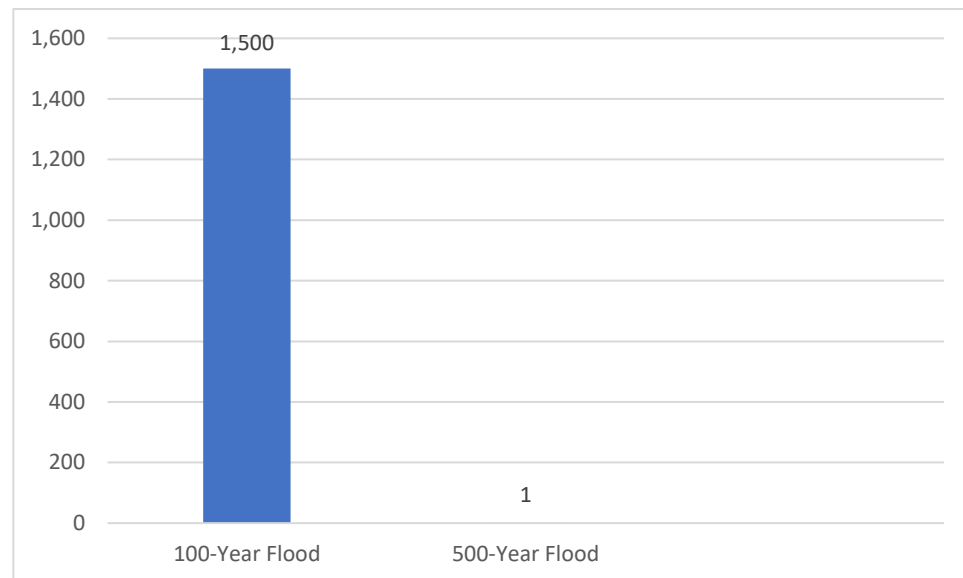
POPULATION AT FLOOD RISK

Of greatest concern in the event of a flood is the potential for loss of life. The GIS Department used the total population estimates from the 2020 Census 5-year projections to determine estimated population that may be within the flood plain. To do this, they distributed the total population counts provided by the census for each block group over all improved parcels within each block group, then restricted the counts to only areas that fall within the flood plain. Since this estimate is not parcel specific, the count is only an estimate and could vary significantly from actual population within the flood plain. Due to the way the software distributes the data over the area, a realistic estimate is 1,500 people within the 100-year flood plain, and 1 resident within the 500-year flood plain. The results of the population overlay are shown in **Figure 4-6**.

Figure 4-6: Population Exposed to NFIP Flood Zones

Population Exposure

*Population Count within
Hesperia by Flood Hazard
Zone*



Living in areas designated as 100-year and 500-year flood zones in Hesperia, California, can have significant implications for the population due to the increased risk of flooding. Here are

some of the effects that residents might experience:

- Homes, businesses, and infrastructure located within flood zones are susceptible to flooding during significant rainfall events or when nearby water bodies exceed their capacity.
- Floodwaters can cause extensive damage to buildings, contents, and utilities, requiring costly repairs or replacement.
- Residents in flood-prone areas may be required to evacuate during flood events to ensure their safety. Evacuations can disrupt daily life and lead to temporary displacement until floodwaters recede and it is safe to return.
- Floodwaters can pose health risks due to contamination from sewage, chemicals, and other pollutants. Exposure to contaminated water can lead to waterborne illnesses and exacerbate public health concerns.
- Swift-moving floodwaters can also pose drowning risks and safety hazards for individuals attempting to navigate or evacuate flooded areas.
- Flooding can disrupt essential services such as electricity, water supply, and transportation networks. Power outages, water contamination, and road closures can hinder emergency response efforts and impact daily activities.
- Floods can damage roads, bridges, and public infrastructure, affecting transportation routes and access to essential services. Repairs to infrastructure can be costly and time-consuming, prolonging recovery efforts.
- Businesses located in flood-prone areas may experience financial losses due to property damage, interruption of operations, and decreased customer traffic.
- Property values in flood zones may be adversely affected, impacting homeowners' investments and insurance premiums.

Vulnerable Populations Affected: Low-income communities, seniors, individuals with disabilities, and communities living in flood-prone areas.

Specific Vulnerabilities:

- **Inundation of low-lying areas:** Low-income communities are often situated in areas that are more prone to flooding, such as floodplains or near rivers, due to lower land costs. These communities may lack the resources to protect their properties from flooding.
- **Transportation disruptions:** Many vulnerable residents rely on public transportation, which may be impacted during flood events, leaving them stranded or unable to access shelters or essential services.
- **Health risks:** People with disabilities or chronic health conditions may face additional health risks in flood conditions due to challenges accessing medical care, clean water, and safe shelter.
- **Evacuation challenges:** Seniors and those with mobility issues may have difficulty evacuating flood zones. Without adequate transportation or assistance, they are at higher risk of injury or worse.

To address the impacts of flooding on vulnerable populations, the city will collaborate with community partners, such as senior centers, disability advocacy groups, and housing organizations, to ensure that mitigation and response efforts are tailored to the specific needs of low-income residents, seniors, and individuals with mobility impairments. These partnerships will help prioritize flood control measures in high-risk areas, improve access to evacuation resources, and provide financial assistance for flood recovery. Additionally, public health organizations will support outreach to ensure that vulnerable populations have access to clean

water, medical care, and critical information about flood-related health risks, ensuring a coordinated and equitable response.

RESIDENTIAL PARCEL VALUE WITH FLOOD RISK

The County's parcel layer was used as the basis for the inventory of improved residential parcels within the FEMA NFIP flood zones. In some cases, a parcel will be within multiple flood zones. GIS was used to create centroids, or points, to represent the center of each parcel polygon – this is assumed to be the location of the structure for analysis purposes. The centroids were then overlaid with the floodplain layer to determine the flood risk for each structure. The flood zone in which the centroid was located was assigned to the entire parcel. Only improved parcels greater than \$20,000 were analyzed. **Table 4-6** shows the count of at-risk parcels and their improvement and land exposure values.

Table 4-6: Parcels Exposed to NFIP Flood Zones; 2023				
Flood Hazard Zone	Improved Parcel Count	Improvement Value Exposure (\$)	Land Value Exposure (\$)	Total Exposure (\$)
100 Year	328	\$67,878,353	\$16,790,710	\$84,669,063
500 Year (Only)	1	\$267,065	\$172,197	\$439,262
500 Year (Combined)	329	68,145,418	16,962,907	85,108,325

While there are several limitations to this methodology, it does allow for potential loss estimation. It should be noted that the analysis may include structures in the floodplain that are elevated at or above the level of the base flood elevation, which will likely decrease potential flood damage to these structures. Also, it is important to remember that the County Assessor's values are well below actual market values; thus, the actual value of assets at risk may be significantly higher than those included herein.

CRITICAL FACILITIES EXPOSURE

Critical facilities data were overlain with flood hazard data to determine the type and number of facilities within the 100-and 500-year floodplain. Flooding poses several significant risks to critical facilities and infrastructure, potentially leading to extensive damage, operational disruptions, and significant economic and social impacts. Here are some of the key risks that flooding can pose to critical facilities and infrastructure:

- Structural damage to buildings, compromising their stability and integrity. This includes damage to foundations, walls, floors, and electrical systems.
- Undermine bridge foundations, wash out roads, and cause structural failures, disrupting transportation networks.
- Inundate and damage utility infrastructure such as water treatment plants, power substations, and sewage systems, leading to service disruptions and potential contamination.
- Damage electrical equipment, control systems, and mechanical components within critical facilities, leading to extended downtime and costly repairs.
- Water infiltration into control rooms and equipment rooms can cause short circuits, equipment failures, and operational failures.
- Interrupt business operations in critical facilities, leading to financial losses.
- Service disruptions in healthcare facilities, emergency response centers, and government offices can impair emergency response capabilities and public services.

- Introduce contaminants, pollutants, and hazardous materials into critical facilities, posing health risks to occupants and emergency responders.
- Sewage backup and overflow can contaminate drinking water supplies and increase the risk of waterborne diseases.
- Disrupt communication networks and transportation routes, hindering emergency communication and response efforts.
- Access to critical facilities may be restricted or cut off, complicating evacuation and rescue operations during flooding events.
- The recovery and restoration of flooded critical facilities and infrastructure can be costly and time-consuming, impacting local economies and budgets.
- Business closures and reduced property values may further strain economic resilience in affected areas.
- Flooded healthcare facilities may struggle to provide essential medical services, resulting in compromised patient care and increased health risks.
- Education facilities may face prolonged closures or disruptions, affecting student learning and community services.

Table 4-7 provides an inventory of critical facilities in the floodplain for Hesperia and provides the locations of lifelines relative to the floodplain in the areas of the City. With a total of 334 high potential loss structures located in either the 100-yr flood zone or the 500-yr flood zone, the impact to the community could be devastating if these critical facilities were damaged or destroyed during a flood event.

Table 4-7: Critical Facility Points Exposed to NFIP Flood Zones			
Infrastructure Type	100-Year Flood Zone	500-Year Flood Zone	Total Count
Essential Facility			
EOC (City Hall)	0	0	0
Fire Department/Fire Station	0	0	0
Police Station	0	0	0
Schools	0	0	0
Public Works – Mojave Corporate Yard	0	0	0
Hesperia Animal Control/Code Enforcement	0	0	0
High Potential Loss			
Vulnerable Population - Flood Zone	328	1	329
Historical/Cultural Resource	0	0	0
Major Employers	0	0	0
Child Care Centers	0	0	0
Foster Family Agency/Adoption Agency	0	0	0
Adult Care/Adult Residential Care	0	0	0
Home Care Organization	0	0	0
Elder Residential Care	0	0	0
Mobile Home Parks	0	0	0
Dam	0	0	0

EPA FRS Facility/Hazmat	0	0	0
Federal Communications Commission – Antenna Structure Registration	0	0	0
Electrical Utility Property	5	0	0
Potable Water Facility	0	0	0
Transportation and Lifeline			
Airport/Runway	0	0	0
Bus Facility	0	0	0
Highway Bridge	0	0	0
Railway Bridge	0	0	0
Grand Total:	333	1	334

Table 4-8 provides information on linear transportation exposed to NFIP flood zones. Floodwaters can inundate tracks, bridges, and roadways, leading to erosion, structural damage, and service disruptions.

Table 4-8: Linear Transportation Exposed to NFIP Flood Zones			
Road Type	100-Year Flood Zone	500-Year Flood Zone	Total Mileage
Interstate Highway	0	0	0
US/State/ County Highways	0.24	0	0.24
Local Road, Major	0.67	0	0.67
Local Road	6.77	0	6.77
Grand Total:	7.68	0	7.68

LOSS ESTIMATION RESULTS

The Hazus analysis was used to assess the risk from and vulnerability to flooding within Hesperia. Hazus building data is aggregated to the census block level, known as the general building stock (GBS), which has a level of accuracy acceptable for hazard mitigation planning purposes. The following sections describe risk to and vulnerability of the GBS within the City's mapped regulatory floodplain. The total value of exposed buildings and content within the City's planning area was generated using Hazus and is previously summarized in **Table 4-2**.

Hazus also has the ability to calculate Direct Annualized Losses (DAL) for buildings. DAL in Hazus refers to the estimated average annual financial losses attributed to damage to buildings caused by various natural hazards over time. Hazus calculates potential damage to buildings by applying vulnerability functions to hazard scenarios. This includes estimating the percentage of buildings that may experience minor, moderate, or complete damage. Damage estimates consider factors like building occupancy, structural resilience, and the intensity of the hazard event.

The DAL losses in relation to flooding are summarized in **Table 4-9**, **Table 4-10**, and illustrated in **Figure 4-7**, and **Figure 4-8**; all values are in thousands of dollars.

Table 4-9: Direct Economic Annualized Losses for Buildings

Direct Economic Annualized Losses for Buildings

California

San Bernardino

Total

16,025

11,484

305

4.0

3,250

794

1,114

992

33,964

Scenario Total

16,025

11,484

305

4.0

3,250

794

1,114

992

33,964

June 17, 2024

All values are in thousands of dollars

Hazus computes the Annualized Loss for each building category by multiplying the estimated damage costs (including repair and replacement costs) by the probability of occurrence.

Table 4-10: Building Damage by General Occupancy





FEMA

Building Damage By General Occupancy

RiskMAP

Increasing Resilience Together

June 17, 2024

All values are in thousands of square feet

		Square Footage Distribution by Damage Percent Range						
	Total Dmg Square Footage	< 1	1-10	11-20	21-30	31-40	41-50	Substantial
California								
San Bernardino								
Agriculture	0.52	0.04	0.21	0.22	0.02	0.01	0.01	0.00
Commercial	16.95	1.27	3.87	6.56	2.56	0.88	0.66	1.15
Education	0.07	0.02	0.05	0.00	0.00	0.00	0.00	0.00
Government	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	25.89	0.70	2.84	6.61	8.54	4.28	1.44	1.48
Religion	2.00	0.26	0.08	1.34	0.03	0.03	0.03	0.22
Residential	290.06	31.69	36.61	66.13	41.27	35.35	23.15	55.85
Total	335.48	33.98	43.66	80.86	52.42	40.56	25.28	58.71
Total	335.48	33.98	43.66	80.86	52.42	40.56	25.28	58.71
Scenario Total	335.48	33.98	43.66	80.86	52.42	40.56	25.28	58.71

Hazus categorizes building damage into percent ranges to quantify the extent of damage sustained:

- **Minor Damage:** Typically involves cosmetic damage or minimal structural impact (< 10% damage).
- **Moderate Damage:** Involves structural damage requiring repairs but not resulting in failure (10%-30% damage).
- **Severe Damage:** Significant structural damage affecting stability (30%-60% damage).
- **Complete Damage:** Total collapse or destruction (> 60% damage).

Hazus then calculates the total square footage of buildings within each damage percent range category.

Figure 4-7: Total Direct Economic Losses for Buildings



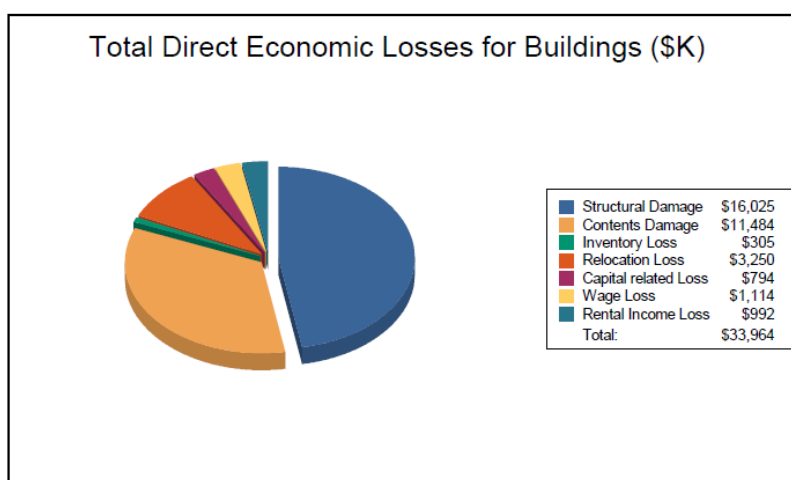
FEMA

Direct Economic Losses for Buildings

RiskMAP
Increasing Resilience Together

June 17, 2024

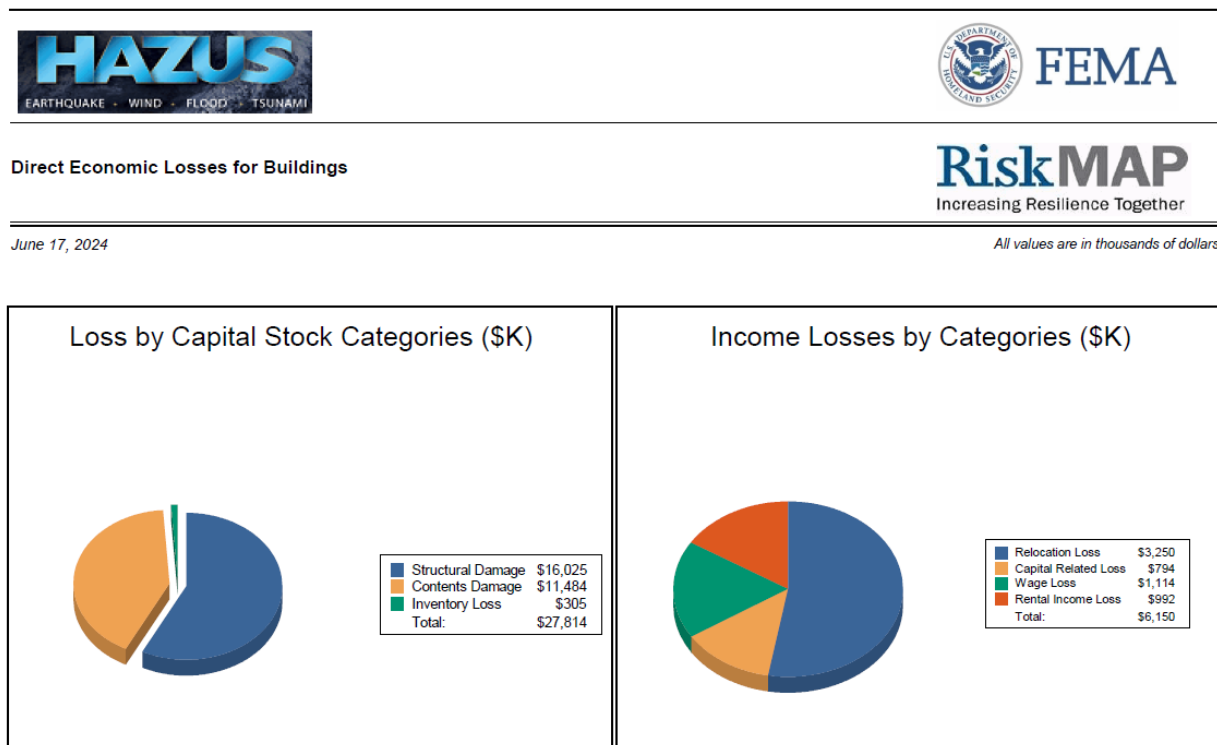
All values are in thousands of dollars



Hazus estimates the potential damage to buildings caused by each hazard scenario, including:

- Structural damage (e.g., walls, roofs, foundations).
- Non-structural damage (e.g., contents, equipment).
- Functional damage (e.g., business interruption, loss of use).

Hazus then calculates direct economic losses for buildings by aggregating the estimated costs of repair, replacement, and other economic impacts. Losses are quantified in monetary terms and include both physical damage costs and economic disruptions (e.g., lost productivity, temporary relocations).

Figure 4-8: Loss by Capital Stock Categories and Income Losses by Categories

Capital Stock Losses include direct physical damage to buildings, infrastructure, and other physical assets affected by natural hazards. It also encompasses indirect economic losses associated with disruptions to business operations, reduced productivity, and the impact on property values.

Income Losses include loss of revenue and income due to temporary closures, disrupted supply chains, and reduced consumer demand following a natural disaster. It also includes Impact on jobs and livelihoods due to business closures, layoffs, and economic downturns caused by the disaster.

Wildfire

Risk to the City from wildfire is of significant concern. High fuel loads in the hills, along with geographical and topographical features, create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in frequent and sometimes catastrophic fires. During the May to October fire season the dry vegetation and hot and sometimes windy weather, combined with continued growth in the WUI areas, results in an increase in the number of ignitions. Any fire, once ignited, has the potential to quickly become large and out-of-control.



Community Vulnerability Rating: Highly Likely, Significant/Severe impact

Potential losses from wildfire include human life, structures and other improvements, natural and cult, quality and quantity of water supplies, cropland, timber, and recreational opportunities. Short and long-term economic losses could also result due to loss of business and other economic drivers associated with Hesperia's natural resources summer season activities. Smoke and air pollution from wildfires can be a severe health hazard. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

Generally, there are three major factors that sustain wildfires and predict a given area's potential vulnerability to burn. These factors are fuel, topography, and weather.

- **Fuel** – Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and volume. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Manmade structures are also considered a fuel source, such as homes and other associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Fuel is the only factor that is under human control. Future developments of the Tapestry Project in the southern region of the City currently possess the highest vulnerability to wildfire.
- **Topography** – An area's terrain and slope affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.
- **Weather** – Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation where fuel will ignite more readily and burn more intensely. Thus, during periods of drought the threat of wildfire increases. Wind is the most treacherous weather factor. The greater the wind, the faster a fire can spread and the more intense it can be. Wind shifts, in addition to wind speed, can occur suddenly due to temperature changes or the interaction of wind with topographical features such as slopes or steep hillsides. As part of a weather system, lightning also ignites wildfires, often in difficult to reach terrain for firefighters.

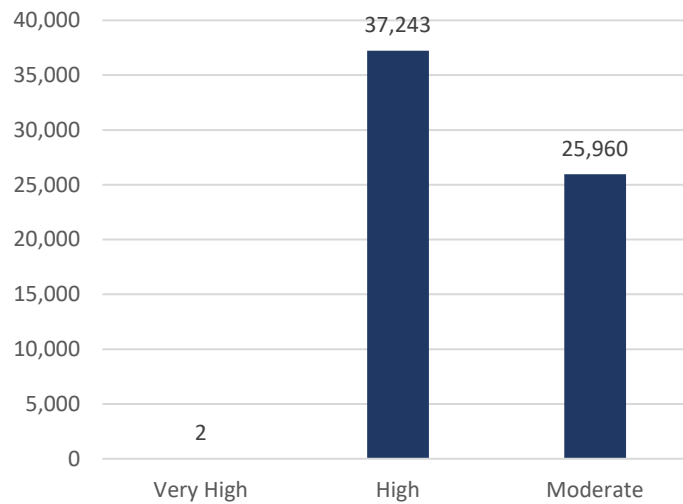
Factors contributing to the high, widespread wildfire risk in Hesperia include:

- Narrow and often one-lane and/or dead-end roads complicating evacuation and emergency response.
- Nature and frequency of ignitions; and increasing population density leading to more ignitions.
- Slope of the foothills.
- Residential development along the foothills.

POPULATION AT RISK

Wildfire risk is of greatest concern to populations residing in the moderate and high wildfire hazard zones. Hesperia 2012 census block data was used to estimate populations within the hazard zones. More than 37,000 residents live within the high fire hazard area and nearly 26,000 residents live within the moderate hazard area.³

³ High and moderate Fire Hazard Severity Zones as defined by the California Department of Forestry and Fire Protection (CAL FIRE).

Figure 4-9: Population at Risk from Wildfire Hazards**Population Exposure***Population Count by Wildfire Hazard Zone*

Note: Per the GIS Department, they recommended using the same data from previous LHMP as they used the previous fire zone data.

Living in areas with very high, high, and moderate wildfire hazard zones, such as Hesperia, California, can have various effects on the population due to the increased risk of wildfires. Here are some of the effects that residents might experience:

- During wildfire events, residents in high-risk zones may be required to evacuate their homes to ensure their safety. Evacuations can be sudden and disruptive, requiring residents to leave behind personal belongings and relocate to temporary shelters or evacuation centers.
- The frequency and intensity of evacuations can lead to emotional stress and uncertainty among residents, particularly if evacuations become frequent during wildfire seasons.
- Wildfires can cause significant damage to homes, businesses, and other structures in their path. Flames, embers, and radiant heat can ignite buildings, resulting in partial or complete destruction.
- Even homes that are not directly impacted by flames can suffer damage from smoke, ash, and heat, necessitating repairs or reconstruction.
- Wildfire smoke contains particulate matter and harmful chemicals that can pose serious health risks, especially to vulnerable populations such as children, the elderly, and individuals with respiratory conditions.
- Poor air quality resulting from wildfires can lead to respiratory problems, exacerbate existing health conditions, and increase healthcare needs within the community.
- Utilities such as electricity, water supply, and telecommunications may be disrupted during wildfires, affecting daily life and emergency response efforts.
- Power outages, water restrictions, and limited access to communication networks can further complicate recovery and evacuation efforts.
- Local businesses may experience financial losses due to property damage, interruption of operations, and reduced customer traffic during and after wildfire events.
- Property values in wildfire-prone areas may be negatively affected, impacting homeowners' investments and potential resale opportunities.

Vulnerable Populations Affected: Low-income residents, seniors, individuals with disabilities, renters, and those living in mobile homes or older buildings.

Specific Vulnerabilities:

- **Structural damage:** Homes in Hesperia, particularly older buildings or mobile homes, are more susceptible to damage from wildfires due to their age and construction materials. Many low-income and rural residents live in these types of dwellings, which are not as fire-resistant as newer, well-maintained homes. Renters may have limited ability to make fire-resistant improvements to their properties, putting them at greater risk.
- **Displacement and property damage:** Wildfires can cause severe property damage, including the destruction of homes, infrastructure, and belongings. For low-income populations, displacement can be especially devastating, as they often lack insurance or financial resources to recover. Limited access to temporary housing or shelter options may prolong the recovery process, leaving these individuals vulnerable for extended periods.
- **Health risks from smoke exposure:** Wildfires create hazardous air quality, and vulnerable populations, such as seniors, children, and those with respiratory conditions or disabilities, are more susceptible to health complications from smoke. Limited access to air filtration systems or protective masks can exacerbate health risks for those without financial resources to mitigate exposure.
- **Evacuation challenges:** Evacuations during wildfires can be particularly difficult for individuals with mobility impairments, the elderly, or those living in isolated or rural areas. Low-income residents may lack reliable transportation options or have difficulty accessing transportation services during an emergency, delaying their ability to evacuate in a timely manner.
- **Access to shelter and recovery resources:** Following a wildfire, vulnerable populations may face barriers to accessing emergency shelters, particularly if they are displaced from their homes or if shelter options are not accessible. Those with disabilities may also require specialized accommodations that are not always available at emergency shelters, hindering their ability to seek refuge. Furthermore, recovery resources, such as temporary housing or financial aid, may be difficult to access for those with limited resources or who face language barriers.

Impact on Vulnerable Populations:

Flooding from heavy rains, poor drainage systems, or dam failure poses a significant risk to vulnerable populations, particularly low-income residents, seniors, and individuals with mobility impairments. Older buildings and mobile homes are more likely to suffer structural damage during floods, and renters may face difficulty finding alternative housing or dealing with property damage. Those without financial resources to relocate or recover after flooding are left with fewer options, leading to prolonged displacement. Health risks from waterborne diseases also disproportionately affect vulnerable groups who have limited access to healthcare or clean water.

To address the impacts of wildfires on vulnerable populations, the city will collaborate with local community organizations, including senior centers, disability advocacy groups, and wildfire preparedness groups, to ensure that emergency plans are accessible and inclusive. These partnerships will help identify high-risk areas where low-income residents, seniors, and individuals with mobility impairments may be most vulnerable due to inadequate evacuation routes or lack of fire-resistant housing. The city will work with community partners to provide targeted outreach, such as offering fire safety education in multiple languages and ensuring residents

have access to evacuation assistance and shelters. By collaborating with these organizations, the city will ensure that the needs of its most vulnerable populations are addressed before, during, and after wildfire events.

RESIDENTIAL PARCEL VALUE AT RISK

The County's parcel layer was used as the basis for the inventory of improved residential parcels. In some cases, a parcel will be within multiple fire threat zones. GIS was used to create centroids, or points, to represent the center of each parcel polygon – this is assumed to be the location of the structure for analysis purposes. The centroids were then overlaid with the fire threat layer to determine the risk for each structure. The fire threat zone in which the centroid was located was assigned to the entire parcel. GIS results include parcels in which the centroid is within the specified fire hazard zone and also have an improved value over \$20,000. **Table 4-11** exhibits portions of Hesperia that have significant assets at risk to wildfire in the Moderate and High fire severity zones.

Table 4-11: Residential Buildings and Content at Risk from Wildfire				
Fire Hazard Zone	Improved Parcel Count	Improvement Value Exposure (\$)	Land Value Exposure (\$)	Total Exposure (\$)
Very High	1	26,501	103,165	129,666
High	11,217	2,752,312,097	655,417,984	3,407,730,081
Moderate	7,778	2,148,888,164	524,247,837	2,673,136,001
Non-Wildfire / Non-Urban	1	330,847	641,927	972,774
Urban, Unzoned	7,775	1,702,496,020	440,684,729	2,143,180,749
Totals	26,772	\$6,604,053,629	\$1,621,095,642	\$8,225,149,271

CRITICAL FACILITIES EXPOSURE

Critical facilities data were overlain with fire hazard severity zone data to determine the type and number of facilities within each risk classification. Wildfires can threaten critical facilities with direct exposure to flames, heat, and embers, potentially causing structural damage or destruction. Power outages due to damaged electrical infrastructure can disrupt critical facility operations, including life-support systems in hospitals and emergency communications. Even if not directly impacted by flames, critical facilities can be affected by smoke and ash infiltration, leading to indoor air quality issues and health risks. **Table 4-12** lists the critical facilities in the High and Moderate wildfire hazard zones for Hesperia.

Table 4-12: Critical Facility Points Exposed to Wildfire			
Infrastructure Type	Moderate	High	Total Count
Essential Facility			
EOC (City Hall)	0	0	0
Fire Department/Fire Station	0	2	2
Police Station	1	0	1
Schools	11	9	20
Public Works – Mojave Corporate Yard	1	0	1
Hesperia Animal Control/Code Enforcement	0	0	0

High Potential Loss			
Historical/Cultural Resource	0	0	0
Major Employers	3	3	6
Child Care Centers	4	18	22
Foster Family Agency/Adoption Agency	0	0	0
Adult Care/Adult Residential Care	5	6	11
Home Care Organization	1	1	2
Elder Residential Care	2	8	10
Mobile Home Parks	5	7	12
Dam	0	0	0
EPA FRS Facility/Hazmat	104	42	146
Federal Communications Commission – Antenna Structure Registration	1	2	3
Electrical Utility Property	36	96	132
Potable Water Facility	25	29	54
Transportation and Lifeline			
Airport/Runway	0	1	1
Bus Facility	1	0	1
Highway Bridge	3	6	9
Railway Bridge	0	2	2
Grand Total	203	232	435

Table 4-13 provides information on linear transportation exposed to moderate and high wildfire risk. Wildfires can damage vegetation and soil stability along transportation corridors, leading to increased erosion, debris flows, and potential damage to infrastructure.

Table 4-13: Linear Transportation Exposed to Wildfire Risk			
Road Type	Moderate Fire Zone	High Fire Zone	Total Mileage
Interstate Highway	4	12	16
US/State/ County Highways	3	6	9
Local Road, Major	18	29	47
Local Road	169	255	424
Grand Total:	194	302	496

In Hesperia, as in many communities at risk of wildfires, conducting comprehensive wildfire loss estimation involves collaboration among local authorities, fire agencies, insurance companies, and risk assessment experts. These efforts aim to quantify potential losses with limited data and prioritize mitigation efforts and enhance community resilience against wildfire events.

Earthquake/Seismic Hazards/Geologic Hazards

Major Impacts from earthquakes are primarily the probable number of casualties and damage to infrastructure occurring from ground movement along a particular fault (USGS 2009). The degree of infrastructure damage depends on the magnitude, focal depth, distance from fault, duration of shaking, type of surface deposits, presence of high groundwater, topography, and the design, type, and quality of infrastructure construction.



Community Vulnerability: Highly Likely, Extensive/Extreme impact.

To analyze the risk to Hesperia residents, the GIS Department generated data for earthquake exposure results for population, critical facilities, and single-family residential parcel values. The Great Shakeout scenario, modeled by the California Integrated Seismic Network (CISN) was used to determine additional loss estimation results. The 2008 Great Southern California ShakeOut was based on a potential magnitude 7.8 earthquake on the southern San Andreas Fault—approximately 5,000 times larger than the magnitude 5.4 earthquake that shook southern California on July 29, 2008. Such an earthquake will cause unprecedented damage to Southern California—greatly dwarfing the massive damage that occurred in Northridge's 6.7-magnitude earthquake in 1994.

FEMA Hazus analyses was used to conduct loss estimation for building and content loss based on peak ground acceleration, peak ground velocity, and peak spectral acceleration modeled for the 7.8 earthquake on the San Andreas Fault.

Earthquakes can generate strong ground shaking that can cause structural damage to buildings, infrastructure, and utilities in Hesperia. Older buildings or structures that do not meet current seismic building codes are particularly vulnerable to earthquake damage. Unreinforced masonry buildings and structures with poor construction practices are at higher risk of collapse or severe damage.

Earthquakes can disrupt critical infrastructure and utilities such as water supply systems, transportation networks, and communication lines. Damage to these systems can hinder emergency response efforts and exacerbate recovery challenges.

Earthquakes can have significant economic consequences, including property damage, loss of business revenue, and increased insurance costs. Social impacts may include displacement, injuries, and psychological stress among residents.

Building codes provide one of the best methods of addressing natural hazards. When properly designed and constructed according to code, the average building can withstand many of the impacts of natural hazards. Hazard protection standards for all new and improved or repaired buildings can be incorporated into the local building code to reduce future earthquake losses. It is important to note that the City of Hesperia has adopted California's 2022 Building Code standards.

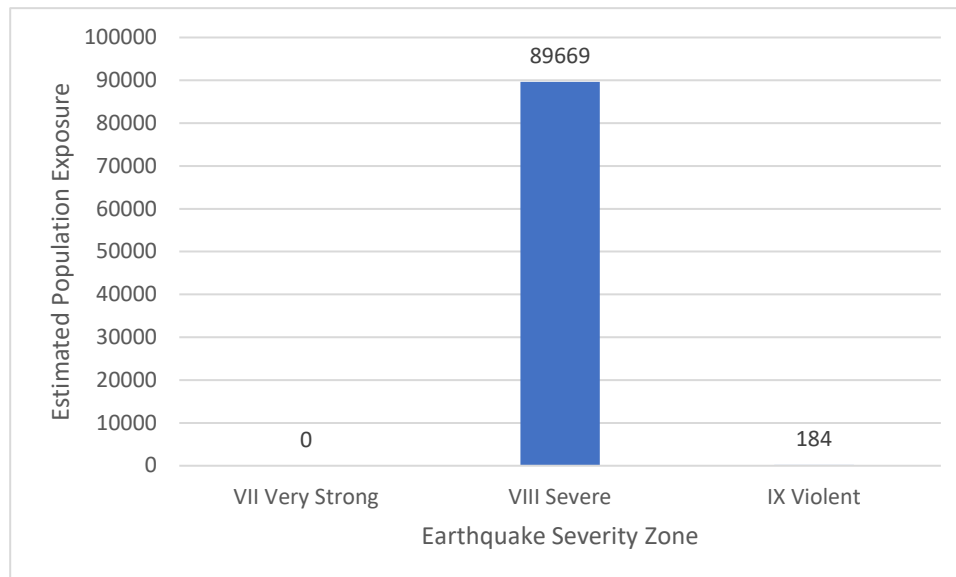
Manufactured or mobile homes are often not regulated by local building codes. They do have to meet construction standards set by the U.S. Department of Housing and Urban Development that apply uniformly across the country. However local jurisdictions may regulate the location of these structures and their on-site installation.

POPULATION AT RISK

The current population of City is 100,744. Though rural residential construction is not particularly vulnerable to earthquakes, the chosen earthquake scenario would directly or indirectly expose the entire population of Hesperia to ground shaking. Depending on the time of day (the population differs based on employment opportunities) and exact location of the modeled epicenter, the earthquake scenario could be experienced differently.

Figure 4-10 exhibits the population totals in each earthquake severity zone. These estimates were created by the GIS Department using the populations per census block group from the 2020 Census 5-year projections, they distributed the total population counts provided by the census for each block group over all improved parcels within each block group. This allowed the GIS Department to find an estimate within each earthquake severity zone. Improved parcels were determined as parcels with an improved value of at least \$20,000, based on San Bernardino County Parcel Data. The type and year of construction will greatly influence damage for structures vulnerable to shaking.

Figure 4-10: Population Exposure to EQ Severity Zones



Living in severe and violent earthquake severity zones, such as those found in areas like Hesperia, California, can pose significant risks and potential impacts on the population. Here are some of the effects that residents might experience:

- Severe and violent earthquakes can cause widespread destruction to buildings, infrastructure, and utilities. Homes and businesses may suffer structural damage or collapse, posing risks of injury or death to residents.
- Falling debris, shattered glass, and other hazards can further threaten personal safety during and after the earthquake.
- Residents may be displaced from their homes due to damage or unsafe conditions. Temporary relocation may be necessary until buildings can be inspected, repaired, or rebuilt.
- The availability of safe housing options may become limited in the aftermath of a severe earthquake, leading to temporary shelter needs for affected individuals and families.

- Earthquakes can disrupt critical infrastructure such as water supply systems, electricity grids, and communication networks. Loss of these services can hinder emergency response efforts and daily life.
- Medical facilities, schools, and businesses may be temporarily closed or inaccessible, affecting access to healthcare, education, and employment.
- Businesses may suffer financial losses due to property damage, interruption of operations, and decreased consumer confidence.

Vulnerable Populations Affected: Seniors, low-income residents, renters, and people with mobility challenges.

Specific Vulnerabilities:

- **Older, unreinforced buildings:** Many older structures, particularly in low-income areas, may not meet modern seismic standards, putting residents at greater risk of injury or death. Renters, who may have limited control over the safety of their homes, are particularly vulnerable.
- **Evacuation difficulties:** Seniors and those with mobility impairments may have trouble evacuating quickly or accessing emergency shelters, which could be located in areas not easily accessible to those with physical disabilities.
- **Limited access to emergency services:** Vulnerable populations may have limited access to transportation and emergency services, making it more difficult for them to receive help after an earthquake.
- **Communication barriers:** Non-English-speaking residents may struggle to receive timely and accurate information about evacuation procedures, safety measures, and assistance available after the earthquake.

Impact on Vulnerable Populations:

The impact of earthquakes on vulnerable populations in Hesperia is significant, especially for those living in older, unreinforced buildings or mobile homes. Structural damage from earthquakes is often more severe in these types of housing, and low-income residents or renters may not have the means to retrofit or rebuild after damage. The elderly, individuals with disabilities, and families with young children face additional challenges during evacuations, as mobility can be restricted or resources for assistance may be insufficient. Furthermore, disrupted infrastructure such as roads and healthcare facilities can hinder access to critical services for those in need.

To address these risks, the city will collaborate with community partners, including local senior centers and disability advocacy groups, to improve preparedness and response efforts for these populations. Specific mitigation measures, such as retrofitting programs and accessible evacuation plans, will be prioritized in vulnerable areas identified through local data and community feedback.

Table 4-14 shows the count of at-risk structures and their associated improvement and land exposure values.

Table 4-14: Residential Parcel Value Exposure to Earthquake Severity Zones

Earthquake Severity Zone	Improved Parcel Count	Improvement Value Exposure (\$)	Land Value Exposure (\$)	Total Exposure (\$)
VII Very Strong	0	-	-	-
VIII Severe	26704	6,452,699,906	1,581,111,377	8,033,811,283
IX Violent	68	151,353,723	39,984,265	191,337,988
Total	26772	6,604,053,629	1,621,095,642	8,225,149,271

CRITICAL FACILITIES AT RISK

Earthquakes pose numerous risks to critical facilities and infrastructure. Seismic risks, or losses, that are likely to result from exposure to seismic hazards include:

- Casualties (fatalities and injuries).
- Utility outages.
- Economic losses for repair and replacement of critical facilities, roads, buildings, etc.
- Indirect economic losses such as income lost during downtime resulting from damage to private property or public infrastructure.

Roads or railroads that are blocked or damaged can prevent access throughout the area and can isolate residents and emergency service providers needing to reach vulnerable populations or to make repairs.

Linear utilities and transportation routes are vulnerable to rupture and damage during and after a significant earthquake event. The cascading impact of a single failure can have affects across multiple systems and utility sectors. Degrading infrastructure systems and future large earthquakes with epicenters near critical regional infrastructure could result in system outages that last weeks for the most reliable systems, and multiple months for others.

Table 4-15 provides an inventory of critical facility locations (points only) with severe and violent earthquake exposure. The building codes have been amended to include provisions for seismic safety at various benchmarks years. Depending on “year built”, each critical facility presented in the tables may have varying damage potential.

Table 4-15: Critical Facilities with EQ Risk

Infrastructure Type	Severe (VIII)	Violent (IX)	Total Count
Essential Facility			
EOC (City Hall)	1	0	1
Fire Department/Fire Station	2	1	3
Police Station	1	0	1
Schools	30	0	30
Public Works – Mojave Corporate Yard	1	0	1
Hesperia Animal Control/Code Enforcement	1	0	1
High Potential Loss			

Historical/Cultural Resource	2	0	2
Major Employers	14	0	14
Child Care Centers	41	0	41
Foster Family Agency/Adoption Agency	2	0	2
Adult Care/Adult Residential Care	18	0	18
Home Care Organization	3	0	3
Elder Residential Care	18	0	18
Mobile Home Parks	11	1	12
Dam	0	0	0
EPA FRS Facility/Hazmat	336	6	342
Federal Communications Commission – Antenna Structure Registration	6	0	6
Electrical Utility Property	121	11	132
Potable Water Facility	71	2	73
Transportation and Lifeline			
Airport/Runway	1	0	1
Bus Facility	1	0	1
Highway Bridge	7	2	9
Railway Bridge	3	1	4
Grand Total	691	24	715

HazMat Fixed Facilities

Although earthquakes are low probability events, they produce hazardous materials (HazMat) threats at very high levels when they do occur. Depending on the year built and construction of each facility containing HazMat, earthquake initiated hazardous material releases (EIHR) potential will vary. HazMat contained within masonry or concrete structures built before certain benchmark years reflecting code improvements may be of particular vulnerability.

Transportation

Earthquake events can significantly impact bridges which often provide the only access to some neighborhoods. Since soft soil regions generally follow floodplain boundaries, bridges that cross water courses are considered vulnerable. Since most of the City bridges provide access across water courses, most are at least somewhat vulnerable to earthquakes. Key factors in the degree of vulnerability are the bridge's age and type of construction which indicate the standards to which the bridge was built. Special attention will be paid to the multiple bridges that cross interstates. Interstates would serve as major emergency response and evacuation routes.

Linear transportation infrastructure would likely suffer considerable damage in the event of an earthquake. Ground shaking during earthquakes can damage tracks, tunnels, bridges, and other infrastructure components, causing structural failures and service interruptions.

Table 4-16 provides the best available linear data and it should be assumed that these systems are exposed to breakage and failure.

Table 4-16: Linear Transportation with EQ Risk

Roads	VIII (Severe)	IX (Violent)	Total Mileage
Interstate Highway	8	9	17
State / County Highway	4	6	10
Local Road, Major	67	5	72
Local Road	537	22	559
Grand Total	616	42	658

Linear Utilities (Power Lines)

During severe or violent earthquakes, powerlines and electrical infrastructure can suffer various types of damage and disruption, which can have significant consequences:

1. **Structural Damage:** The shaking and ground movements during earthquakes can cause structural damage to powerline supports (such as poles and towers), transformers, and substations. This structural damage can lead to powerlines collapsing or becoming disconnected, resulting in immediate power outages.
2. **Ground Rupture:** In areas where the earthquake causes ground rupture or displacement, underground power cables can be damaged or severed. This can disrupt electricity transmission and distribution.
3. **Fire Hazards:** Earthquakes can cause powerlines to spark or short-circuit, especially if they come into contact with each other or with other infrastructure. This can lead to fires, particularly in urban areas where powerlines are densely packed.
4. **Disconnection of Power Supply:** If powerlines are damaged, utilities may proactively disconnect sections of the grid to prevent further damage or hazards. This can result in controlled or widespread blackouts until repairs are made.
5. **Infrastructure Interdependency:** Powerlines are often interconnected with other critical infrastructure, such as telecommunications and water supply systems. Damage to powerlines can therefore indirectly impact these systems, leading to broader disruptions.
6. **Recovery Challenges:** Repairing powerlines after earthquakes can be challenging due to access issues, continued aftershocks, and the need for specialized equipment and skilled personnel. This can prolong the restoration of electricity services.

Due to the amount of infrastructure and sensitivity of utility data, linear utilities are difficult to analyze without further investigation of individual system components.

Natural Gas Utilities

The U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) defines natural gas pipelines under two categories, "Transmission" and "Distribution." Transmission pipelines are primarily used to receive gas from suppliers and move it to distribution load centers or to storage facilities.

High Pressure Distribution lines are used to deliver gas to Hesperia customers. These pipelines operate at pressures above 60 psi and deliver gas in smaller volumes to the lower pressure distribution system. (SoCalGas Gas Transmission and High Pressure Distribution Pipeline Interactive Map, n.d.)

Several common characteristics of earthquakes and their impacts on natural gas safety are:

- Earthquake ground shaking will generally lead to substantially more instances of building damage than fire ignitions.
- Ground motions that are sufficient enough to damage buildings are the most likely to impact utility and customer gas systems and create a potential for gas-related fire ignitions.
- The number of post-earthquake fire ignitions related to natural gas can be expected to be 20% to 50% of the total post-earthquake fire ignitions.
- The consequences of post-earthquake fire ignitions for residential gas customers are largely financial. A fire ignition only becomes a life safety concern when inhabitants are unable to exit the building following earthquakes. Experience in past earthquakes indicates that egress from earthquake damaged single-family homes is generally possible because of the limited structure height, low numbers of occupants, and multiple direct escape paths through doors and windows.
- The potential life safety dangers from post-earthquake fires are considerably more serious in seismically vulnerable apartment or condominium buildings since they provide a greater chance for damaging the structure and trapping the occupants.

Southern California Gas Company (SoCal Gas), Hesperia's natural gas utility, is responsible for designing, constructing, maintaining, and operating the natural gas system safely and efficiently. This includes all the facilities used in the delivery of gas to any customer up to and including the point of delivery to the customers' gas piping system. SoCal Gas provides seismic safety through compliance with existing regulations, coordinating their emergency planning with local governments, and incorporating earthquake-resistant design considerations into their maintenance activities and new construction.

Gas customers and Hesperia residents are responsible for using gas safely on their property and within their buildings and other facilities. Customers meet this responsibility by maintaining their gas appliances in good working condition, assuring that only qualified individuals are engaged to modify or maintain their gas service and facility piping, and knowing what to do before and after earthquakes to maintain the safe operation of their natural gas service.

The following conditions, when combined, pose the greatest risk for severe post-earthquake fire damage:

- Buildings are unoccupied and individuals are not present to mitigate damage to gas systems or control small fires.
- High building density or dense, fire-prone vegetation.
- High wind and low humidity weather conditions.
- Damage to water systems that severely limits firefighting capabilities.
- Reduced responsiveness of firefighting resulting from impaired communications, numerous requests for assistance, direct damage to fire stations, restricted access because of traffic congestion and damaged roadways, and delays in mutual aid from neighboring fire districts.

LOSS ESTIMATION RESULTS

The Hazus Level 2 analysis was used to assess the risk from and vulnerability to earthquake shaking within Hesperia. Hazus buildings data is aggregated to the census tract level for earthquake models, known as the general building stock (GBS), which has a level of accuracy acceptable for planning purposes. Where possible the GBS was enhanced using GIS data from the County as described previously. The following sections describe risk to and vulnerability of the GBS within the City. Hazus calculates losses to structures from earthquake shaking by considering the amount of ground displacement and type of structure. The software estimates

the percentage of damage to structures and their contents by applying established building fragility curves. Damage estimates are then translated to estimated dollar losses.

For the Great Shakeout Scenario, ground shaking data (shakemaps) were acquired from CISEN and imported into Hazus. The shakemap data consist of peak ground velocity, peak ground acceleration, peak spectral acceleration at 0.3 seconds, and peak spectral acceleration at 1.0 seconds. The earthquake module operates on census tracts that often include population and structures in the incorporated cities and the unincorporated area within a single tract. Due to this fact the results include census tracts that have a substantial portion of land within the incorporated area (loss estimates for some tracts will include structures in incorporated cities).

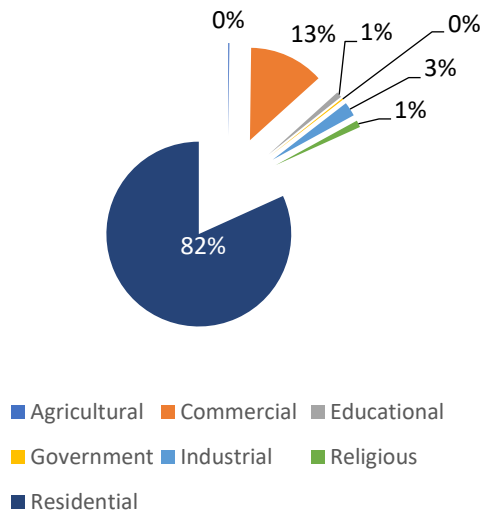
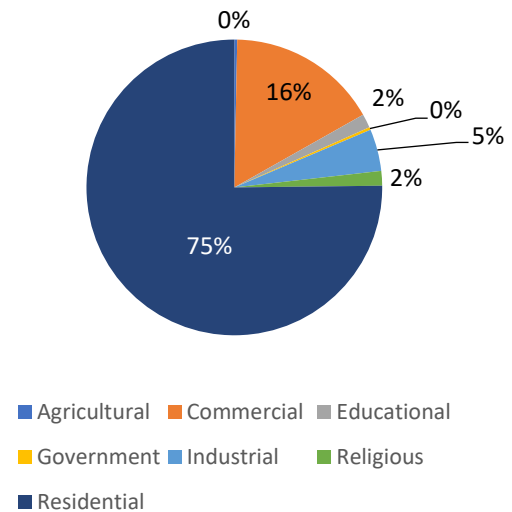
The results are summarized in **Table 4-17** for the Great Shakeout Scenario. It is important to understand that the Hazus earthquake module uses the census tract as its enumeration unit rather than the more detailed census block. The loss estimation values for earthquakes are much higher than those of the flooding and dam failure due to this fact. The portions of incorporated areas included within boundary census tracts elevate the values due to the inclusion of additional GBS. Though the difference between census tracts and census blocks are extremely disparate, the most important summary information is the percent of loss estimation against the total value.

Reading from **Table 4-17**, residential building and content loss estimation from the Great Shakeout Scenario is nearly **\$17 billion** dollars and **5.5 percent** of the total value of the residential buildings. In Great Shakeout Scenario, residential damage will be the greatest. While there are several limitations to the FEMA Hazus model, it does allow for potential loss estimation. It is important to remember that the replacement costs are well below actual market values, thus, the actual value of assets at risk may be significantly higher than those included herein.

Figure 4-11 provides an illustration of Estimated Building Loss and Content Damage by Occupancy Type.

Table 4-17: Estimated Building and Content Loss Great Shakeout Scenario EQ; 2016

Building Type	Building Replacement Costs (\$000)	Building Replacement Cost (% of Total Value)	Content Replacement Cost (\$000)	Content Replacement Cost (% of Total Value)	Total Estimated Loss (\$000)	Total Loss Estimation (% of Total Value)	Total Value (\$000)
Agricultural	\$1,956	3.5%	\$681	1.2%	\$2,638	4.7%	\$55,664.00
Commercial	\$123,567	5.5%	\$35,824	1.6%	\$159,391	7.1%	\$2,237,452.00
Educational	\$9,327	3.5%	\$3,284	1.2%	\$12,611	4.7%	\$266,686.00
Government	\$2,237	5.6%	\$639	1.6%	\$2,876	7.2%	\$39,896.00
Industrial	\$23,425	4.5%	\$9,956	1.9%	\$33,381	6.4%	\$523,613.00
Religious	\$11,436	5.2%	\$3,478	1.6%	\$14,914	6.8%	\$219,042.00
Residential	\$771,135	4.5%	\$163,181	1.0%	\$934,317	5.5%	\$17,100,364.00
Grand Total	\$943,085	4.6%	\$217,043	1.1%	\$1,160,128	5.7%	\$20,442,717

Figure 4-11: Estimated Building Loss and Content Damage by Occupancy Type; 2016**Great Shakeout Scenario EQ***Estimated Building Loss by Occupancy Type***Great Shakeout Scenario EQ***Estimated Content Damage by Occupancy Type*

Estimating building loss and content damage in Hesperia due to a Great ShakeOut scenario involves complex modeling and data analysis tailored to local seismic hazards and building characteristics. Local authorities, engineering experts, and emergency management agencies typically collaborate to assess earthquake risks, enhance building resilience, and prepare communities for seismic events.

Severe/Extreme Weather (Severe Winds, Extreme Heat, Severe Rainstorms)**PHYSICAL THREAT****SEVERE WINDS**

Intense winds likely present the greatest threat to physical structures, particularly from trees or branches that fall on buildings/vehicles, causing substantial damage. Older structures that have deferred maintenance or have not been retrofitted for high wind conditions may suffer greater damage than newer/updated structures. Utility lines and wooden utility poles face an elevated threat from wind, as do buildings without reinforced roofs. Often utility poles and trees suffer impacts during high wind events if they occur after a significant rain event. During these events, saturated soils around the base of the tree/pole may be unable to hold up to the strains placed on it by strong winds causing it to fall over.

Trees, tree branches, and other objects have the potential to fall on powerlines and other electrical infrastructure during a severe windstorm, causing power outages throughout the city. Another physical threat of severe wind is wildfire impacts and electric utilities' current practice of conducting Public Safety Power Shutoff activities. During high wind events, these shutoffs may impact structures that rely on electricity for normal operations. See social threats for population impacts that may also occur because of these events.

Community Vulnerability Rating: Likely, Limited/Moderate impact

EXTREME HEAT

Extremely high temperatures can cause roads to deform and buckle as the pavement expands in the heat, especially in areas that have not been maintained well. Power lines and other electrical grid components become less effective in higher temperatures and may be damaged due to stress during extreme heat events. Urban heat islands occur when natural land cover is replaced with concentrations of pavement, buildings, or other surfaces that absorb and retain heat. Buildings with dark pavement will absorb more heat than surfaces with vegetation or lighter materials that are better at reflecting the sun's energy. This urban heat island effect is strongest during the summer when solar radiation is strongest.

Community Vulnerability Rating: Likely, Limited/Moderate impact

SEVERE RAINSTORMS

Physical threats associated with severe rainstorms are similar in nature to those identified in the Flood discussion above.

Community Vulnerability Rating: Likely, Limited/Moderate impact

SOCIAL THREAT

SEVERE WIND

Severe wind events can harm people throughout Hesperia but have a greater effect on the safety of people experiencing homelessness and those working outdoors. Populations that work outside or have respiratory illnesses may be impacted by severe wind events as they can generate dust and other contaminants that can affect the health of residents and workers. Lower-income residents, who may not have the financial resources to purchase homes (or are renting homes) that are not built or retrofitted to withstand powerful winds, could also have difficulty recovering from wind events.

Vulnerable Populations Affected: Low-income residents, seniors, individuals with disabilities, renters, and those living in mobile homes or older buildings.

Specific Vulnerabilities:

- **Structural damage:** Older buildings or mobile homes, common in low-income and rural communities, are more likely to be damaged by high winds. Renters may be particularly vulnerable, as they often have less ability to make structural improvements to their living spaces.
- **Displacement and property damage:** Severe winds may lead to property damage, such as fallen trees or debris, which could render homes uninhabitable. Those with limited financial resources may struggle to recover from such damage.
- **Power outages:** Wind events often lead to power outages, which disproportionately affect those who rely on electricity for medical devices or who cannot afford backup generators.
- **Access to shelter:** In the aftermath of severe wind events, vulnerable populations may face difficulties accessing shelter, whether due to transportation challenges or the lack of accessible accommodations.

Impact on Vulnerable Populations:

Severe wind events in Hesperia can cause significant property damage, especially to older homes and mobile homes, which are more susceptible to structural failure during high winds.

Low-income residents, who may not have the resources to make their homes more resilient to wind damage, are particularly at risk. Renters are also vulnerable, as they often have limited control over the condition or safety of their living spaces. Power outages resulting from severe winds disproportionately affect seniors, individuals with medical conditions, and those relying on electrical medical devices. Inadequate access to emergency shelters or assistance during wind events can further exacerbate the impacts on vulnerable communities.

To address the impacts of severe wind on vulnerable populations, the city will work closely with community partners, including local organizations that support low-income residents, seniors, and people with disabilities, to ensure preparedness and response efforts are tailored to their needs. These partnerships will help identify areas most at risk, particularly where homes may be structurally vulnerable due to age or lack of maintenance. The city will prioritize outreach to ensure that residents are informed about the risks of severe wind and the importance of securing property and belongings. Community organizations will play a key role in ensuring that vulnerable individuals have access to emergency shelters, transportation, and resources for recovery in the aftermath of severe wind events. By collaborating with these partners, the city will help mitigate the risks posed by severe wind to its most vulnerable populations.

EXTREME HEAT

Whereas a heat event can be relatively harmless for those with a reliable means of staying hydrated and cool, the event can be deadly for others. Young children, the elderly, or people suffering from serious medical conditions are physiologically more vulnerable to heatstroke. Some senior citizens also take medicines that can make it harder for their bodies to maintain a safe internal temperature, creating an additional threat from extreme heat events. Young children may not be aware of the signs of dehydration or ways of protecting themselves from heatstroke.

People living in homelessness are at a high risk of health complications during heat waves, especially if they are unsheltered. According to San Bernardino County homeless counts, in 2023, there were approximately 4,195 individuals experiencing homelessness in the county, with 71% percent unsheltered.⁴ Of the 4,195 individuals experiencing homelessness within the county, approximately 64 individuals are experiencing homelessness within the city. This population is very vulnerable to heatstroke during a heatwave, especially if they cannot reach a cooling center.

Sudden spikes in heat can catch people by surprise. Stores can rapidly sell out of fans, air-conditioning units, or drinking water during a heatwave. Many lower-income households live in older, poorly insulated, and energy-inefficient housing and cannot afford to run their air conditioning, which can be further compounded by the threat of power outages due to heat/rolling blackouts. During these events, extreme heat impacts may affect larger portions of the city and populations that would not be viewed as vulnerable under normal circumstances.

Vulnerable Populations Affected: Seniors, young children, individuals with chronic medical conditions, low-income residents, and those without access to air conditioning.

Specific Vulnerabilities:

- **Health impacts:** Extreme heat can exacerbate existing health conditions, such as heart disease, respiratory conditions, and diabetes, which disproportionately affect vulnerable populations.

⁴ <https://www.sbcounty.gov/uploads/sbchp/content/SBC-2023-Homeless-Count-Report.pdf>

- **Limited cooling resources:** Low-income households may lack access to air conditioning or cooling centers, increasing the risk of heat-related illnesses and deaths.
- **Lack of shelter options:** Vulnerable populations living in areas without adequate cooling centers may be forced to stay in unsafe conditions during extreme heat events, leading to dehydration, heat stroke, and other serious health issues.
- **Outdoor workers:** Low-income individuals who work outdoors, such as those in agriculture, construction, or service industries, are at a higher risk of heat exhaustion and heat stroke, particularly during prolonged heatwaves.

Impact on Vulnerable Populations:

Extreme heat events are particularly dangerous for seniors, children, individuals with chronic health conditions, and low-income residents who may lack access to cooling systems or air conditioning. Vulnerable populations in Hesperia may also face difficulties accessing cooling centers, especially if transportation options are limited or if they live in isolated areas. Low-income individuals are more likely to live in homes that are not built for heat mitigation, making them more susceptible to heat-related illnesses. Additionally, those with limited financial resources may struggle to manage the costs of utilities, leading them to forgo cooling measures during extreme heat events.

To address the impacts of severe heat on vulnerable populations, the city will collaborate with local organizations that support seniors, low-income residents, and individuals with health conditions or mobility impairments. These partnerships will help ensure that cooling centers are accessible, particularly in areas with high concentrations of vulnerable populations, and that transportation is available for those who need assistance getting to these facilities. Outreach efforts will be expanded to raise awareness about the health risks of extreme heat and provide resources on how to stay safe. Additionally, public health organizations will help monitor at-risk populations and provide medical support for those experiencing heat-related illnesses. Through these collaborations, the city will strengthen its ability to protect its most vulnerable residents during severe heat events.

SEVERE RAINSTORMS

Social threats associated with severe rainstorms is similar in nature to those identified in the Flood discussion above.

Vulnerable Populations Affected: Low-income residents, people with disabilities, elderly individuals, and people living in areas with poor drainage or flood control.

Specific Vulnerabilities:

- **Flooding and water damage:** Severe rainstorms often lead to flash floods, which can inundate homes in poorly maintained or flood-prone areas, leading to property damage, displacement, and loss of belongings.
- **Public infrastructure:** People in underserved communities may face delayed or inadequate infrastructure repairs after a storm, leading to prolonged disruptions in services such as roads, utilities, and communication systems.
- **Access to emergency services:** During heavy rainstorms, vulnerable populations may have difficulty reaching emergency shelters or accessing services due to poor road conditions or transportation limitations.
- **Communication and alerts:** Non-English speakers may not receive early warning messages or may struggle to understand evacuation orders, making them more vulnerable during rainstorms.

Impact on Vulnerable Populations:

Severe rainstorms can lead to localized flooding, landslides, and infrastructure damage. Vulnerable populations in Hesperia are at higher risk due to their living situations in flood-prone or poorly drained areas. Seniors, individuals with disabilities, and children are more likely to face challenges in evacuating or finding safe shelter during a rainstorm. Those in mobile homes or older buildings may experience greater damage during heavy rain due to structural weaknesses. Additionally, vulnerable groups may have limited access to emergency services or resources, including shelters or medical care, which can heighten the severity of the impact.

To address the impacts of severe rainstorms on vulnerable populations, the city will work with community organizations to ensure that residents, especially low-income individuals, seniors, and those with disabilities, have the resources and support they need during and after storms. Partnerships with local groups will help identify flood-prone areas and ensure that emergency shelters and evacuation routes are accessible to all, particularly for those with mobility challenges. The city will also focus on improving drainage infrastructure in neighborhoods with higher concentrations of vulnerable populations, reducing the risk of flooding. Outreach efforts will include providing information on how to prepare for severe rainstorms, including flood prevention tips, and ensuring that residents know where to seek assistance during storms. Additionally, public works will help distribute sandbags or flood barriers, to those in high-risk areas. By collaborating with these organizations, the city will ensure a more inclusive and effective response to severe rainstorms, minimizing the impact on its most vulnerable residents.

OTHER THREATS**SEVERE WIND**

Southern California and the City of Hesperia all suffer from seasonal Santa Ana Winds and will for the foreseeable future. Extreme wind events can worsen other risks, such as wildfires.

EXTREME HEAT

Extreme Heat for any length of time can also affect other hazards and risks within the city. For example, it can create a spike in electricity demand leading to power loss/failure, food insecurities, and a rise in vector-borne disease transmission. Coupled with extreme wind, it can cause or spread wildfires and jeopardize additional neighborhoods/communities.

SEVERE RAINSTORMS

Other threats associated with severe rainstorms are similar in nature to those identified in the Flood discussion above.

Dam Failure

PHYSICAL THREAT

The physical threat posed to Hesperia by a dam failure would primarily involve significant flooding and potential destruction downstream of the dam. Hesperia, located in San Bernardino County, could be affected depending on the location of the dam failure and the path of the resulting floodwaters.

Community Vulnerability Rating: Unlikely, Significant/Severe impact

If a dam were to fail upstream near Hesperia, several potential consequences could occur:

- **Flash Flooding:** A sudden release of water from a dam failure could lead to rapid and intense flash flooding in the downstream areas, including parts of Hesperia depending on the watershed.
- **Property Damage:** Homes, businesses, infrastructure, and agricultural land in low-lying areas could sustain significant damage from floodwaters and debris carried downstream.
- **Loss of Life:** The sudden onset of flooding could endanger residents and visitors who are caught off guard, especially if warnings and evacuation orders are not effectively communicated or heeded.
- **Disruption of Services:** Flooding can disrupt transportation, utilities (such as power and water supply), and emergency services, complicating rescue and recovery efforts.
- **Environmental Impact:** Floodwaters can carry pollutants, debris, and sediment, impacting local ecosystems and water quality downstream.

Various factors, such as the amount of water released, the distance between the dam failure site, and the topography of the surrounding land, will influence the extent to which physical assets in Hesperia are threatened.

There are three dams near Hesperia that can inundate portions of the City should they fail catastrophically: Mojave Forks Dam, Cedar Springs Dam, and Lake Arrowhead Dam. Water released by the Mojave Forks Dam would be confined to the Mojave River bed, the mouth of Antelope Valley Wash channel, and several other smaller tributaries. Water released by the Cedar Springs Dam would flood a significant portion of eastern Summit Valley, an area for the most part presently undeveloped, except for Highway 173. Water from Lake Arrowhead Dam would most likely be contained within the Mojave Forks reservoir.⁵

POPULATION AT RISK

The sudden onset of flooding can pose significant risks to human life, including drowning and injuries from debris carried by floodwaters. Vulnerable populations, such as elderly individuals, children, and those with limited mobility, may face challenges evacuating to safety. Residents in affected areas may be forced to evacuate their homes quickly to avoid floodwaters and seek shelter in safer locations. Temporary displacement may be necessary until floodwaters recede, and it is safe to return to assess damage and begin recovery efforts.

⁵ <chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.hcd.ca.gov/housing-elements/docs/hesperia-6th-draft040522.pdf>

The social threats posed by dam inundation in Hesperia, would primarily revolve around the impact on residents' safety, well-being, and community cohesion. Here are some key social threats that could arise:

1. **Loss of Life and Injury:** The sudden inundation of floodwaters can endanger lives, particularly if residents are caught unaware or unable to evacuate in time. This threat is heightened in areas where evacuation routes may be limited or compromised.
2. **Displacement and Homelessness:** Residents forced to evacuate due to flooding may face temporary or long-term displacement, leading to emotional distress, uncertainty about housing, and disruption of community ties.
3. **Psychological Impact:** Witnessing or experiencing the destruction of homes and community infrastructure can cause significant psychological trauma, leading to stress, anxiety, and other mental health challenges among residents.
4. **Disruption of Community Services:** Floods can disrupt essential services such as hospitals, schools, and emergency response systems, further challenging residents' ability to cope and recover.
5. **Social Disruption:** The displacement of families and disruption of neighborhoods can strain social networks and community resilience. Rebuilding communities after such events may require significant time and effort.
6. **Economic Impact on Families:** Loss of property and livelihoods can lead to financial hardship for affected families, potentially exacerbating existing socio-economic disparities within the community.
7. **Long-Term Recovery Challenges:** Recovering from the social impacts of dam inundation can be a lengthy process, requiring coordinated efforts from government agencies, non-profit organizations, and community groups to support affected residents.

Vulnerable Populations Affected: Low-income residents, seniors, individuals with disabilities, renters, and those living in mobile homes or older buildings.

Specific Vulnerabilities:

- **Structural damage:** Areas near dams or in floodplains are at greater risk of structural damage during a dam inundation event. Older buildings and mobile homes, common in low-income and rural areas, are more likely to suffer from flooding and water damage, which can compromise their integrity. Renters may not have the ability to make structural improvements to protect their homes from flooding, leaving them more vulnerable to property loss.
- **Displacement and property damage:** Dam inundation can lead to widespread flooding, forcing residents to evacuate and potentially displacing them from their homes. Low-income families are particularly at risk, as they often lack the resources to find alternative housing or recover from property damage. The financial burden of repairing or rebuilding after flooding may be insurmountable for those without insurance or savings, further exacerbating inequities.
- **Health risks from waterborne diseases:** Inundation events can contaminate water supplies, leading to the spread of waterborne diseases. Vulnerable populations, such as seniors, children, and those with underlying health conditions, are more susceptible to these health risks. Limited access to clean water or medical care can

worsen these health impacts, especially for low-income individuals who may already have limited access to healthcare resources.

- **Evacuation challenges:** Evacuating during a dam inundation event can be difficult for individuals with mobility impairments, the elderly, and families with young children. Low-income residents may not have access to transportation or may struggle to evacuate in a timely manner, especially if roadways are blocked or infrastructure is damaged. The absence of accessible evacuation routes or transportation services may increase the risk of harm for these individuals.
- **Access to shelter and recovery resources:** Vulnerable populations may face barriers to accessing emergency shelters after a dam inundation event, especially if the shelters are not equipped with necessary accommodations for individuals with disabilities or specialized care needs. Low-income individuals and families may also have difficulty accessing recovery resources, including financial aid or housing assistance, due to bureaucratic barriers or a lack of information on available support.

Impact on Vulnerable Populations:

Dam failure poses a catastrophic risk to vulnerable populations in Hesperia, particularly those living in floodplains or near critical infrastructure such as dams. Low-income residents and renters are at higher risk of displacement if their homes are inundated, as they may not have the financial resources to evacuate or recover from property damage. Seniors and individuals with mobility impairments may have difficulty evacuating quickly, especially if transportation routes are blocked or if they lack assistance. Furthermore, the aftermath of a dam failure can create long-term challenges for vulnerable groups in accessing shelter, healthcare, and financial resources, further compounding their vulnerability during the recovery process.

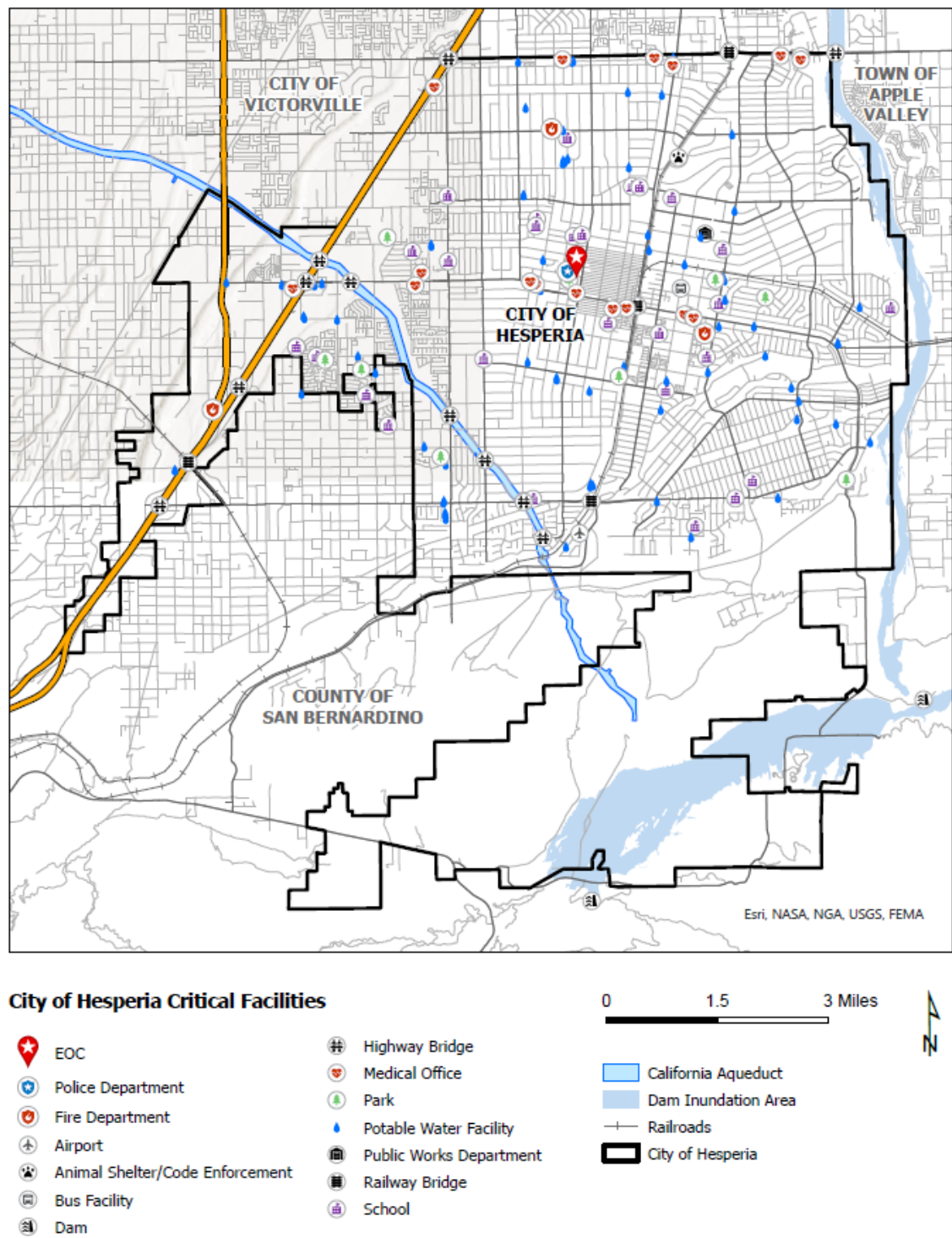
To address the impacts of dam failure on vulnerable populations, the city will collaborate with local organizations, including senior centers, disability advocacy groups, and low-income housing agencies, to ensure that evacuation plans and emergency communication are accessible to all residents. Partnerships with these groups will help identify the most at-risk areas, particularly where low-income households or seniors may be located in flood zones downstream of dams. The city will prioritize outreach efforts to ensure that residents, especially those without transportation or mobility challenges, are informed about evacuation routes and shelter locations. In the event of dam failure, local partners will play a key role in providing immediate assistance, including transportation to shelters, and supporting recovery efforts for those who are displaced or suffer property damage. By working with these organizations, the city can ensure a coordinated, inclusive response to dam failure events, helping to protect its most vulnerable populations.

No populations data for these three dam inundation zones was available, and the data or modeling expertise required exceeds the city's current capabilities. In the next update, we will work on implementing strategies to refine the data and improve the accuracy of risk assessments, including collaborating with the state dam safety agency and the US Army Corps of Engineers (USACE).

CRITICAL FACILITIES AT RISK

Figure 4-12 shows the location of critical facilities and infrastructure with respect to dam inundation zones.

Figure 4-12: Critical Facilities and Infrastructure Near Dam Inundation Zones



OTHER THREATS

Dam failures are often triggered by other events (e.g., seismic shaking, intense rainstorms, etc.). There would most likely be service disruptions in Hesperia if this type of event occurred. Floodwaters could quickly inundate the city, disrupting utilities such as water, power, heating, and other services (communications or transportation infrastructure). Residents may find street lighting and traffic signals are temporarily disabled. Debris may be carried in the rapid inundation of water, blocking roads and impeding traffic flow. Water would most likely inundate roadways and other low-lying, flat areas, such as parking lots, open spaces, and schoolyards. In severe scenarios, people's mobility in these areas would likely be restricted or even impossible. Any unprotected or unhoused mechanical or electronic equipment that is not properly elevated could be damaged or inoperable until crews can conduct repairs or replacements.

ECONOMIC LOSS ESTIMATES

No economic loss estimates were available for these three dam inundation zones, and the data or modeling expertise required exceeds the city's current capabilities. In the next update, we will work on implementing strategies to refine the data and improve the accuracy of risk assessments, including collaborating with the state dam safety agency and the US Army Corps of Engineers (USACE).

CHANGES IN POPULATION PATTERNS AND LAND USE AND DEVELOPMENT

Those in the inundation zone may choose to move out of the city or out of the inundation area if the impacts of dam failure are great enough. Those renting homes within the city have little control over the rebuilding process of a home that has been affected by inundation and, therefore, may be forced to move out of the inundation area or out of the city.

Dam failure is unlikely to affect land use and development because the development review process will take steps to mitigate or minimize flood-related impacts. Areas inundated within the city would not be significantly altered, requiring changes in land use and development patterns.

Climate Change

PHYSICAL THREAT

Hesperia, located in the High Desert region of Southern California, faces a number of climate change-related physical threats that could impact its community. Here are some key concerns:

- **Extreme Heat:** Hesperia, already experiencing high temperatures, may face increasingly severe heat waves. Prolonged periods of extreme heat can affect public health, strain energy resources due to higher air conditioning use, and worsen air quality.
- **Drought:** The region is prone to dry conditions, and climate change is expected to exacerbate drought conditions. This can impact water availability for agriculture, domestic use, and increase the risk of water shortages.
- **Wildfires:** The combination of high temperatures, dry conditions, and potentially stronger winds increases the risk of wildfires. Wildfires can threaten homes, disrupt local ecosystems, and impact air quality.

- **Air Quality:** Increased temperatures can lead to higher concentrations of ground-level ozone and other pollutants, affecting respiratory health and overall air quality.
- **Water Supply Issues:** Reduced snowpack in the Sierra Nevada and shifting precipitation patterns could affect the region's water supply. Hesperia relies on imported water, and disruptions or reductions in supply could impact local water availability.
- **Ecosystem Changes:** Changes in temperature and precipitation patterns can alter local ecosystems, potentially affecting native plant and animal species and disrupting the balance of local habitats.
- **Infrastructure Stress:** Extreme weather events and changing climate conditions can place additional stress on infrastructure, such as roads, bridges, and utilities, leading to increased maintenance costs and potential damage.

POPULATION AT RISK

Several population groups are particularly vulnerable to the impacts of climate change. Understanding these vulnerabilities can help in developing targeted adaptation and mitigation strategies. Here are key groups at risk:

- **Elderly Residents:** Older adults are more susceptible to extreme heat and health complications related to temperature changes. They may also have limited mobility and resources to cope with climate-related stressors.
- **Low-Income Families:** Low-income communities may have fewer resources to manage the impacts of climate change, such as the cost of cooling during heat waves or the ability to invest in home improvements that mitigate extreme weather effects.
- **People with Pre-existing Health Conditions:** Those with chronic health conditions, such as respiratory or cardiovascular issues, are more vulnerable to poor air quality and extreme heat events, which can exacerbate their health problems.
- **Children:** Young children are particularly susceptible to heat stress and poor air quality. They also depend on adults for protection and resources, which can complicate their ability to cope with climate-related challenges.
- **Homeless Individuals:** People experiencing homelessness are at significant risk during extreme weather events. They may lack access to adequate shelter, healthcare, and resources needed to manage heat, cold, or other climate-related hazards.
- **Residents in High-Risk Areas:** Those living in areas prone to wildfires or with limited access to water are at higher risk. Hesperia's landscape, with its dry conditions and proximity to wildfire-prone areas, means that residents in these zones could be more directly affected by climate impacts.
- **Agricultural Workers:** Although not as prevalent in Hesperia itself, nearby agricultural areas could affect the local economy and workforce. Changes in water availability and temperature extremes can impact agricultural productivity and labor conditions.

Addressing the needs of these vulnerable populations involves targeted policies and interventions, such as improving access to cooling centers, enhancing healthcare services, investing in affordable housing improvements, and providing resources for disaster preparedness and recovery.

CRITICAL FACILITIES AT RISK

Critical facilities that may be at risk due to climate change include:

- **Water Supply Infrastructure:** Facilities such as water treatment plants and reservoirs are crucial for providing clean water to the community. Climate change-induced droughts and reduced water availability can strain these systems, potentially leading to water shortages or reduced water quality.
- **Emergency Services:** Fire stations, police stations, and emergency medical services (EMS) facilities are vital for responding to climate-related emergencies such as wildfires, heatwaves, and extreme weather events. These facilities must be equipped and resilient to handle increased demand and extreme conditions.
- **Healthcare Facilities:** Hospitals and clinics are essential for treating climate-related health issues, such as heat-related illnesses or respiratory problems from poor air quality. Extreme heat and other climate impacts could strain these facilities and their capacity to provide care.
- **Energy Infrastructure:** Power plants, substations, and distribution networks are critical for maintaining electricity supply. Extreme heat and increased demand for cooling can strain these systems, leading to potential outages or damage to infrastructure.
- **Transportation Networks:** Roads, bridges, and public transportation systems are essential for mobility and access. Extreme weather events like heatwaves and storms can damage infrastructure, disrupt transportation, and affect emergency response times.
- **Waste Management Facilities:** Facilities responsible for waste collection and processing are important for maintaining sanitation and public health. Increased temperatures and extreme weather can affect the efficiency and safety of waste management operations.
- **Education Facilities:** Schools and educational institutions are important for community stability and development. They need to be prepared for climate-related disruptions, such as extreme heat or wildfires, which can impact student health and learning environments.
- **Public Cooling and Shelter Facilities:** Designated cooling centers and shelters are vital during heatwaves and other extreme weather events. Ensuring these facilities are accessible and resilient to climate impacts is crucial for protecting vulnerable populations.
- **Communication Infrastructure:** Telecommunications facilities, including cell towers and data centers, are critical for maintaining communication during emergencies. They must be resilient to extreme weather and temperature fluctuations to ensure reliable communication.
- **Recreational and Community Centers:** Facilities such as parks, community centers, and libraries serve as social hubs and emergency shelters. Their resilience to climate impacts is important for community cohesion and support during extreme events.

Protecting these critical facilities involves assessing vulnerabilities, enhancing resilience through infrastructure improvements, and planning for emergency response and recovery. It also requires coordination between local government, emergency services, and community organizations to ensure that these facilities can continue to function effectively in the face of climate change.

ECONOMIC LOSS ESTIMATES

Estimating economic losses in Hesperia due to climate change involves considering various factors and potential impacts. While precise figures can vary, here are some general areas where economic losses could occur, along with considerations for estimating their impact:

- **Property Damage from Wildfires:**
 - **Cost Estimates:** Wildfires can cause significant property damage, including destruction of homes and infrastructure. In regions prone to wildfires, costs can run into billions of dollars annually, depending on the severity of the fires.
 - **Example:** The 2020 California wildfires resulted in over \$10 billion in insured losses statewide. While Hesperia is a smaller area, it is part of a broader region affected by wildfires.
- **Water Supply Costs:**
 - **Cost Estimates:** Droughts can increase the cost of water sourcing, treatment, and conservation efforts. Costs related to water shortages can include increased prices for water, investments in alternative water supplies, and infrastructure repairs.
 - **Example:** The economic impact of drought on water utilities can be substantial, potentially affecting hundreds of millions of dollars statewide.
- **Increased Energy Costs:**
 - **Cost Estimates:** Extreme heat increases demand for air conditioning, leading to higher energy bills and potential strain on energy infrastructure. Upgrades to energy systems to handle increased demand can also be costly.
 - **Example:** Extreme heat events can lead to tens of millions in additional energy costs for affected areas.
- **Healthcare Costs:**
 - **Cost Estimates:** Climate-related health issues such as heat stress, respiratory problems from poor air quality, and vector-borne diseases can increase healthcare costs. Emergency medical services and hospital admissions during extreme weather events can drive up costs.
 - **Example:** The overall increase in healthcare costs due to climate change impacts could be significant, with estimates varying widely.
- **Infrastructure Damage:**
 - **Cost Estimates:** Extreme weather events, such as flooding and heatwaves, can damage roads, bridges, and public buildings. Repairing and upgrading infrastructure to be more resilient can involve substantial expenses.
 - **Example:** Infrastructure damage from severe weather events can lead to repair and replacement costs in the millions or even billions, depending on the extent of the damage.
- **Agricultural and Economic Productivity Losses:**
 - **Cost Estimates:** Changes in temperature and precipitation patterns can affect local agriculture and related industries. Crop failures or reduced productivity can lead to economic losses for farmers and related businesses.
 - **Example:** Economic losses in agriculture can range from millions to billions of dollars annually, depending on the scale of impact.
- **Property Value Declines:**
 - **Cost Estimates:** Increased risk of climate-related events can reduce property values, especially in areas vulnerable to flooding, wildfires, or other hazards. Property devaluation can have broader economic implications for homeowners and the local economy.
 - **Example:** Property values in high-risk areas can decline significantly, potentially affecting tens of millions of dollars in real estate value.
- **Insurance Costs and Losses:**

- Cost Estimates: Increased risk of damage from climate events can lead to higher insurance premiums or reduced availability of coverage. Insurance companies may face higher payouts for claims, leading to increased costs for policyholders.
- Example: Rising insurance premiums and increased claims can affect both individuals and businesses, leading to significant economic impacts.

These estimates require detailed local data and modeling to refine. Collaboration with local government, economic analysts, and climate experts can help provide more accurate and context-specific figures for Hesperia.

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Chapter 5 – Hazard Mitigation Strategy

Strategy Development Process

The intent of the mitigation strategy is to provide the City of Hesperia with a guidebook to future hazard mitigation administration. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. This will help City staff to achieve compatibility with existing planning mechanisms and ensures that mitigation activities provide specific roles and resources for implementation success.

The mitigation strategy represents the key outcomes of the Hesperia LHMP planning process. The hazard mitigation planning process conducted by the HMPC is a typical problem-solving methodology:

- Estimate the impacts the problem could cause (*See Vulnerability Assessment*);
- Describe the problem (*See Identifying the Problem*);
- Assess what safeguards and resources exist that could potentially lessen those impacts (*See Capabilities Assessment*);
- Develop Goals and Objectives with current capabilities to address the problems (*See Mitigation Goals, Objectives, and Projects*);
- Using this information, determine what can be done, and select those actions that are appropriate for the community (*See Goal, Objective and Mitigation Action Matrix*).

Identifying the Problem

As part of the mitigation actions identification process, the HMP Planning Committee identified issues and/or weaknesses as a result of the risk assessment and vulnerability analysis. By combining common issues and weaknesses developed by the Planning Committee, the realm of resources needed for mitigating each can be understood. Community issues and weaknesses are presented by individual hazards in Table 5-1a through Table 5-1d.

Table 5-1a: Earthquake Hazard Problem Statements

Problem Description	Problem Type	Action No.
1. Damage to City water supply in the event of an earthquake may present a water supply issue.	Infrastructure	MH 1.1
2. Potential damage to I-15 overpasses would impede travel.	Infrastructure	MH 1.2
3. Protecting utility service such as natural gas from earthquake damage.	Infrastructure	EQ 1.4
4. Public facility infrastructure i.e., fire stations with earthquake damage risk.	Infrastructure	MH 1.4, EQ 1.5
5. Structural adequacy of city buildings / facilities?	Infrastructure	EQ 1.5
6. Content damage in City buildings.	Infrastructure	MH 1.1
7. The majority of residents live in the severe shake zone in the Great Shakeout Scenario.	Vulnerable Population	EQ 1.1, 1.2, 1.3, 1.6, 1.7

		MH 1.3 PA 1.2, 1.4, 1.5
8. Dam failure due to earthquake event.	Vulnerable Population	DI 1.1, 1.2 MH 1.7

Table 5-1b: Wildfire Hazard Problem Statements

Problem Description	Problem Type	Action No.
1. Residents along the City's southern half are in the High fire hazard severity zone.	Vulnerable Populations	WF 1.2 MH 1.5 PA 1.2
2. City open spaces / vegetative fuels backing up to resident's property/ homes.	Vulnerable Populations	WF 1.1, 1.2
3. Lack of public notice to areas of extreme fire danger (clear brush etc.)	Public Education	PA 1.4, 1.5, WF 1.3

Table 5-1c: Flood Hazard Problem Statements

Problem Description	Problem Type	Action No.
1. Several streets are rendered impassable during heavy rainstorms, trapping residents.	Infrastructure	FL 1.1, 1.2, 1.3, 1.4
2. The City's easterly border along the Mojave River is located near the 100-year flood zone,	Vulnerable Populations	FL 1.1 MH 1.5 PA 1.6
3. Debris/sediment buildup on roadways after rain/flooding	Maintenance	FL 1.3, 1.4
4. Dam failure due to flooding events.	Vulnerable populations	DI 1.1, DI 1.2 MH 1.7

Table 5-1d: Severe Weather Problem Statements

Problem Description	Problem Type	Action No.
1. Debris/sediment buildup on roadways after rain/flooding	Maintenance	FL 1.3, 1.4
2. Lack of public notice to areas of severe weather (i.e., flooding, road closures, wildfire, heat exhaustion, hyperthermia, etc.)	Public Education Vulnerable populations	EW 1.1, 1.2, 1.3
3. Content damage to City buildings.	Infrastructure	EW 1.4

Capabilities Assessment

The City of Hesperia strives to protect and maintain the health, safety and welfare of the community on a day-to-day basis and takes extra measures to reduce the impacts of natural or technological hazards. The City can use a variety of different tools, assets, and authorities to effectively prepare for, mitigate against, respond to and recover from emergencies and disasters. These include voluntary and mandatory measures; individual and community efforts; private and public actions; and preventive as well as responsive approaches. Example mitigation activities include educating citizens, enforcing building and development codes, constructing capital improvement projects, adopting plans, establishing incentive programs, and reducing the impact of potential disasters through emergency preparedness and response.

The capabilities available to the City of Hesperia fall into the following broad categories: Agencies and People, Plans, Codes and Regulations, Mitigation Programs and Financial Resources. Identifying and documenting these capabilities provides the basis for developing future mitigation opportunities and how they can be implemented within existing City programs.

Capabilities Improvement/Expansion

The ability to expand current mitigation capabilities is reliant upon available funding. FEMA has released a series of guides over the past few years which highlight some of the ways in which jurisdictions can expand mitigation. Some strategies for increasing current mitigation capabilities may include:

1. City should actively identify, adopt, and enforce the most current set of development codes and standards available. Strongly encouraging new development to be constructed to higher standards than currently required, increasing resilience within the community.
2. Engaging parts of the community that may not be actively involved in mitigation efforts.
3. Expanding the number and types of organizations involved in mitigation planning and implementation, increasing both efficiency and bandwidth.
4. Fostering new relationships to bring underrepresented populations and partners to the hazard mitigation planning process.
5. During the annual LHMP review, the HMPC should look for opportunities to fund and expand/enhance the effectiveness of current mitigation actions.
6. During annual budgeting processes, the City should identify new funding sources (bonds, grants, assessment districts, etc.) that can be used to support existing capabilities enhancements.

Tables 5-2a – 5-2g show the capabilities assessment for Hesperia. Within each resource described, a section titled “Expansion and Improvement” is provided, which helps the City recognize specific areas where each capability may be modified to align with mitigation priorities and actions to be taken in the future.

Local Planning and Regulatory Mitigation Capabilities

The information in **Table 5-2a** is used to construct mitigation actions aligned with existing planning and regulatory capabilities of the City. Planning and regulatory tools typically used by local jurisdictions to implement hazard mitigation activities are building codes, zoning regulations, floodplain management policies, and other municipal planning documents.

Table 5-2a: City of Hesperia Capabilities Assessment			
Local Legal and Regulatory Capabilities			
Hazard	Resource Name	Responsible Agency	Description (Effect on Hazard Mitigation)
Multi-Hazard	Hesperia / California Building Code 2022 Edition	Community Development Dept.	The City has adopted the California Building Code 2022 Edition, Volumes 1 and 2. The California Building codes protect buildings to the extent possible from natural occurring hazards. The City will continue to adopt any changes in the California building codes to stay current on future hazard risks. Expansion and Improvement: Adherence to building codes, including local codes, regulates growth and controls land use patterns. As codes are updated, addressing known hazards results in lowered risk and potentially fewer losses.
Multi-Hazard	City of Hesperia Building Code	Community Development Dept.	Hesperia adopted the 2022 California Building codes, which can be found in Title 15 of the H.M.C. The Codes set the minimum standards for all aspects of building construction, from design to finish, with the goal of protecting public health, safety and welfare in a given area. Expansion and Improvement: Adherence to building codes, including local codes, regulates growth and controls land use patterns. Addressing known hazards, as codes are updated, results in lowered risk and potentially fewer losses.
Multi-Hazard	City of Hesperia General Plan -Safety Element	Community Development Dept.	The General Plan was last updated in 2010. To stay current with the evolving population and safety standards, the City initiated a focused 2050 General Plan update. The Safety Element provides: • Background on the history of hazards and the likelihood of future changes to these hazards. • Policies that increase the resilience of residents, businesses, workers, and visitors. • Policies to reduce the level of property loss due to a potential disaster. • A framework for emergency management. Expansion and Improvement: The LHMP will be informed by referencing the Safety Element of the General Plan. The City will adopt the approved LHMP as part of the General Plan Safety Element to meet the requirements of AB 2140.

Table 5-2a: City of Hesperia Capabilities Assessment

Local Legal and Regulatory Capabilities

Hazard	Resource Name	Responsible Agency	Description (Effect on Hazard Mitigation)
Climate Change	City of Hesperia General Plan – Climate Change Vulnerability Assessment	Community Development Dept.	The General Plan was last updated in 2010. To ensure it aligns with current needs, the City initiated a focused 2050 General Plan update. The vulnerability assessment acts as a foundation for integrating adaptation and resilience policies into the Safety Element and The General Plan by identifying a set of priority vulnerabilities in the City of Hesperia. Expansion and Improvement: The LHMP and Climate Change Vulnerability Assessment should be closely correlated. Ensure the Vulnerability Assessment is updated in conjunction with LHMP updates.
Multi-Hazard	City of Hesperia General Plan -Land Use	Community Development Dept.	The General Plan was last updated in 2010. To ensure it aligns with current needs, the City initiated a focused 2050 General Plan update. The Land Use Element functions as a guide to the ultimate pattern of development for the city, both within its incorporated boundaries and sphere of influence. The Land Use Element: • Designates the distribution, location, and balance of land uses. • Describes the desired build-out of Hesperia • Describes building intensity standards for each land use. • Communicates population density. • Ensures compatibility between land uses. Expansion and Improvement: Focus on balancing community needs and ensuring compatibility of uses and development patterns.
Multi-Hazard	Land-Use Specific Plans	Community Development Dept.	The City maintains various area-specific land use and project plans. Expansion and Improvement: These specific plans and the LHMP will be aligned to describe developmental trends, hazards, and potential development in hazard areas.

Table 5-2a: City of Hesperia Capabilities Assessment

Local Legal and Regulatory Capabilities

Hazard	Resource Name	Responsible Agency	Description (Effect on Hazard Mitigation)
Multi-Hazard	City of Hesperia Emergency Operations Plan	City Manager's Office	The 2022 City EOP provides a framework for coordinated response and recovery activities during an emergency. The City EOP is intended to be invoked whenever the City must respond to an unforeseen incident or planned event, the size or complexity of which is beyond that normally handled by routine operations. The City will update the EOP every 5 years and will incorporate current hazard mitigation information, procedures, and regulations. Expansion and Improvement: The hazards section of the Emergency Operations Plan (EOP) is informed by the LHMP as the two are closely correlated.
Climate Change	Hesperia 2020 Urban Water Management Plan (UWMP)	Public Works	The UWMP provides urban water suppliers (including the City) with a planning document for long-term resource planning to ensure adequate water supplies are available to meet existing and future water supply needs. In addition, the 2020 UWMP incorporates water supply reliability determinations resulting from potentially prolonged drought, regulatory revisions, and/or changing climatic conditions. Expansion and Improvement: The UWMP and LHMP will be aligned in describing and developing mitigation actions to address climate change and potential/future drought issues.
Climate Change	City of Hesperia Climate Action Plan 2010	Planning	The City of Hesperia (City) prepared a Climate Action Plan (CAP) as its primary strategy for ensuring that the buildout of the General Plan Update will not conflict with the implementation of Assembly Bill 32 – the Global Warming Solutions Act of 2006. This CAP is designed to reduce community-related and City operations-related greenhouse gas emissions to a degree that would not hinder or delay implementation of AB 32. Expansion and Improvement: The LHMP and Climate Action Plan should be closely correlated. As the Climate Action Plan is updated, mitigation measures from the new LHMP can be incorporated.

Administrative and Technical Capabilities

The following **Table 5-2b** provides a summary of administrative and technical capabilities organized by staff and department. It is important to understand current administrative and technical capabilities before developing mitigation activities.

Table 5-2b: City of Hesperia Capabilities Assessment		
Administrative and Technical Capabilities		
Staff/Personnel Resources	Dept. / Agency	Description (Effect on Hazard Mitigation)
City Clerk's Office and Records Management	City Manager's Office	The City Clerk's office manages all City elections and Fair Political Practices Commission (FPPC) administrative filings; maintains original City deeds and easements; processes public record requests; coordinates various administrative policy matters; maintains the City's legal library; and accepts and records claims, lawsuits and summons filed upon the City. The Office also processes record requests, receives claims, and prepares proclamations, City Council agendas and publishes legal notices as required by California law, records all minutes, adopted legislation, policy documents and contracts approved by the City Council, subsidiary districts and agency Boards. Expansion and Improvement: Prioritize new initiatives that support mitigation activities within the city.
Public Information Office	City Manager's Office	The Public Information Office is responsible for providing information on behalf of the City of Hesperia. This is accomplished through the distribution of: • Horizon Newsletter • The City Website • Social Media • Advertisements • Special events • Media inquiries Expansion and Improvement: Strengthen ties with community organizations and businesses to ensure key content and information is timely and relevant. Create additional communications platforms to ensure information and content reaches community members.

Staff/Personnel Resources	Dept. / Agency	Description (Effect on Hazard Mitigation)
Planning	Community Development	The Planning Department plays a critical role in achieving the City Council's goals and objectives relative to land use, urban design, and the quality and sustainability of the built environment. The department conducts site plan reviews for residential, commercial, and industrial developments. They also process Conditional Use Permits, variances, zoning changes, and General Plan amendments. Expansion and Improvement: Provide opportunities for continued education to Community Development staff to maintain state-of-the-art knowledge of new code and regulatory requirements.
Planning Commission	Community Development	The Planning Commission is responsible for reviewing proposed residential and commercial development projects, subdivisions, and land use requests to determine their compliance with applicable City regulations. The Commission makes recommendations to the City Council with respect to the City's General Plan, Zoning Code, Specific Plans and other matters related to development within the City. The Commission may be responsible for implementing mitigation items pertaining to the Commission's scope. Expansion and Improvement: Provide opportunities for continued education to members of the Planning Commission to maintain state-of-the-art knowledge of new code and regulatory requirements.
Building	Community Development	The Building Department provides professional plan review and inspection services to ensure buildings and projects are built and developed in compliance with all applicable municipal and state code requirements. Expansion and Improvement: Provide opportunities for continued education to Community Development staff to maintain state-of-the-art knowledge of new code and regulatory requirements.
Economic Development	Development Services	The Economic Development Department supports and recruits business to the city. Expansion and Improvement: Identify economic development opportunities that incorporate mitigation actions and strategies.

Staff/Personnel Resources	Dept. / Agency	Description (Effect on Hazard Mitigation)
Housing	Development Services	The Economic Development Department develops, manages and promotes programs and projects that improve the City's housing stock and provide affordable housing opportunities. The Department provides initial on-going subsidies to affordable rental housing projects within city limits. These affordable housing projects are targeted to very low, low and moderate-income persons. The Department also contemplates participation in developer-based proposals for affordable housing projects throughout the year. Expansion and Improvement: Integrate mitigation actions and strategies into low- and moderate-income areas to reduce blight and potentially spur further investment.
Engineering	Public Works	Oversees, plans, designs, and implements infrastructure projects. Expansion and Improvement: Integrate mitigation actions and strategies into the Capital Improvements Program and annual budgeting.
Floodplain Management	Public Works	The duties and responsibilities of the Floodplain Administrator shall include, but not be limited to: • Permit review • Flood hazard reduction • NFIP program administration • Construction inspections Expansion and Improvement: The Floodplain Administrator supports compliance with NFIP requirements, advocates for appropriate development in flood hazard areas, and provides technical expertise on effective flood mitigation activities. This can support mitigation activities.
Public Works	Public Works	Public Works Department is responsible for water production, water distribution, water pipeline replacements/upgrades, sewer and stormwater maintenance, and customer service and meter reading. Expansion and Improvement: Improve the understanding of the role those daily activities play in hazard mitigation.

Staff/Personnel Resources	Dept. / Agency	Description (Effect on Hazard Mitigation)
Financial Services	Finance Department City Manager's Office	The Finance Department is tasked with maintaining reliable accounting records, payment of approved demands against the City treasury, financial statement reporting, preparation of the annual budget, prudent fiscal planning, payroll processing and debt administration. Expansion and Improvement: Assist with key mitigation activities associated with cost tracking hazard events and disasters, identifying grant funding opportunities, grant reporting and administration, and establishing financial risk calculations that can help assist with budgeting of operations, maintenance, and capital improvements.
Human Resources	Human Resources	The Human Resources Department plans, coordinates and administers a comprehensive human resources management program for the City of Hesperia and its employees. This includes the recruitment and retention of highly qualified employees, maintenance of a competitive employee compensation program. The Risk Management Department identifies, evaluates and manages the City's risk and liability programs. This includes claims administration, cost recovery, the maintenance of liability/insurance coverage as well as the compliance with governmental regulation. In addition, the department administers the City's workers' compensation and employee safety programs. Expansion and Improvement: Increase knowledge and information through better data collection and tracking.
Information Technology	Information Technology	The role of the IT Department is to support the operational departments with reliable systems and information on a daily basis. The most critical support required of IT being network, communications and applications support. The IT department provides short- and long-term direction in planning, researching, selecting and deploying future technologies. IT strives to accommodate improved business process automation, self-service and quality customer service through a variety of hardware and software solutions. Expansion and Improvement: Increase system redundancy and resiliency through improvements to technologies and connectivity.

Staff/Personnel Resources	Dept. / Agency	Description (Effect on Hazard Mitigation)
GIS Department	Information Technology	Provides complex mapping and data management of City facilities, land use, and potential hazards. Supports visualization of complex data sets using geo-location and data correlation. Expansion and Improvement: Acquire and conduct training for GIS technicians on the latest versions of ArcGIS.
City Attorney	City Manager's Office	Reviews and approves resolutions and ordinances. Expansion and Improvement: Provide opportunities for the City Attorney to review updates to regulatory information to provide expert review of City resolutions and ordinances that may address hazard mitigation
Public Safety	San Bernardino County (SBC) Sheriff's Dept.	Law enforcement activities within the City of Hesperia include: • Marked-unit patrol • Traffic enforcement • Gang enforcement / graffiti / vandalism investigation and abatement • Advanced investigations These deputies network with a variety of law enforcement partners such as City Code Enforcement, Parole, Probation, Welfare Fraud officers and citizens. This networking helps the deputies to identify community problems, the causal factors behind the problems and then attack them from a variety of angles. Expansion and Improvement: Provide training to Officers to better enable them to see potential hazards and take action to report them.
Fire Department	San Bernardino County Fire Protection District	Fire and Emergency Services are provided to the City of Hesperia by the San Bernardino County Fire Protection District. San Bernardino County Fire is a community-based, all hazard emergency services provider. Expansion and Improvement: Proactively identify opportunities to coordinate and collaborate with neighboring jurisdictions to increase City and region-wide capabilities.

Staff/Personnel Resources	Dept. / Agency	Description (Effect on Hazard Mitigation)
Emergency Management Personnel	City Manager's Office	Develops, coordinates, and manages programs that prevent, prepare for, respond to, recover from, and mitigate natural and human-caused disasters and emergencies. Expansion and Improvement: Increase coordination and collaboration with other City departments, especially during annual budgeting.

Fiscal Capabilities

This section identifies the financial tools or resources that the City could potentially use to help fund mitigation activities. Fiscal capabilities include City-specific as well as state and federal resources.

Table 5-2c provides a summary of local fiscal resources. As indicated in **Table 5-2g**, there are also several governmental funds and revenue raising activities that can be allocated for hazard mitigation. The local Fiscal Resources are updated every fiscal year. Each year allocation of funds for hazard mitigation will be adjusted based on the current year's population growth, location, and future hazard risks.

Table 5-2c: City of Hesperia Capabilities Assessment		
Financial Resources		
Financial Resources	Administrator	Description (Effect on Hazard Mitigation)
General Fund Revenue	Finance Dept.	Program operations and specific projects. Consists of sales and use tax, transient occupancy tax, general and administrative recovery, vehicle license fees, etc., that can be used for general purposes. Expansion and Improvement: Hazard mitigation projects may be considered during the annual budgeting process for funding from the general fund.
State and County Community Development Dept. Block Grants (CDBG)	Fund Specific	The CDBG program provides funding for eligible senior activities such as in-home care, art classes, counseling, and home delivered meals. HUD also provides Disaster Recovery Assistance in the form of flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas, subject to the availability of supplemental appropriations. Expansion and Improvement: Where applicable, CDBG grants should be used to fund mitigation projects that enhance the resiliency of low-income and underserved communities.

Hazard Mitigation Grant Program (HMPG)	City Manager's Office	Provides support for pre-and post-disaster mitigation plans and projects. Expansion and Improvement: Train staff on notice of intent (NOI) procedures and track opportunities on the Cal OES mitigation website to initiate applications for grant funding.
Building Resilient Infrastructure and Communities (BRIC)	Grant Funding	Provides support for pre-disaster mitigation plans and projects. Expansion and Improvement: Train staff on notice of intent (NOI) procedures and track opportunities on the Cal OES mitigation website to initiate applications for grant funding.
Flood Mitigation Assistance grant program (FMA)	Grant Funding	Mitigates structures and infrastructure that have been repetitively flooded. Expansion and Improvement: Train staff on notice of intent (NOI) procedures and track opportunities on the Cal OES mitigation website to initiate applications for grant funding.

County Wildfire Mitigation Programs

San Bernardino County has one of the most comprehensive set of programs to mitigate the potential for catastrophic wildfires in the Nation. There is no other jurisdiction that has the comprehensive, multi-agency cooperation and coordination as is found in San Bernardino County. While the following programs can be used by the City of Hesperia to develop and perform mitigation actions, they are the County of San Bernardino's programs, so the City is unable to determine how that entity will expand and improve it at this time. Refer to **Table 5-2d** below:

Table 5-2d: City of Hesperia Capabilities Assessment

County Wildfire Mitigation Program			
Hazard	Program	Responsible Agency	Comments
Wildfire	MAST	Multiple	The mission of the MAST is to facilitate a coordinated effort by cities, county, state, federal, and non-profit agencies to provide for protection from wildfire. For more information see County OES website or hazard mitigation plan.
Wildfire	Cal Fire	Cal Fire	Cal Fire provides programs to increase fire safety in high fire hazard severity zones. For more information see County OES website or hazard mitigation plan.
Wildfire	County Fire Hazard Abatement	Fire District	Fire Hazard Abatement works to reduce the potential for an individual's property to be the source of fire and structural ignitability. For more information see County OES website or hazard mitigation plan.

Hazard	Program	Responsible Agency	Comments
Wildfire	Contractor Certification	City of Big Bear Lake Fire Department	This program trains and certifies landscape contractors to provide a qualified workforce to conduct fuels reduction activities on individual properties. For more information see County OES website or hazard mitigation plan.
Wildfire	Southern California Edison (SCE)	Southern California Edison (SCE)	SCE removes dead trees near power lines to reduce fire hazards. For more information see County OES website or hazard mitigation plan.
Wildfire	Wood Shake Roof Replacement	County	This code requires that all Wood Shake Roofs in the Fire Safety Overlay, as defined in the Development Code, ongoing effort. For more information see County OES website or hazard mitigation plan.
Wildfire	Inland Empire Fire Safe Alliance	Inland Empire Fire Safe Alliance	The Alliance was created to act as a forum for all Fire Safe Councils in San Bernardino County. For more information see County OES website or hazard mitigation plan.
Wildfire	Community Wildfire Protection Plans (CWPP)	Fire District	CWPPs are designed to provide a means for a community to have input into and actively participate in the planning, strategy, goals, and objectives of creating a fire safe community. For more information see County OES website or hazard mitigation plan.
Wildfire	Organized Group Volunteer Activities	Fire District	There are several volunteer citizen groups throughout the County that are capable of providing significant resources that are not provided by traditional governmental agency services. For more information see County OES website or hazard mitigation plan.

County Flood Mitigation Programs

Table 5-2e below details flood mitigation programs that were established by San Bernardino County Flood Control District to protect life and property. These programs are typically designed to mitigate flood hazards to life and property, and critical infrastructure. Also, these programs can be used as a public education and information capability for Hesperia. While the following programs can be used by the City of Hesperia to develop and perform mitigation actions, they are the County of San Bernardino's programs, so the City is unable to determine how that entity will expand and improve it at this time.

Table 5-2e: City of Hesperia Capabilities Assessment

County Flood Mitigation Program			
Hazard	Program	Responsible Agency	Comments
Flood	Flood Area Safety Taskforce (FAST)	Flood Control District	The FAST Organization stresses liaison with the communities, provides for community education and information, and places emphases on community and city partnerships. For more information see County OES website or hazard mitigation plan.

Flood	Alluvial Fan Task Force	Alluvial Fan Task Force	The Task Force reviews the state of knowledge regarding alluvial fan floodplains, determine future research needs, and, if appropriate, develop recommendations relating to alluvial fan floodplain management, with an emphasis on alluvial fan floodplains that are being considered for development. For more information see County OES website or hazard mitigation plan.
Flood	StormReady	Flood Control District	San Bernardino County is a StormReady County. For more information see County OES website or hazard mitigation plan. The City of Hesperia also achieved their 6 th renewal of NOAA StormReady recognition, which is valid for (4) years. Recognition will expire on June 20, 2028.

County Public Education and Alert Programs

While the following programs can be used by the City of Hesperia to develop and perform mitigation actions, they are the County of San Bernardino's programs, so the City is unable to determine how that entity will expand and improve it at this time. Refer to **Table 5-2f** below:

Table 5-2f: City of Hesperia Capabilities Assessment			
County Public Education and Alert Programs			
Multi-Hazard	CERT	San Bernardino County (SBC) Office of Emergency Services (OES)	The Community Emergency Response Team (CERT) Program educates people about disaster preparedness and trains them in basic response skills. For more information on the CERT program see County OES website or HMP.
Multi-Hazard	California Disaster Corps	SBC OES	The Disaster Corps is a first-in-the-nation effort to professionalize, standardize and coordinate highly trained disaster volunteers statewide. This program initiative was built collaboratively in partnership with California Volunteers from the ground up through public-private partnerships and with a wide range of subject matter experts. For more information see County OES website or HMP.
Multi-Hazard	TENS	SCB OES	Telephone Emergency Notification Systems (TENS) During an emergency, public safety can be a direct function of the speed and accuracy of the dissemination of information. This is particularly important during emergencies that require evacuations. To that end the Board of Supervisors dedicated General Fund money in 2003 to the implementation of an automated phone dialing system that calls telephones in specific geographic areas of concern. All areas of San Bernardino County have all been preprogrammed so that during an emergency, the specific target group can be notified as quickly as possible. For more information see County OES website or HMP.
Multi-Hazard	ECS	SCB OES	The Emergency Communications Service (ECS) is a volunteer group providing front-line communications, technical and logistical support to the San Bernardino Office of Emergency Services. Their primary mission is to support County Fire, County Government and other local agencies in time of disaster. In addition, ECS has provided telecommunications and event support to other County departments including Public Health, Behavioral Health, Public Works, Pre-School Services, Sheriff's Search and Rescue and other County Departments.

			For more information see County OES website or hazard mitigation plan.
Multi-Hazard	AM Radio	SCB OES	Community Based AM Radio Transmitters are very inexpensive but very effective. The transmitters are very effective for providing information and updates to a community that is either preparing for a community emergency or just had one. As a delivery modality they are extremely reliable because in most all emergencies the AM radio in your car is likely to be operational particularly when the electricity is out in your house.
Multi-Hazard	IPAWS	SCB OES	During an emergency, alert and warning officials need to provide the public with life-saving information quickly. The Integrated Public Alert and Warning System (IPAWS) is a modernization and integration of the nation's alert and warning infrastructure and will save time when time matters most, protecting life and property. Federal, State, Territorial, Tribal, and local alerting authorities can use IPAWS and integrate local systems that use Common Alerting Protocol (CAP) standards with the IPAWS infrastructure. IPAWS provides public safety officials with an effective way to alert and warn the public about serious emergencies using the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), the National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and other public alerting systems from a single interface.

State and Federal Fiscal Resources

While the following programs/grants can be used by the City of Hesperia to develop and perform mitigation actions, they are the State of California/federal programs, so the City is unable to determine how that entity will expand and improve it at this time. Refer to **Table 5-2g** below:

Table 5-2g: City of Hesperia Capabilities Assessment	
State and Federal Fiscal Resources (Potential Funding Programs/Grants from State and Federal Agencies)	
Agency / Grant Name	Potential Programs/Grants
California DWR Proposition 50/84: Integrated Regional Water Management (IRWM) Program.	<i>DWR has a number of IRWM grant program funding opportunities. Current IRWM grant programs include planning, implementation, and DAC and Tribal Involvement Grant Program</i> https://water.ca.gov/work-with-us/grants-and-loans/irwm-grant-programs Proposition 84, the Safe Drinking Water, Water Quality, and Supply, Flood Control, River and Coastal Protection Bond Act, which provides \$1,000,000,000 (P.R.C. §75001-75130) for IRWM Planning and Implementation. CA Dept. of Water Resources' Flood Emergency Response Projects are posted on the webpage at: https://opc.ca.gov/prop-84/
California Housing and Community Development (HCD) Emergency Solutions Grant (ESG) Program	<i>To fund projects that serve homeless individuals and families with supportive services, emergency shelter/transitional housing, assisting persons at risk of becoming homeless with homelessness prevention assistance, and providing permanent housing to the homeless population. The Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) Act of 2009 places new emphasis on assisting people to quickly regain stability in permanent housing after experiencing a housing crisis and/or homelessness.</i> https://www.hcd.ca.gov/grants-and-funding/programs-active/emergency-

Agency / Grant Name	Potential Programs/Grants
	solutions-grants
CalTrans Division of Local Assistance / Safe Routes to School Program	California Dept. of Transportation. Federal funding administered via Caltrans. Local 10% match is the minimum requirement. https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/active-transportation-program
California State Office of Historic Preservation (OHP) / Statewide Historic Preservation Plan	Local Government; OHP's Local Government Unit (LGU) offers guidance and assistance to city and county governments to preserve historic properties including damage from natural hazards.
U.S. Dept. of Energy / Energy Efficiency and Conservation Block Grant Program	<i>Provides funding for weatherization of structures and development of building codes/ordinances to ensure energy efficiency and restoration of older homes.</i> http://www1.eere.energy.gov/wip/eeecbg.html
Dept. of Homeland Security (DHS) / FEMA Grants	http://www.fema.gov/grants
Office for Victims of Crime: Antiterrorism and Emergency Assistance Program (AEAP)	<i>The Office for Victims of Crime supports communities responding to terrorist attacks and cases of mass violence. The AEAP Assistance Programs include crisis response, consequence management, criminal justice support, crime victim compensation and training and technical assistance.</i> https://www.ovc.gov/AEAP/
U.S. Department of State Office of Antiterrorism Assistance (ATA): Antiterrorism Assistance Program	The ATA program trains civilian security and law enforcement personnel from friendly governments in police procedures that deal with terrorism. Since its inception in 1983, the program has trained and assisted over 84,000 foreign security and law enforcement officials from 154 countries. https://www.state.gov/antiterrorism-assistance-program/
California Emergency Management Agency (Cal EMA) / Proposition 1B Grants Programs	The Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, approved by the voters as Proposition 1B at the November 7, 2006 general election, authorizes the issuance of nineteen billion nine hundred twenty-five million dollars (\$19,925,000,000) in general obligation bonds for specified purposes, including grants for transit system safety, security, and disaster response projects. https://ww2.arb.ca.gov/our-work/programs/proposition-1b-goods-movement-emission-reduction-program
California Proposition 1: The Water Bond (AB 1471)	Authorize \$7.545 billion in general obligation bonds for state water supply infrastructure projects, such as public water system improvements, surface and groundwater storage, drinking water protection, water recycling and advanced water treatment technology, water supply management and conveyance, wastewater treatment, drought relief, emergency water supplies, and ecosystem and watershed protection and restoration. The State Water Resources Control Board (State Water Board) will administer Proposition 1 funds for five programs. The estimated implementation schedule for each is outlined in Five Categories: ▪ Small Community Wastewater ▪ Water Recycling ▪ Drinking Water ▪ Stormwater ▪ Groundwater Sustainability

Agency / Grant Name	Potential Programs/Grants
	http://www.waterboards.ca.gov/water_issues/programs/grants_loans/proposition_1.shtml
Assistance to Firefighters Grant Program (AFG); Fire Prevention and Safety (FP&S)	The primary goal of the FP&S Grants is to enhance the safety of the public and firefighters with respect to fire and fire-related hazards. The Grant Programs Directorate administers the FP&S Grants as part of the AFG Program. FP&S Grants are offered to support projects in two activity areas: 1). Fire Prevention and Safety (FP&S) Activity Activities designed to reach high-risk target groups and mitigate the incidence of death and injuries caused by fire and fire-related hazards. 2). Research and Development (R&D) Activity To learn more about how to prepare to apply for a project under this activity, please see the FP&S Research and Development Grant Application Get Ready Guide. https://www.fema.gov/fire-prevention-safety-grants

Budget in Brief

General Fund Resources

The City of Hesperia's General Fund Budget for expenditures is \$48,804,804 for FY 2024-25. The combined Capital Improvement Program Budget for FY 2024-25 is \$33,804,875.

Revenue is anticipated to decrease by 11% (\$15.5 million) overall. The decrease in the FY 2024-25 Budget compared to the prior year's budget is largely due to a decrease in Other City Related Funds and Streets Related revenues from the closeout of the Neighborhood Stabilization Program (NSP) during FY 2022-23 with HUD approved reallocation of CDBG grant activities and Developer Impact Fees (DIF) as outstanding projects have been completed and move towards occupancy. This decrease is offset, in part, by an anticipated increase in General Fund revenues. With that, the General Fund is increasing by 9% or \$4.1 million, which is due to expected increases in Vehicle License Fees, General and Administrative revenue, and Other General Fund revenues.

The Hesperia Water District, which comprises 30% of the overall revenue budget, is expected to remain relatively unchanged from the FY 2023-24 Budget.

The following provides a brief description of the City's top general revenue sources along with the general assumptions used in preparing revenue projections.

Secured Property Tax

Property owners pay a basic tax of 1% of their property's valuation to the County annually. Historically, the City's General Fund receives approximately 1.5 cents of every property tax dollar paid by owners. The FY 2024-25 Budget of \$1.2 million is 7% more than the FY 2023-24 Budget. This increase can be attributed to the growth in assessed valuations and the retention of additional property taxes in recent years.

Sales and Use Tax

Sales Tax is currently 7.75% in the City of Hesperia. The City's share is 1.00% of the 7.75%, with 6.00% going to the State, 0.50% to Measure I, and 0.25% applied to Local Transportation funding. The FY 2024-25 Budget estimate for Sales and Use Tax revenues is \$14.3 million, a slight decrease of 0.6% from the FY 2023-24 Budget of \$14.4 million. It is anticipated that sale prices will remain stable in several industry groups, such as auto and transportation,

restaurants and hotels, and general consumer goods.

Vehicle License Fee (VLF)

The growth of the City's Vehicle License Fees is tied to the City's growth of assessed valuation. The County Assessor will provide notification on July 1, 2024, of the FY 2024-25 assessed valuation. It is estimated that the FY 2024-25 assessed valuation will be a 3.5% increase, which is consistent with past trends as well as reflective of recent development. Currently, the combined FY 2024-25 Budget for VLF revenues estimate is \$12.7 million, which is \$2.6 million or 25.8% above the FY 2021-22 Actual.

Franchise Fees

The City imposes fees on refuse hauling; gas and electric utilities; and cable television companies operating in the City for the use, and wear and tear of the City's right-of-way. The fees range from two to ten percent (2% - 10%) of gross receipts. The FY 2024-25 Budget estimates revenue of \$4.6 million, which is 6% higher than the FY 2023-24 Budget.

Development Related Fees

Overall, Development Related revenue is projected to increase by 16% from the FY 2023-24 Revised Budget and 26% compared to the FY 2023-24 Budget. This overall increase is due to anticipated residential, multi-family, and industrial-related projects occurring in FY 2024-25. Development related revenue comprises 7.8% of the General Fund FY 2024-25 Budget estimates.

Business License

This license is paid by each business operating within the City. The FY 2024-25 Budget estimate of \$843,000 is 2% higher than the FY 2023-24 Budget estimate of \$824,243. The increase in the budget-to-budget comparison is due to an increase in the Business License Fees for a new business as a result of the revised City-wide fee schedule adopted by the City Council at the December 19, 2023, City Council meeting. The increase in the new business fees is partially offset by a decrease in cannabis business licenses renewals.

Transient Occupancy Tax (TOT)

The City of Hesperia municipal code authorizes the application of a 10% tax to the cost of hotel rooms within the City. This is intended to offset the cost of governmental services (streets and public safety) that the visitors use while temporarily staying in the City. Growth is driven by a combination of occupancy, rates, and lodging supply. The FY 2023-24 Budget is expecting a decrease of \$0.3 million or 17% over the FY 2023-24 Revised due to a delinquency of TOT from a hotel, which the City is currently pursuing. It is expected that the revenue source will remain unchanged compared to the FY 2023-24 Budget.

Severe Repetitive Loss (SRL)

According to the National Flood Insurance Program, the City of Hesperia has zero repetitive loss properties within its jurisdiction.

Community Development Block Grants

Overall, this group of funds is projecting an 88% increase in the FY 2024-25 Budget. Non-streets Developer Impact Funds consists of 31% of the group's total FY 2024-25 Budget while CDBG/HOME funds comprise 44% of the total.

- **CDBG-Entitlement** - These grants are received from U.S. Department of Housing and Urban Development (HUD), for the purpose of improving areas of the City and providing housing assistance for low-income families. These revenues are largely derived grant reimbursements, after incurring the expenditures. The FY 2024-25 Budget represents planned projects outlined in the CDBG Action Plan which is submitted to and approved by HUD. The budget-to-budget increase of 98% is primarily due to the drawdown on the grant funds related to the FY 2021-22 and FY 2023-24 Street Improvement Projects.

Other City Related Funds

The City of Hesperia participates in an extensive list of federal and state grant programs, each designed to supplement the City's budget and allow flexibility to increase infrastructure and opportunity capabilities allowing for more efficient use of tax dollars. The six funds in this group include: the Environmental Programs Grant, the Disaster Preparedness Grant, the 2012 Water Rights Debt Service, the 2023 Refunding Lease Debt Service, the Public Art, and the Local Assistance Grant fund. Each of these funds has restrictions, limiting how its money can be spent. The fund with the greatest revenue source in this revenue group is the Environmental Programs Grant, with grant revenue of \$61,021.

Positions, Salaries, and Benefits

In total, the FY 2024-25 budgeted salaries and benefits are expected to increase by 11%, or \$2.9 million, over the FY 2023-24 Budget. The FY 2024-25 Budget includes the addition of the new Street Repair crew, a cost-of-living adjustment (COLA) of 4.0% for both represented and non-represented employees, benefit changes, and pension funding.

The FY 2024-25 Budget increases staffing by 4% or 8.29 full-time equivalent (FTE) from 195.20 FTE in FY 2023-24 to 203.49 FTE.

Hazard Mitigation Strategies and Actions

Mitigation Overview

The intent of the mitigation strategy is to provide Hesperia with a guidebook to future hazard mitigation administration. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. This will help City staff to achieve compatibility with existing planning mechanisms and ensures that mitigation activities provide specific roles and resources for implementation success.

The City of Hesperia's mitigation strategy is derived from the in-depth review of the existing vulnerabilities and capabilities described in previous sections of this plan, combined with a vision for creating a disaster resistant and sustainable community for the future. This vision is based on informed assumptions and recognizes both mitigation challenges and opportunities demonstrated by the goals and objectives outlined below. Each of the mitigation measures identified under each objective includes an implementation plan. The measures were individually evaluated during discussions of mitigation alternatives and conclusions and used as input when priorities were decided. All priorities are based on consensus of the Planning Team.

Mitigation measures are categorized generally for all hazards and specifically for the four high risk hazards facing the City that were extensively examined in the risk assessment

section: earthquake, flood, wildfire, severe weather events, and climate adaptation.

Mitigation 5-Year Progress Report

The following identifies the complete, deferred, and on-going actions or activities from the previously approved 2017 plan.

Mitigation Action	Complete	Deferred	On-going	Comments
Ranchero Road Improvements – Seventh Avenue to Mariposa Road			×	Construction began in December 2021 with utility relocations and will continue into FY 2024-25. The Ranchero Road Corridor Project consists of various improvements to Ranchero Road including the widening of Ranchero Road from two lanes to four lanes in each direction from Seventh Avenue to Mariposa Road. Four culverts were also constructed as part of this project.
Aqueduct Crossing Improvements – Widen Bridge at Main Street		×		Project delayed due to limited funding. The Main Street bridge crosses the California Aqueduct. Main Street is a major arterial roadway and is the primary east/west path of travel to I-15. Widening the aqueduct crossing is required to accommodate the ultimate configuration of Main Street.
Ranchero Road Aqueduct Crossing			×	Right-of-way acquisition began in FY 2018-19 and was completed in fall 2020. Incidental work for the project occurred in FY 2023-24. Construction of the bridge will begin in summer 2024. The Ranchero Road Corridor Project consists of various improvements to Ranchero Road including the construction of a storm drainpipe along the California aqueduct and the development of a detention basin.
FY 2019-20 CDBG Street Improvements	×			Phase I of this project was completed in October 2020. Phase II was completed in September 2022. The project provided improvements to existing dirt roadways or existing paved roadways in serious need of rehabilitation. The project included construction of a reinforced concrete box (RCB) to control the flow of storm waters that flow across the surface of Peach Avenue impeding vehicular traffic during storm events and also include roadway improvements required as a result of constructing the RCB. The location of this work is between Hinton Street and Centennial Street where the Antelope Valley Wash crosses Peach Avenue.
Ranchero Road Street Improvements		×		Preliminary engineering and design commenced in FY 2022-23. Right-of-way acquisition and design will commence in FY 2023-24 with anticipated start of construction in Summer 2026. This is Phase IV of the Ranchero Road Corridor street improvement project. It is anticipated that roadway improvements will generally be within the project limits of Danbury Avenue to I Avenue. Preliminary engineering will need to be conducted to determine the roadway improvements being

				implemented under this project.
Maple Ave Street Improvement Project			×	Preliminary engineering began in Fiscal Year 2022-23 and design will commence in FY 2023-24. Street rehabilitation projects usually include maintenance of existing roadways including methods of crack seal and slurry seal, grind and overlay, or full-depth reconstruction of a section of roadway. Pavement conditions are being evaluated along with methods of rehabilitation for Maple Avenue. The project will likely be phased and boundaries for each phase will be determined after evaluation of pavement conditions and needed improvements.
Cedar Street Roadway Improvements			×	Preliminary engineering and studies will commence in Fiscal Year 2023-24. Upon determining the improvements to be implemented, design of the project may begin. This project will consist of roadway infrastructure improvements on Cedar Street west of Escondido Avenue. Currently, Cedar Street is a dirt road east of Coyote Trail. Preliminary engineering and studies will be conducted to determine the improvements, alignment and project limits to be implemented under this project. This project would be constructed in partnership with San Bernardino County, as a portion of the roadway is within their jurisdictional boundary.
2023 Emergency Storm Repairs	×			Roadway repairs began in FY 2022-23 and will continue into FY 2023-24. Project consisted of emergency roadway repairs required as a result of extremely significant storm events which occurred in the winter of 2023. The storm damage was so extensive it prompted the need for emergency repairs at multiple locations throughout the City on the following streets: Sultana Street, Maple Avenue, Olive Street, Dalscote Street, Peach Avenue, Mariposa Road, Oakwood Avenue, Joshua Street, and Danbury Avenue.
FY 2023-24 CDBG Street Improvements			×	Design and construction is expected to be completed during FY 2023-24. Project will provide improvements to existing dirt roadways or existing paved roadways that are in serious need of rehabilitation. Streets are under review for rehabilitation.
Temecula Avenue – C-01 Retention Basin			×	Right-of-way (ROW) acquisition was completed in Fiscal Year 2019-20. Design will commence in FY 2024-25, with construction following additional funding availability. Installation of retention basin west of the storm drainpipe will regulate the flow of stormwater and allow sediment to settle in the basin rather than dispersing in the storm drain pipe.
Walnut Street – H-01 Retention Basin			×	Right-of-way (ROW) acquisition was completed in October 2019. Design was completed in FY 2021-22 with environmental clearance continuing into FY 2024-25. During initial environmental review, it was determined that additional studies and permitting will be required. Construction will begin upon completion of

			environmental clearance, commencing in spring 2025. Installation of retention basin south of the storm drainpipe will regulate the flow of stormwater and allow sediment to settle in the basin rather than dispersing in the storm drainpipe.
A-04 Drainage Program		×	Pursuit of grant funding opportunities began in Fiscal Year (FY) 2017-18. Seeking grant funding opportunities as well as other funding options will continue throughout the life of the project over the course of several fiscal years. Engineering evaluations and pursuit of right-of-way acquisition will continue in the coming fiscal years as the opportunity arises. Right-of-way acquisition, design, and environmental clearance may begin in phases as funding is secured. The A-04 drainage course is natural regional drainage channel on the Master Plan of Drainage along the western portion of the City, east of Interstate 15, of which reaches nearly Main Street to Eucalyptus Street. This channel conveys large quantities of stormwater through the City. Because of its significance, Main Street near Pyrite is often inundated with flood waters during storm events. Further, several streets and properties north of Main Street experience significant stormwater flows.
Cataba Road Basin		×	The Oro Grande Wash is a natural drainage course on the Master Plan of Drainage situated on the west side of the City between Interstate 15 and Highway 395 just north of Main Street. Installation of a retention basin between the end of Cataba Road and before the California Aqueduct will regulate the flow of stormwater and allow the sediment to settle into the basin rather than overflowing into the overchute.
I-15 Corridor Water		×	This project is on hold pending additional funding. In November 2004, the City annexed the freeway corridor south from Highway 395 to the summit at Oak Hills. As part of this annexation, the City is required to construct the water and sewer infrastructure to serve this corridor.
Reclaimed Water	×		The Hesperia Regional Water Reclamation Plant provides reclaimed, non-potable water supplies. It is estimated that the plant is able to supply 1.0 million gallons per day of recycled water, which can be used for irrigation purposes. This resource provides a distribution system to convey the recycled water to potential users.

Hazard Mitigation Goals

The broad goals identified in Chapter 1 help develop policies to protect community members, ecosystems, and other important assets from hazard events. In reviewing and updating the mitigation goals and actions, it was the HMPC's consensus that the following goals remain in this LHMP update. These goals were developed to ensure consistency with the focused updates to Hesperia's Safety Element, which plays an important role in risk reduction within Hesperia. These goals informed the development of mitigation actions and act as checkpoints to help City staff determine implementation progress.

Emergency Preparedness Goals

Goal 1: A community prepared to withstand and recover from natural disasters and

other emergencies.

Objectives: *Since the City's ultimate post-disaster survival will depend not only on the effectiveness of hazard mitigation and disaster response programs, but also on how quickly and how well the City is rebuilt after a major disaster, the City shall initiate a program for post-disaster planning.*

- A. Consistent with Public Resources Code Section 4290.5, require new development of 30 units or more in Fire Hazard Severity Zones, to have two ingress and egress routes that account for existing and proposed traffic evacuation volumes at buildout. Establish comprehensive procedures for post-disaster planning in affected areas.
- B. Coordinate with emergency responders and Caltrans to maintain potential evacuation routes to ensure adequate capacity, safety, and viability of those routes in the event of an emergency, including making improvements to existing roads to support safe evacuations as needed.
- C. Provide information to members of the public about evacuation concerns, including designated evacuation routes and evacuation plan details, through multiple formats and in multiple languages.
- D. Continue to participate in the countywide Ready San Bernardino County emergency alert system and Storm Ready Program with the National Weather Service, issuing evacuation notices for affected neighborhoods in a timely manner in languages and formats accessible to all residents of Hesperia.
- E. Maintain a FEMA-certified and adopted Local Hazard Mitigation Plan (LHMP). Implement and regularly update the LHMP through a partnership consisting of representatives from all City departments, the San Bernardino County Fire and Sheriff Departments, local quasi-governmental agencies, private businesses, citizens, and other community partners involved in emergency relief and/or community-wide services.
- F. Upon update and certification by the Federal Emergency Management Agency, incorporate the Hesperia Local Hazard Mitigation Plan (LHMP) into this Safety Element by reference, as permitted by California Government Code Section 65302.6.
- G. Continue to support the development of local preparedness plans and multi-jurisdictional cooperation and communication for emergency situations consistent with regional, state (SIMS), and Federal standards, guidelines, and/or recommendations (NIMS).
- H. Maintain mutual aid agreements with neighboring cities and the San Bernardino County Operational Area. Cooperate with other public agencies to ensure adequate medical and other emergency services, including assessing and projecting future emergency service needs.
- I. Ensure to the fullest possible extent that, in the event of a major disaster, including extreme weather events, critical, dependent care, and high-occupancy facilities remain functional.

- J. To the greatest extent possible, locate new essential public and critical facilities, such as police stations, schools, and community centers, outside of mapped hazard zones. If essential facilities must be located in these zones, site and design them to minimize the risk of damage and maintain their operational capacity during and after a hazard. Require all essential and critical facilities in an identified hazard zone (100-year/500-year flood zone, dam inundation zone, fire hazard severity zone, landslide susceptibility zone, or others), to develop disaster response and evacuation plans that address the actions that will be taken in the event of an emergency.
- K. Coordinate with local and regional agencies to establish resilience centers to support residents, in accordance with State guidance. Resilience centers consist of well-used, existing, community-serving facilities that are equipped to provide residents and workers shelter, water, restrooms, showers, and electricity during poor air quality events, extreme heat events, or disasters. Ensure that resilience centers are not in areas at risk from hazards and equitably located to the extent possible, are equipped with renewable energy generation and backup power supplies, and accessible by the City's most vulnerable residents. Work with transit, dial-a-ride, and paratransit services to provide transit services to and from resilience centers for seniors and people with disabilities in the community.
- L. Coordinate with the Victor Valley Transit Authority and community service organizations to assist with evacuation efforts for those, with limited English proficiency, lack access to a vehicle, and/or have limited mobility.
- M. Offer educational programs to promote measures that for residents and businesses should take prior to, during, and after an emergency. Promote public awareness of City emergency response plans, resources, risk reduction, and preparation of emergency kits. Provide emergency preparedness educational programs in languages and formats accessible to all residents and businessowners in Hesperia.
- N. In cooperation with the San Bernardino County Fire Protection District, develop and hold regular Community Emergency Response Team (CERT) training exercises to residents and members of the business community to empower individuals and neighborhoods and increase disaster awareness and emergency response capability.

Programs

Emergency Communications Network - CodeRED

- The primary goal of CodeRED is to deliver emergency alerts to a large number of people within a very short time frame, allowing for swift action in critical situations. This is particularly important during emergencies requiring evacuations. CodeRED is a wireless, web-based mass notification system that is designed to meet the needs of counties and municipalities, for fast, efficient telephone and email notifications to their citizens. The City's CodeRED system has been pre-programmed to allow the City to carry critical information for the safety of the public and during an emergency event and has the capability to notify specific target groups and specific geographic areas as quickly as possible.

Standardized Emergency Management Systems (SEMS)

- The SEMS has been adopted by the City for managing response to multi-agency and multi-jurisdiction emergencies and to facilitate and communications and coordination between all levels of the system and among all responding agencies. SEMS regulations require local governments to provide for five functions: management, operations, planning/intelligence, logistics and finance/administration.

National Incident Management System (NIMS)

- In addition to SEMS, the City recognizes and has incorporated the National Incident Management System (NIMS) into the Emergency Operations Plan, training and exercises. NIMS incorporates the use of the Incident Command System (ICS).
- City staff will coordinate with the San Bernardino County Fire Department and train in National Information Management (NIMS) compliant emergency response procedures to provide assistance as needed during emergency situations. This includes conducting emergency response exercises, including mock earthquake induced fire-scenario exercises, to evaluate and improve, as needed, the City's ability to respond to the multiple ignitions that an earthquake is likely to generate.

City of Hesperia's Emergency Operations Center

- An EOC is a location from which centralized emergency management can be performed during a major emergency or disaster. This facilitates a coordinated response by the Director of Emergency Services, emergency management staff and representatives from organizations who are assigned emergency management responsibilities. The level of EOC staffing will vary with the specific emergency. An EOC provides a central location of authority and information and allows for face-to-face coordination among personnel who must make emergency decisions.

Earthquake

Goal 1: *Minimize injury, loss of life, property damage and economic and social disruption caused by seismic shaking and other earthquake-induced hazards, and by geologic hazards such as slope instability, compressible and collapsible soils and subsidence.*

Objectives: *To protect life and property from impacts associated with seismic related disasters and to identify the potential hazards that can significantly impact the City.*

- A. Require preparation of geotechnical and engineering geological investigations, prepared by State-certified professionals (geotechnical engineers and engineering geologists, as appropriate) following the most recent guidelines by the California Geological Survey and similar organizations, as a condition of approval, for all project proposed in areas identified as within geologic and/or seismic hazard zones. These reports shall provide mitigation measures to reduce those hazards identified at a site to an acceptable level. City Staff that review geotechnical, geological, and structural reports submitted by development applicants, and that review grading operations, shall have the necessary professional credentials and certifications within their area of expertise to conduct these reviews. City Staff or assigned representatives will conduct

routine inspection of grading operations to ensure site safety and compliance with approved plans and specifications.

- B. Require development to minimize grading and other changes to the natural topography to protect public safety and reduce the potential for property damage as a result of geologic hazards. Liquefaction assessment studies shall be conducted as a condition of approval for all projects proposed in areas identified as potentially susceptible to liquefaction identified in the Technical Background Report.
- C. Require preparation of liquefaction assessment studies, as a condition of approval, for all projects proposed in areas identified as potentially susceptible to liquefaction. The studies shall be prepared by State-certified professionals (geotechnical engineers and engineering geologists, as appropriate) following the most recent guidelines by the California Geological Survey.

Encourage owners of unreinforced masonry buildings, to assess the seismic vulnerability of their structures and conduct seismic retrofitting as necessary to improve the buildings' resistance to seismic shaking.

Projects/Programs

Mobile Home Seismic Retrofit Program

- Develop and sponsor projects and programs to brace new or relocated mobile homes to resist earthquakes.

General Earthquake Mitigation Projects

- Promote the San Bernardino County's CERT training to the community to educate residents about disaster preparedness basic response skills, such as fire safety, light search and rescue and disaster medical operations.
- Develop earthquake mitigation public outreach educational programs.
- Retrofit water storage tanks with shut-off valves, flexible fittings and/or other seismic safeguards as appropriate with the most recent water tank design guidelines.

Wildfire

Goal 1: *Minimize injury, loss of life, property damage and economic and social disruption caused by wildland and urban fires.*

Objectives: *Because an integrated approach is needed to coordinate the City's present and future needs in fire protection services in response to fire hazards and risks and to serve as a basis for program budgeting, identification and implementation of optimum cost-effective solutions:*

- A. In cooperation with the San Bernardino County Fire Department, ensure, to the maximum extent possible, that fire services, such as firefighting equipment and personnel, infrastructure, and response times, are adequate for all sections of the city. The City, in cooperation with the San Bernardino County Fire Department, will evaluate citizen notification systems that can be used to warn residents of an approaching wildfire and to provide evacuation instructions.
- B. Encourage new development to occur outside of Very High Fire Hazard Severity Zones. Development that does occur in the Very High Fire Hazard Severity Zones shall demonstrate compliance with applicable state and local building and fire code regulations as well as appropriate mitigation measures and design considerations.

C. The City, in cooperation with the San Bernardino County Fire Department, will ensure, to the Require new developments in Very Fire Hazard Severity Zones (see Figure SF-10, Fire Hazard Severity Zones) to include the following, at a minimum, in applicable permit applications:

- Site plan, planting plan, planting palette, and irrigation plan to reduce the risk of fire hazards and with consideration to site conditions, including slope, structures, and adjacencies.
- Identification of defensible space for all buildings and plans for maintenance plan of defensible space.
- More than one point of ingress and egress to improve evacuation, emergency response, and fire equipment access and adequate water infrastructure for water supply and fire flow that meets or exceeds the standards in the California Fire Safe Regulations. This specifically includes two sections of Title 14 of the CCR, Division 1.5, Chapter 7: Subchapter 2, Articles 1-5 (commencing with section 1270, SRA Fire Safe Regulations); and Subchapter 3, Article 3 commencing with section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations).
- Class A roof materials for new and replacement roofs.
- Location and source of anticipated water supply.
- Fire protection plans for long-term, comprehensive, fuel reduction and management, consistent with California Fire Code, Chapter 49. Fire protection plans shall include a risk analysis, fire response capabilities, fire safety requirements, mitigation measures and design considerations for non-conforming fuel modifications, and wildfire education maintenance and limitations.

D. All new development within the wildland-urban interface or Very High Fire Hazard Severity Zone must comply with fire-resistant landscaping and defensible space requirements. These standards shall meet or exceed Title 14 of the California Code of Regulations (CCR). This specifically includes Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with section 1270, SRA Fire Safe Regulations); and Division 1.5, Chapter 7, Subchapter 3, Article 3 (commencing with section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations). New development shall also comply with the California Public Resource Code Section 4291 (State Defensible Space Requirements) which requires the following:

- Create a defensible space of at least 100 feet around the structure.
- Remove all dead plants, grass, weeds, and other flammable vegetation from the defensible space.
- Remove tree limbs that are within 10 feet of the chimney or stovepipe of the structure.
- Trim tree limbs that are within 6 feet of the ground or within 10 feet of the structure.
- Remove all dead branches, leaves, and other debris from roofs and rain gutters.
- Create horizontal and vertical spacing between trees and shrubs to prevent the spread of fire.
- Space trees at least 10 feet apart from each other.
- Maintain the defensible space throughout the year, not just during fire season.

- Obtain any necessary permits from local fire agencies before conducting any vegetation management activities.
 - Provide and maintain access to the property for emergency vehicles.
- E. Require development, including infrastructure, in areas within the wildland-urban interface or Very High Fire Hazard Severity Zone, to establish and maintain vegetation management practices to reduce the risk of wildfire ignition and spread. These practices shall include fire safe site planning, home hardening, vegetation management, the use of native drought-tolerant and fire-resistant species, and defensible space consistent with State and San Bernardino County Fire Protection District regulations.
- F. In coordination with San Bernardino County Fire Protection District, require that new development be located where fire and emergency services have sufficient capacity to meet project needs or require that they be upgraded to provide necessary capacity as part of the proposed development activities to ensure new development has adequate fire protection.
- G. Require new development to provide adequate access for fire and emergency vehicles and equipment that meets or exceeds State standards found in two parts of the California Fire Safe Regulations (California Code of Regulations, Title 14, Division 1.5, Chapter 7): Subchapter 2, Articles 1-5 (commencing with section 1270, SRA Fire Safe Regulations); and Subchapter 3, Article 3 (commencing with section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations).
- H. Ensure that street signage and building address signage support firefighting crews and emergency response teams in their response to fire hazards or work under low-visibility conditions, including installation of high-visibility signage for streets and building addresses that meet or exceed the standards in the California Fire Safe Regulations (Title 14 of the CCR, Division 1.5, Chapter 7, Articles 2 and 3, Sections 1273 and 1274).
- I. Coordinate with State and regional partners to ensure roadways in fire hazard severity zones are in compliance with current fire safety regulations. The City will maintain City-owned roadways to meet current regulations to the extent feasible and given the absence of other site constraints. These regulations include road standards for evacuation and emergency vehicle access, vegetation clearance, and other requirements of the California Fire Safe Regulations, Title 14 of the CCR, Division 1.5, Chapter 7), specifically Subchapter 2, Articles 1-5 (commencing with section 1270, SRA Fire Safe Regulations); and Subchapter 3, Article 3 (commencing with section 1299.01, Fire Hazard Reduction Around Buildings and Structures Regulations).
- J. Encourage owners of non-sprinklered high-occupancy structures to retrofit their buildings to include automatic fire sprinklers.
- K. Make available and share relevant educational and outreach materials, rebate programs, and incentives with the public to help residents understand appropriate fire mitigation and preparedness activities, such as vegetation management, home hardening, defensible space, evacuation routes, and emergency evacuation

procedures during a fire hazard.

- L. Coordinate with CAL FIRE, San Bernardino County Fire Protection District, and landowners to ensure maintenance of existing fuel breaks, vegetation clearance, and emergency access routes for effective fire suppression on public and private roads, especially evacuation routes.
- M. Develop programs and provide updates, as appropriate, that ensure recovery and redevelopment after a large fire and reduce future vulnerabilities to fire hazard risks through site preparation, redevelopment layout design, fire resistant landscape planning, and fire retarding building design and materials.
- N. Collaborate with the San Bernardino County Fire Protection District to address fire suppression needs for the community.
- O. Coordinate with San Bernardino County Fire Department to provide resources to seniors and physically disabled residents to assist in maintaining defensible space around their homes.
- P. Seek the designation as a Fire Risk Reduction Community through CAL FIRE.

Projects/Programs

- Partner with County of San Bernardino Fire Department to design, develop and construct mitigation programs and facilities that provide training opportunities in support of multi-hazard/multi-jurisdictional emergency incidents.
- Provide adequate fire protection facilities and services in accordance with standards of the City and the County of San Bernardino Fire Department for all development, existing and proposed.
- The County of San Bernardino Fire Prevention Division is responsible for Fire Hazard Abatement (FHA). On a mission of public education and fire prevention FHA works to reduce the potential for an individual's property to be the source of fire and structural ignitability. Failing to maintain one's private property in a fire safe condition was considered to be an individual property rights issue. Now, when a person leaves the vegetation on their property in such a state of disrepair, it is seen as a fire threat and is considered a threat to their neighbor's property rights. To ensure compliance, FHA issues notices of violation to properties that have dry vegetation and flammable green vegetation. If the property owner doesn't comply with the notice, FHA obtains a warrant to go onto the property and abate the fire hazard. FHA staff dedicates a substantial amount of time working to educate non-compliant citizens as to what a significant threat they impose on their neighbors. The goal of the FHA team is to get complete compliance through behavior modification.
- The CERT program educates and trains people in disaster preparedness by teaching basic response skills, such as fire safety, light search and rescue and disaster medical operations. Following a catastrophic event, many public safety resources will be unavailable and/or overwhelmed. Utilizing their CERT training, CERT members can

assist themselves, their families and others in the neighborhood or workplace until professional first responders arrive.

Flood

Goal: *Minimize injury, loss of life, property damage and economic and social disruption caused by flooding and inundation hazards.*

Objectives: *Because the City has entered into an agreement to participate in the National Flood Insurance Program which provides flood insurance within designated flood plains, the following actions shall be implemented:*

- A. Require preparation of hydrological studies prepared by a State-certified engineer with expertise in this area, as a condition of approval, for all projects proposed in the 100-year or 500-year floodplain. These studies shall assess the impact that the new development will have on the flooding potential of existing development down-gradient. The studies shall provide mitigation measures to reduce this impact to an acceptable level. Single family residences shall be exempt, except for infill lots with natural drainage courses, washes, master plan of drainage are subject to providing hydrology reports. The City shall continue participation in the National Flood Insurance Program and require that all owners of properties located within the 100-year floodplain (Zones A and AE), and repeat-flood properties in the 500-year floodplain (Zone X) to purchase and keep flood insurance for those properties.
- B. Participate in the National Flood Insurance Program and require that all owners of properties located within the 100-year floodplain, and repeat-flood properties in the 500-year floodplain purchase and keep flood insurance for those properties.
- C. Maintain, and improve where needed, the storm drain systems, with an emphasis on those areas of the City that flood repeatedly. This entails maintaining and regularly cleaning the storm drains and other flood-control structures in low-lying areas, as necessary, such that floodwaters can be effectively conveyed away from structures. Explore the construction of additional drainage channels where necessary.
- D. Coordinate with the Hesperia Recreation and Park District to explore the use of floodplains as parks, nature trails, equestrian parks, golf courses, or other types of recreational facilities that can withstand periodic inundation.
- E. Encourage new development and existing property owners to slow or absorb floodwaters, including through installation of permeable pavements and green infrastructure.
- F. Coordinate with the Hesperia Recreation and Park District and surrounding jurisdictions to conduct habitat restoration projects in passive recreation areas to improve the capacity of local ecosystems to absorb or slow floodwaters.
- G. Prepare to respond to a potential dam failure from Cedar Springs Dam, Mojave Dam, and Lake Arrowhead Dam.

Projects/Programs

1. Master Plan Drainage Facility H-01, Bandicoot Basin – Although a San Bernardino County project, the 920 ac-ft basin will attenuate flood waters – reducing peak flow rates nearly 50% - and accumulates sediments loads while conversing local storm water runoff. The project will include excavation of a basin together with inlet/outlet facilities and an emergency spillway.
2. Master Plan Drainage Facility A-04, Escondido Basin – the 330 ac-ft basin will attenuate flood waters – reducing peak flow rates nearly 80% - and accumulates sediments loads while conversing local storm water runoff. The project will include excavation of a basin together with inlet/outlet facilities and an emergency spillway.
3. Master Plan Drainage Facility H-01, Walnut Basin – the 37 ac-ft basin will attenuate flood waters and accumulates sediments loads while conversing local storm water runoff. The project will include excavation of a basin together with inlet/outlet facilities and an emergency spillway connecting to already improved downstream storm drain system.
4. Master Plan Drainage Facility C-01, Temecula Basin – the 39 ac-ft. multiple basin project will attenuate flood waters and accumulates sediments loads while conversing local storm water runoff. The project will include excavation of a basin together with inlet/outlet facilities and an emergency overflow facility connecting to already improved downstream storm drain system.
5. Cataba Road Basin – The Oro Grande Wash is a natural drainage course on the Master Plan of Drainage situated on the west side of the City between I-15 and Highway 395 just north of Main St. Stormwater runoff from various tributaries discharge into an earthen channel at Cataba Rd. and continues north where it meets the Oro Grande Wash that intersects with a chute over the California Aqueduct. The overchute conveys stormwater over the aqueduct. Because of the significant quantity of sediment that reaches the chute, the State of California Department of Water Resources has asked the City to mitigate the transportation of sediment caused by storm flows. Installation of a retention basin between the end of Cataba Rd. and before the California Aqueduct will regulate the flow of stormwater and allow the sediment to settle into the basin rather than overflowing the chute.

National Flood Insurance Program

- Hesperia participates in the National Flood Insurance Program (NFIP), which was created by Congress in 1968 to provide flood insurance at subsidized rates to homeowners who live in flood-prone areas. Individual communities have the option to participate in the NFIP, although property owners who live in nonparticipating communities with flood-prone areas will not be able to buy flood insurance through the program. Additionally, nonparticipating communities with mapped floodplains cannot receive federal grants or loans for development activities in flood-prone areas and cannot receive federal disaster assistance to repair flood-damaged buildings in mapped floodplains.

Initial Flood Insurance Rate Map	09/29/1989
NFIP Participation Date	10/19/1989
Current Effective Map Date	09/02/2016

Although participation is not a dedicated hazard mitigation action, Hesperia will continue to participate in NFIP and comply with the program's requirements through continued enforcement of the City's Floodplain Management Regulations (Municipal Code Chapter 8.28: Flood Hazard Protections Regulations).

Adoption of Minimum Floodplain Management Criteria, and Implementation and Enforcement of Floodplain Management Regulations	Title 8 – Health and Safety, Chapter 8.28 – Flood Hazard Protections Regulations https://library.municode.com/ca/hesperia/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.28FLHAPRRE
Designee to Implement NFIP	Section 8.28.040 – Administration https://library.municode.com/ca/hesperia/code_s/code_of_ordinances?nodeId=TIT8HESA_CH8.28FLHAPRRE_8.28.040AD The city engineer, or their designee, is hereby appointed to administer, implement and enforce this chapter by granting or denying development permits in accord with its provisions.
Implementation of Substantial Improvement/ Substantial Damages Provisions	Section 8.28.050 – Provisions for Flood Hazard Reduction https://library.municode.com/ca/hesperia/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.28FLHAPRRE_8.28.050PRFLHARE
*Ordinances are hyperlinked	

These regulations apply to all areas of special flood hazards, areas of flood-related erosion hazards and areas of mudslide (i.e., mudflow) hazards within the City. The purpose of these regulations is to promote public health, safety, and general welfare and to minimize public and private losses due to flood conditions. This chapter also includes methods of reducing flood losses, the basis for establishing flood hazard areas, development permit requirements, duties and responsibilities of the City's Floodplain Administrator, the development standards that apply in flood-prone areas and required documentation and analysis for construction within these areas. As part of the City's efforts to comply with NFIP, Hesperia will make updates and revisions to these regulations periodically to ensure they are most effective at minimizing the threat of harm from flood events. These updates and revisions may be promoted by changes in local demographics, shifts in land use, changes to flood regimes such as frequency and intensity of flood events, and other factors that may warrant municipal action. The City will also continue to incorporate any changes to the locations and designations of mapped floodplains into future planning documents, including future updates to this Plan.

The City of Hesperia contains Special Flood Hazard Areas that include 88 policies in

force, with approximately \$74,761 in premiums. Total insurance coverage for these policies amounts to \$22,128,000. According to FEMA, from July 7, 1991 to August 20, 2023 a total of 20 closed paid losses have occurred totaling \$644,126; there was (1) substantial damage loss, however, no severe repetitive loss properties were identified by FEMA.

Climate Change/Extreme Weather (Severe Winds, Extreme Heat, Severe Storms)

Goal: *A resilient community able to adapt to climate change hazards.*

Objectives: *To protect life and property from impacts associated with extreme weather events.*

- A. Promote water conservation measures in all public and private development.
- B. Work with regional water providers to implement extensive water conservation measures and ensure sustainable water supplies, including for fire suppression needs.
- C. Conduct regular public awareness campaigns on resilience initiatives related to poor air quality, drought, extreme heat, severe weather, water conservation, and human health hazards.
- D. Coordinate with the Victor Valley Transit Authority to increase shading and use of heat-mitigating materials on pedestrian walkways and at transit stops.
- E. Develop and maintain an Extreme Heat Action Plan in accordance with State guidance.
- F. Promote the use of drought-tolerant green infrastructure, including landscaped areas, as part of cooling strategies in public and private spaces.
- G. Encourage local businesses to develop workplace heat safety protocols and provide training for employers and employees in heat-exposed occupations.
- H. Improve the resiliency of City-owned structures to severe weather events and support homeowners and business owners to improve the resilience of their buildings and properties through retrofits, weatherization, and other improvements.
- I. Coordinate with the City's utility service providers to upgrade, harden, and/or underground their facilities and infrastructure in Hesperia, to improve their survivability of a natural or human-caused hazard event.
- J. Participate in regional partnerships that support increased community resilience, such as the Inland Southern California Climate Collaborative.
- K. Coordinate with the San Bernardino County Department of Public Health and health-care providers to support free or reduce-cost medical care for low-resourced households.

- L. Coordinate with local agencies, healthcare providers, and community-based organizations that provide resources to help residents respond to poor air quality events (e.g., transportation to resilience centers and supply free N95 masks).
- M. Work with local contractors and community based organizations to help low-income households and community service providers obtain or upgrade indoor air filtration systems.

Programs

1. Emergency Management Institute – Conducts a series of Virtual Tabletop Exercises using a virtual platform to reach community-based training audiences around the country to provide a virtual forum for disaster training. The program process involves key personnel from emergency management reviewing pre-packaged exercise materials and convening for a 4+ hour tabletop exercise discussion of a simulated disaster scenario. The event allows the group to assess current plans, policies, and procedures while learning from other participants. On September 25, 2024, the City of Hesperia participated in the Winter Weather (Freezing Rain) exercise. On November 14, 2024, the City of Hesperia also participated in a Tabletop Exercise in Adelanto Stadium on Local Supply Chain Resilience.

Evaluation of Potential Hazard Mitigation Actions

Based on the hazard profiles, threat assessment, capabilities assessment, community survey results, discussions among HMPC members, and existing best practices, a set of potential mitigation actions was developed and then evaluated based on the following criteria:

- FEMA requires local governments to evaluate the monetary and non-monetary costs and benefits of potential mitigation actions. Although local governments are not required to assign specific dollar values to each action, they should identify the general size of costs and benefits.
- The HMPC may elect to include measures with a high cost or low benefits, but such measures should be clearly beneficial to the community and an appropriate use of local resources.

In addition, FEMA directs local governments to consider the following questions as part of the financial analysis:

- What is the frequency and severity of the hazard type to be addressed by the action, and how vulnerable is the community to this hazard?
- What impacts of the hazard will the action reduce or avoid?
- What benefits will the action provide to the community?

The HMPC also chose to review and revise the potential hazard mitigation actions using a third set of criteria (Table 5-3), known as STAPLE/E (Social, Technical, Administrative, Political, Legal, Economic, and Environmental). The HMPC did not formally assess every potential mitigation action under all STAPLE/E criteria but used the criteria as guidance.

Prioritization Process

As part of the mitigation actions development and review, the HMPC also prioritized the actions. The prioritization efforts looked at the risks and threats from each hazard, financial costs and benefits, technical feasibility, and community values, among others.

Table 5-3: STAPLE/E Criteria

Issues	Criteria
Social	• Is the action socially acceptable to community members? • Would the action mistreat some individuals? • Is there a reasonable chance of the action causing a social disruption?
Technical	• Is the action likely to reduce the risk of the hazard occurring, or will it reduce the hazard's effects? • Will the action create new hazards or make existing hazards worse? • Is the action the most useful approach for the City to take, given the City and community members' goals?
Administrative	• Is the action likely to reduce the risk of the hazard occurring, or will it reduce the hazard's effects? • Will the action create new hazards or make existing hazards worse? • Is the action the most useful approach for the City to take, given the City and community members' goals?
Political	• Is the action politically acceptable to City officials and other relevant jurisdictions and political entities? • Do community members support the action?
Legal	• Does the City have the legal authority to implement and enforce the action? • Are there potential legal barriers or consequences that could hinder or prevent the implementation of the action? • Is there a reasonable chance that the implementation of the action would expose the City to legal liabilities? • Could the action reasonably face other legal challenges?
Economic	• What are the monetary costs of the action, and do the costs exceed the monetary benefits? • What are the start-up and maintenance costs of the action, including administrative costs? • Has the funding for action implementation been secured, or is a potential funding source available? • How will funding the action affect the City's financial capabilities? • Could the implementation of the action reasonably burden the City's economy or tax base? • Could there reasonably be other budgetary and revenue impacts to the City?
Environmental	• What are the monetary costs of the action, and do the costs exceed the monetary benefits? • What are the start-up and maintenance costs of the action, including administrative costs? • Has the funding for action implementation been secured, or is a potential funding source available? • How will funding the action affect the City's financial capabilities? • Could the implementation of the action reasonably burden the City's economy or tax base? • Could there reasonably be other budgetary and revenue impacts to the City?

Public Input for Mitigation Priorities

Public input is an essential step in validating the prioritization of mitigation actions. Valuable information was gathered regarding the perception of hazard threats to residents through a community survey. A summary of the results can be found in

Appendix B.

The community survey found that 75% of respondents had experienced a disaster within the City of Hesperia. The top three hazards of concern for respondents were Extreme Weather (High winds, Extreme Heat Days, Severe Rainstorms), Flooding, and there was a draw between Earthquake/Geologic Hazards and Wildfires. These responses confirmed that the concerns identified by City staff during the planning process were similar to residents that responded.

The survey also investigated whether residents had taken any action to protect themselves from natural hazards. The survey indicated that 18.52% were very confident, 25.93% were somewhat confident, 25.93% were unconfident, 7.41% were not at all confident, and 22.22% were unsure whether mitigating measures were sufficient. The survey asked how the City could help residents better prepare for a disaster, 96.30% of the respondents indicated that the City should provide effective emergency notifications and communication. This community feedback was taken into consideration when prioritizing mitigation actions.

A second survey was released to the public and to stakeholders, and it was determined that respondents continued to be concerned about Wildfires (82.35%), Extreme Weather (64.71%), and Flooding (47.06%). For this survey there was a draw between Earthquake (41.18%) and Human Caused Hazards (41.18%).

When asked about community-wide activities that would help reduce vulnerability to hazards, 94.12% of respondents agreed that prevention through administrative or regulatory actions that influence the way land is developed and buildings are built is very important. Equally important to respondents (94.12%) was emergency services, such as actions that protect people and property during and immediately after a hazard event. This feedback was also taken into consideration when prioritizing mitigation actions.

Cost Estimates

To meet the cost estimation requirements of the hazard mitigation planning process, the HMPC identified relative cost estimates based on their understanding of the mitigation action and their experience developing identical or similar programs/implementing projects. Three cost categories based on the City's typical cost criteria were used for budgeting purposes:

- Low cost (\$): \$100,000 or less
- Medium cost (\$\$): \$100,001 to \$999,999
- High cost (\$\$\$): Greater than \$1,000,000

Based on the criteria and evaluation processes used during Plan development, the HMPC prepared a prioritized list of mitigation actions to improve Hesperia's resilience to hazard events. Table 5-4 lists the mitigation actions, the prioritization of each action, and other details related to implementation. In addition to mitigation action and strategies, several preparedness activities were identified and denoted with the letter "PA."

Timeframes

Table 5-4 includes timeframes that provide general timing durations due to the nature of the mitigation actions identified by the City. The following timeframes are used based on the following conditions:

- Ongoing (Annually): Actions that identify this timeframe are the types of actions that City staff would conduct on an annual basis.
- In Progress (As Needed): Actions identified under this timeframe involve activities that City staff will undertake in response to emerging needs or requests.
- Future Planning Process: Actions identified within this timeframe are considered low-priority actions that the City would like to continue to track but does not feel they would be able to implement in the current planning implementation timeframe.

Table 5-4: Mitigation Action Implementation Plan

Action No.	Mitigation Action Description	Responsible Department(s)	Relative Cost	Timeframe	Potential Funding Source	Priority
Preparedness Activities						
PA 1.1	Conduct regular emergency preparedness drills and training exercises for City staff.	City Manager's Office	\$	Ongoing (Annually)	General Fund/ Grants	N/A
PA 1.2	Continue agreements with local school districts to ensure that school facilities can act as evacuation sites during major emergencies.	City Manager's Office	\$	In Progress (As Needed)	General Fund/ Grants	N/A
PA 1.3	Partner with SBC Fire to promote CERT training to the community to educate residents about disaster preparedness on basic response skills, such as fire safety, light search and rescue, and disaster medical operations.	City Manager's Office, San Bernardino County Fire District	\$	Initiate by 2025-2026	General Fund/ Grants	N/A
PA 1.4	Continue to ensure effective emergency notifications through multiple media formats, about pending, imminent, or ongoing emergency events. Ensure that information is accessible to persons with access and functional needs.	City Manager's Office	\$	In Progress (As Needed)	General Fund/ Grants	N/A
PA 1.5	Ensure that community evacuation plans include provisions for community members who do not have access to private vehicles or are otherwise unable to drive.	City Manager's Office, SBC Sheriff's Dept.	\$\$	Initiate by 2025-2026	General Fund/ Grants	N/A
PA 1.6	Ensure that the City has an adequate supply of sandbags for residents and businesses, including prefilled sandbags for individuals who may be unable to fill them on their own.	City Manager's Office, Public Works	\$	In Progress (As Needed)	General Fund/ Grants	N/A
Multiple Hazards						
MH 1.1	Conduct routine updates to Facility Conditions Assessments for City-owned infrastructure and other utilities and coordinate with other agencies to ensure inspections of other important infrastructure.	Public Works, Facilities, Engineering	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium

MH 1.2	Repair, as feasible, all major deficiencies discovered by inspections to prevent collapse, failure, or damage in the event of a natural disaster.	Public Works, Facilities, Engineering, Building and Safety	\$\$\$	Initiate by 2026	General Funds, BRIC/HMPG Grants, Other Grants	High
MH 1.3	Work closely with community groups to increase awareness of hazard events and resiliency opportunities among socially vulnerable community members, including those experiencing homelessness.	City Manager's Office, Community	\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
MH 1.4	Avoid building new City-owned key facilities in mapped hazard areas. If no feasible sites outside mapped areas exist, ensure that such facilities are hardened against hazards beyond any minimum building requirements/ mitigation standards.	Public Works, Engineering, Building and Safety	\$	In Progress (As Needed))	General Funds, BRIC/HMPG Grants, Other Grants	Low
MH 1.5	Closely monitor changes in the boundaries of mapped hazard areas resulting from land use changes or climate change and adopt new mitigation actions or revise existing ones to ensure continued resiliency.	Community Development, Planning	\$	In Progress (As Needed))	General Funds, BRIC/HMPG Grants, Other Grants	Low
MH 1.6	Integrate policy direction and other information from this Plan into other City documents, including the General Plan, Emergency Operations Plan, and Capital Improvements Program.	All Departments	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
MH 1.7	Monitor funding sources for hazard mitigation activities.	City Manager's Office	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
MH 1.8	Integrate climate change mitigation and adaptation information and analysis into future LHMP updates and other City Plans, where practicable.	City Manager's Office, Planning	\$	Initiate 2024-2025	General Funds, BRIC/HMPG Grants, Other Grants	Low
Earthquake/Geologic Hazards						
EQ 1.1	Develop a Public Information Program (PIP) for earthquake awareness and mitigation. The program should focus on reducing injury and property damage and encourage partnerships, activities, and products to educate the public about earthquake science and motivate residents and businesses to prepare for earthquakes.	City Manager's Office	\$	Initiate 2025-2026	General Funds, BRIC/HMPG Grants, Other Grants	Medium

EQ 1.2	Conduct an educational campaign to encourage simple earthquake mitigation activities (i.e., water heater straps, furniture anchoring, gas shut-off tools, and other emergency supplies) to reduce strain on City resources during an event.	City Manager's Office	\$	Initiate 2025-2026	General Funds, BRIC/HMPG Grants, Other Grants	Medium
EQ 1.3	Periodically update the seismically vulnerable buildings and structures inventory and pursue funding to incentivize retrofits of these structures to be more resilient to earthquakes in accordance with State and Local building standards and Historic Preservation Program requirements. Assess soft story conditions for apartment buildings constructed prior to 1980.	Building and Safety	\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Low
EQ 1.4	Encourage the installation of resilient (seismically appropriate) piping for new or replacement pipelines in close coordination with utility providers.	Public Works	\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
EQ 1.5	To the extent feasible, construct all new and significantly retrofitted City-owned facilities to remain operational in the event of a major earthquake.	Public Works, Facilities, Engineering	\$\$\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Low
EQ 1.6	Improve local understanding of the threat of a major earthquake by conducting a citywide scenario modeling potential loss of life and injuries, destroyed and damaged structures, and interruptions to key services.	City Manager's Office, Public Works	\$	Initiate by 2026	General Funds, BRIC/HMPG Grants, Other Grants	Medium
EQ 1.7	Monitor groundwater elevations in areas where liquefaction and subsidence may be a concern.	Public Works	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
Flood						
FL 1.1	Identify project candidates and sources of funding to improve drainage conveyance, and/or mitigate peak flow in local tributaries.	Public Works	\$\$\$	Future Planning Process	General Funds, BRIC/HMPG Grants, Other Grants	Medium
FL 1.2	Identify potential flood improvements that reduce inundation from both storm flows and potential dam inundation effects.	Public Works, California Division of Safety of Dams, USACE	\$	Initiate by 2026	General Funds, BRIC/HMPG Grants, Other Grants	Medium
FL 1.3	Conduct frequent cleanings of storm drain intakes, especially before and	Public Works	\$	Ongoing (Annually)	General Funds,	Low

	during the rainy season.				BRIC/HMPG Grants, Other Grants	
FL 1.4	Track areas where ponding frequently occurs during heavy rainfall and monitor intersections that frequently flood during rain events and identify improvements to alleviate these conditions.	Public Works, Engineering	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	High
Wildfire						
WF 1.1	Partner with the County of San Bernardino Fire Department to design, develop and construct mitigation programs and facilities that provide training opportunities in support of fuel reduction in open space, creeks, around critical facilities, and urban/wildland areas.	San Bernardino County Fire District	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
WF 1.2	Improve and enforce weed abatement policies, by enhancing public education and encouraging the public to take responsibility for wildfire protection.	Code Enforcement	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
WF 1.3	Provide information and resources to residents city-wide on ways to improve resilience to home fires, including procedures for fallen powerlines.	San Bernardino County Fire District	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
Extreme Weather (High Winds, Extreme Heat, Severe Rainstorms)						
EW 1.1	Conduct outreach to residents and businesses before the severe winds/weather (Santa Ana Wind events) on proper tree maintenance and identification of potentially hazardous trees. (Hazards address: High winds, Severe Weather/Storm)	City Manager's Office/PIO	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
EW 1.2	Evaluate long term capacity of designated cooling centers to provide sufficient relief from extreme heat. Assess the need to expand services as the frequency, length, and severity of future heatwaves potentially change as a result of climate change. (Hazards addressed: Extreme Heat)	City Manager's Office	\$	Future Planning Process	General Funds, BRIC/HMPG Grants, Other Grants	Low
EW 1.3	Promote early notification to residents in advance of a severe weather event, focusing on effective communication methods with vulnerable populations to better ensure they have adequate time to prepare. (Hazards Addressed: Severe Weather)	City Manager's Office, SBC Sheriff's Dept., San Bernardino County Fire District	\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Medium

EW 1.4	Conduct routine updates to Facility Conditions Assessments for City-owned infrastructure and repair, as feasible, any storm related damages.	Public Works, Facilities and Maintenance	\$\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
Dam Inundation						
DI 1.1	Coordinate with dam owners/operators, state and federal agencies to collectively identify threats to the City and the region and identify ways to retrofit/strengthen the dams under their control.	City Manager's Office, California Division of Safety of Dams, USACE	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
DI 1.2	Implement an early warning system/protocol that notifies downstream communities in the event of a potential dam failure incident.	City Manager's Office, California Division of Safety of Dams, USACE	\$\$	Future Planning Process	General Funds, BRIC/HMPG Grants, Other Grants	Low

2017 Mitigation Action Progress

The HMPC reviewed the mitigation actions from the 2017 plan. Since the preparation of the previous plan, City staff has recognized that many of the actions needed to be refined and integrated into the proposed mitigation actions matrix in **Table 5-4**. **Table 5-5** includes a summary of how these existing actions were incorporated into the proposed mitigation actions within the plan.

Table 5-5: 2017 Mitigation Action Progress

Hazard	Mitigation Action	Description / Background	Integration into Table 5-3
Multiple Hazards (Supersedes previous section titled All Hazards or "AH 1.1")	Routine Updates and Coordination for Facility Conditions Assessments and Infrastructure Inspections	Conduct routine updates to Facility Conditions Assessments for City-owned infrastructure and other utilities and coordinate with other agencies to ensure inspections of other important infrastructure.	This action was incorporated into Mitigation Action MH 1.1.
	Addressing Major Deficiencies to Prevent Infrastructure Collapse and Damage	Repair, as feasible, all major deficiencies discovered by inspections to prevent collapse, failure, or damage in the event of a natural disaster.	This action was incorporated into Mitigation Action MH 1.2. 2017 EQ1.4 action was removed as MH 1.2 covers City infrastructure (including water storage tanks).
	Enhancing Hazard Awareness and Resiliency for Socially Vulnerable Community Members	Work closely with community groups to increase awareness of hazard events and resiliency opportunities among socially vulnerable community members, including those experiencing homelessness.	This action was incorporated into Mitigation Action MH 1.3. 2017 FL 1.2 action was removed, as MH 1.3 covers all hazards, including flood.

	Strategic Planning for City-Owned Facilities in Hazard Areas: Site Selection and Hardening Measures	Avoid building new City-owned key facilities in mapped hazard areas. If no feasible sites outside mapped areas exist, ensure that such facilities are hardened against hazards beyond any minimum building requirements/ mitigation standards.	This action was incorporated into Mitigation Action MH 1.4.
	Monitoring Hazard Area Boundaries and Adapting Mitigation Strategies for Enhanced Resiliency	Closely monitor changes in the boundaries of mapped hazard areas resulting from land use changes or climate change and adopt new mitigation actions or revise existing ones to ensure continued resiliency.	This action was incorporated into Mitigation Action MH 1.5.
	Integrating Policy Direction and Information into City Plans and Documents	Integrate policy direction and other information from this Plan into other City documents, including the General Plan, Emergency Operations Plan, and Capital Improvements Program.	This action was incorporated into Mitigation Action MH 1.6.
	Tracking Funding Opportunities: Supporting Hazard Mitigation through Strategic Monitoring	Monitor funding sources for hazard mitigation activities.	This action was incorporated into Mitigation Action MH 1.7.
	Incorporating Climate Change Mitigation and Adaptation into LHMP Updates and City Planning	Integrate climate change mitigation and adaptation information and analysis into future LHMP updates and other City Plans, where practicable.	This action was incorporated into Mitigation Action MH 1.8. This item replaces 2017 CC 1.1.
Earthquake	Creating a Public Information Program for Earthquake Awareness and Mitigation	Develop a Public Information Program (PIP) for earthquake awareness and mitigation. The program should focus on reducing injury and property damage and encourage partnerships, activities, and products to educate the public about earthquake science and motivate residents and businesses to prepare for earthquakes.	This action was incorporated into Mitigation Action EQ 1.1.
	Educational Campaign for Simple Earthquake Mitigation Activities and Resource Reduction	Conduct an educational campaign to encourage simple earthquake mitigation activities (i.e., water heater straps, furniture anchoring, gas shut-off tools, and other emergency supplies) to reduce strain on City resources during an event.	This action was incorporated into Mitigation Action EQ 1.2.
	Updating Seismic Vulnerability Inventory and Funding Retrofits for Resilient Building	Periodically update the seismically vulnerable buildings and structures inventory and pursue funding to incentivize retrofits of these structures to be more resilient to earthquakes in accordance with State and Local building standards and Historic Preservation Program requirements. Assess soft story conditions for apartment buildings constructed prior to 1980.	Mitigation Action EQ 1.3 replaces 2017 EQ 1.1. The updated mitigation action would also include mobile home structures; therefore the 2017 EQ 1.3 mitigation action was removed.
	Optimizing Seismic Resilience: Coordinating with Utility Providers for	Encourage the installation of resilient (seismically appropriate) piping for new or replacement pipelines in close coordination with utility providers.	This action was incorporated into Mitigation Action EQ 1.4.

	Enhanced Piping Systems		
	Ensuring Earthquake Resilience: Constructing City Facilities for Continued Operation in Major Quakes	To the extent feasible, construct all new and significantly retrofitted City-owned facilities to remain operational in the event of a major earthquake.	This action was incorporated into Mitigation Action EQ 1.5.
	Enhancing Earthquake Awareness: Citywide Scenario Modeling for Risk Assessment and Preparedness	Improve local understanding of the threat of a major earthquake by conducting a citywide scenario modeling potential loss of life and injuries, destroyed and damaged structures, and interruptions to key services.	This action was incorporated into Mitigation Action EQ 1.6.
	Monitoring Groundwater Levels to Mitigate Liquefaction and Subsidence Risks	Monitor groundwater elevations in areas where liquefaction and subsidence may be a concern.	This action was incorporated into Mitigation Action EQ 1.7.
Flood	Enhancing Flood Resilience: Identifying Improvements to Mitigate Storm and Dam Inundation Risks	Identify potential flood improvements that reduce inundation from both storm flows and potential dam inundation effects.	This action was incorporated into Mitigation Action FL 1.2.
	Maintaining Storm Drain Efficiency: Routine Cleanings Before and During Rainy Seasons	Conduct frequent cleanings of storm drain intakes, especially before and during the rainy season.	This action was incorporated into Mitigation Action FL 1.3.
	Addressing Flooding: Monitoring Ponding and Intersection Flooding to Identify Improvement Opportunities	Track areas where ponding frequently occurs during heavy rainfall and monitor intersections that frequently flood during rain events and identify improvements to alleviate these conditions.	This action was incorporated into Mitigation Action FL 1.4.
Wildfire	Empowering Residents: Citywide Resources for Enhancing Home Fire Resilience and Safety Measures for Fallen Powerlines	Provide information and resources to residents city-wide on ways to improve resilience to home fires, including procedures for fallen powerlines.	This action was incorporated into Mitigation Action WF 1.3.
	Maintain and improve fire protection facilities for all development.	Provide adequate fire protection facilities and services in accordance with standards of the City and the County of San Bernardino Fire Department for all development; existing and proposed.	This was 2017 WF 1.2 action. This item was removed as it is the City's intent to provide adequate fire protection facilities and services for all development.
Extreme Weather (New)	Pre-Wind Event Outreach: Educating Residents and Businesses on Tree Maintenance and Hazard Identification	<i>Conduct outreach to residents and businesses before the severe winds/weather (Santa Ana Wind events) on proper tree maintenance and identification of potentially hazardous trees.</i> (Hazards address: High winds, Severe Weather/Storm)	This action was incorporated into Mitigation Action EW 1.1.

	Assessing Cooling Center Capacity: Evaluating and Expanding Services to Address Future Heatwave Challenges	Evaluate long term capacity of designated cooling centers to provide sufficient relief from extreme heat. Assess the need to expand services as the frequency, length, and severity of future heatwaves potentially change as a result of climate change. (Hazards addressed: Extreme Heat)	This action was incorporated into Mitigation Action EW 1.2.
	Enhancing Severe Weather Preparedness: Early Notification Strategies for Effective Communication with Vulnerable Populations	<i>Promote early notification to residents in advance of a severe weather event, focusing on effective communication methods with vulnerable populations to better ensure they have adequate time to prepare.</i> (Hazards Addressed: Severe Weather)	This action was incorporated into Mitigation Action EW 1.3.
	Routine Facility Condition Assessments: Updating and Repairing City Infrastructure Post-Storm	Conduct routine updates to Facility Conditions Assessments for City-owned infrastructure and repair, as feasible, any storm related damages.	This action was incorporated into Mitigation Action EW 1.4.
Dam Inundation (New)	Collaborative Dam Safety: Coordinating with Stakeholders to Identify Threats and Retrofit Dams for Regional Resilience	Coordinate with dam owners/operators, state and federal agencies to collectively identify threats to the City and the region and identify ways to retrofit/strengthen the dams under their control.	This action was incorporated into Mitigation Action DI 1.1.
	Developing an Early Warning System: Protocols for Alerting Downstream Communities in Case of Dam Failure	Implement an early warning system/protocol that notifies downstream communities in the event of a potential dam failure incident.	This action was incorporated into Mitigation Action DI 1.2.

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Chapter 6 – Plan Maintenance

For this LHMP to remain effective and useful to the community of Hesperia, it must remain up to date. An updated version of the LHMP will continue to guide Hesperia hazard mitigation activities and help keep the City eligible for state and federal hazard mitigation funding. The HMPC has structured this LHMP so individual sections can easily be updated as new information becomes available and as new needs arise, helping to keep this Plan current.

This chapter discusses how to update this Plan to keep it in compliance with applicable state and federal requirements. This chapter also describes how the City can incorporate the mitigation actions described in Chapter 5 into existing programs and planning mechanisms and how public participation will remain an important part of Plan monitoring and future update activities.

Coordinating Body

The HMPC will remain responsible for maintaining and updating the Plan, including evaluating the Plan effectiveness as needed. Members of the HMPC will also coordinate the implementation of the Plan through their respective positions. **Table 1-1** contains a list of current members. In future years, staff and representatives (either current HMPC members or other individuals) from the following City Departments should be included in maintenance and update activities:

- Office of Emergency Management
- Community Life & Culture (Recreation)
- Community Life & Culture (Library)
- Community Life & Culture (Museum)
- Community Development (Building)
- Community Development (Community Improvement)
- Community Development (Engineering)
- Community Development (Housing)
- Community Development (Planning)
- Economic Development
- Finance
- Fire Department
- Human Resources/Risk Management
- Information Technology
- Management Services (City Communications)
- Management Services (Records Management)
- Management Services (Broadband)
- Management Services (Innovation, Performance, and Audit)
- Police Department
- Public Works (Municipal Services)
- Public Works

The staff member currently serving as the HMPC leader (responsible for coordinating future updates) is in the Office of Emergency Management (within the City Manager's Office). He/she will serve as the project manager during the update process or designate this role to another staff member. The HMPC leader or their designee will coordinate the maintenance of this Plan, lead the formal Plan review and evaluation activities, direct the Plan update, and assign tasks to other members of the HMPC to complete these activities. Such tasks may include collecting data, developing new mitigation actions, updating mitigation actions, making presentations to City staff and community groups, and revising sections of the Plan.

Plan Implementation

The effectiveness of the Plan depends on the successful implementation of the mitigation actions. This includes integrating mitigation actions into existing City plans, policies, programs, and other implementation mechanisms. The mitigation actions in this Plan are intended to reduce the damage from hazard events, help the City secure funding, and provide a framework for hazard mitigation activities.

HMPC members prioritized the hazard mitigation actions in **Table 5-3** in Chapter 5. These priorities will guide the implementation of these actions through new or existing City mechanisms as resources are available. The LHMP project manager is responsible for overseeing this Plan's implementation, promotion, and maintenance, as well as facilitating meetings and other coordinating activities related to Plan implementation and maintenance.

The key City Plans that should incorporate content from this LHMP include the following:

- **The Hesperia General Plan Update 2050 - Safety Element** – Content from the LHMP incorporated into the Safety Element will ensure the goals and policies of this plan are reinforced throughout future developments and projects proposed within the city.
 - The 2017 LHMP was integrated into Hesperia's General Plan and land use policies, with specific references to hazard mitigation strategies for wildfire, flooding, and earthquake risk reduction. This included updates to zoning codes and building regulations to promote resilience in vulnerable areas, as well as incorporating hazard risk assessments into future development planning. Similarly, the City plans to integrate the 2024 LHMP in the same way.
- **Hesperia Emergency Operations Plan** – This plan focuses on the effective preparedness and response to hazard events that occur within the city. Incorporating relevant content from this plan into the EOP ensures consistency regarding the hazards addressed in both plans.
 - The City's Emergency Operations Plan incorporated hazard-specific mitigation actions from the 2017 LHMP. This alignment ensured that both response and recovery actions were integrated with long-term mitigation efforts and that resources were efficiently allocated. Similarly, the City plans to integrate the 2024 LHMP in the same way.
- **Hesperia Capital Improvements Program** – This program identifies key infrastructure investments throughout the City that may include hazard mitigation elements. Incorporating this plan into the CIP may enhance infrastructure investment through additional funding and/or modification of improvements to include hazard mitigation elements.

- The 2017 LHMP mitigation strategies were considered during the development of the city's Capital Improvement Plans. This ensured that infrastructure projects, such as flood control, road improvements, and fire breaks were prioritized in areas most vulnerable to natural hazards. Similarly, the City plans to integrate the 2024 LHMP in the same way.

This integration of the LHMP into Hesperia General Plan Update 2050 Safety Element also allows the City to comply with AB 2140 requirements, as identified in Chapter 1 of this plan.

Plan Maintenance Process

As a living document it is important that this plan becomes a tool in Hesperia's resources to ensure reductions in possible damage from a natural hazard event. This section discusses plan adoption, implementation, monitoring, evaluating, and updating the LHMP. Plan implementation and maintenance procedures will ensure that the LHMP remains relevant and continues to address the changing environment and community priorities in the City. This section describes the incorporation of the LHMP into existing City planning mechanisms, and how the city staff will continue to engage the public.

Plan Monitoring and Evaluation

When members of the HMPC are not updating the Plan, they should meet at least once a year to go over mitigation action implementation and evaluate the Plan's effectiveness. These meetings should include the following:

- Discussion of the timing of mitigation action implementation
- Mitigation action implementation evaluation and determination of success
- Mitigation action prioritization revisions, if deemed necessary
- Mitigation action integration into other mechanisms, as needed

To the extent possible, HMPC meetings should be scheduled at an appropriate time in the City's annual budgeting process, which will help ensure that funding and staffing needs for mitigation actions are considered.

When the HMPC meets to evaluate the Plan, members should consider these questions:

- What hazard events, if any, have occurred in Hesperia in the past year? What were the impacts of these events on the community? Were the impacts mitigated, and if so, how?
- What mitigation actions have been successfully implemented? Have any mitigation actions been implemented but not successfully, and if so, why?
- What mitigation actions, if any, have been scheduled for implementation but have not yet been implemented?
- What is the schedule for implementing future mitigation actions? Is this schedule reasonable? Does the schedule need to be adjusted for future implementation, and are such adjustments appropriate and feasible?
- Have any new issues of concern arisen, including hazard events in other communities or regions that are not covered by existing mitigation actions?
- Are new data available that could inform updates to the Plan, including data relevant to the hazard profiles and threat assessments?
- Are there any new planning programs, funding sources, or other mechanisms that

can support hazard mitigation activities in Hesperia?

Plan Updates

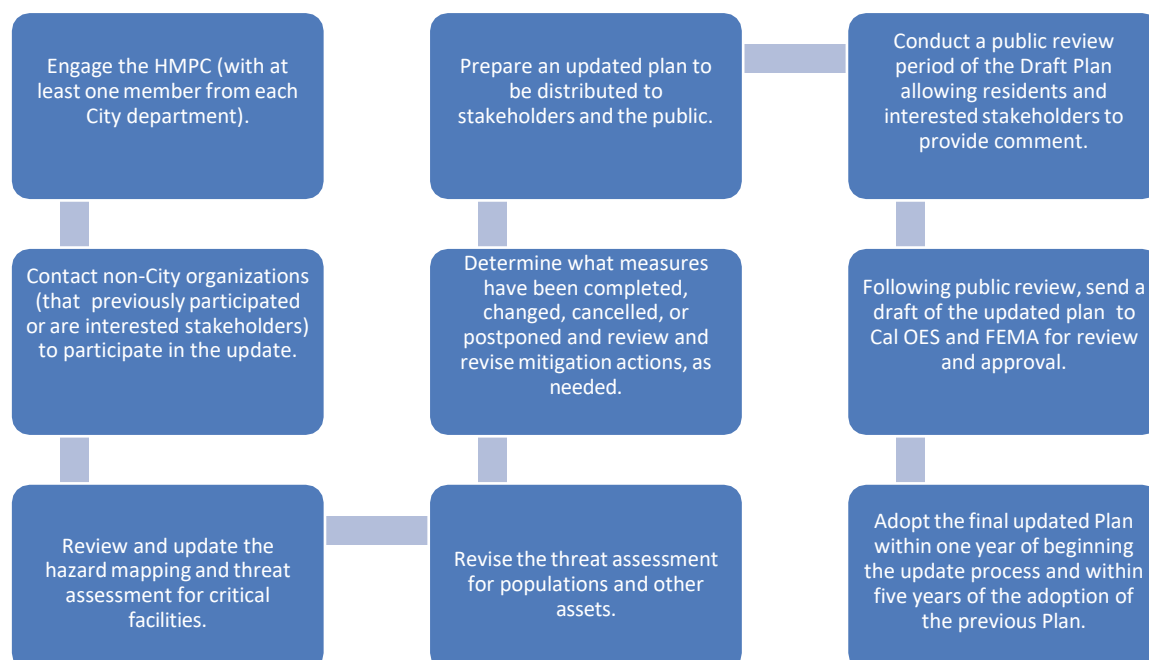
The information in this Plan, including the hazard profiles, threat assessments, and mitigation actions, is based on the best available information, practices, technology, and methods available to the City and HMPC at the time this Plan was prepared. As factors change, including technologies, community demographics and characteristics, best practices, and hazard conditions, it is necessary to update the plan to remain relevant. Additionally, Title 44, Section 201.6(d)(3) of the Code of Federal Regulations requires that LHMPs be reviewed, revised, and resubmitted for approval every five years to remain eligible for federal benefits.

UPDATE METHOD AND SCHEDULE

The update process should begin no later than four years after this Plan is adopted, allowing a year for the update process before the Plan expires. Depending on the circumstances, the LHMP project manager or their designee may also choose to begin the update process sooner. Some reasons for accelerating the update process may include the following:

- A presidential disaster declaration for Hesperia or an area that includes part or the entire city
- A hazard event that results in one or more fatalities in Hesperia

The update process will add new and updated methods, demographic data, community information, hazard data and events, considerations for threat assessments, mitigation actions, and other information, as necessary. This helps keep the Plan relevant and current. The HMPC will determine the best process for updating the Plan, which should include the following steps:



UPDATE ADOPTION

The Hesperia City Council is responsible for adopting this Plan and all future updates. As previously mentioned, adoption should occur every five years. To ensure the plan remains active, the City should begin the update process at least one year prior to expiration. If the City has a grant application that relies on the LHMP, an update to the plan should occur no later than 18 months before expiration. Adoption should take place after FEMA notifies the City that the Plan is Approved Pending Adoption. Once the City Council adopts the Plan following its approval by FEMA, the adopted plan should be transmitted to FEMA.

Continued Public Involvement

The City will continue to keep members of the public informed about the HMPC's actions to review and update the LHMP. The HMPC will develop a revised community engagement strategy that reflects the City's updated needs and capabilities. The updated strategy should include a tentative schedule and plan for public meetings, recommendations for using the City website and social media accounts, and content for public outreach documentation. The HMPC will also distribute annual progress reports through City social media platforms and mailing lists used to engage community members. These outreach opportunities will describe the actions taken by the City and ways that residents and businesses can help further the City's goals. These updates are anticipated to occur after the annual HMPC meeting is conducted by the City.

Point of Contact

The HMPC leader for Hesperia is the primary point of contact for this Plan and future updates. At the time of writing, the HMPC leader is Jacquelyn Castillo (Management Analyst available at jmcastillo@hesperiacaca.gov | (760) 947-1589.

Appendix A – HMPC Meeting Materials

Table 1-1: Hesperia HMPC Members

City of Hesperia HMP 2024 Update: Pre-Planning Meeting

- Agenda
- Sign-in Sheet

City of Hesperia HMP Plan Update: Meeting #1

- Agenda
- Sign-in Sheet

HMPC Stakeholder Meeting #2

- PlaceWorks Memorandum
- Attendees
- Stakeholder Questions

HMPC Stakeholder Meeting #3

- PlaceWorks Memorandum
- Attendees
- Stakeholder Questions

HMPC Stakeholder Meeting #4

- PlaceWorks Memorandum
- Attendees
- Stakeholder Questions

HMPC Community Meeting #5

- Planning Commission Meeting Agenda
- PlaceWorks PowerPoint (Extraction of Safety Element Portion)

Table 1-1: Hesperia HMPC Members

Name	Title	Department
Jacquelyn Castillo (Project Manager, POC)	Management Analyst	City Manager's Office
Melinda Sayre	Deputy City Manager	City Manager's Office
Tammy Pelayes	Assistant to the City Manager	City Manager's Office
Kelly Brady	Public Relations Analyst	City Manager's Office
Ryan Leonard	Principal Planner	Community Development (Planning Department)
Andrew Lemke	Building Official	Community Development (Building and Safety)
Rubi Arellano	Community Development Supervisor	Community Development (Building and Safety)
Cassandra Sanchez	City Engineer	Community Development (Engineering)
Benjamin Leslie	GIS Technician	GIS/Information Technology Program
Brian Blackwell	Operations Manager/Streets Division	Public Works
April Antonio	Administrative Analyst	Economic Development
Keith Cheong	Senior Accountant	Finance
Kelly Anderson	Assistant Fire Chief	San Bernardino County Fire Department
Steve Tracy	Battalion Chief	San Bernardino County Fire Department
Steve Allen	Lieutenant	Police Department

**City of Hesperia
Hazard Mitigation Plan 2024 Update
Pre-Planning Meeting**

City Hall
Deputy City Manager's Office
Tuesday, February 13, 2024
11:00 – 12:30 pm

AGENDA

- Project Overview and Background Recap
 - Local Mitigation Planning Policy Side-by-Side Comparison Tool
- Planning Process and Establishment of Project Timeline
- Discuss Plan for Kick-Off Meeting
- Discuss Potential Stakeholders
- Next steps
 - Reach out to San Bernardino County for contact information on retrieving updated local map data and statistics
 - Develop media outreach efforts (website, social media, and questionnaires)
- Meeting adjourned at 12:30pm

SIGN IN SHEET

City of Hesperia – Hazard Mitigation Plan Update –Pre-Planning Meeting – February 13, 2024

Name	Title	Email	Phone
Jaqueline Castillo	Management Analyst	jcastillo@cityofhesperia.us	(760) 947-1345
Kelly Brady	Public Relations Analyst	kbrady@cityofhesperia.us	(760) 954-8950
Melinda Sengul	Dep CM	msengul@cityofhesperia.us	760-947-1007
April Antonio	Admin. Analyst	Aantonio@cityofhesperia.us	760-947-1909
Tammy Pelanes	Asst. to the cm	tpelanes@cityofhesperia.us	760-947-1014

**City of Hesperia
2024 Hazard Mitigation Plan Update
Meeting #1**

Hesperia City Hall
Joshua Room

Thursday, March 7, 2024
3:00 p.m. – 4:30 p.m.

AGENDA

- Welcome and Introductions
- Background
- Hazard Mitigation Plan (HMP) Overview
- HMP Standards for Approval
- HMP Planning Process Phases
- Planning Process Objectives
- Building the HMP Planning Team
- HMP Planning Team Tasks
- Forecasted Schedule
- Common HMP Goals
- **Roundtable Discussion**
 - Establish HMP Planning Committee
 - Discuss current and past mitigation plan documents/projects
 - Assign data gathering for critical documents / studies / data required for HMP development
 - Begin brainstorming City-specific enhancements for public outreach strategy
 - Establish potential dates for City Council / Planning Commission meetings to present periodic HMP updates and material
 - Set date for HMP Planning Committee Meeting #1
 - Distribute 2017 HMP Plan for review – Handout #1
 - Distribute Hazard Evaluation Exercise and Instructions – Handout #2
 - Distribute Draft 2024 Hazard Mitigation Plan Survey – Handout #3
- **Next Steps**
 - **Outreach**
 - Prepare mail list for proposed planning committee members
 - Prepare planning committee meeting location
 - Update Mitigation Plan webpages
 - Develop outreach printed material (e.g., website, social media, survey, etc.) and distribute to public.
 - **Risk Assessment**
 - Complete and collect preliminary hazard evaluation
 - Consolidate preliminary hazard evaluation and results and complete hazard prioritization matrix
 - Develop building/parcel inventory

- Develop critical infrastructure inventory & linear points
- Define repetitive loss areas (flood administrator)
- Meeting Adjourned

SIGN IN SHEET

City of Hesperia – 2024 Hazard Mitigation Plan Update – Meeting #1 – March 7, 2024

Name	Title	Department/Agency	Email/Phone
Melinda Sayre	Deputy CM/CC	Hesperia	
Kelly Anderson	ASSISTANT FIRE CHIEF	SBCoFD	KANDERSON@SBCFire.org 760-953-1758
B. Blackwell	Open House Manager/Street	CDH/P.W.	
Tammy Pelayes	Assistant to CM	CM	tpelayes@cityofhesperia.us Aantonio@cityofhesperia.us 760-947-1939
April Antonio	Admin Analyst	Econ. Dev.	760-947-1020
Kelly Brady	Public Relations Analyst CM		760-947-1020 Kbrady@cityofhesperia.us
Benjamin Leslie	GIS Technician	Hesperia GIS	760-947-1421
Chelsea Woods	Associate Engineer	Eng.	cwoods@cityofhesperia.us
Rubi Arellano	Comm. Dev. Sp.	B+S	rarellano@cityofhesperia.us
Ryan Leonard	Principal Planner	Planning	rleonard@cityofhesperia.us
Steve Tracy	Battalion chief	SBCoFD	stracyt@SBCFire.org
Keith Cheong	Sr. Accountant	city of Hesperia	kcheong@cityofhesperia.us
Corrie Kates	BUILDING OFFICIAL		BUILDING OFFICIAL @ CH

HMPC Stakeholder Meeting #2

June 3, 2024

Members of the HMPC met with PlaceWorks, consulting firm to discuss components of the Safety Element, which is currently being updated as part of a focused General Plan Update. Members of the HMPC team included San Bernardino County Sheriff's Department - Lieutenant, Principal Planner. The LHMP Project Manager was briefed on the meeting.



MEMORANDUM

DATE June 3, 2024

TO Lieutenant Steve Allen, San Bernardino County Sheriff's Department
Sergeant Christine Kirby, San Bernardino County Sheriff's Department
Ryan Leonard, Planning Department, Senior Planner
Edgar Gonzalez, Planning Department, Senior Planner
Leilani Henry, Planning Department, Assistant Planner
Maricruz Montes, Planning Department, Planning Specialist
Jacquelyn Castillo, City Manager's Office, Management Analyst

FROM Mark Hoffman, PlaceWorks, Principal-in-Charge
Cory Witter, PlaceWorks, Project Manager
Tammy L. Seale, PlaceWorks, Climate Action and Resilience Principal
Jacqueline Protsman Rohr, PlaceWorks, Senior Associate
Miles Barker, PlaceWorks, Associate

SUBJECT Hesperia Safety Element Update – Stakeholder Meeting Notes

Attendees

1. Sergeant Christine Kirby
2. Amanda Padlock – Public Information Officer
3. Ryan Leonard
4. Edgar Gonzalez
5. Cory Witter
6. Jacqueline Protsman Rohr
7. Miles Barker

Stakeholder Questions

1. What hazards are of most concern to the San Bernardino Sheriff's Department in Hesperia? What do you feel most and least prepared to address?
 - Earthquakes
 - Fire - responding to local fire
 - Take directives with fire dept.
 - Leading evacuation
 - Animal control/rescue/livestock
 - Ensuring fire personnel

**HESPERIA SAFETY ELEMENT UPDATE
STAKEHOLDER MEETING QUESTIONS**

- Flooding
 - Work with City to shut down roads (Rock Springs Road)
 - Evacuation
 - How would the Sheriff's Department respond and address evacuation?
 - The Sheriff's Department leads evacuation efforts for storms or fires if there is a potential for loss of life. The department would work closely with the Fire Department then they would dictate the evacuation area.
 - No one can be forced to evacuate but residents are alerted and there is a system in place to track who is evacuating.
2. How has the San Bernardino Sheriff's Department prepared for, responded to, or recovered from natural disasters or hazard events like wildfires, severe storms/flooding, drought, extreme heat, or similar events? What strategies have been most effective?
- Speaker system on units (patrol cars and Sheriff vehicles) for loudspeaker announcements for evacuation
 - Shows what addresses it went to
 - Access and Functional Needs (AFN)/ADA evacuation
 - Volunteer forces resources to help evacuate AFN/ADA populations.
 - Police Department doesn't have a specific list of individuals needing these services.
 - Nothing specific to Hesperia
 - Recent severe winter weather storm - needed to adjust response based on the severity of the event
 - Emergency operations plan – Police Department conducts updates. Reviews with Fire Department. Yearly training is conducted.
 - Extreme heat protocols
 - Response to people in need – help remove people from homes with high indoor air temperatures.
 - The Police Department acknowledges concern but there is not a clear response or protocol.
3. What type of populations, infrastructure, and community assets do you think are most vulnerable to hazards in Hesperia?
- Extreme Heat
 - Elderly, homeless, etc. – nothing in particular stands out. Extreme heat does impact elderly due to limited resources.
 - Everyone is equipped with ways to reach 911
 - Infrastructure
 - Concern around railroad system and freeway. Any major hazard event could impact this infrastructure. A loss of access to major roadways would impact access to resources/aid/supplies.
 - Railroads – a key resource that could be blocked/damaged by a hazard.
 - I-15 freeway - key corridor for resources
 - Main evacuation corridor North/South
4. What programs or initiatives does your organization have or provide to address hazards, public safety, and/or climate adaptation?
- National Night Out – Insurance, resources for disability.
 - Rock'n Our Disabilities Foundation
 - Social media
 - Alerts to community regarding hazard/evacuation information
 - Major storm event could impact internet and phone services.

**HESPERIA SAFETY ELEMENT UPDATE
STAKEHOLDER MEETING QUESTIONS**

- Satellite phones allow City to contact resources outside of city.
- Other languages for emergency notifications.
 - Speaker system alerts residents in different languages.
 - Mandarin is another secondary language outside of Spanish speaking residents.
 - Working on identifying other languages.
- 5. Does your department consider natural or human-caused hazards when developing your annual budget and facility development and maintenance programs? If so, please describe.
 - Budget is through city, but regarding natural disaster the Sheriff's Department is unaware of any specific budget.
- 6. How does the San Bernardino Sheriff's Department work, partner, or engage with City staff?
 - It is a County Department – operationally, the City of Hesperia is contracted with the San Bernardino County Sheriff's Department for its police services.
 - Share personnel
 - Building paid for by the city.
- 7. What opportunities do you see available in the City to increase the community's resilience to hazards? Are there barriers that the City can help remove?
 - Improve on getting more information out during a hazard
 - Barrier: Difficult to get people prepared
 - Barrier: Planning for what kind of hazard will happen
 - Gain community support
 - Barrier: it's difficult to get community onboard.
 - Provide information to community regarding resources to prepare and adapt to potential hazards.
 - Provide live, updated information on hazards and evacuation procedures.
 - Volunteer support in the community/outreach programs through volunteers
 - Fair Grounds - evacuation location
 - Many people already know where they will take their animals
 - Instead of reaching out to organizations, people would come to the command post of the EOC
- 8. Do you have any questions for us?
 - See if Kristy can send out Lieutenant notes
 - Rely on EOP where possible

HMPC Stakeholder Meeting #3

June 4, 2024

Members of the HMPC met with PlaceWorks, consulting firm to discuss components of the Safety Element, which is currently being updated as part of a focused General Plan Update. Members of the HMPC team included the Fire Chief, Principal Planner, and the LHMP Project Manager.



MEMORANDUM

DATE June 4, 2024

TO Assistant Chief Kelly Anderson, San Bernardino County Fire Protection District, North Desert Division
Ryan Leonard, Planning Department, Senior Planner
Leilani Henry, Planning Department, Assistant Planner
Edgar Gonzalez, Planning Department, Senior Planner
Maricruz Montes, Planning Department, Planning Specialist
Jacquelyn Castillo, City Manager's Office, Management Analyst

FROM Mark Hoffman, PlaceWorks, Principal-in-Charge
Cory Witter, PlaceWorks, Project Manager
Tammy L. Seale, PlaceWorks, Climate Action and Resilience Principal
Jacqueline Protsman Rohr, PlaceWorks, Senior Associate
Miles Barker, PlaceWorks, Associate

SUBJECT Hesperia Safety Element Update – Stakeholder Meeting Notes

Attendees

1. Assistant Chief Anderson - Fire and EMS Operations
2. Ryan Leonard
3. Leilani Henry
4. Jacquelyn Castillo
5. Mark Hoffman
6. Jacqueline Protsman Rohr
7. Miles Barker

Stakeholder Questions

1. What hazards are of most concern to the San Bernardino County Fire Protection District in Hesperia?
What do you feel most and least prepared to address?
 - The biggest hazard is wildland-urban interface fire. The area is a dry desert and prone to wildfire.
 - Flooding poses a risk during rainfall.
 - i. Flash flooding is a major concern.

**HESPERIA SAFETY ELEMENT UPDATE
STAKEHOLDER MEETING QUESTIONS**

- Human-caused disaster – terrorist event.
 - i. It is becoming prevalent and is the hardest to plan for. Bombings or mass shootings are difficult to plan and prepare for.
 - More common hazards – hazardous materials, medical, rescue, etc.
 - i. The District is more adequately prepared to handle these hazards.
2. How has the San Bernardino County Fire Protection District prepared for, responded to, or recovered from natural disasters or hazard events like wildfires, severe storms/flooding, drought, extreme heat, or similar events? What strategies have been most effective?
- Fire protection belongs to county fire district - benefit
 - i. Use regionalized approach - all resources from the County FD
 - ii. Easier to respond to larger disaster
 - iii. The City has many resources– three stations in City without asking for support. It also has the County Fire Protection District with more resources.
 - Blizzard/hurricane
 - i. Able to pull in large number of resources with county/mutual aid
 - ii. Mutual aid support from all over the State.
 - Recovery
 - i. Fire Department gets things started for recovery and then State/County OES get involved.
 - ii. Response, mitigation and recovery – County OES and State OES funds and financial resources to initiate recovery process.
 - Not a significant WUI incident in many years
 - i. Submit for additional funding/grants to help
 - 1. Replenish resources
 - 2. Local communities apply for assistance
 - Extreme heat/cold events
 - i. Nothing specific
 - ii. City provides cooling/warming shelters
 - iii. Can activate Red Cross/additional resources (during storm with stranded travelers). Case-by-case ability to provide resources for extreme heat events. Will activate Red Cross if needed, to provide resources such as shelter. Stranded travelers or motorists can be supported via shelter. The Red Cross assumes responsibility long-term.
3. What type of populations, infrastructure, and community assets do you think are most vulnerable to hazards in Hesperia?
- Populations
 - i. Underserved - low-income, unhoused, living in poor quality homes, homes without AC/heating, those without healthcare (fires/extreme heat)
 - 1. More prone to fires/accidents
 - 2. Lack of healthcare make these populations more vulnerable.
 - 3. Prone to more fires and accidents since they seek alternative sources to heat or cool homes.
 - ii. Elderly
 - 1. Susceptibility to extreme temperatures

June 4, 2024 | Page 2

**HESPERIA SAFETY ELEMENT UPDATE
STAKEHOLDER MEETING QUESTIONS**

2. Evacuation support and mobility issues
 - Infrastructure
 - i. Roadways
 1. Dirt/paved - cracked/potholes
 2. Extreme weather affects roadways and in some cases, they become impassable due to flooding or landslides.
 3. Access is an issue
 4. Hurricane Hilary took out many of the roadways temporarily and made access hard, not many options, shelter in place
4. What programs or initiatives does your department have or provide to address hazards, public safety, and/or climate adaptation?
 - Community Risk Reduction Program
 - Office of Fire Marshal
 - i. Fire prevention
 - ii. Hazmat programs
 - Educational Events
 - i. Education at community, school events, and via social media. Education involves what people can do to address or respond to hazards such as extreme heat.
 - Wildland Program
 - i. Hand crews conduct hazard mitigation to remove vegetation.
 - ii. Clearing hazardous trees.
 - iii. Woodchipper program to remove trees and branches/pine needle cleanup.
 - iv. Residential assessment program for defensible space.
5. Does your department consider natural or human-caused hazards when developing your annual budget and facility development and maintenance programs? If so, please describe.
 - E- Fund
 - i. The District has an Emergency Fund that is a pool of money set aside for unplanned events (natural or manmade)
 - Insured facilities
 - i. Facilities are insured, so at a minimum, the deductible is budgeted to account for repairs.
 - Preparedness
 - i. Newer fire stations are built to higher standards to consider earthquake safety, fire resistant.
 - ii. Sprinklers.
 - iii. All stations consider the security and are built with block walls and rolling gates.
 - iv. New building codes require backup emergency generators for facilities – all stations have emergency generators.
6. How does the San Bernardino County Fire Protection District work, partner, or engage with City staff?
 - Geographically, the County is split up.
 - Chief Kelly Anderson is a fire chief representing the City of Hesperia
 - i. Team in Hesperia does all the plan checks
 - Attend City staff meetings/City Council meetings.
 - Available for anything the city needs.

June 4, 2024 | Page 3

**HESPERIA SAFETY ELEMENT UPDATE
STAKEHOLDER MEETING QUESTIONS**

7. What opportunities do you see available in the city to increase the community's resilience to hazards? Are there barriers that the City can help remove?
- [no response – will follow up]
8. Do you have the ISO ratings for different neighborhoods of Hesperia, including the Oak Hills area? Does the San Bernardino County Fire Protection District have the scores for the different components of the ISO rating system?
- [no response – will follow up]
9. Do you have any questions for us?
- Have we used the CalOES hazard viewer?
 - i. PlaceWorks has not used this tool but is aware of it.
 - ii. Use information for demographics
 - iii. CalOES website, has different viewers: fire, flood, earthquakes, etc.
 - Additional Questions from PlaceWorks:
 - i. Activity Hesperia Stations?
 1. Stations 22, 304, 305
 2. Any CAL FIRE or USFS in the area?
 - a. CAL FIRE station in Feland, in Lucerne Valley
 - ii. Do stations cover all areas?
 1. Agreements with all operators for all calls
 2. Mostly 10 minute drive times
 - iii. Are there more incidents in the west end?
 1. Largest number of calls are in the center of town (Off of 11th street)
 2. Freeway/industrial area
 - a. 305 would be first in
 3. 395/Duncan
 - a. Bear Valley Road in Victorville
 - Fire Zone Mapping from Jacquelyn - issues with the link/data
 - From Jacquelyn
 - i. Issues with the Vulnerability Assessment and HAZUS
 - ii. HAZUS information - not able to use

HMPC Stakeholder Meeting #4

June 6, 2024

Members of the HMPC met with PlaceWorks, consulting firm to discuss components of the Safety Element, which is currently being updated as part of a focused General Plan Update. Members of the HMPC team included the Deputy City Engineer, Public Works Supervisor, and Principal Planner. The LHMP Project Manager was briefed on the meeting.



MEMORANDUM

DATE June 6, 2024

TO Jeremy McDonald, Public Works Department, Water Operations Manager
Cassandra Sanchez, Engineering Department, Deputy City Engineer
Brian Blackwell, Public Works Department, Public Works Supervisor
Ryan Leonard, Planning Department, Senior Planner
Edgar Gonzalez, Planning Department, Senior Planner
Leilani Henry, Planning Department, Assistant Planner
Maricruz Montes, Planning Department, Planning Specialist
Jacquelyn Castillo, City Manager's Office, Management Analyst

FROM Mark Hoffman, PlaceWorks, Principal-in-Charge
Cory Witter, PlaceWorks, Project Manager
Tammy L. Seale, PlaceWorks, Climate Action and Resilience Principal
Jacqueline Protsman Rohr, PlaceWorks, Senior Associate
Miles Barker, PlaceWorks, Associate

SUBJECT Hesperia Safety Element Update – Stakeholder Meeting Notes

Attendees

- » PlaceWorks
 - Jacqueline Protsman Rohr
 - Miles Barker
 - Cory Witter
 - Mark Hoffman
- » City of Hesperia
 - Jeremy McDonald, Water Operations Manager
 - Brian Blackwell, Public Works Supervisor
 - Cassie Sanchez, Deputy City Engineer
 - Ryan Leonard, Senior Planner

Stakeholder Questions

1. What hazards are of most concern to the Engineering and Public Works Departments? What do you feel most and least prepared to address?

**HESPERIA SAFETY ELEMENT UPDATE
STAKEHOLDER MEETING QUESTIONS**

- Flooding during winter storms
 - Flooding can also come in the form of a tropical storm – dealt with for a very long time
 - Areas of the city vulnerable to flooding – southwest quadrant is most vulnerable
 - Involved with Emergency Operations Centers (EOCs) dealing with wildfire to south of city
 - Required closing roads and rerouting traffic – in coordination with police and fire departments
2. How has your department prepared for, responded to, or recovered from natural disasters or hazard events like wildfires, severe storms/flooding, drought, extreme heat, or similar events? What strategies have been most effective?
- Enhance response to floods
 - Would like to install rapidly deployable signage
 - Continue to look at various Capital Improvement Program (CIP) projects to mitigate flooding in certain areas.
 - CIP – focus on things that deal with more immediate issues – deteriorating roadways
 - Walnut Basin Project – keep sediment from entering pipes/system – improve transportation of water
 - Water supply
 - Water supply is 100 percent groundwater
 - Part of adjudicated water basin
 - Managed by Mojave Water Agency
 - City has 15 active wells
3. What type of populations, infrastructure, and community assets do you think are most vulnerable to hazards in Hesperia?
- No specific population type at most risk
 - Geographic region of city
 - Southwestern region – foothills that is subject to flooding and wildfire
 - Wells are located in the southern portion
 - Mark (PlaceWorks) asked about water quality
 - Nitrate, chromium, chlorate
 - No issues nitrate/perchlorate
 - Chromium-6 may be on the high side with new MCLs (10 ppb)
 - Chromium
 - Question from PlaceWorks: Places in the city most effected?
 - Southwest portion of city
4. What programs or initiatives does your organization have or provide to address hazards, public safety, and/or climate adaptation?
- Municipal Code has Water Shortage Contingency Plan (Stage 1 now, has been in Stage 2)
 - Water shortage contingency plan – implemented as directed by State
 - Water conservation
 - Beacon (program) – portal that monitors all the meters in the city
 - Leak detection program
 - Part of the EOC
5. Does the Engineering and/or Public Works Department consider natural or human-caused hazards when developing your annual budget and capital improvement programs? If so, please describe.
- CIP - focus on projects for more immediate issues
 - Roadways and capacity

**HESPERIA SAFETY ELEMENT UPDATE
STAKEHOLDER MEETING QUESTIONS**

- Flood basin projects (2-5 year)
- Flood focused
 - Walnut Basin – environmental review
 - Keep sediment out of pipes
- Stormwater Master Plan - back in 90s
 - Looking to update and to go underground
 - Have a Master Plan that shows opportunity sites (buy land for basins)
- 6. How does your department work, partner, or engage with City staff in other departments?
 - Smaller scale - always in contact with police and fire
 - Engineering partners with public works for development review
- 7. What opportunities do you see available in the City to increase the community's resilience to hazards?
Are there barriers that the City can help remove?
 - City is on septic.
 - Question from PlaceWorks: Sewage system master plan, will sewer be extended and phase out septic?
 - No immediate plans
 - VBWRA partnership on sewer system plan
 - No specific policies.
- 8. Do you have any questions for us?
 - N/A

HMPC Community Meeting #5

**PLANNING COMMISSION
REGULAR MEETING
AMENDED AGENDA
GENERAL PLAN UPDATE
COMMUNITY MEETING**



Meeting Agenda

Thursday, July 11, 2024

5:00 PM

City Council Chambers
9700 Seventh Ave.,
Hesperia, CA, 92345

Planning Department: (760) 947-1224

Planning Commission Members

Roger Abreo, Chair
Sophie Steeno, Vice Chair
Dale Burke, Commissioner
Earl Hodson V, Commissioner
Christopher Sevy, Commissioner

Nathan Freeman, Director of Development Services
Ryan Leonard, Principal Planner
Robert Hensley, Assistant City Attorney



NOTE: In compliance with the Americans with Disability Act, if you need special assistance to participate in this meeting, please contact the City Clerk's Office at (760) 947-1007 or (760) 947-1224. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility.

To leave a Public Comment by phone, call and leave a recorded message at (760) 947-1056 up to 5:30 pm on the day of the scheduled meeting. City Council meetings may be viewed live or after the event on the City's website at www.cityofhesperia.us.

Planning Commission

Meeting Agenda

July 11, 2024

AGENDA**HESPERIA PLANNING COMMISSION**

9700 Seventh Ave., Council Chambers, Hesperia, CA 92345

As a courtesy, please silence your cell phones, pagers, and other electronic devices while the meeting is in session. Thank you.

Prior to action of the Planning Commission, any member of the audience will have the opportunity to address the legislative body on any item listed on the agenda, including those on the Consent Calendar. PLEASE SUBMIT A COMMENT CARD TO THE COMMISSION SECRETARY WITH THE AGENDA ITEM NUMBER NOTED.

CALL TO ORDER - 5:00 PM

- A. Pledge of Allegiance to the Flag
- B. Invocation
- C. Roll Call
- D. Agenda Revisions and Announcements by Planning Secretary

JOINT PUBLIC COMMENTS

Please complete a "Comment Card" and give it to the Commission Secretary. Comments are limited to three (3) minutes per individual. State your name for the record before making your presentation. This request is optional, but very helpful for the follow-up process.

Under the provisions of the Brown Act, the Commission is prohibited from taking action on oral requests. However, Members may respond briefly or refer the communication to staff. The Commission may also request the Commission Secretary to calendar an item related to your communication at a future meeting.

DISCUSSION

General Plan Update Community Meeting topic will be status of General Plan update process and preliminary draft content.

PLANNING DIVISION REPORT

The Planning staff may make announcements or reports concerning items of interest to the Commission and the public.

ASSISTANT CITY ATTORNEY REPORT

The Assistant Attorney may make comments of general interest to the City.

PLANNING COMMISSION COMMENTS

The Commission Members may make comments of general interest to the City.

Planning Commission

Meeting Agenda

July 11, 2024

ADJOURNMENT

I, Maricruz Montes, Planning Commission Secretary of the City of Hesperia, California do hereby certify that I caused to be posted the foregoing agenda on Wednesday, July 3, 2024 at 5:30 p.m. pursuant to California Government Code §54954.2.


Maricruz Montes
Planning Commission Secretary

The cover page features a desert landscape with Joshua trees and mountains in the background. The title 'City of Hesperia Focused General Plan Update' is centered in a large, bold, dark red font. Below it, the text 'Community Meeting 3' and 'July 11, 2024' are displayed in a smaller, dark red font, followed by 'Prepared by PlaceWorks' in a very small, italicized font. The page is divided into two main sections by a diagonal line. The top section has a dark red background and contains the word 'Agenda' in a large, white, bold font, followed by a list of topics: 'Goals and Policies', 'Land Use Updates', 'Circulation Updates', 'Safety Updates', 'Environmental Justice', and 'Next steps'. The bottom section has a dark red background and contains the word 'Safety' in a large, white, bold font, followed by a list of topics: 'Vulnerability Assessment', 'Technical Buildout Report', and 'Goal & Policy Direction'. Both sections feature a small, colorful logo in the bottom right corner. The right side of the page shows an aerial view of a residential neighborhood with mountains in the background.

City of Hesperia Focused General Plan Update

Community Meeting 3
July 11, 2024
Prepared by PlaceWorks

Agenda

- Goals and Policies
- Land Use Updates
- Circulation Updates
- Safety Updates
- Environmental Justice
- Next steps

Safety

- Vulnerability Assessment
- Technical Buildout Report
- Goal & Policy Direction

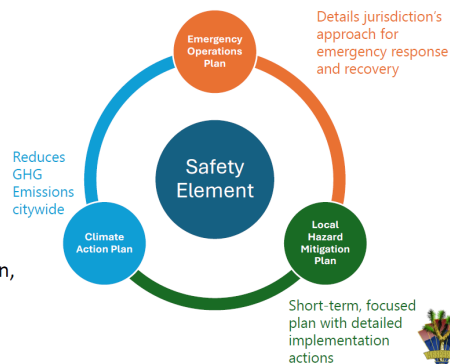
Results of Vulnerability Assessment

- Identifies hazards of concern and related risks to the community
- Helps protect the community against natural disasters and other hazards
 - Fires
 - Floods
 - Landslides
 - Earthquakes
 - Emergency preparedness and response
 - Climate Change
- Must be updated at least every eight years, along with the Housing Element.



Technical Background Report

- Incorporate most recent Local Hazard Mitigation Plan
- Ensure consistency with other General Plan Elements and applicable agency plans
- Enhance eligibility for grant funding
- Comply with State regulations
 - Flooding, fire, climate adaptation, and evacuation



Vulnerability Assessment Process

- Identifies how people and key community assets may be affected by climate change
- Evaluates availability of existing policies or programs to help people respond to and recover from impacts
- Prioritizes vulnerabilities that inform the resilience and adaptation policies and implementation measures of the Safety Element



Flooding



Extreme Heat



Drought



Wildfire



Results of Vulnerability Assessment

- People are most vulnerable to wildfire and extreme temperatures.
- Homes are the most vulnerable building type due to their location and density, especially to flooding, severe weather, and wildfire.
- Energy and communication infrastructure are the most vulnerable infrastructure type, especially to extreme temperatures, landslides, severe weather, and wildfire.
- Agriculture is severely vulnerable to air quality and smoke, drought, extreme temperatures, human health hazards, severe weather, and wildfire.
- Riparian habitat are the most vulnerable habitat type.



Current Safety Goals

Five goals that address:

1. Seismic and Geologic Hazards
2. Emergency Preparation and Response
3. Flood and Inundation Hazards
4. Fire Hazards
5. Hazardous Waste and Materials



Draft Safety Goals

Draft

1. Minimize injury, loss of life, property damage and economic and social disruption caused by seismic shaking and other earthquake-induced hazards, and by geologic hazards such as slope instability, compressible and collapsible soils, and subsidence.

Current

1. Minimize injury, loss of life, property damage and economic and social disruption caused by seismic shaking and other earthquake-induced hazards, and by geologic hazards such as slope instability, compressible and collapsible soils, and subsidence.



Draft Safety Goals

Draft

2. Minimize injury, loss of life, property damage and economic and social disruption caused by flooding and inundation hazards.

Current

2. Minimize injury, loss of life, property damage and economic and social disruption caused by flooding and inundation hazards.



Draft Safety Goals

Draft

3. Minimize injury, loss of life, property damage and economic and social disruption caused by wildland and urban fires.

Current

3. Reduce the risk of death, injury, property damage and economic loss due to vegetation and structure fires.



Draft Safety Goals

Draft

4. Minimize the potential for hazardous materials contamination in Hesperia.

Current

4. Reduce the potential for hazardous materials contamination in Hesperia.



Draft Safety Goals

Draft

5. A community prepared to withstand and recover from natural disasters, human health hazards, and other emergencies.

Current

5. Plan for emergency response and recovery from natural disasters, especially from flooding, fire, and earthquakes, and from civil unrest that may occur following a natural disaster.



Draft Safety Goals

Draft

6. A community resilient to drought, extreme heat, severe weather events, and other climate-related hazards.

Current

Not addressed by current GP



Appendix B – Outreach Engagement Materials

- ✚ **Public Engagement Opportunity: March 12, 2024 LHMP Survey**
 - Social Media Posts
 - 2024 City of Hesperia Hazard Mitigation Plan Survey
 - 2024 City of Hesperia Hazard Mitigation Plan Survey Results
- ✚ **Public Engagement Opportunity: August 6, 2024 LHMP Survey (National Night Out)**
 - Social Media Post and Flyer
 - City Website Information
- ✚ **Public Engagement Opportunity: August 22, 2024 LHMP Survey Shared with Stakeholders**
 - Email with link to LHMP Survey
- ✚ **2024 Public Participation Survey for Hazard Mitigation Planning**
- ✚ **2024 Public Participation Survey for Hazard Mitigation Planning – Survey Results**
- ✚ **Public Engagement Opportunity: October 2, 2024 (Email)**
 - Stakeholder Hazard Mitigation Feedback Form
 - Draft of the 2024 LHMP shared with stakeholders
- ✚ **Public Engagement Opportunity: November 4, 2024 Stakeholder Meeting Invitation (Email)**
 - Agenda
 - PowerPoint Presentation
 - Sign-in Sheet
 - Stakeholder Hazard Mitigation Feedback Form
 - Stakeholder Hazard Mitigation Feedback Form – Comments from Stakeholder's
- ✚ **Public Engagement Opportunity – November 12, 2024**
 - City Website Information
 - Social Media Post
 - Public Survey: Hesperia Local Hazard Mitigation Plan Draft
- ✚ **Public Engagement Opportunity – December 9, 2024: CCAC Meeting – LHMP Planning Process**
 - City Website Information
 - Social Media Post
 - Agenda
 - Staff Report
 - PowerPoint Presentation

Public Engagement Opportunity – March 12, 2024 LHMP Survey

Social Media Posts

City of Hesperia
Mar 15 · 🌐

Help us prepare for disasters caused by natural hazards before they occur in [#Hesperia](#). We're updating our Local Hazard Mitigation Plan and welcome your feedback. To take our short survey and provide your input, visit surveymonkey.com/r/cohlhmp.



LOCAL HAZARD MITIGATION PLAN
The City of Hesperia is Updating its Local Hazard Mitigation Plan!

What is an HMP?

- Improves local resilience to hazards.
- Prepared by City staff.
- Support from key City stakeholders.
- Incorporates community member feedback.

What does an HMP do?

- Summarizes our community's hazard threats (i.e., floods, earthquakes, fires, and extreme weather).
- Identifies how climate change exacerbates future hazards.
- Identifies how the community and assets are vulnerable to hazard events.
- Outlines a mitigation strategy for policy and action plans to City staff and community partners to improve hazard resiliency.
- Includes steps on how to keep the HMP Plan updated and current.

Why have an HMP?

- Protect our community from current and future hazards.
- Make Hesperia eligible for more FEMA funding for hazard mitigation efforts (Robert T. Stafford Act and the Disaster Mitigation Act of 2000).
- Make Hesperia eligible to receive disaster relief funding (California Government Code §8685.9).

FOLLOW OUR PROGRESS AND TAKE OUR SURVEY!



City of Hesperia
Mar 14 · 🌐

Stay connected, [#Hesperia](#)! Take a look at our lineup of upcoming programs, meetings, and events.



UPCOMING
Programs - Meetings - Events

- 16 MARCH** 9 A.M. - 2 P.M.
Used Oil Filter Exchange & Recycling
AutoZone
17115 Main Street
- 20 MARCH** 3:30 P.M. - 7:30 P.M.
City of Hesperia Goal Setting Workshop
Hesperia Police Department Community Room
15840 Smoketree Street
- 6 & 7 APRIL** STARTS AT 9 A.M.
E-Waste Recycling & Shred Day
BEHIND 16776 Main Street
E-Waste Recycling - April 6 & 7 9 a.m. - 3 p.m.
Shred Day - April 6 9 a.m. - 2 p.m.
- DEADLINE 15 APRIL** ONLINE
Local Hazard Mitigation Plan Survey
Online at surveymonkey.com/r/cohlhmp

LEARN MORE cityofhesperia.us

City of Hesperia
Mar 23 · 🌐

We're updating our Local Hazard Mitigation Plan and welcome your feedback. Help us prepare for disasters caused by natural hazards before they occur in [#Hesperia](#). To take our short survey and provide your input, visit surveymonkey.com/r/cohlhmp.



SHARE YOUR INPUT
The City of Hesperia is Updating its Local Hazard Mitigation Plan!

FOLLOW OUR PROGRESS AND TAKE OUR SURVEY!
surveymonkey.com/r/cohlhmp

2024 City of Hesperia Hazard Mitigation Plan Survey

The City of Hesperia is preparing an update to the local Hazard Mitigation Plan or (HMP). Like all other communities, Hesperia could potentially face widespread devastation in the event of a natural disaster. While no community can completely protect itself against all potential hazardous situations, this plan will help identify those situations, assess our current provisions, and outline a strategy to lessen the vulnerability and severity of future disasters.

Your responses to this survey will inform the preparation of the plan. Thank you for your time and cooperation.

1. Please indicate whether you live or work in the City of Hesperia.

- ☐ I live in the City of Hesperia.
- ☐ I work in the City of Hesperia.
- ☐ I live and work in the City of Hesperia.
- ☐ Neither applies to me, but I am interested in the City's resiliency.

2. What is the ZIP code of your home?

3. Have you been impacted by a hazard event in your current residence?

- ☐ Yes
- ☐ No

Question Title

4. If you answered yes to the previous question, please select the type of hazard event that you have been impacted by (select all that apply).

- ☐ Earthquake/Geologic Hazards
- ☐ Extreme Weather (High Winds, Extreme Heat Days, Severe Rainstorms)
- ☐ Wildfires
- ☐ Dam Failure
- ☐ Flooding
- ☐ Technology Hazards including hazardous material incidents
- ☐ Human Caused Hazards (Transportation Incidents, Communications Failure, Terrorism)
- ☐ Other

5. Please list any additional hazards that have previously impacted your neighborhood or home.

6. The following hazards could potentially impact the city. Please mark the THREE (3) hazards that are of most concern to your neighborhood or home.

- ☐ Earthquake/Geologic Hazards
- ☐ Extreme Weather (High Winds, Extreme Heat Days, Severe Rainstorms)
- ☐ Wildfires
- ☐ Dam Failure
- ☐ Flooding
- ☐ Technology Hazards including hazardous material incidents
- ☐ Human Caused Hazards (Transportation Incidents, Communications Failure, Terrorism)
- ☐ Other

7. The planning team is using various data sources to identify hazards in your community; however, some of these data sources do not provide data at a general citywide level. Are there any small-scale issues, such as ponding at a specific intersection during rain, that you would like the planning team to consider?

- ☐ I am not aware of local hazards.
- ☐ I am aware of local hazards.

8. If you are aware of local hazards that you would like the planning team to consider, please provide as much detail as possible, including location and type of hazard.

9. How concerned are you that climate change may create new hazardous situations in Hesperia or make existing natural hazards worse?

- ☐ Very concerned.
- ☐ Somewhat concerned.
- ☐ Somewhat unconcerned.
- ☐ Not at all concerned.
- ☐ Unsure.

10. When do you think climate change will pose a threat to your health, property, livelihood, or overall wellbeing?

- ☐ It already is.
- ☐ Within the next five years.
- ☐ In five to twenty years.
- ☐ Not for at least another twenty years.
- ☐ Never, or not in my lifetime.

11. If you have taken any action to protect yourself against natural hazards, how confident are you that these actions will be sufficient to protect against more severe hazards that are expected because of climate change?

- ☐ Very confident.
- ☐ Somewhat confident.
- ☐ Somewhat unconfident.
- ☐ Not at all confident.
- ☐ Unsure.

12. If you are a homeowner, do you have adequate homeowners' insurance to cover the hazards that could impact your home?

- ☐ Yes, my insurance coverage should be adequate.
- ☐ No, I don't believe my insurance coverage would be adequate for a major disaster.
- ☐ Unsure.
- ☐ I do not have an insurance policy.
- ☐ Not applicable; I rent my current residence.

13. If you rent your residence, do you have renters' insurance?

- ☐ Yes
- ☐ No
- ☐ Not applicable; I own my residence.

14. Do you have flood insurance for your home?

- ☐ Yes, I own my home and have flood insurance.
- ☐ Yes, I rent my home and have flood insurance.

- ☐ No, but I am interested in reviewing flood insurance options (<https://www.floodsmart.gov/flood-insurance>).

15. Have you done anything to your home to make it less vulnerable to hazards such as earthquakes, floods, and fires?

- ☐ Yes
- ☐ No
- ☐ Not applicable; I rent my residence.

16. If not, do you plan to?

17. If a severe hazard event occurred today such that all services were cut off from your home (power, gas, water, sewer) and you were unable to leave or access a store for 72 hours, which of these items do you have readily available?

- ☐ Potable water (3 gallons per person)
- ☐ Cooking and eating utensils
- ☐ Can opener
- ☐ Canned/nonperishable foods (ready to eat)
- ☐ Gas grill/camping stove
- ☐ Extra medications and contact lenses (if applicable)
- ☐ First aid kit/supplies
- ☐ Portable AM/FM radio (solar powered, hand crank, or batteries)
- ☐ Handheld "walkie-talkie" radios (with batteries)
- ☐ Important family photos/documentation in water and fireproof container
- ☐ Extra clothes and shoes
- ☐ Blanket(s)/sleeping bag(s)
- ☐ Cash
- ☐ Flashlight (with batteries)
- ☐ Gasoline
- ☐ Telephone (with batteries)
- ☐ Pet supplies
- ☐ Secondary source of heat

18. What else do you have in your emergency kit? For more information on emergency kits, visit: <https://www.ready.gov/kit>

19. Are you familiar with the special needs of your neighbors in the event of a disaster situation (special needs may include limited mobility, severe medical conditions, memory impairments)?

- ☐ Yes
☐ No

20. Are you a trained member of your Community Emergency Response Team (CERT)?

- ☐ Yes
☐ No, but I would like to learn more about CERT (Please visit: <https://www.cityofhesperia.us/744/CERT-Training>).
☐ No, I'm not interested in being a trained CERT member.

21. How can the City help you become better prepared for a disaster? (Choose all that apply)

- ☐ Provide effective emergency notifications and communication.
☐ Provide training and education to residents and business owners on how to reduce future damage.
☐ Provide community outreach regarding emergency preparedness.
☐ Create awareness of special needs and vulnerable populations.

22. Other ways the City can help you become better prepared (please specify)?

23. If you do NOT work in the City of Hesperia, what is the zip code of your workplace?

24. If you do NOT work in the City of Hesperia, does your employer have a plan in place for disaster recovery?

- ☐ Yes
☐ No

- ☐ I don't know.
- ☐ Not applicable; I work in Hesperia.

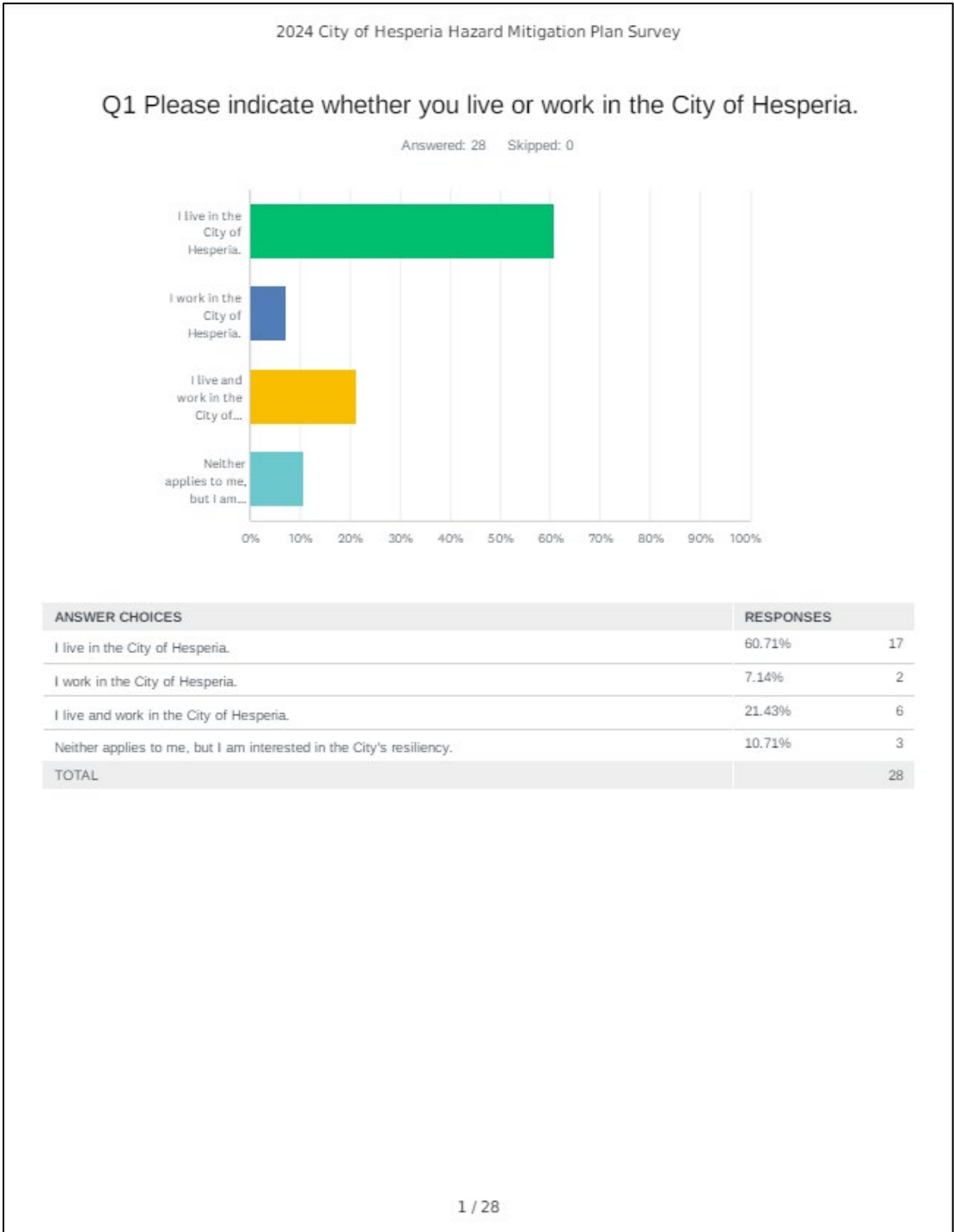
25. If you do NOT work in the City of Hesperia, does your employer have a workforce communications plan to implement following a disaster, so they can contact you?

- ☐ Yes
- ☐ No
- ☐ Not applicable; I work in Hesperia.

26. Please provide us with any additional comments/suggestions/questions regarding hazard events.



2024 City of Hesperia Hazard Mitigation Plan Survey Results

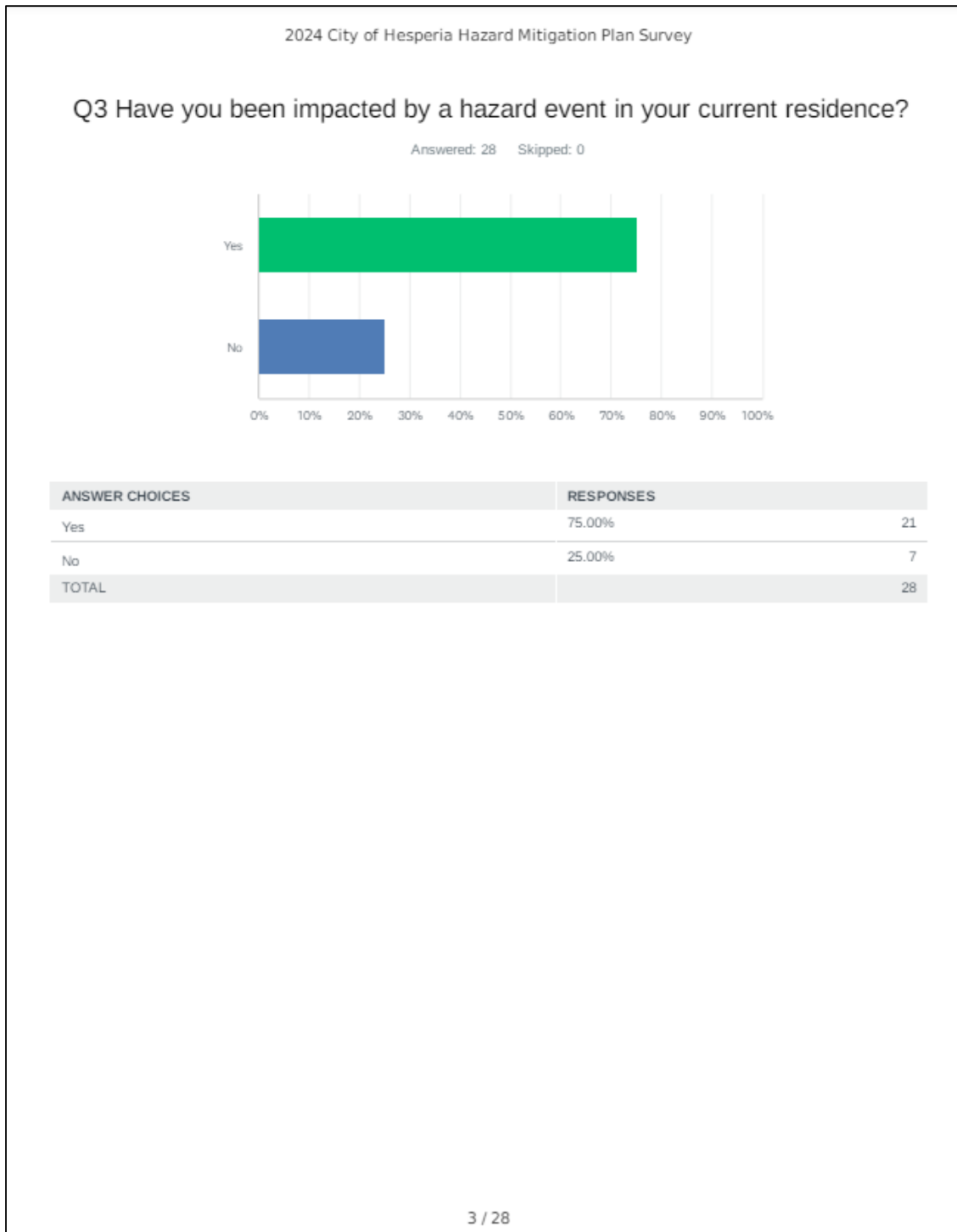


2024 City of Hesperia Hazard Mitigation Plan Survey

Q2 What is the ZIP code of your home?

Answered: 28 Skipped: 0

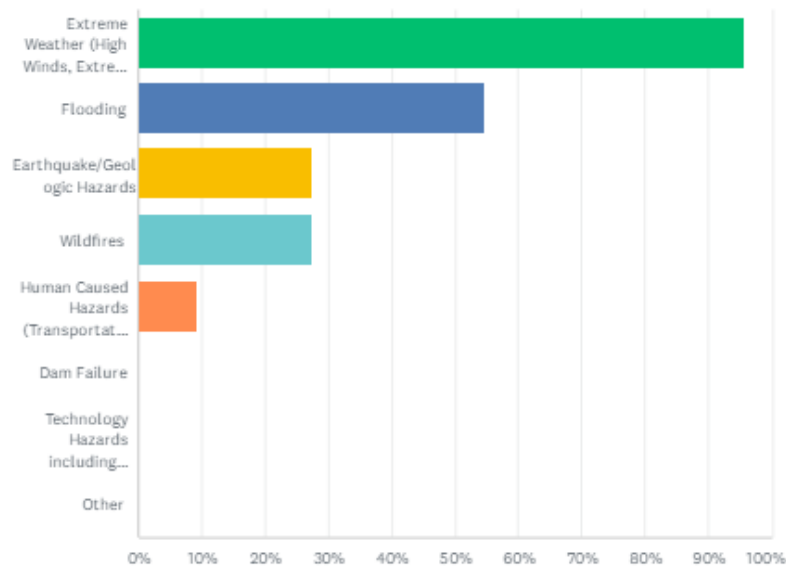
#	RESPONSES	DATE
1	92308	4/1/2024 3:30 PM
2	92345	3/25/2024 12:59 PM
3	92345	3/24/2024 1:10 PM
4	92345	3/24/2024 8:58 AM
5	92345	3/23/2024 11:44 PM
6	92344	3/23/2024 6:26 PM
7	92344	3/23/2024 4:30 PM
8	92345	3/23/2024 12:31 PM
9	92345	3/23/2024 12:14 PM
10	92345	3/19/2024 5:12 AM
11	92344	3/18/2024 7:25 PM
12	92344	3/17/2024 10:56 PM
13	92345	3/16/2024 7:46 AM
14	92345	3/16/2024 7:16 AM
15	92344	3/16/2024 4:46 AM
16	92345	3/15/2024 4:40 PM
17	92344	3/15/2024 4:01 PM
18	92308	3/15/2024 3:23 PM
19	92345	3/15/2024 2:50 PM
20	92345	3/15/2024 2:45 PM
21	92345-5266	3/15/2024 1:06 PM
22	92345	3/15/2024 12:12 PM
23	92345	3/13/2024 6:20 AM
24	92344	3/12/2024 10:59 PM
25	92342	3/12/2024 7:14 PM
26	92307	3/12/2024 7:07 PM
27	92344	3/12/2024 6:48 PM
28	92344	3/12/2024 5:23 PM



2024 City of Hesperia Hazard Mitigation Plan Survey

Q4 If you answered yes to the previous question, please select the type of hazard event that you have been impacted by (select all that apply).

Answered: 22 Skipped: 6



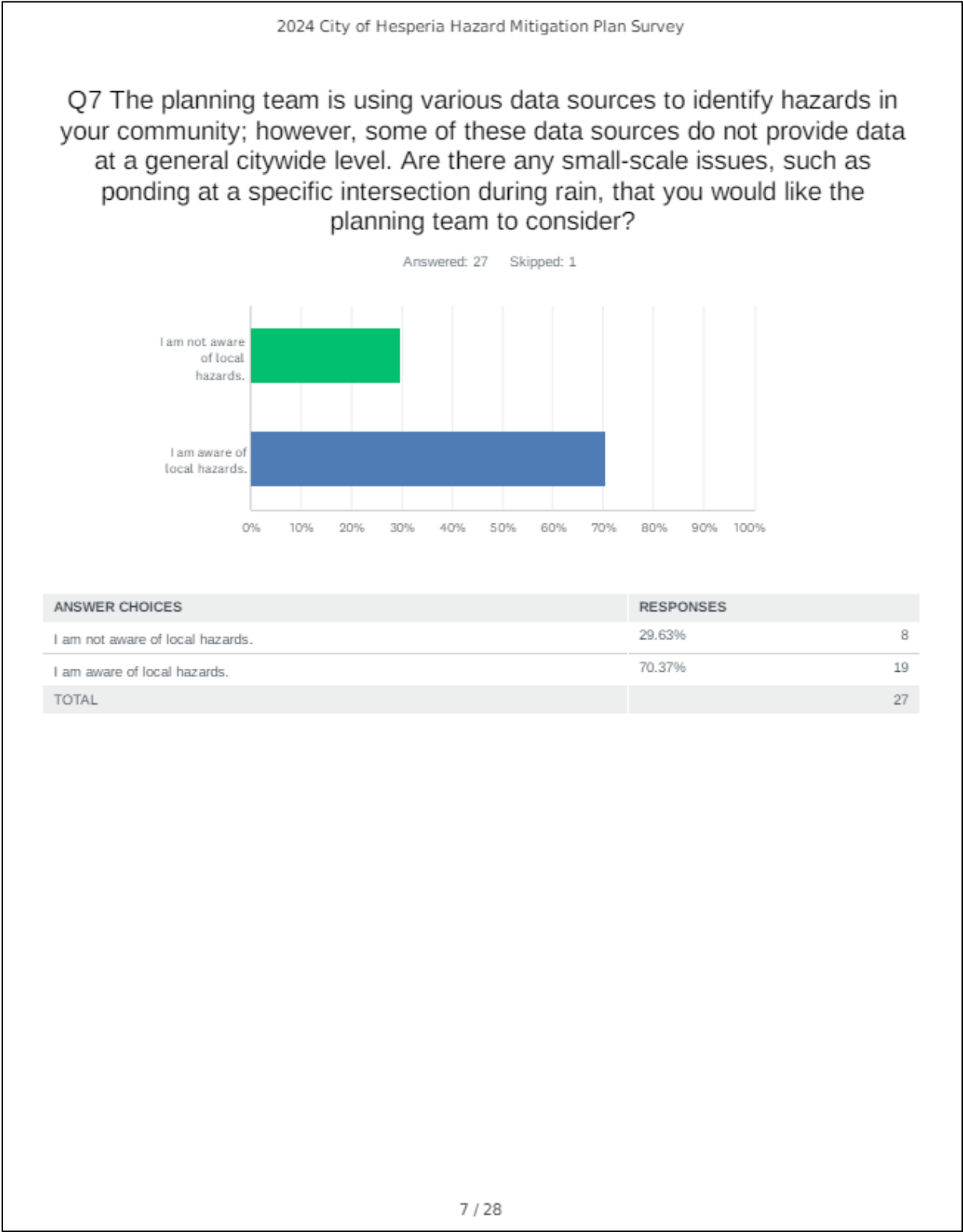
ANSWER CHOICES	RESPONSES	
Extreme Weather (High Winds, Extreme Heat Days, Severe Rainstorms)	95.45%	21
Flooding	54.55%	12
Earthquake/Geologic Hazards	27.27%	6
Wildfires	27.27%	6
Human Caused Hazards (Transportation Incidents, Communications Failure, Terrorism)	9.09%	2
Dam Failure	0.00%	0
Technology Hazards including hazardous material incidents	0.00%	0
Other	0.00%	0
Total Respondents: 22		

2024 City of Hesperia Hazard Mitigation Plan Survey

Q5 Please list any additional hazards that have previously impacted your neighborhood or home.

Answered: 12 Skipped: 16

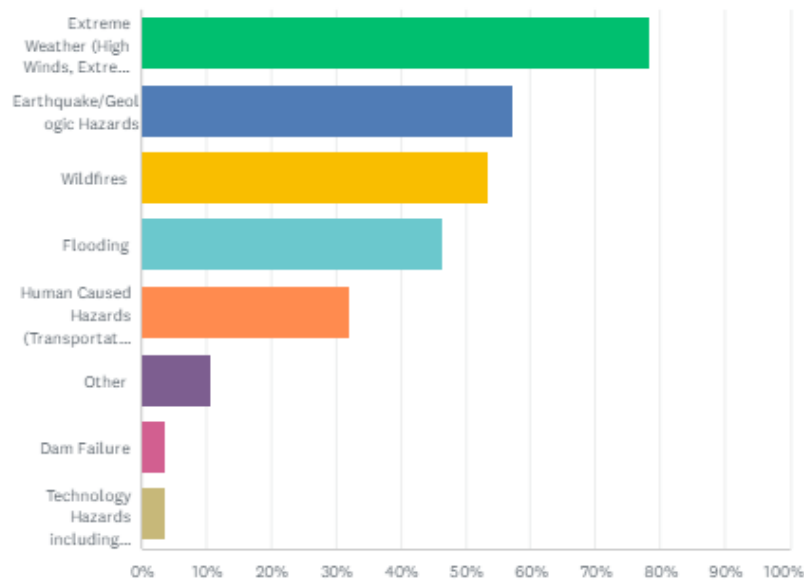
#	RESPONSES	DATE
1	N/A	4/1/2024 3:30 PM
2	Wind blew roof shingles off, and fences down, smoke from wildfires required evacuation for a few days.	3/23/2024 11:44 PM
3	Equipment failures, extreme traffic	3/23/2024 4:30 PM
4	Potholes due to rain, need better roads with curb and gutter Storm drains	3/23/2024 12:31 PM
5	Wildfire, Flooding of the roads leading off the Mesa	3/15/2024 4:40 PM
6	Streets are horrible! Pot holes in almost every street. City workers do half ass jobs just to be back a few months later to fix them again	3/15/2024 2:50 PM
7	No drainage , front of house at street always erodes,	3/15/2024 2:45 PM
8	Pot Holes everywhere causing damage to vehicles.	3/13/2024 6:20 AM
9	We live on dirt roads which are extremely bad and for driving our students to Hesperia schools and neither the county nor the city have ever taken action to improve them.	3/12/2024 10:59 PM
10	Pot holes from flooding	3/12/2024 7:07 PM
11	None	3/12/2024 6:48 PM
12	None	3/12/2024 5:23 PM



2024 City of Hesperia Hazard Mitigation Plan Survey

Q6 The following hazards could potentially impact the city. Please mark the THREE (3) hazards that are of most concern to your neighborhood or home.

Answered: 28 Skipped: 0



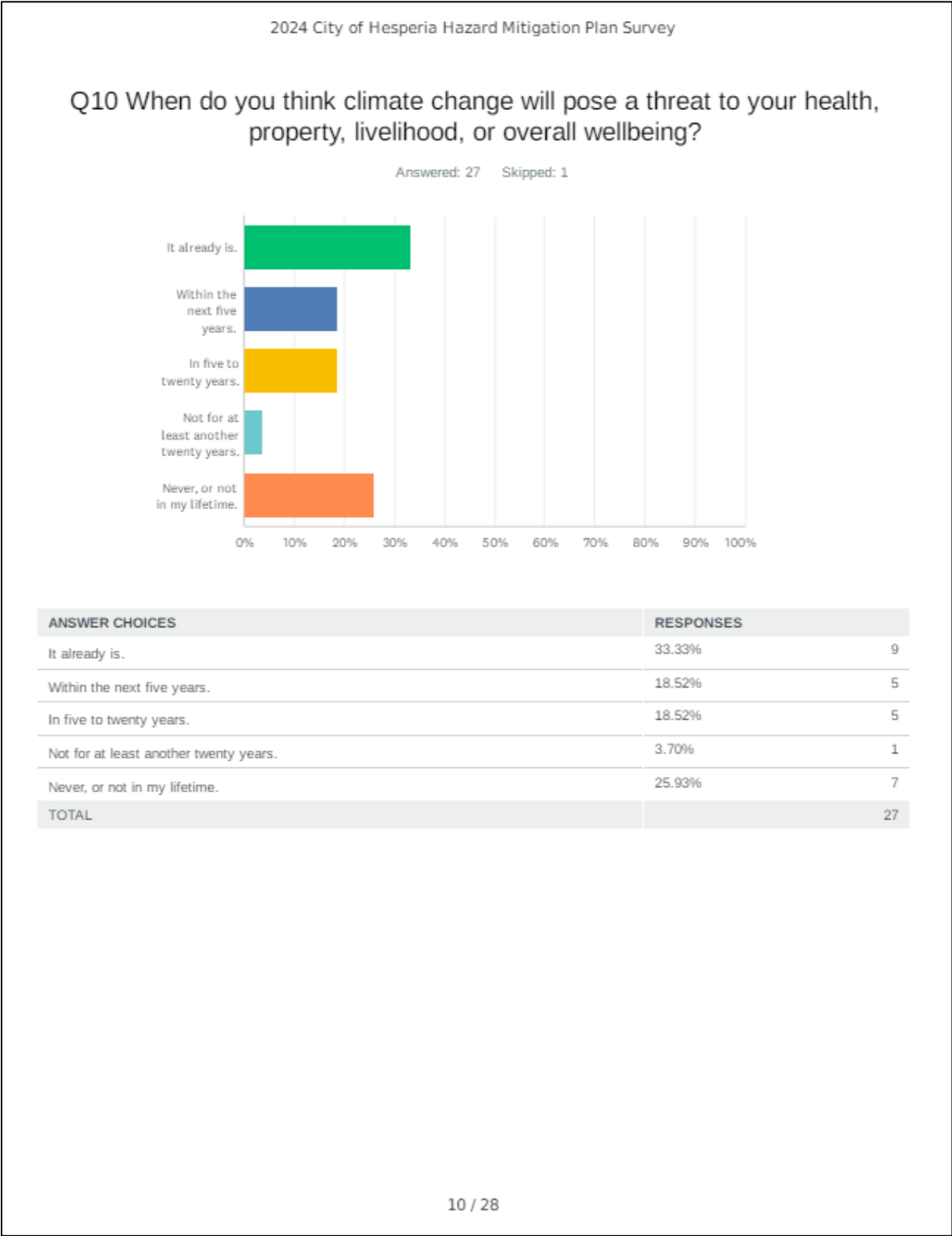
ANSWER CHOICES	RESPONSES	
Extreme Weather (High Winds, Extreme Heat Days, Severe Rainstorms)	78.57%	22
Earthquake/Geologic Hazards	57.14%	16
Wildfires	53.57%	15
Flooding	46.43%	13
Human Caused Hazards (Transportation Incidents, Communications Failure, Terrorism)	32.14%	9
Other	10.71%	3
Dam Failure	3.57%	1
Technology Hazards including hazardous material incidents	3.57%	1
Total Respondents: 28		

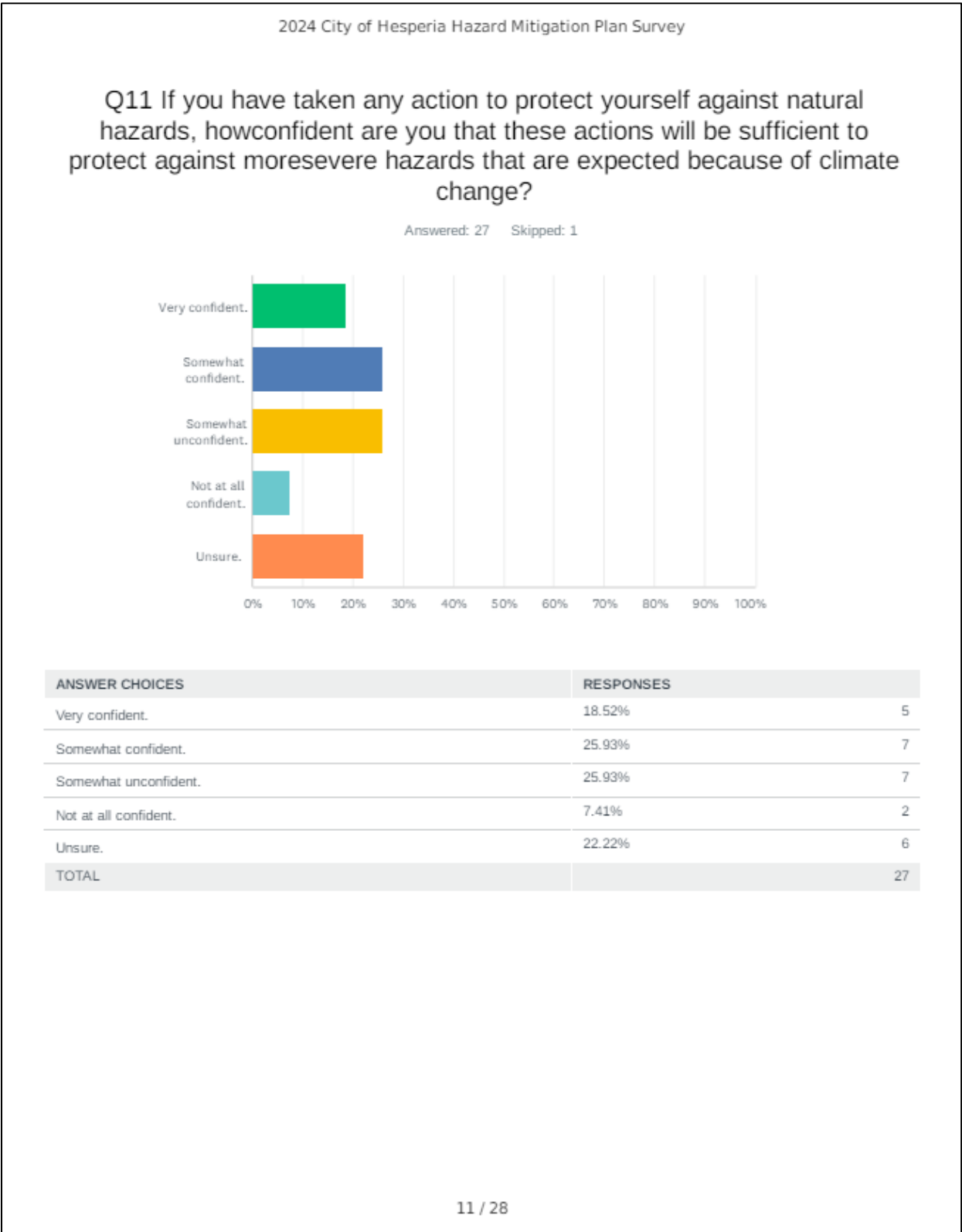
2024 City of Hesperia Hazard Mitigation Plan Survey

Q8 If you are aware of local hazards that you would like the planning team to consider, please provide as much detail as possible, including location and type of hazard.

Answered: 17 Skipped: 11

#	RESPONSES	DATE
1	N/A	4/1/2024 3:30 PM
2	Deep hole fills with water corner of Fairburn and Danbury. City used to drop dirt and fill ruts that storm runoff caused. Need a load dropped and spread NE corner Fairburn and Montrose going north and also east	3/23/2024 11:44 PM
3	Maple between Muscatel and Main and Sultana East of Maple	3/23/2024 6:26 PM
4	Lack of road maintenance near Mesquite and Maple streets	3/23/2024 4:30 PM
5	Sultana & 7th ave	3/23/2024 12:31 PM
6	Massive flooding on eucalyptus and balsam and balsam and manzanita.	3/23/2024 12:14 PM
7	Flooding everywhere	3/16/2024 7:16 AM
8	Not enough escape routes through city. We have Main st and Ranchero rd as escape routes. That's not nearly enough for 130000 residents to flee should some emergency occur. Some of the roads , or most of the roads that do exist , are in horrible condition. Mariposa Rd, amargosa Rd. , Main St. , Escondido. All are in horrible condition with potholes, cracks and flooding issues that would make evacuations impossible or very difficult. Whoever is in control of planning this city needs to drive around and look at these issues.,	3/16/2024 4:46 AM
9	Flooding on low points on I Ave, Peach Ave and Lake Arrowhead Road	3/15/2024 4:40 PM
10	Some kind of water drainage, something to control water coming down street a washing road out on chase ave	3/15/2024 2:45 PM
11	Water ponding along Cottonwood	3/15/2024 12:12 PM
12	C / Santa fe Mesquite / Maple road very damaged	3/13/2024 6:20 AM
13	Dirt roads, many pot holes throughout the city, city roads which have faded or no lines on streets, especially Maple going south from main street.	3/12/2024 10:59 PM
14	Flooding on Balsam	3/12/2024 7:14 PM
15	Sultana!!	3/12/2024 7:07 PM
16	Mesquite East of Escondido has flooding making road impassable, Sultana has severe flooding	3/12/2024 6:48 PM
17	Flooding on Sultana and near Mesquite Trails Elementary	3/12/2024 5:23 PM

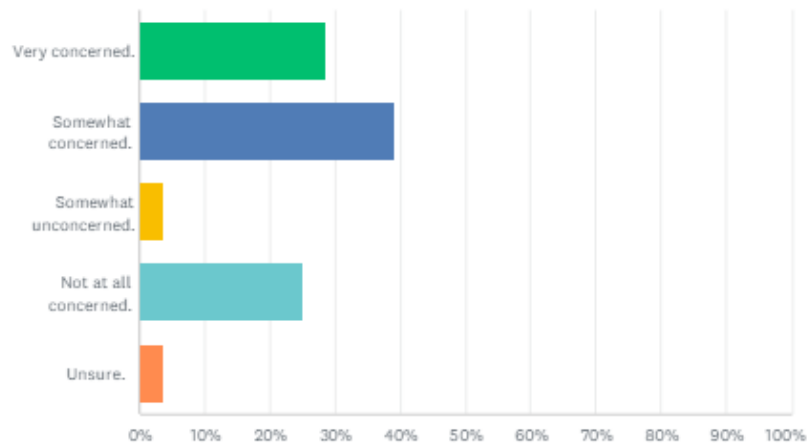




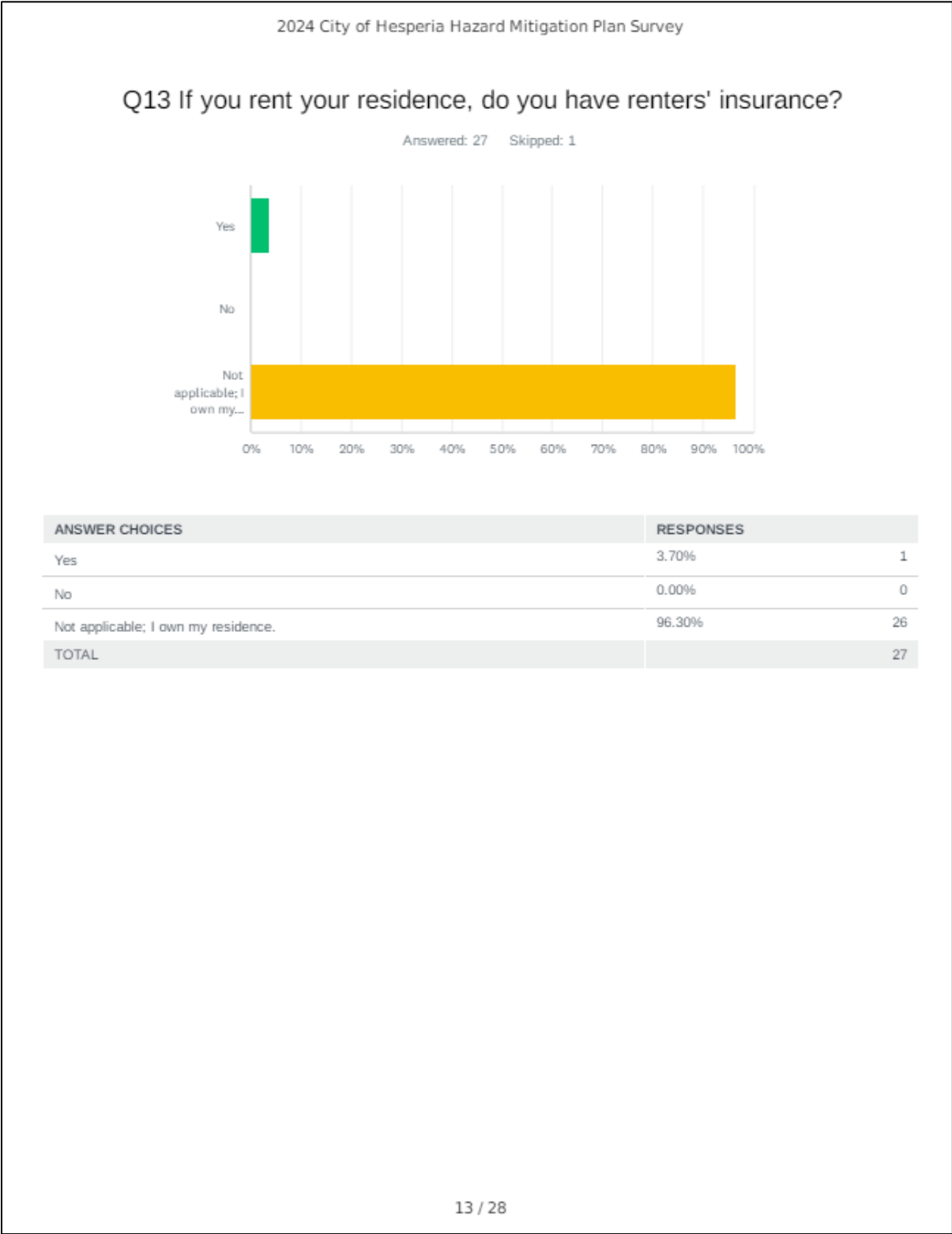
2024 City of Hesperia Hazard Mitigation Plan Survey

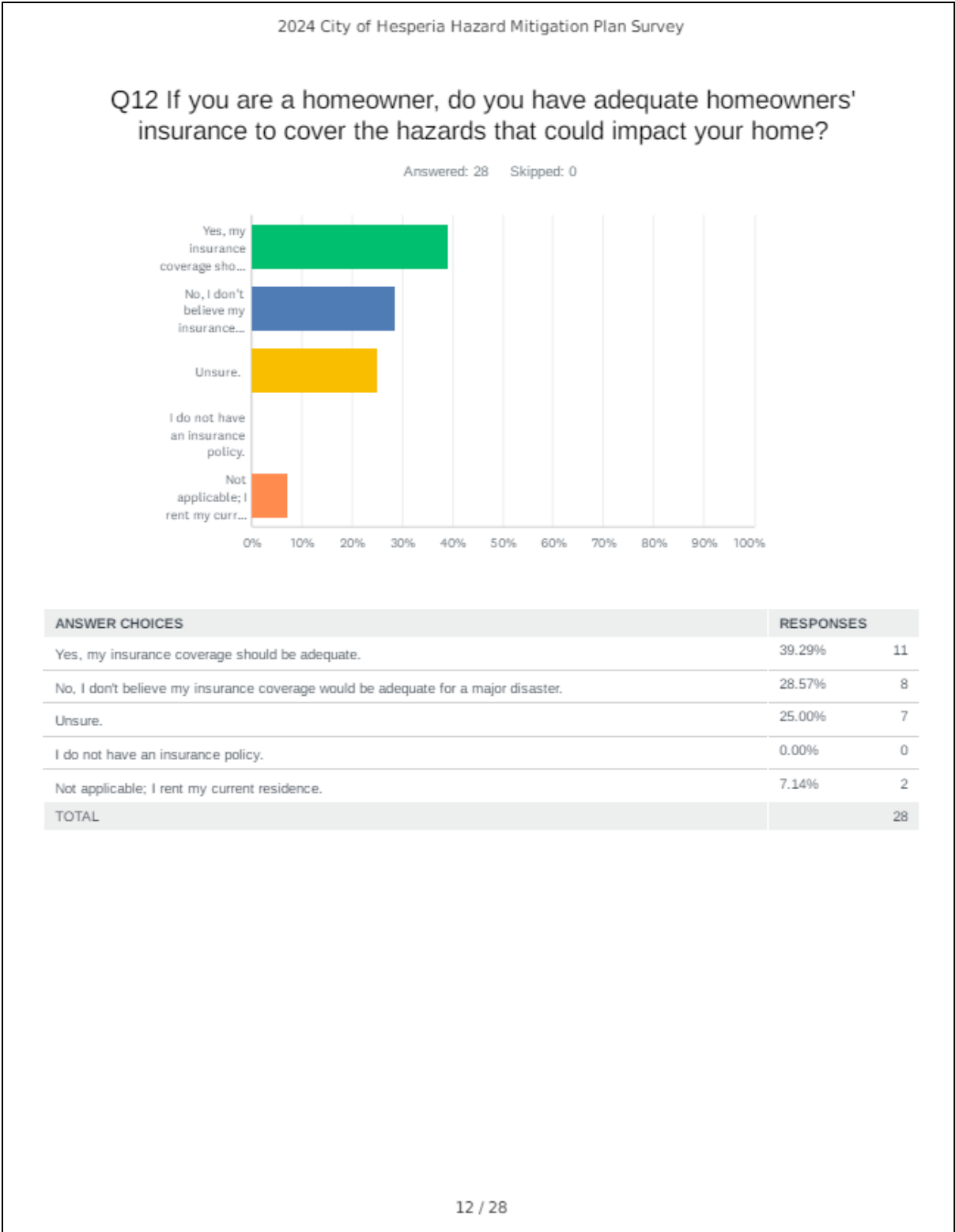
Q9 How concerned are you that climate change may create new hazardous situations in Hesperia or make existing natural hazards worse?

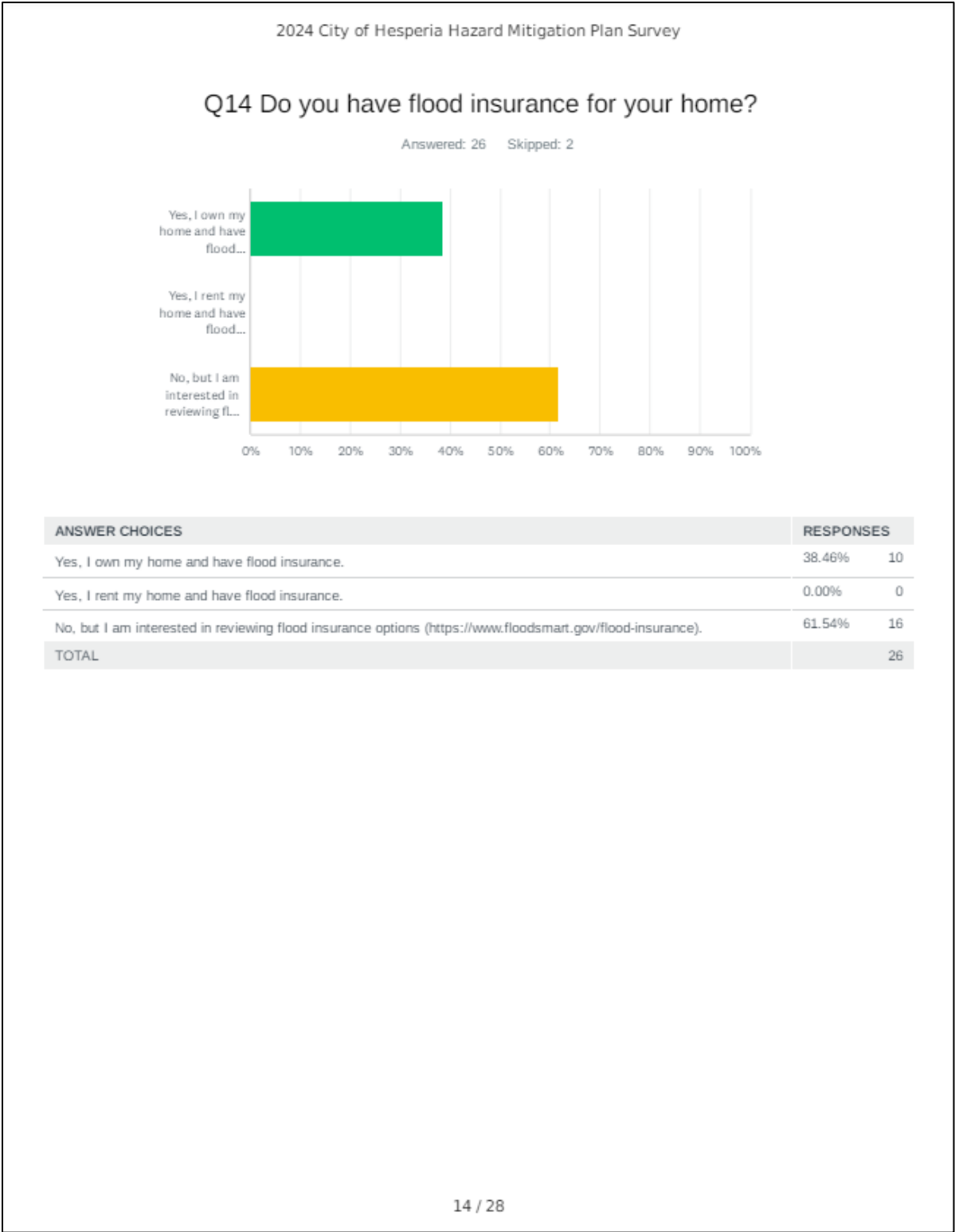
Answered: 28 Skipped: 0

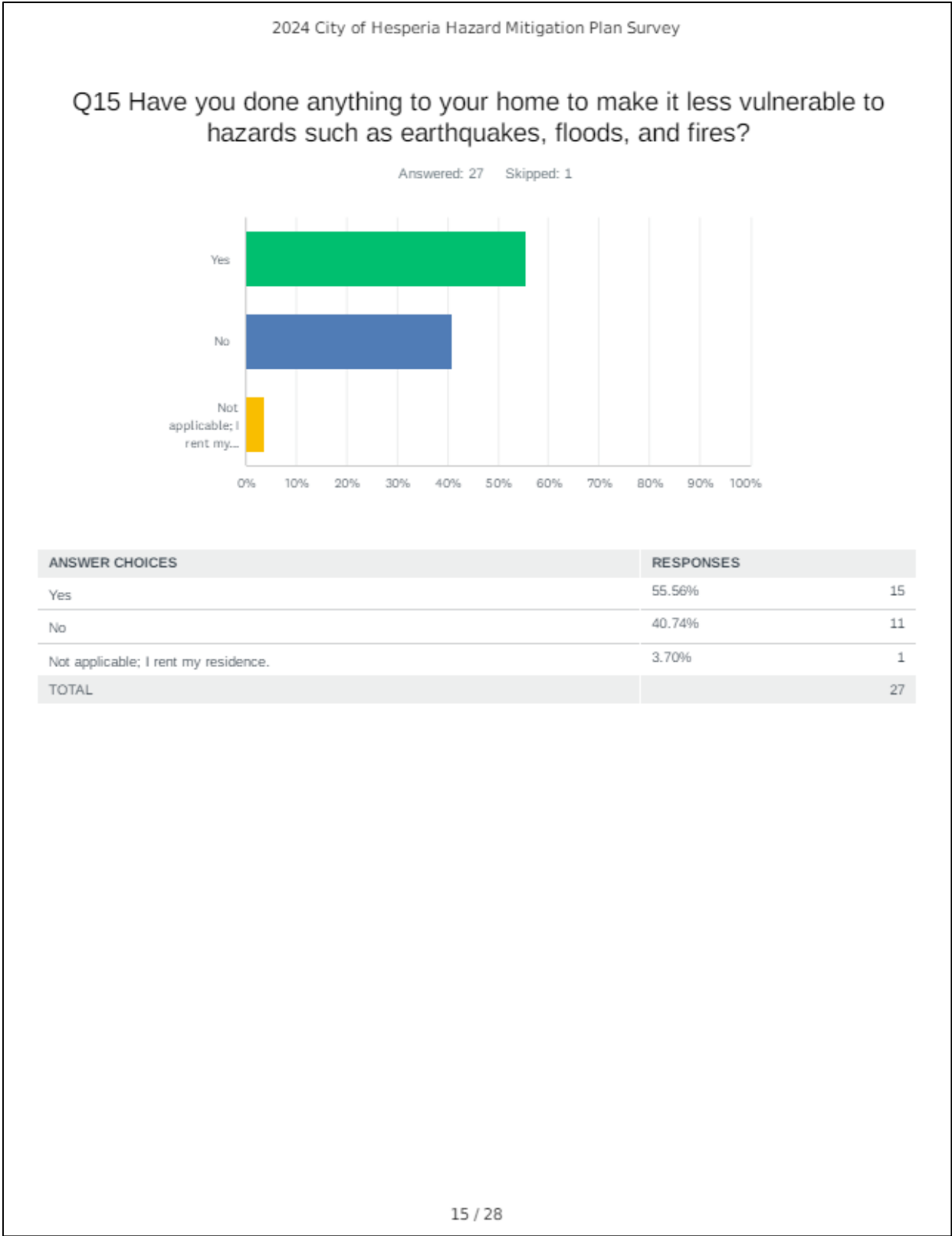


ANSWER CHOICES	RESPONSES	
Very concerned.	28.57%	8
Somewhat concerned.	39.29%	11
Somewhat unconcerned.	3.57%	1
Not at all concerned.	25.00%	7
Unsure.	3.57%	1
TOTAL		28









2024 City of Hesperia Hazard Mitigation Plan Survey

Q16 If not, do you plan to?

Answered: 9 Skipped: 19

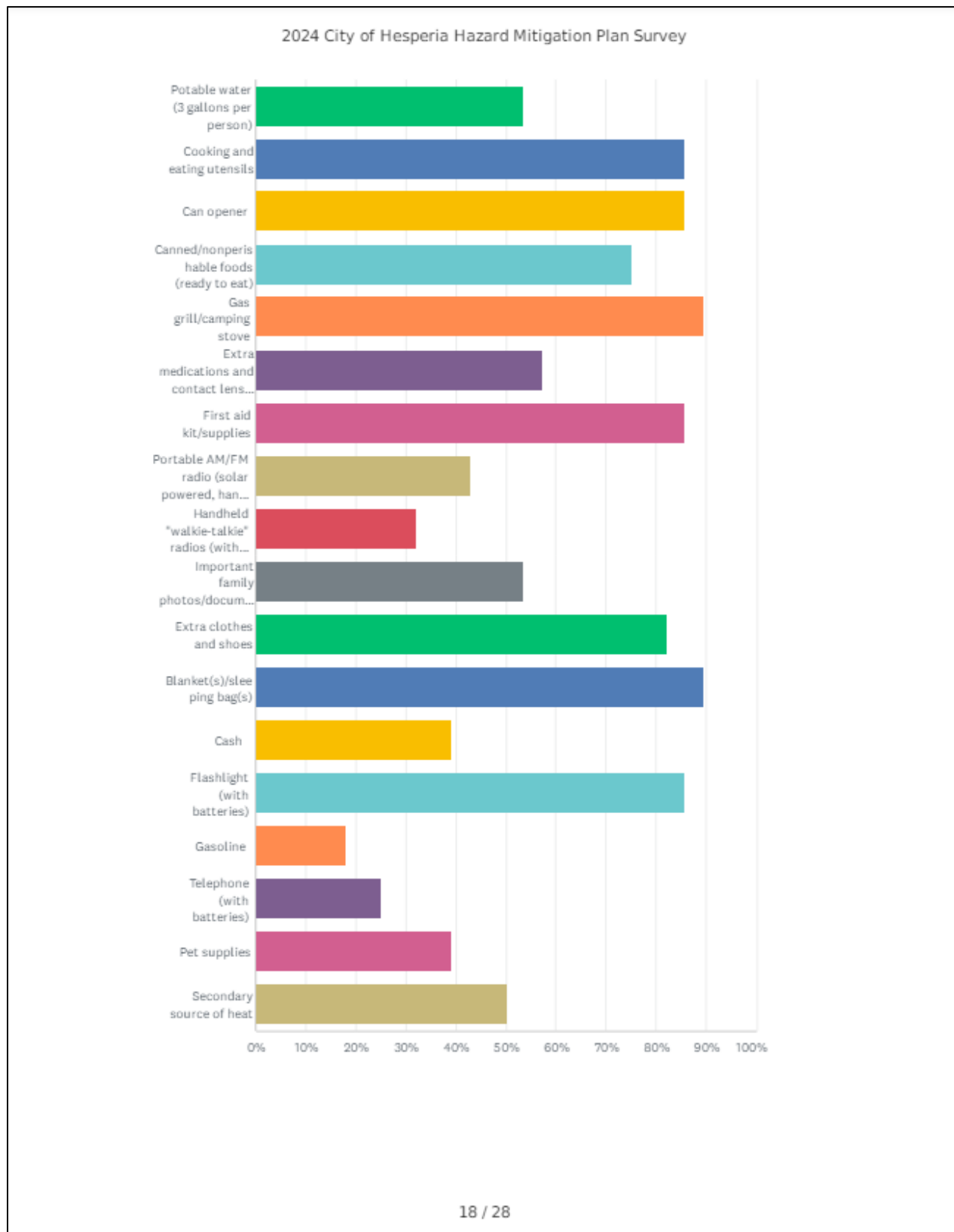
#	RESPONSES	DATE
1	N/A	4/1/2024 3:30 PM
2	Nothing we can do for earthquakes and high wind damage. We keep yard weed free to prevent fires	3/23/2024 6:26 PM
3	Yes	3/23/2024 4:30 PM
4	If need be	3/23/2024 12:31 PM
5	No	3/16/2024 7:46 AM
6	No	3/16/2024 4:46 AM
7	Yes	3/13/2024 6:20 AM
8	Not sure	3/12/2024 7:07 PM
9	Maybe	3/12/2024 5:23 PM

2024 City of Hesperia Hazard Mitigation Plan Survey

Q17 If a severe hazard event occurred today such that all services were cut off from your home (power, gas, water, sewer) and you were unable to leave or access a store for 72 hours, which of these items do you have readily available?

Answered: 28 Skipped: 0

17 / 28



2024 City of Hesperia Hazard Mitigation Plan Survey

ANSWER CHOICES	RESPONSES	
Potable water (3 gallons per person)	53.57%	15
Cooking and eating utensils	85.71%	24
Can opener	85.71%	24
Canned/nonperishable foods (ready to eat)	75.00%	21
Gas grill/camping stove	89.29%	25
Extra medications and contact lenses (if applicable)	57.14%	16
First aid kit/supplies	85.71%	24
Portable AM/FM radio (solar powered, hand crank, or batteries)	42.86%	12
Handheld "walkie-talkie" radios (with batteries)	32.14%	9
Important family photos/documentation in water and fireproof container	53.57%	15
Extra clothes and shoes	82.14%	23
Blanket(s)/sleeping bag(s)	89.29%	25
Cash	39.29%	11
Flashlight (with batteries)	85.71%	24
Gasoline	17.86%	5
Telephone (with batteries)	25.00%	7
Pet supplies	39.29%	11
Secondary source of heat	50.00%	14
Total Respondents: 28		

2024 City of Hesperia Hazard Mitigation Plan Survey

Q18 What else do you have in your emergency kit?For more information on emergency kits, visit: <https://www.ready.gov/kit>

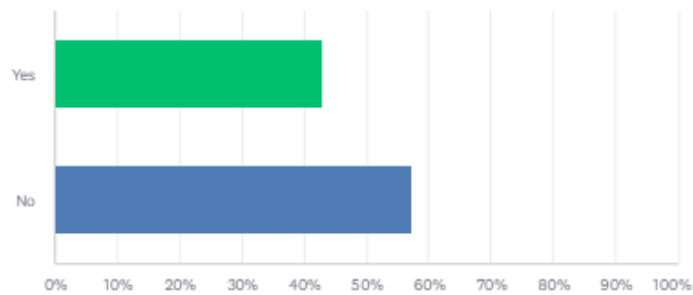
Answered: 9 Skipped: 19

#	RESPONSES	DATE
1	N/A	4/1/2024 3:30 PM
2	We have a backup battery with a solar panel provided by SCE that will power refrigerator and swamp cooler and lamps and recharge phones. It will last about five days and recharges by solar if necessary	3/23/2024 6:26 PM
3	Generator	3/23/2024 12:31 PM
4	Rain poncho, em. Blanket, umbrella, cash,plus	3/17/2024 10:56 PM
5	A gun and bullets.	3/16/2024 7:46 AM
6	First aid, tools, blankets , lights, heat, propane, water,	3/16/2024 4:46 AM
7	Sanitation and cleaning	3/15/2024 4:01 PM
8	Guns , ammunition	3/15/2024 2:45 PM
9	None	3/12/2024 6:48 PM

2024 City of Hesperia Hazard Mitigation Plan Survey

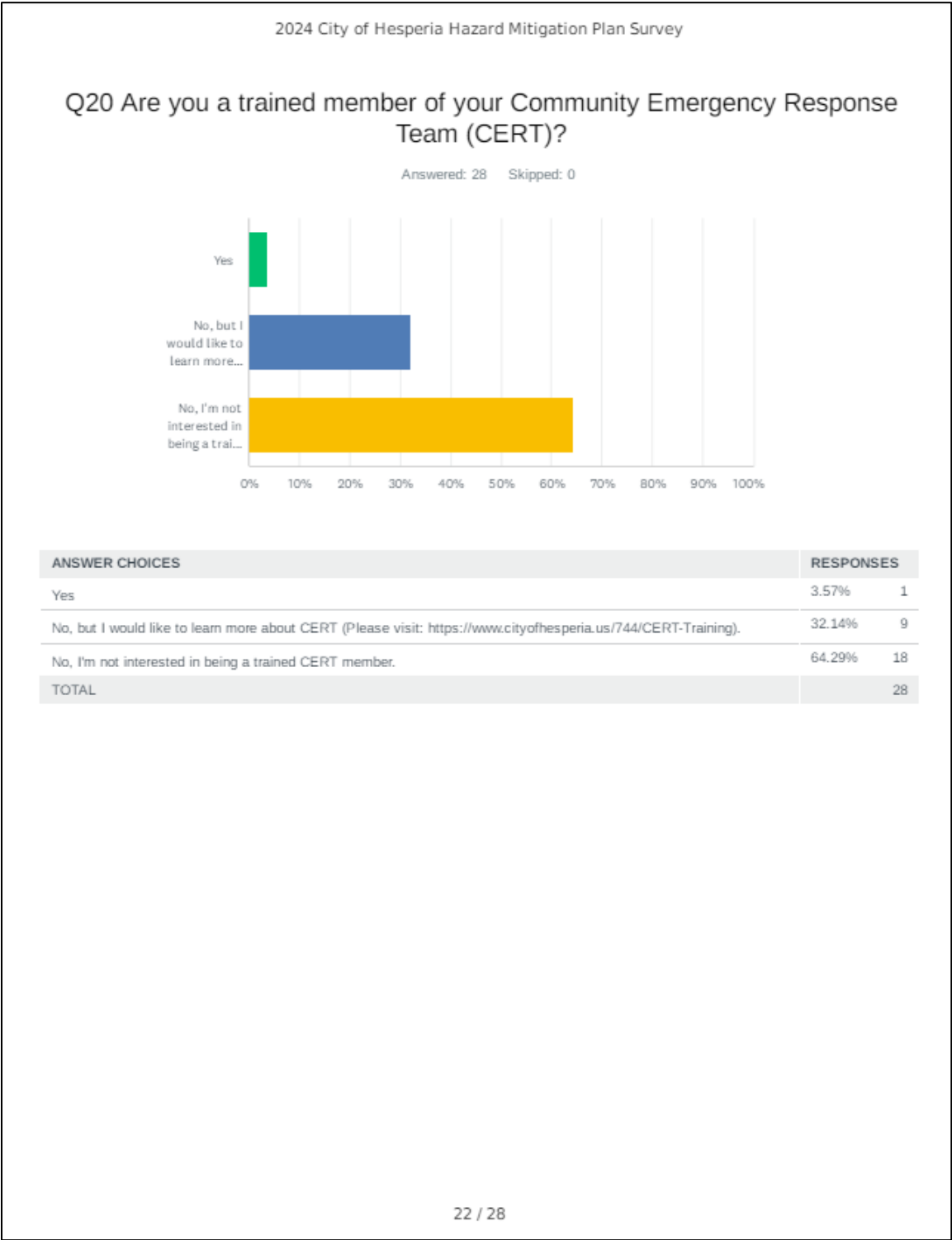
Q19 Are you familiar with the special needs of your neighbors in the event of a disaster situation (special needs may include limited mobility, severe medical conditions, memory impairments)?

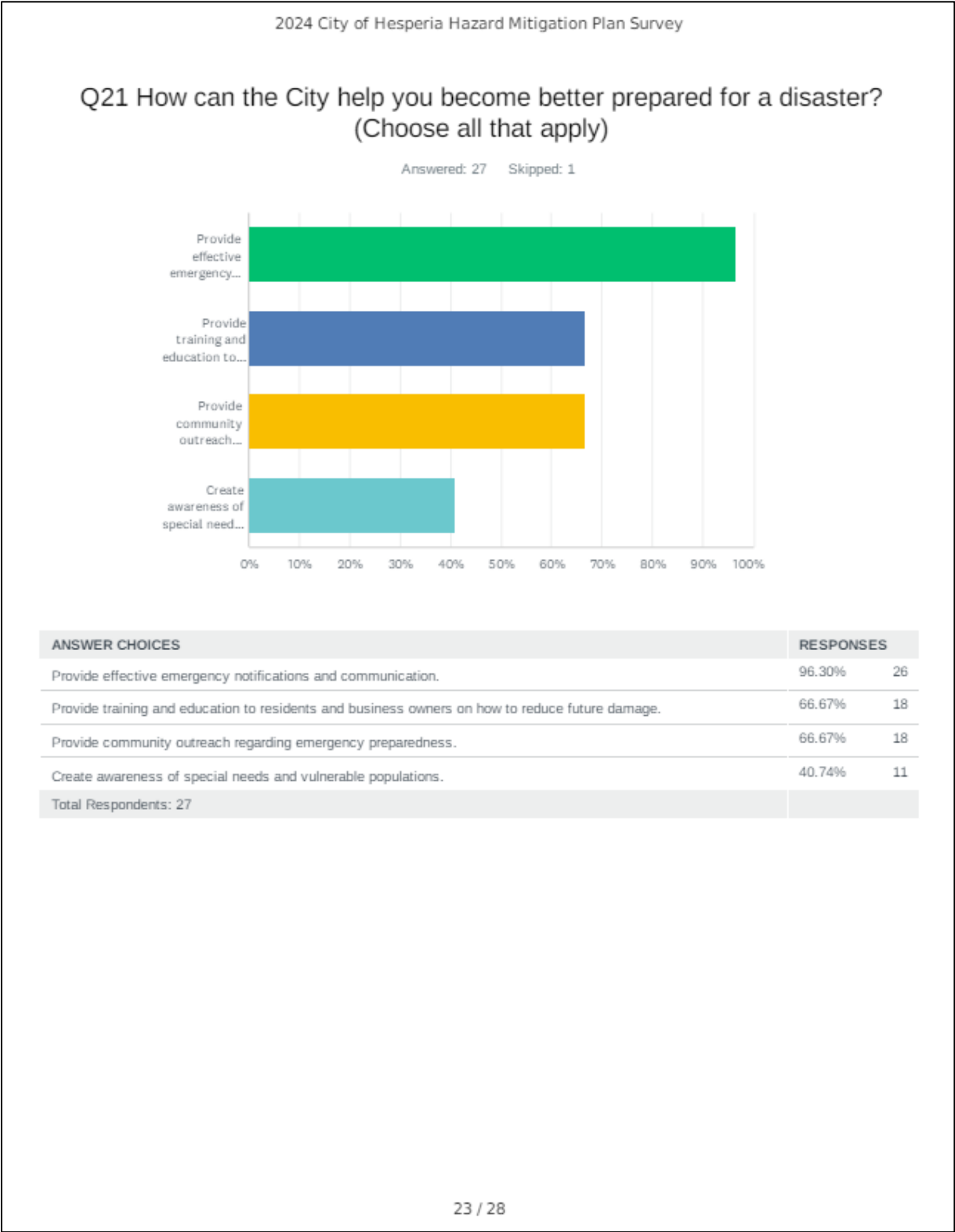
Answered: 28 Skipped: 0



ANSWER CHOICES		RESPONSES	
Yes		42.86%	12
No		57.14%	16
TOTAL			28

21 / 28





2024 City of Hesperia Hazard Mitigation Plan Survey

Q22 Other ways the City can help you become better prepared (please specify)?

Answered: 11 Skipped: 17

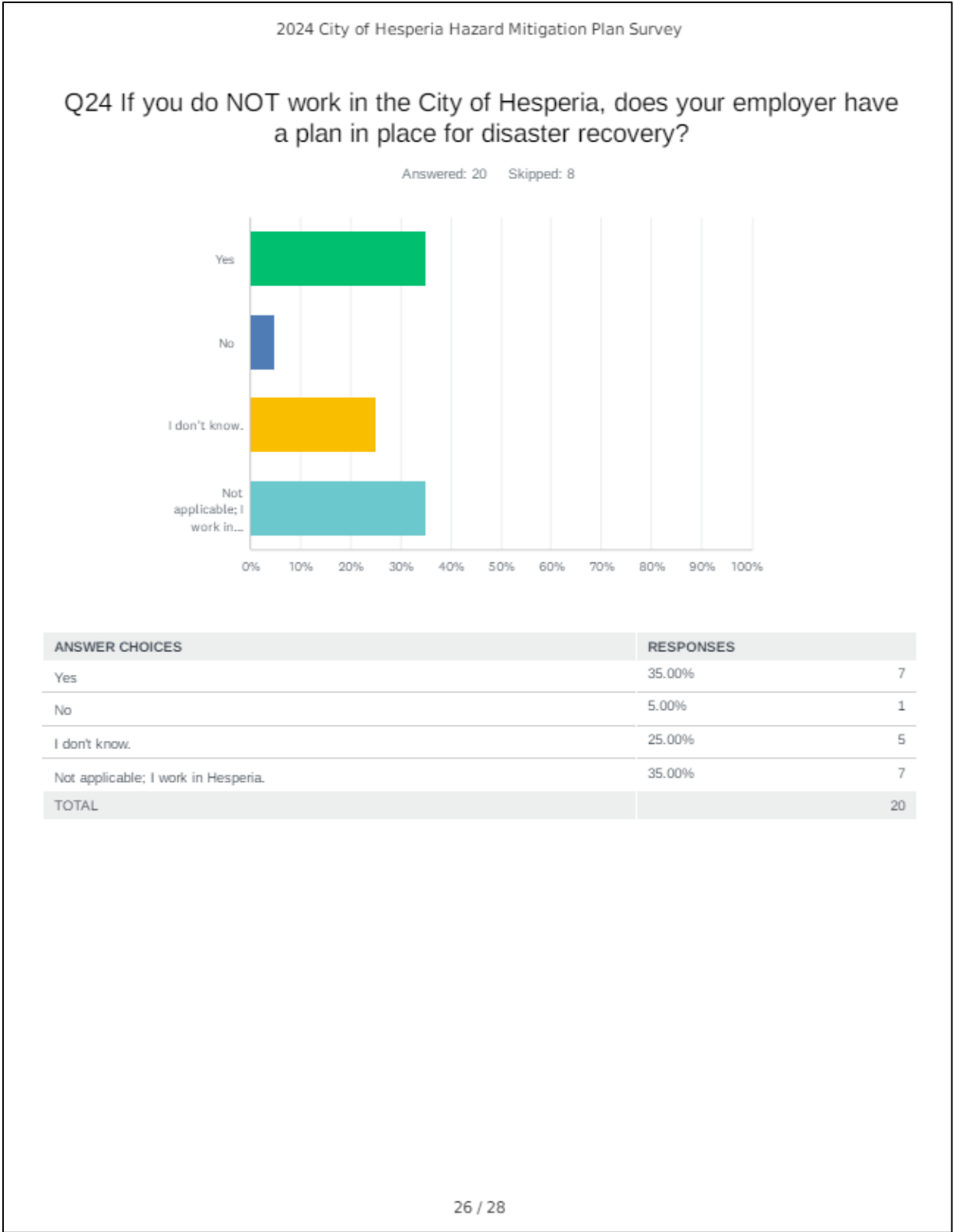
#	RESPONSES	DATE
1	CERT Training, Community Outreach, ect.	4/1/2024 3:30 PM
2	Arrange for emergency goods and food at discounted prices.	3/23/2024 6:26 PM
3	Offer deals on supplies	3/17/2024 10:56 PM
4	Spend more tax money on fishing the problems you created	3/16/2024 7:16 AM
5	More escape routes	3/16/2024 4:46 AM
6	Have emergency evacuation routes and stations identified	3/15/2024 4:01 PM
7	Fix road conditions	3/15/2024 2:45 PM
8	Provide emergency food, water, etc.	3/15/2024 12:12 PM
9	Communication	3/13/2024 6:20 AM
10	Better maintenance of rural roadways/ dirt roads, and regular maintenance of drainage systems, alternative routes through rural/dirt roads	3/12/2024 6:48 PM
11	None	3/12/2024 5:23 PM

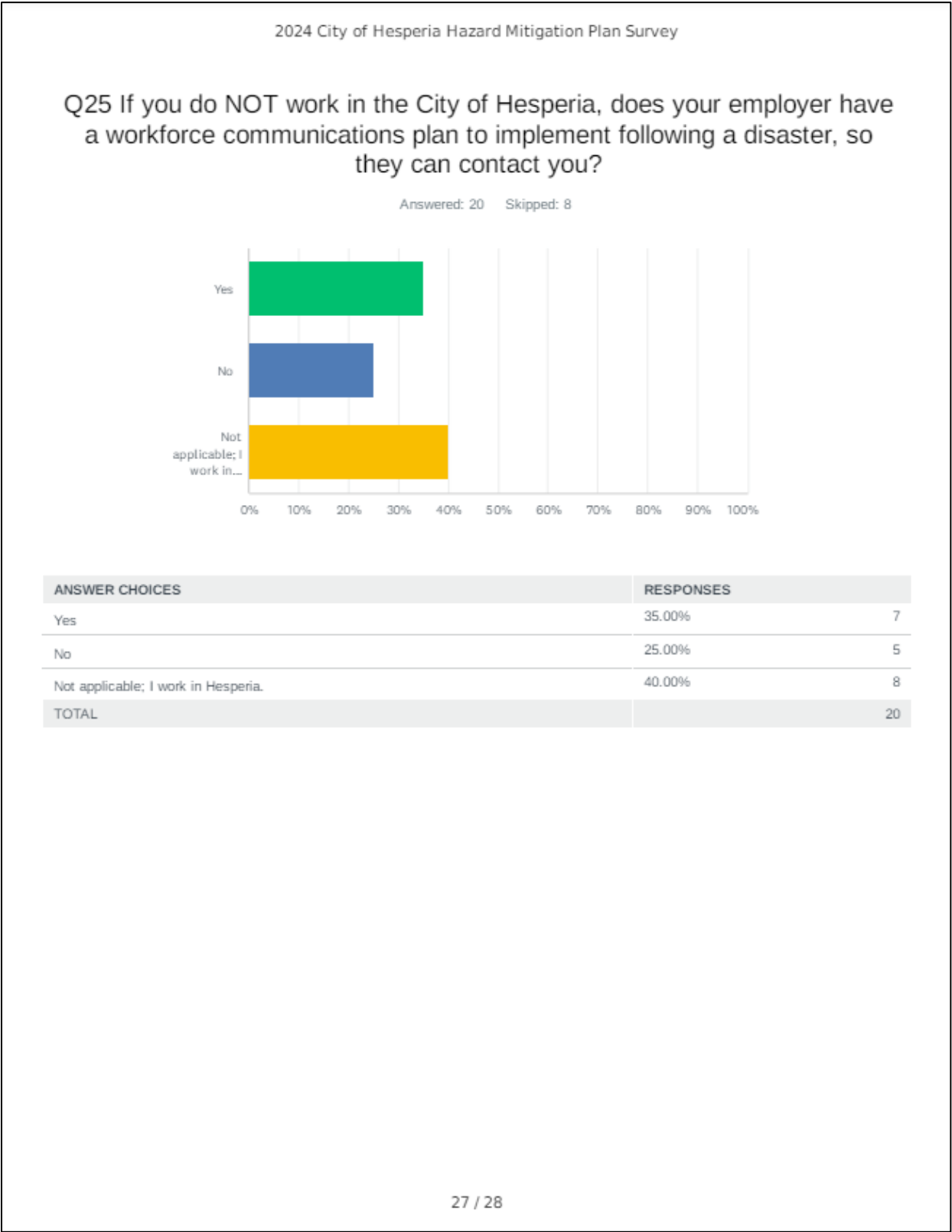
2024 City of Hesperia Hazard Mitigation Plan Survey

Q23 If you do NOT work in the City of Hesperia, what is the zip code of your workplace?

Answered: 13 Skipped: 15

#	RESPONSES	DATE
1	92307	4/1/2024 3:30 PM
2	92392	3/25/2024 12:59 PM
3	92879	3/24/2024 1:10 PM
4	Retired	3/23/2024 6:26 PM
5	92357	3/23/2024 12:14 PM
6	91786	3/18/2024 7:25 PM
7	Retired	3/17/2024 10:56 PM
8	92369	3/16/2024 7:46 AM
9	Phelan	3/16/2024 4:46 AM
10	92308	3/15/2024 3:23 PM
11	91710	3/15/2024 12:12 PM
12	Not applicable	3/12/2024 6:48 PM
13	N/A	3/12/2024 5:23 PM





2024 City of Hesperia Hazard Mitigation Plan Survey

Q26 Please provide us with any additional comments/suggestions/questions regarding hazard events.

Answered: 9 Skipped: 19

#	RESPONSES	DATE
1	You're doing great.	4/1/2024 3:30 PM
2	All of our gas meters should have quake safety devices installed on them at no cost to residents.	3/23/2024 11:44 PM
3	Streets with curb and gutter, more storm drains	3/23/2024 12:31 PM
4	It would be extremely difficult to get up the hill via the 15 fwy after a major event such as an earthquake.	3/18/2024 7:25 PM
5	Classes and training, resources, fairs	3/17/2024 10:56 PM
6	It would be nice if there was a listed and distributed map of evacuation routes and places available for evacuation of humans & livestock.	3/15/2024 4:01 PM
7	Fix road and better drainage problems	3/15/2024 2:45 PM
8	Good survey!	3/12/2024 7:07 PM
9	Roadways during school hours are highly congested. Major traffic jams with no alternative routes for emergency vehicles. Example Mesquite Trails on Escondido and Cedar Middle School on Escondido. Better lighting on roadways and pedestrian walkways, better handicap access.	3/12/2024 6:48 PM

Public Engagement Opportunity – August 6, 2024
LHMP Survey (National Night Out)

Social Media Post and Flyer

The image shows a Facebook post from the City of Hesperia. The post includes a profile picture of the city, the name 'City of Hesperia', and a timestamp of '12m'. The text of the post asks for help in preparing for disasters by updating the Local Hazard Mitigation Plan and provides a link to a survey. Below the text is a flyer for the 'LOCAL HAZARD MITIGATION PLAN' which explains the purpose of the plan and encourages community input through a survey. The flyer features a large circular image of a Joshua tree at sunset and the City of Hesperia logo at the bottom.

City of Hesperia
12m · 🌐

Help us prepare for disasters caused by natural hazards before they occur in [#Hesperia](#). We're updating our Local Hazard Mitigation Plan and welcome your feedback. To take our short survey and provide your input, <https://www.cityofhesperia.us/lhmp>.

LOCAL HAZARD MITIGATION PLAN
THE CITY OF HESPERIA IS UPDATING ITS LOCAL HAZARD MITIGATION PLAN!

THIS PLAN WILL HELP THE CITY ASSESS HAZARD VULNERABILITIES TO REDUCE THE RISK OF INJURIES, PROPERTY DAMAGE, AND COMMUNITY DISRUPTION THAT MAY OCCUR DURING DISASTROUS EVENTS.

TO HELP THE CITY CREATE A PLAN THAT WILL TAILOR TO THE COMMUNITY, PLEASE GIVE YOUR OPINION BY TAKING A SHORT SURVEY AT:

[CITYOFHESPERIA.US/LHMP](https://www.cityofhesperia.us/lhmp)



Like Comment Share

Write a comment...

City Website Information

You Are Here: [Home](#) > [Your Government](#) > [City Manager](#) > [City Departments](#) > [Departments A - E](#) > [Community Relations](#) > [Emergency Preparedness](#) > Hazard Mitigation

Hazard Mitigation

This webpage serves as an information source and document repository for City of Hesperia's Hazard Mitigation Plan (HMP). The City of Hesperia's HMP must be updated every five years to ensure the plan remains current with natural hazard events and maintains eligibility for State and Federal Hazard Mitigation Grant funding. This webpage will remain permanently active to document past, current and future hazard mitigation planning efforts for the public and City officials alike.

Local Hazard Mitigation Plan

The City of Hesperia is updating its Local Hazard Mitigation Plan!

This plan will help the city assess hazard vulnerabilities to reduce the risk of injuries, property damage, and community disruption that may occur during disastrous events.

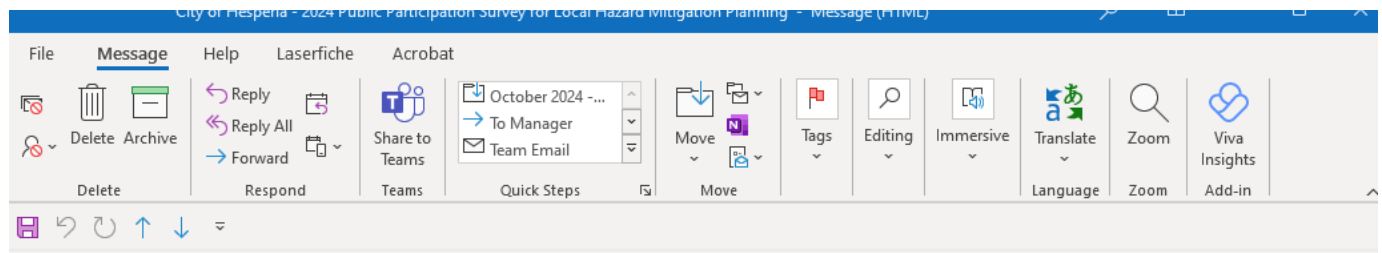
To help the city create a plan that will tailor to the community, please give your opinion by taking a short survey before the **Sept. 6 deadline** at:
<https://www.surveymonkey.com/r/2024pplhmp>.



Resources

- [2017 Hazard Mitigation Plan - Final Draft](#)
- [Hazard Mitigation Survey Results](#)
- [HMP Stakeholder Meeting](#)

Public Engagement Opportunity – August 22, 2024
LHMP Survey Shared with Stakeholders (Email)



City of Hesperia - 2024 Public Participation Survey for Local Hazard Mitigation Planning



Jacquelyn Castillo

To

Bcc yrivera@applevalley.org; LPearson@applevalley.org; ready@applevalley.org; dwellborn@victorvilleca.gov; kvelotta@barstowca.org; Tespinoza@barstowca.org; jislas@adelantoca.gov; david.olney@hesperiausd.org; kanderson@sbcfire.org; apaslak@sbcscd.org; **+48 others**

Reply

Reply All

Forward



Thu 8/22/2024 4:53 PM

Hello,

The City of Hesperia is updating its Local Hazard Mitigation Plan! The LHMP will serve as a blueprint for reducing property damage and saving lives from the effects of future natural disasters in the City. You are receiving this because you or your agency has been identified as a key participant at the "Stakeholder Group" level and we invite you to participate by taking a short survey before the **Sept. 6 deadline** at: <https://www.surveymonkey.com/r/2024pplhmp>.

We appreciate your input and will keep you updated on future meetings.

Thank you,



Jacquelyn Castillo
Management Analyst

City of Hesperia

9700 Seventh Avenue
Hesperia, California 92345
Phone: 760-947-1589

Email: jmcastillo@hesperiacal.gov

Website: <http://cityofhesperia.us>



2024 Public Participation Survey for Hazard Mitigation Planning

The City of Hesperia is preparing an update to the Local Hazard Mitigation Plan or (LHMP). This Plan will identify and assess our community's natural hazard risks and determine how to best mitigate, or minimize and manage those risks.

This survey is an opportunity for you to share your opinions and participate in the mitigation planning process. The information you provide will help us better understand your hazard concerns and can lead to mitigation activities that can help lessen the impacts of future hazard events.

1. Please indicate whether you live or work in the City of Hesperia.

- ☐ I live in the City of Hesperia.
- ☐ I work in the City of Hesperia.
- ☐ I live and work in the City of Hesperia.
- ☐ Neither applies to me, but I am interested in the City's resiliency.

2. If you live and/or work in Hesperia, have you been impacted by a hazard event?

- ☐ Yes
- ☐ No
- ☐ Not applicable; I do not live and/or work in Hesperia

3. If you answered yes to the previous question, please select the type of hazard event that you have been impacted by in Hesperia (select all that apply).

- ☐ Earthquake/Geologic Hazards
- ☐ Extreme Weather (High Winds, Extreme Heat Days, Severe Rainstorms)
- ☐ Wildfires
- ☐ Dam Failure
- ☐ Flooding
- ☐ Technology Hazards including hazardous material incidents
- ☐ Human Caused Hazards (Transportation Incidents, Communications Failure, Terrorism)

4. The following hazards could potentially impact the City. Please mark the THREE (3) hazards that are of most concern to your neighborhood or home in Hesperia.

- ☐ Earthquake/Geologic Hazards
- ☐ Extreme Weather (High Winds, Extreme Heat Days, Severe Rainstorms)
- ☐ Wildfires
- ☐ Dam Failure
- ☐ Flooding
- ☐ Technology Hazards including hazardous material incidents
- ☐ Human Caused Hazards (Transportation Incidents, Communications Failure, Terrorism)
- ☐ Not applicable; I do not live and/or work in Hesperia

5. If you would like the Planning Team to consider other local hazards that could impact Hesperia, please provide details, including location and type of hazard.

6. How concerned are you that climate change may create new hazardous situations in Hesperia or make existing natural hazards worse?

- ☐ Very concerned.
- ☐ Somewhat concerned.
- ☐ Somewhat unconcerned.
- ☐ Not at all concerned.
- ☐ Unsure.

7. When do you think climate change will pose a threat to your health, property, livelihood, or overall wellbeing?

- ☐ It already is.
- ☐ Within the next five years.
- ☐ In five to twenty years.
- ☐ Not for at least another twenty years.
- ☐ Never, or not in my lifetime.

8. If you have taken any action to protect yourself against natural hazards, how confident are you that these actions will be sufficient to protect against more severe hazards that are expected because of climate change?

- ☐ Very confident.
- ☐ Somewhat confident.
- ☐ Somewhat unconfident.
- ☐ Not at all confident.
- ☐ Unsure.

9. If you are a homeowner, do you have adequate homeowners' insurance to cover the hazards that could impact your home?

- ☐ Yes, my insurance coverage should be adequate.
- ☐ No, I don't believe my insurance coverage would be adequate for a major disaster.
- ☐ Unsure.
- ☐ I do not have an insurance policy.
- ☐ Not applicable; I rent my current residence.

10. If you rent your residence, do you have renters' insurance?

- ☐ Yes
- ☐ No
- ☐ Not applicable; I own my residence.

11. Do you have flood insurance for your home?

- ☐ Yes, I own my home and have flood insurance.
- ☐ Yes, I rent my home and have flood insurance.
- ☐ No, but I am interested in reviewing flood insurance options (<https://www.floodsmart.gov/flood-insurance>).

12. If a severe hazard event occurred today such that all services were cut off from your home (power, gas, water, sewer) and you were unable to leave or access a store for 72 hours, which of these items do you have readily available?

- ☐ Potable water (3 gallons per person)
- ☐ Cooking and eating utensils
- ☐ Can opener
- ☐ Canned/nonperishable foods (ready to eat)
- ☐ Gas grill/camping stove
- ☐ Extra medications and contact lenses (if applicable)
- ☐ First aid kit/supplies
- ☐ Portable AM/FM radio (solar powered, hand crank, or batteries)
- ☐ Handheld "walkie-talkie" radios (with batteries)
- ☐ Important family photos/documentation in water and fireproof container
- ☐ Extra clothes and shoes
- ☐ Blanket(s)/sleeping bag(s)
- ☐ Cash
- ☐ Flashlight (with batteries)
- ☐ Gasoline
- ☐ Telephone (with batteries)
- ☐ Pet supplies
- ☐ Secondary source of heat

13. Do you know which government department or agency to contact regarding your risks from hazards in your area?

☐ Yes

☐ No

14. Please select the way(s) you prefer to receive information about how to make your home, neighborhood, or family safer from hazards:

☐ Newspaper

☐ Television

☐ Radio

☐ Internet

☐ Social Media

☐ Email

☐ Mail

☐ Public Workshops/Meetings

☐ School Meetings

☐ City Website

15. Please select the way(s) you prefer to receive alerts or warnings about impending hazard events or dangerous conditions:

☐ Television

☐ Radio

☐ Landline Phone

☐ Cell Phone

☐ Text Message

☐ Social Media

16. In your opinion, what are some steps local government could take to reduce the risk of future hazard damages in your community?

17. A number of community-wide activities can reduce vulnerability to hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important you think each category is for your community to consider.

	Very Important	Somewhat Important	Not Important
Prevention - Administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open space preservation, and floodplain regulations.	☐	☐	☐
Property Protection - Actions that involve modification of existing buildings to protect them from a hazard or removal from the hazard area. Examples include acquisition, relocation, elevation, structural retrofits, and storm shutters.	☐	☐	☐
Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems. Examples include floodplain protection, habitat preservation, and slope stabilization.	☐	☐	☐

Structural Projects -

Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard.

Examples include dams, levees, detention/retention basins, channel modification, retaining walls, and storm sewers.

**Emergency Services**

- Actions that protect people and property during and immediately after a hazard event.

Examples include warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems.

**Public Education and Awareness -**

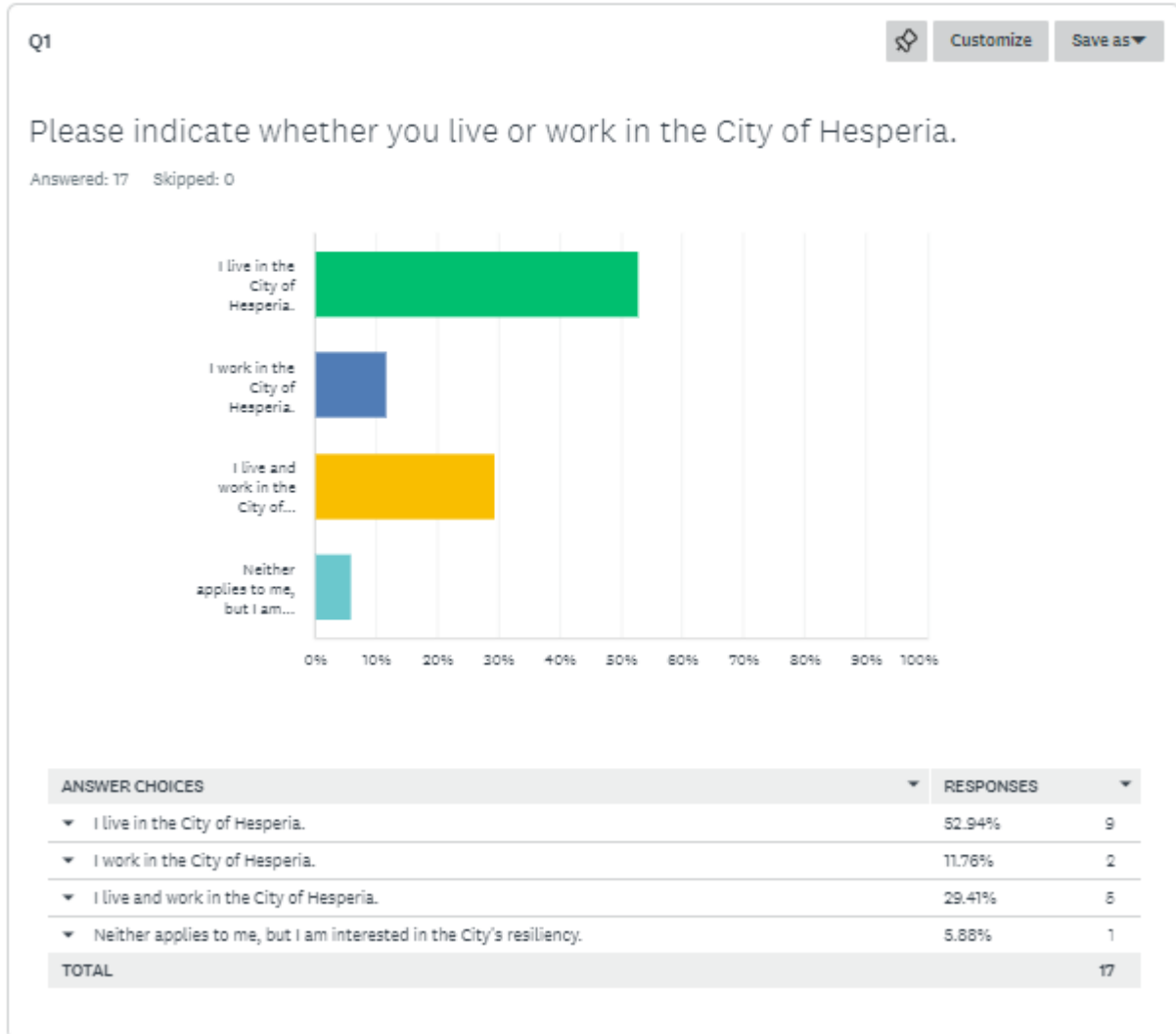
Actions to inform citizens about hazards and the techniques they can use to protect themselves and their property. Examples include outreach projects, school education programs, public workshops, etc.

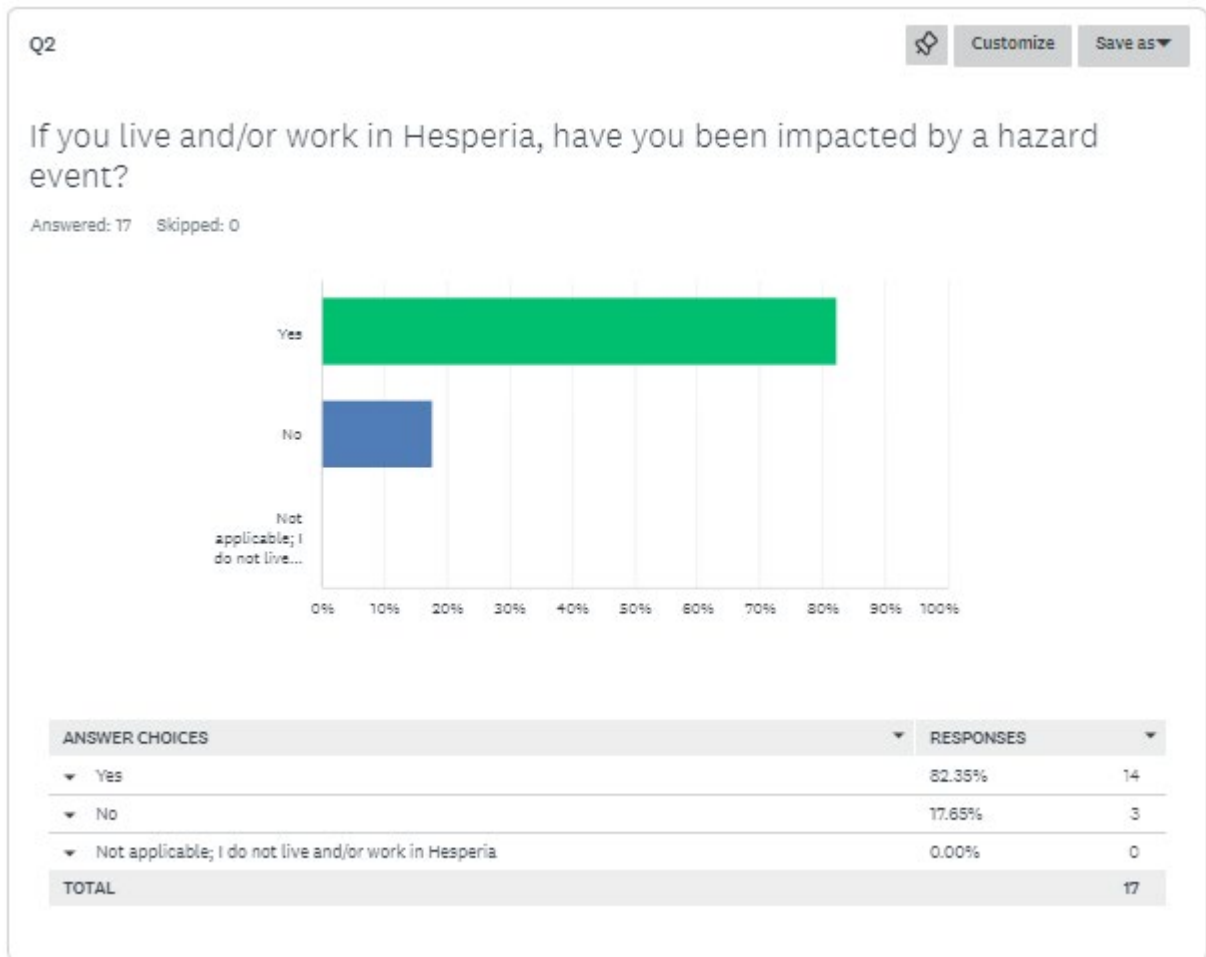


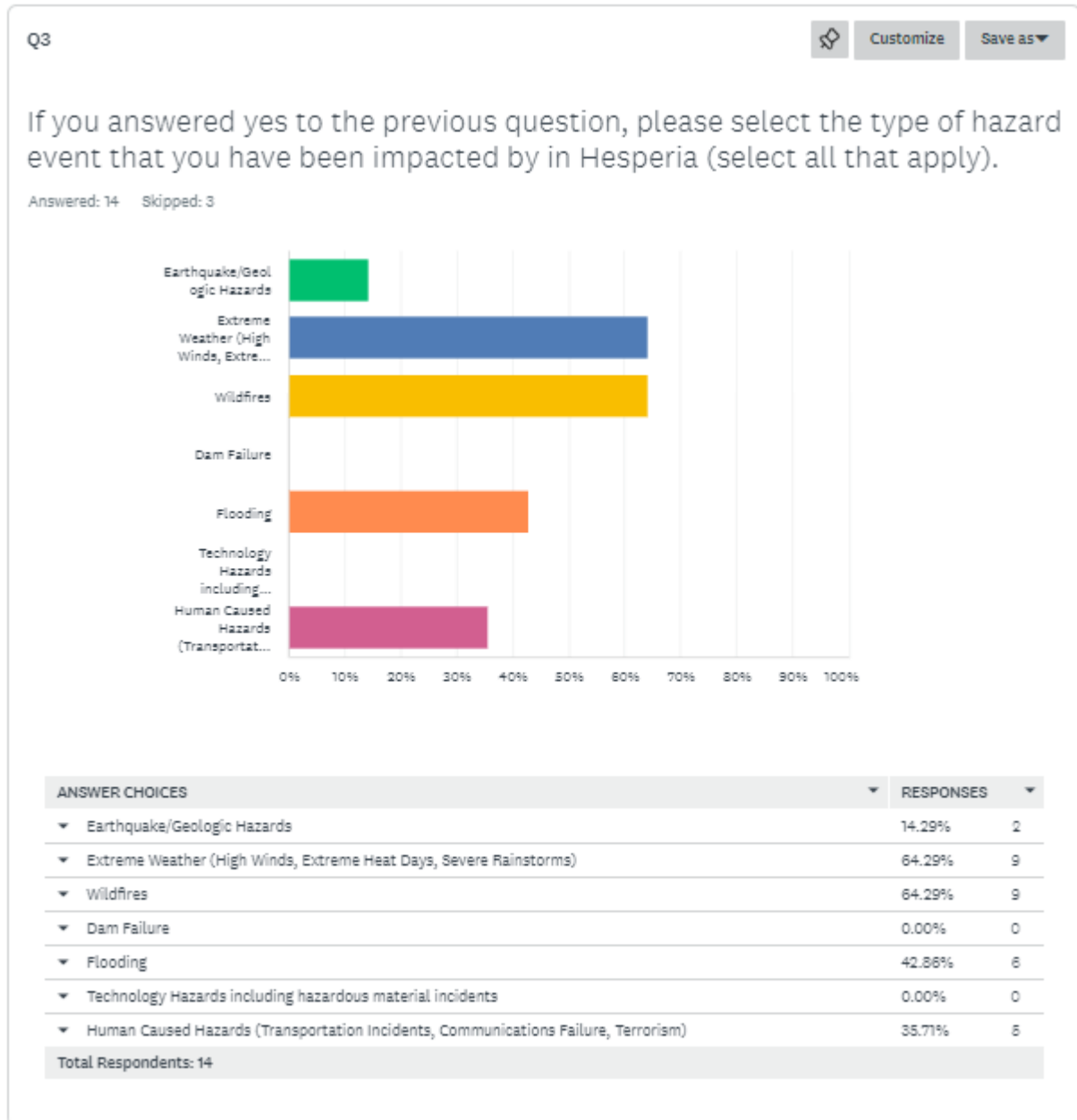
2024 Public Participation Survey for Hazard Mitigation Planning – Survey Results

RESPONDENTS: 17 of 17

Page 1







Q4

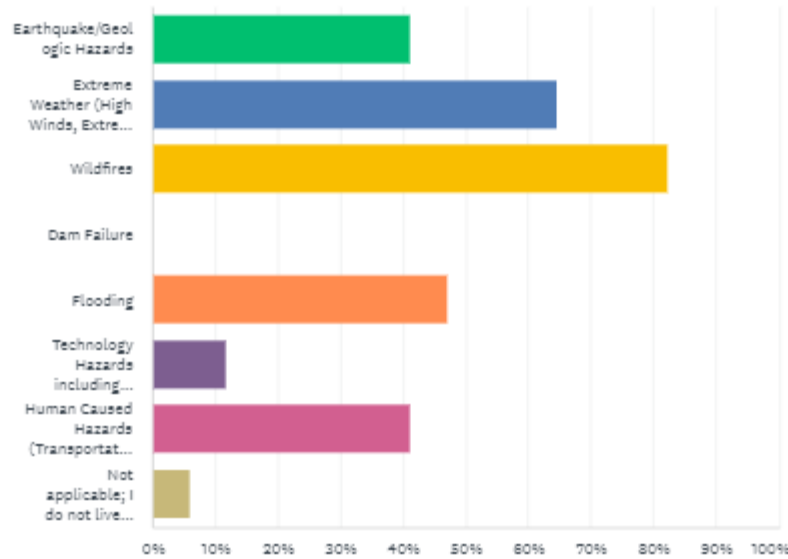


Customize

Save as ▼

The following hazards could potentially impact the City. Please mark the THREE (3) hazards that are of most concern to your neighborhood or home in Hesperia.

Answered: 17 Skipped: 0



ANSWER CHOICES ▼	RESPONSES ▼	
▼ Earthquake/Geologic Hazards	41.18%	7
▼ Extreme Weather (High Winds, Extreme Heat Days, Severe Rainstorms)	64.71%	11
▼ Wildfires	82.35%	14
▼ Dam Failure	0.00%	0
▼ Flooding	47.06%	8
▼ Technology Hazards including hazardous material incidents	11.76%	2
▼ Human Caused Hazards (Transportation Incidents, Communications Failure, Terrorism)	41.18%	7
▼ Not applicable; I do not live and/or work in Hesperia	5.88%	1
Total Respondents: 17		

Q5

 Save as ▾

If you would like the Planning Team to consider other local hazards that could impact Hesperia, please provide details, including location and type of hazard.

Answered: 2 Skipped: 15

RESPONSES (2)

WORD CLOUD

TAGS (0)

 Sentiments: OFF 

 Search Responses

 Filter: by tag ▾

☐ Showing 2 responses

☐ Train wrecks

8/6/2024 04:53 PM

[View respondent's answers](#)

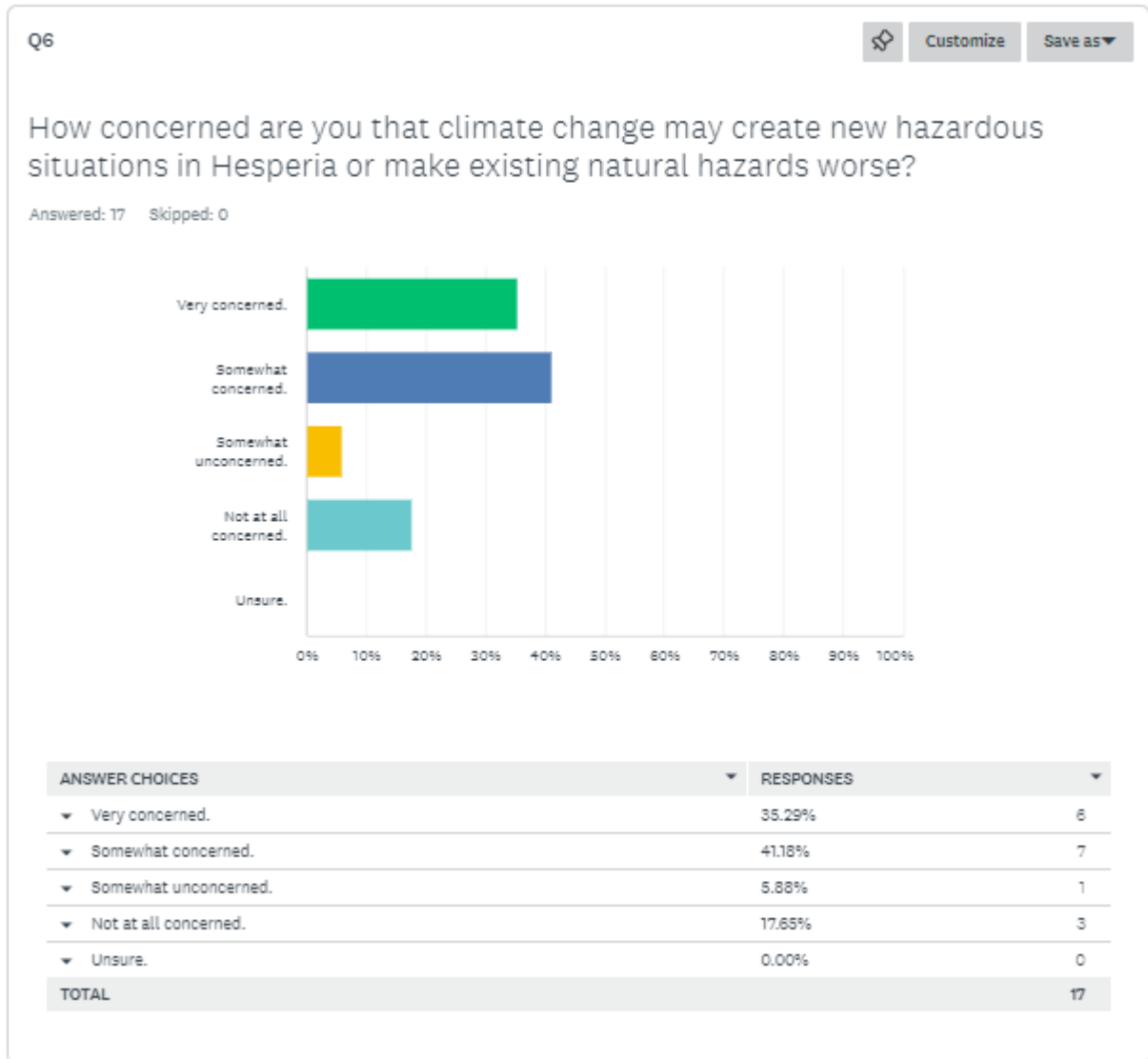
[Add tags ▾](#)

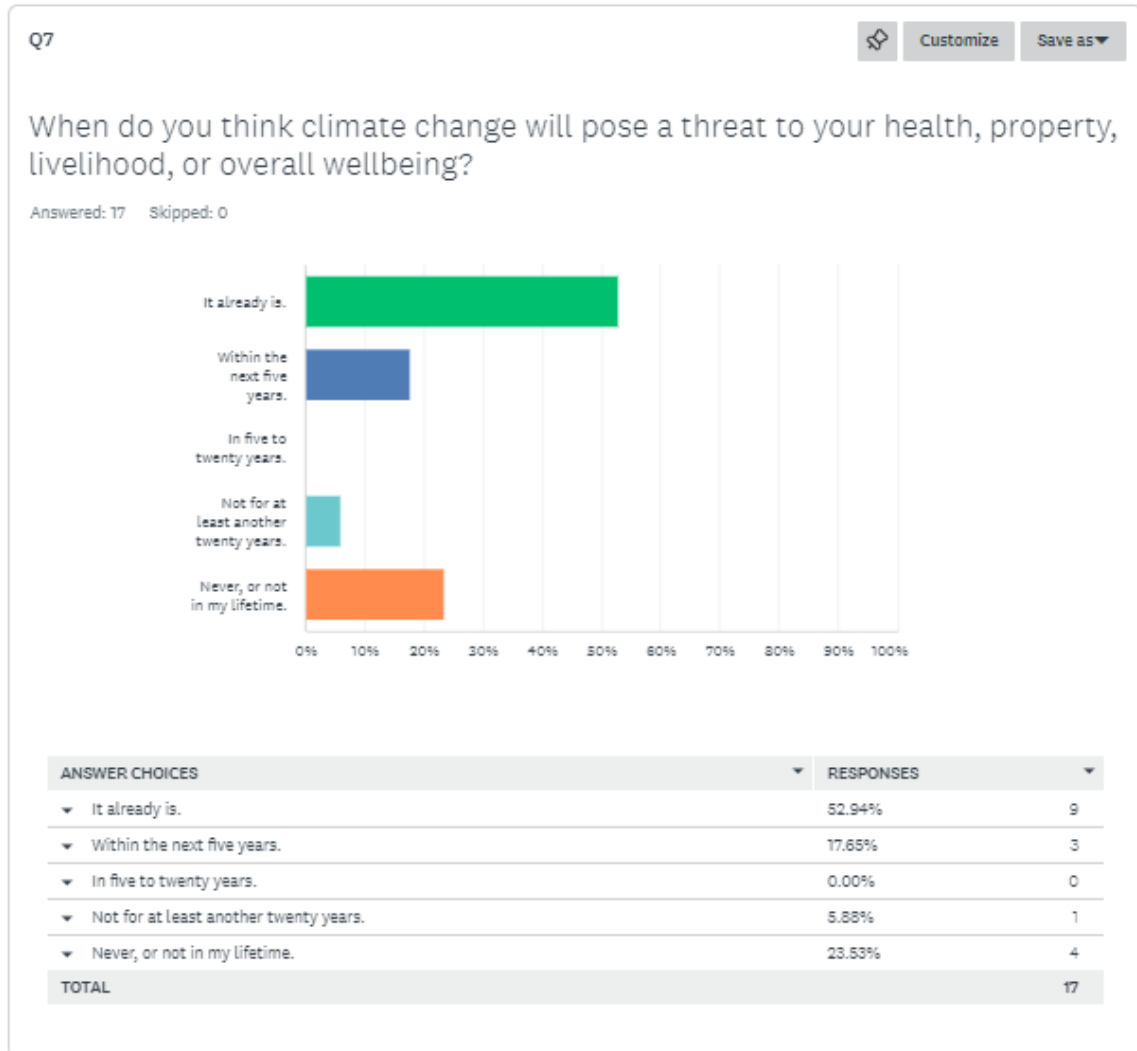
☐ Illegal Fireworks

8/6/2024 01:39 PM

[View respondent's answers](#)

[Add tags ▾](#)





Q8

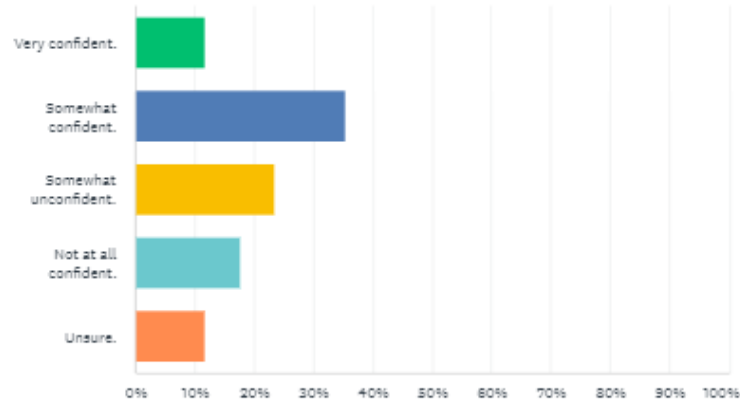


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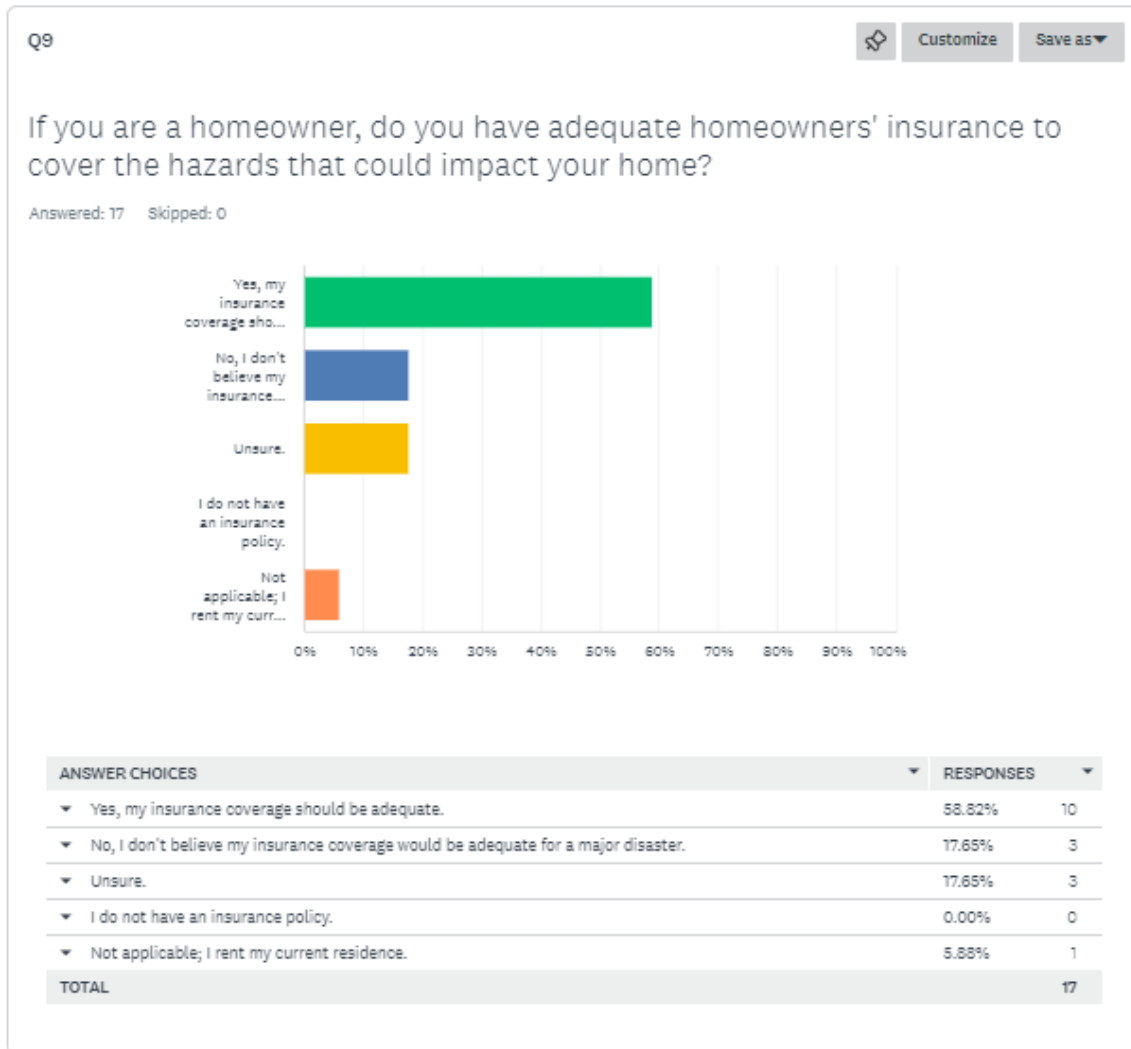
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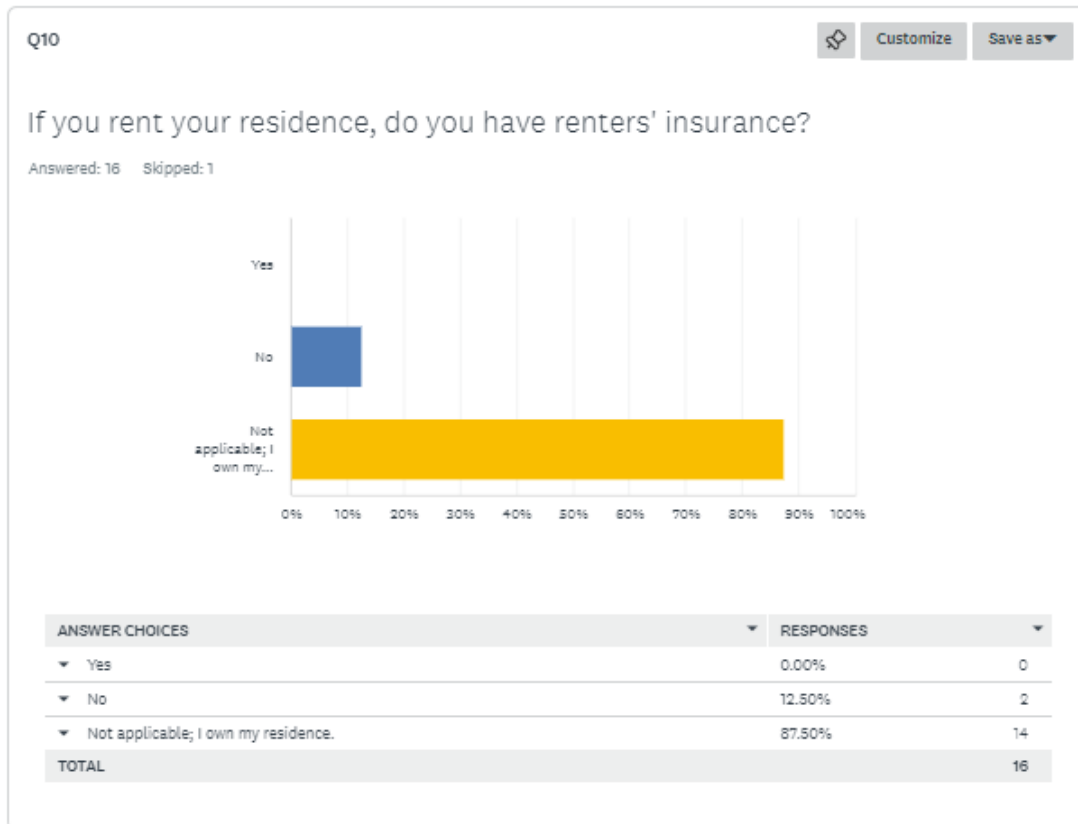
If you have taken any action to protect yourself against natural hazards, how confident are you that these actions will be sufficient to protect against more severe hazards that are expected because of climate change?

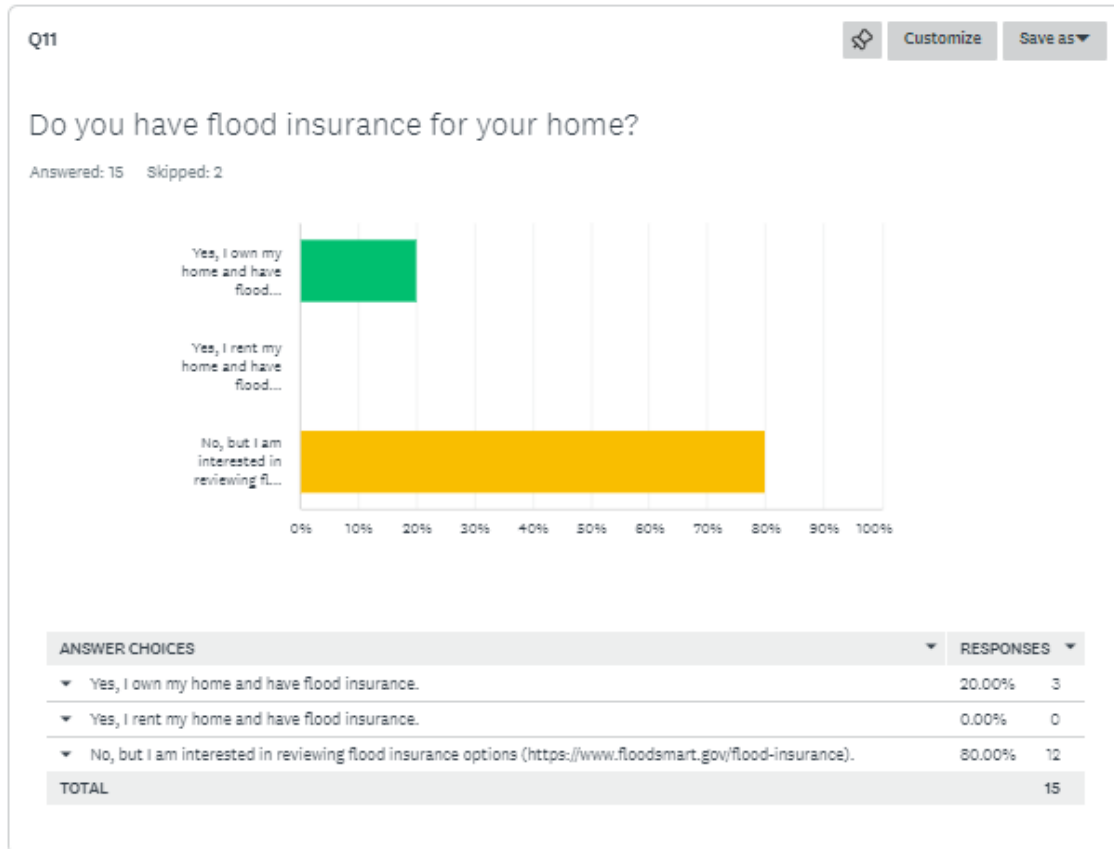
Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	
Very confident.	11.76%	2
Somewhat confident.	35.29%	6
Somewhat unconfident.	23.53%	4
Not at all confident.	17.65%	3
Unsure.	11.76%	2
TOTAL		17







Q12

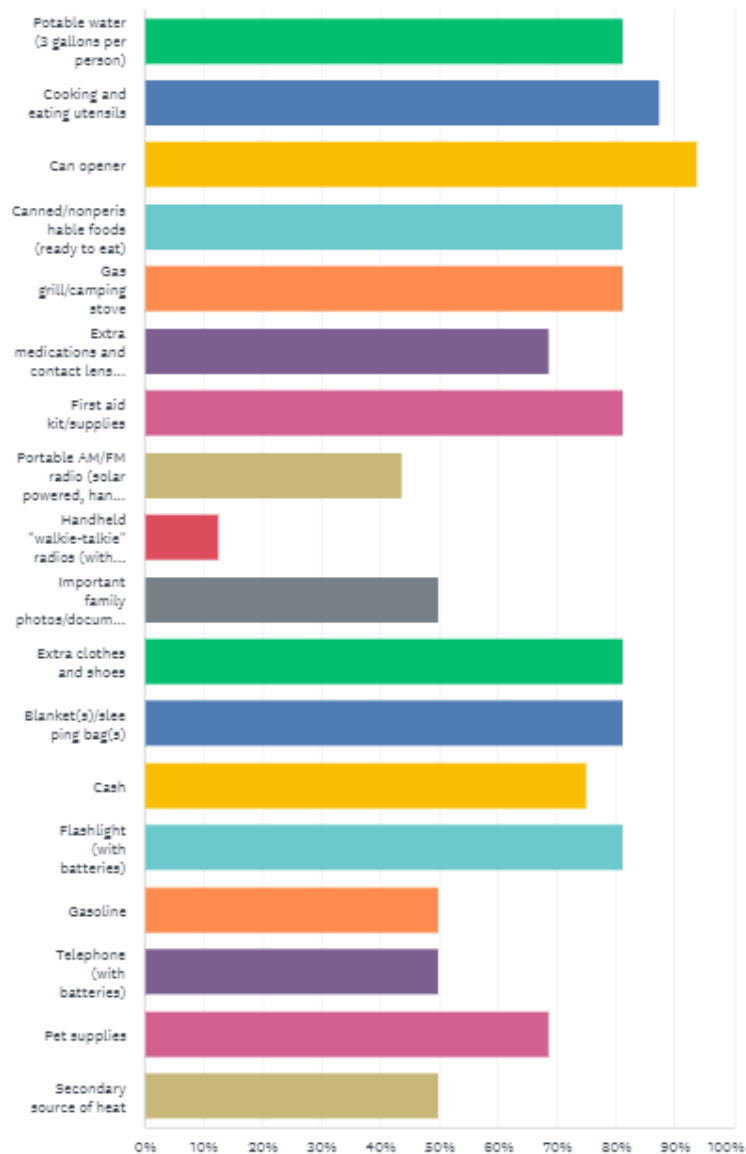


Customize

Save as ▼

If a severe hazard event occurred today such that all services were cut off from your home (power, gas, water, sewer) and you were unable to leave or access a store for 72 hours, which of these items do you have readily available?

Answered: 16 Skipped: 1



ANSWER CHOICES	RESPONSES	
▼ Potable water (3 gallons per person)	81.25%	13
▼ Cooking and eating utensils	87.50%	14
▼ Can opener	93.75%	15
▼ Canned/nonperishable foods (ready to eat)	81.25%	13
▼ Gas grill/camping stove	81.25%	13
▼ Extra medications and contact lenses (if applicable)	68.75%	11
▼ First aid kit/supplies	81.25%	13
▼ Portable AM/FM radio (solar powered, hand crank, or batteries)	43.75%	7
▼ Handheld "walkie-talkie" radios (with batteries)	12.50%	2
▼ Important family photos/documentation in water and fireproof container	50.00%	8
▼ Extra clothes and shoes	81.25%	13
▼ Blanket(s)/sleeping bag(s)	81.25%	13
▼ Cash	75.00%	12
▼ Flashlight (with batteries)	81.25%	13
▼ Gasoline	50.00%	8
▼ Telephone (with batteries)	50.00%	8
▼ Pet supplies	68.75%	11
▼ Secondary source of heat	50.00%	8
Total Respondents: 16		

Q13

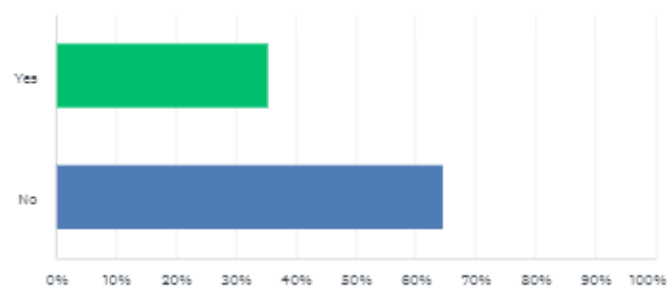


Customize

Save as ▼

Do you know which government department or agency to contact regarding your risks from hazards in your area?

Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	
▼ Yes	35.29%	6
▼ No	64.71%	11
TOTAL		17

Q14

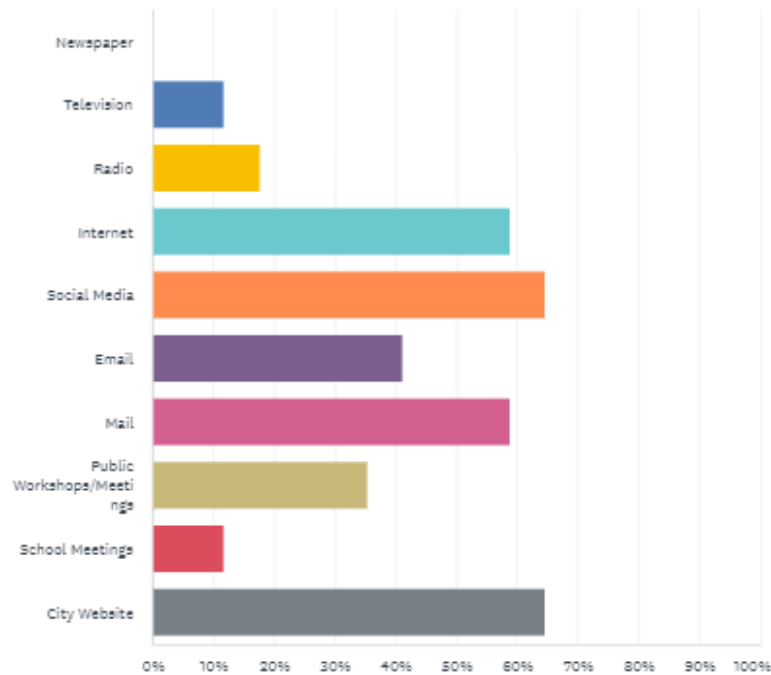


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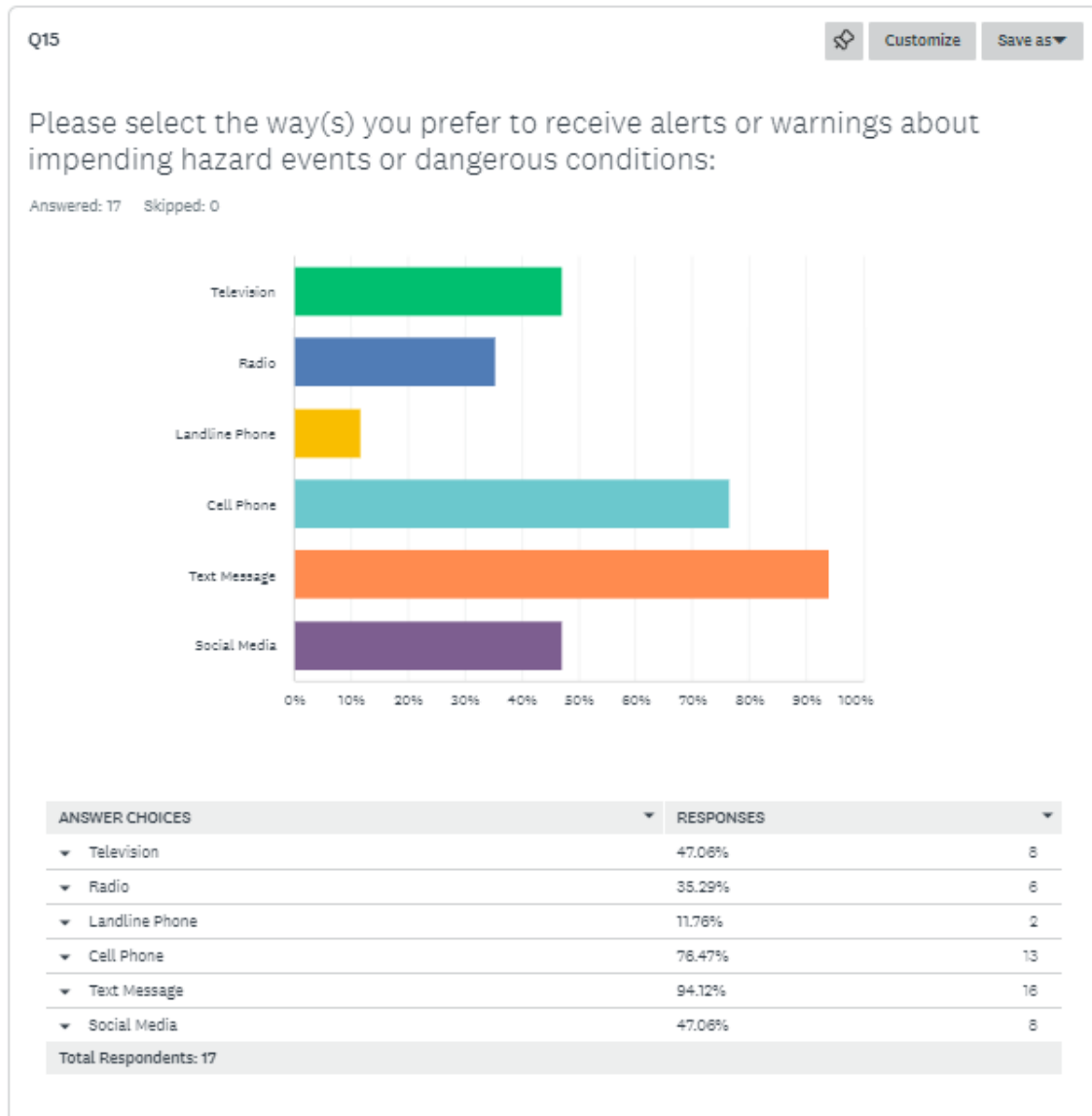
Save as ▼

Please select the way(s) you prefer to receive information about how to make your home, neighborhood, or family safer from hazards:

Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	
Newspaper	0.00%	0
Television	11.76%	2
Radio	17.65%	3
Internet	58.82%	10
Social Media	64.71%	11
Email	41.18%	7
Mail	58.82%	10
Public Workshops/Meetings	35.29%	6
School Meetings	11.76%	2
City Website	64.71%	11
Total Respondents: 17		



Q16

 Save as ▼

In your opinion, what are some steps local government could take to reduce the risk of future hazard damages in your community?

Answered: 7 Skipped: 10

RESPONSES (7)

WORD CLOUD

TAGS (0)

 Sentiments: OFF 

 Filter: by tag ▼

☐ Showing 7 responses

☐ Upgrade medical facilities within the highdesert

8/26/2024 03:45 PM

[View respondent's answers](#) [Add tags ▼](#)

☐ Education on preparedness, what the hazards are. What can people expect from the government.

8/23/2024 04:46 PM

[View respondent's answers](#) [Add tags ▼](#)

☐ Proactively identify potential hazards.

8/22/2024 05:05 PM

[View respondent's answers](#) [Add tags ▼](#)

☐ Better roads, more police officers, Update drainage to prevent flooding. Public education and awareness is a waste of money most people are aware and choice not to be prepared or have different properties. Spend city money on actually fixing the problems.

8/8/2024 05:16 PM

[View respondent's answers](#) [Add tags ▼](#)

Q17

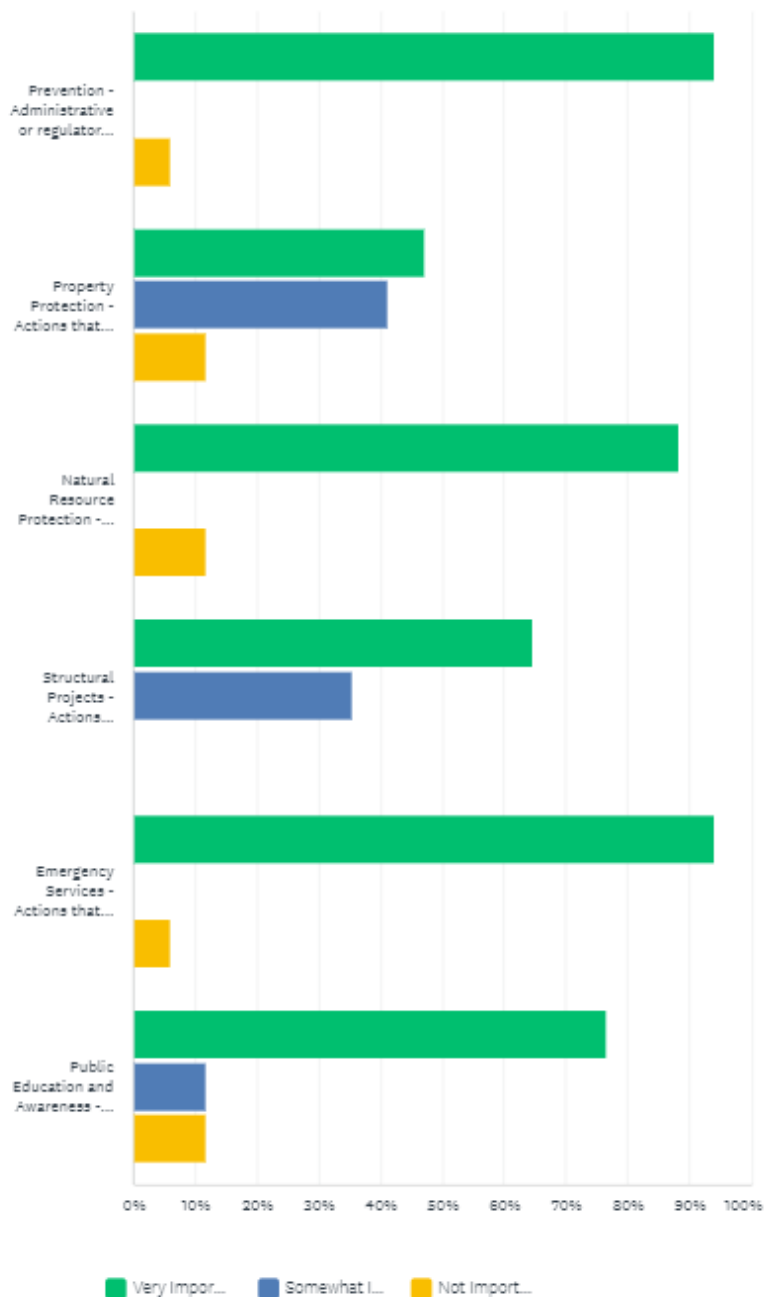


Customize

Save as ▼

A number of community-wide activities can reduce vulnerability to hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important you think each category is for your community to consider.

Answered: 17 Skipped: 0



	VERY IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT	TOTAL
▼ Prevention - Administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open space preservation, and floodplain regulations.	94.12% 16	0.00% 0	5.88% 1	17
▼ Property Protection - Actions that involve modification of existing buildings to protect them from a hazard or removal from the hazard area. Examples include acquisition, relocation, elevation, structural retrofits, and storm shutters.	47.06% 8	41.18% 7	11.76% 2	17
▼ Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems. Examples include floodplain protection, habitat preservation, and slope stabilization.	88.24% 15	0.00% 0	11.76% 2	17
▼ Structural Projects - Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard. Examples include dams, levees, detention/retention basins, channel modification, retaining walls, and storm sewers.	64.71% 11	35.29% 6	0.00% 0	17
▼ Emergency Services - Actions that protect people and property during and immediately after a hazard event. Examples include warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems.	94.12% 16	0.00% 0	5.88% 1	17
▼ Public Education and Awareness - Actions to inform citizens about hazards and the techniques they can use to protect themselves and their property. Examples include outreach projects, school education programs, public workshops, etc.	76.47% 13	11.76% 2	11.76% 2	17

Public Engagement Opportunity – October 2, 2024
Stakeholder Hazard Mitigation Feedback Form and a Draft of the 2024 LHMP
shared with stakeholders

City of Hesperia 2024 Local Hazard Mitigation Plan Update - Stakeholder Meeting - Meeting

File

Meeting

Help

LaSerfiche

Acrobat

October 2024 ...

To Manager

Team Email

Done

Reply & Delete

Create New

Move

Rules

Assign Policy

Mark Unread

Categorize

Follow Up

Find

Related

Select

Read Aloud

Immersive Reader

Zoom

Viva Insights

City of Hesperia 2024 Local Hazard Mitigation Plan Update - Stakeholder Meeting

✓ Accept

? Tentative

✗ Decline

⌚ Propose New Time

⋮

Wed 10/2/2024 1:48 PM

 Jacquelyn Castillo

Required

Optional yrivera@applevalley.org; LPearson@applevalley.org; ready@applevalley.org; dwellborn@victorvilleca.gov; kvelotta@barstowca.org; Tespinoza@barstowca.org; jislas@adelantoca.gov; david.olney@hesperiausd.org; kanderson@sbcfire.org; apaslak@sbcscd.org; Allen, Steve; chkirby@sbcscd.org; GBeck@dph.sbcounty.gov; Brian Blackwell; rleonard@cityofhesperia.us; mvvarner@hesperiaparks.com; Cassandra Sanchez; +42 others

 Stakeholder Hazard Mitigation Feedback Form.docx
66 KB

 City of Hesperia Draft LHMP 2024.pdf
15 MB

Monday, November 4, 2024 3:00 PM-4:00 PM

Police Department Community Room: 15840 Smoke Tree Street, Hesperia, CA 92345

You are invited to make an impact

The City of Hesperia is updating its Local Hazard Mitigation Plan (LHMP), and we invite you to participate in the process. The updated plan will serve as a roadmap for reducing property damage and protecting lives from future natural disasters in our community.

You are receiving this invitation because you or your agency has been identified as a key participant in our "Stakeholder Group." We encourage you (and any interested parties) to collaborate with the HMP Project Management Team in refining our natural hazard mitigation documents for Hesperia.

Stakeholder Meeting Details:

- **Date:** Monday, November 4, 2024
- **Time:** 3:00 – 4:00 p.m.
- **Location:** Police Department Community Room, 15840 Smoke Tree Street, Hesperia, CA 92345

For more information about the HMP update process, please visit [Hesperia LHMP Update](#).

Please reply to this email to confirm your participation and let us know who will be attending. If you're unable to attend but would still like to contribute, please complete the attached **Stakeholder Hazard Mitigation Feedback Form** and email it back to me at your earliest convenience. For your reference, we've also attached the draft **2024 Local Hazard Mitigation Plan**. If you identify any areas in the draft 2024 LHMP that you would like to see expanded or addressed, please include your suggestions in the feedback form.

If you have any questions, feel free to contact me at (760) 947-1589 or jmcastillo@hesperiacal.gov.

Thank you for your time and support.



Jacquelyn Castillo

Management Analyst

City of Hesperia

B-65

Public Engagement Opportunity – November 4, 2024 Stakeholder Meeting Invitation

City of Hesperia 2024 Local Hazard Mitigation Plan Update - Stakeholder Meeting

Meeting

File Meeting Help Laserfiche Acrobat

Delete

Respond

Share to Teams

Send to OneNote

Calendar

October 2024 -...

Team Email

Reply & Delete

To Manager

Done

Create New

Move

Rules

Assign Policy

Mark Unread

Categorize

Follow Up

Find

Related

Select

Read Aloud

Immersive Reader

Zoom

Viva Insights

Add-in

Quick Steps

Move

Tags

Editing

Immersive

Zoom

Add-in

City of Hesperia 2024 Local Hazard Mitigation Plan Update - Stakeholder Meeting

 Jacquelyn Castillo
Required

✓ Accept

? Tentative

✗ Decline

⌚ Propose New Time

📧

...

Wed 10/2/2024 1:48 PM

Optional yrivera@applevalley.org; LPearson@applevalley.org; ready@applevalley.org; dwellborn@victorvilleca.gov; kvelotta@barstowca.org; Tespinoza@barstowca.org; jislas@adelantoca.gov; david.olney@hesperiausd.org; kanderson@sbcfire.org; apaslak@sbcisd.org; Allen, Steve; chkirby@sbcisd.org; GBeck@dph.sbcounty.gov; Brian Blackwell; leonard@cityofhesperia.us; mvarner@hesperiaparks.com; Cassandra Sanchez; **+42 others**

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If you have any questions, feel free to contact me at (760) 947-1589 or jmcastillo@hesperiacal.gov.

Thank you for your time and support.



Jacquelyn Castillo
Management Analyst

City of Hesperia



City of Hesperia 2024 Local Hazard Mitigation Plan Update Engaging Stakeholders for a Resilient Future

Date: Monday, November 4, 2024

Time: 3:00 p.m. – 4:00 p.m.

Location: Hesperia – San Bernardino County Sheriff's Department, PD Conference Room

AGENDA

- 1. Welcome and Introductions**
- 2. Presentation on Local Hazard Mitigation Plan (LHMP)**
 - o Goals of the meeting
 - o Overview of hazard mitigation
 - o Key mitigation measures and benefits
 - o LHMP planning process and schedule
 - o Update on identified hazards (2017 vs. 2024)
 - o Risk assessment results and maps
 - Earthquakes, Wildfire, Flooding, Extreme Weather, Dam Inundation
 - o Vulnerability assessment and strategies
 - o 5-Year progress and goals
 - o Public input on priorities and survey results
- 3. Feedback Form**
 - o Review of the 2024 Stakeholder Hazard Mitigation Feedback Form
- 4. FEMA Preparedness Handouts**
 - o Earthquakes, Wildfires, Floods, Winter Storm, Extreme Heat
- 5. Next Steps**
 - o Upcoming Council meetings for HMP draft and final approval (dates TBD)
 - o CalOES Approval
 - o FEMA Approval
- 6. Adjournment**

City of Hesperia 2024 Local Hazard Mitigation Plan Update – Engaging Stakeholder's for a Resilient Future (Presentation)

City of Hesperia 2024 Local Hazard Mitigation Plan Update

Engaging Stakeholders for a Resilient Future

City of Hesperia
Stakeholder Meeting for Planning Process
November 4, 2024

Introduction

- Today, we will focus on discussing hazards that our community faces, discussing mitigation strategies, and fostering collaboration to implement effective solutions.
- Your input will help refine our action plans and ensure that we address the needs of all community members.

LHMP Stakeholder Meeting Goals

- We want your input on the:
 - Planning Process,
 - Data & Analysis,
 - Opportunities to Reduce Risk, and
 - Implementation Strategies.
- The City aims to actively engage stakeholders in the process of updating the LHMP.

Overview of Hazard Mitigation

Definition:
Hazard mitigation refers to the efforts and strategies aimed at reducing the impact of potential hazards and disasters on people, property, and the environment. It involves identifying risks, implementing measures to prevent or lessen the severity of disasters, and enhancing community resilience.

Objectives:
Overall, the goal is to create safer, more prepared communities by:

- Protecting Lives
- Preserving Property
- Reducing Economic Losses
- Enhancing Resilience

Hazard Mitigation Framework

The hazard mitigation framework involves several key steps:

- Prioritizing local risks such as floods and earthquakes.
- Assessing community vulnerabilities across various sectors.
- Reviewing current mitigation strategies for effectiveness.
- Engaging local stakeholders to foster collaboration.
- Establishing clear, achievable mitigation goals.
- Outlining specific actions to reduce risks.
- Identifying potential funding sources for projects.
- Promoting community awareness of hazard risks.
- Creating metrics to monitor progress.
- Encouraging regular updates to the mitigation plans to ensure continuous improvement.

Mitigation Measures

The hazard mitigation approach includes:

- Prevention** - planning and zoning to reduce losses.
- Property Protection** - modifications or removals of at-risk structures.
- Public Education** - informing citizens about hazards.
- Natural Resource Protection** - erosion control and watershed management.
- Emergency Services** - safety measures during and after events.
- Structural Projects** - construction like dams and levees to mitigate impacts.

Benefits of Mitigation Measures

Investing in hazard mitigation offers numerous benefits, including:

- Long-Term Savings** - Reduces the cost of disaster response and recovery.
- Increased Safety** - Fewer injuries and fatalities during hazard events.
- Community Resilience** - Better recovery and adaptability to future hazards.
- Environmental Protection** - Preservation and enhancement of natural systems.

HMP Planning Process - 6 Phases

LHMP Planning Schedule

03/2024	04/2024	05/2024	06/2024	11/2024	12/2024
Organize Resources	Risk Assessment	Stakeholder Input/Strategy	Mitigation Strategy	Draft Plan Updates	Review and Adoption
Assign planning committee, review existing plan	Data acquisition, natural hazard analysis, etc.	Receive information from public	Goals and objectives, mitigation strategy	Update sections, technical edits	Public review, required edits/rewrites, plan adoption

HMP Updating Process

- The City is currently updating sections of the LHMP.
- The team has collected information on hazards and vulnerabilities that affect our community and has developed mitigation actions, strategies, and goals.
- The next stage is to get feedback from stakeholder's and the public and make technical updates and edits.

2017 LHMP Hazards Identified

		2017 HAZARD ASSESSMENT MATRIX		
		Impact		
Probability	High	Earthquake/Geo hazards Floods Wildfire	High Winds	Extreme Heat Drought
	Medium		Severe Thunderstorms Hazardous Materials	
	Low	Dam Failure		Climate Change Infection Terrorism Lightning

Updating 2024 Hazards

- The 2024 HMP Plan focuses on natural hazards.
- The HMP Planning Team evaluated (16) different hazards based on hazards recommended for consideration by FEMA, the State of California, San Bernardino County, and Hesperia's 2017 HMP.
- The HMP Planning Team opted to take a common sense and risk-based approach in evaluating hazards unique to Hesperia.
 - For example, the evaluation did not include hazards such as sea-level rise, storm surge, coastal flooding, or tsunami as Hesperia is not a coastal community where these hazards would be a concern.

Preliminary Hazard Evaluation

Hazard	Score	Weighted Score
Earthquake	10	10
Wildfire	10	10
Flood	10	10
Seismic Shaking	10	10
Wildfire Severity	10	10
Flood Zones	10	10
Extreme Weather	10	10
Dam Inundation	10	10

13

Preliminary Hazard Evaluation, cont.

- The team considered historical hazard incidents and disaster declarations.
- The hazards were then streamlined into broad hazard types and ultimately scored and prioritized based on weighted values.

14

HMP Planning Team Risk Assessment Results 2024

Hazard	Score	Weighted Score
Earthquake	10	10
Wildfire	10	10
Flood	10	10
Seismic Shaking	10	10
Wildfire Severity	10	10
Flood Zones	10	10
Extreme Weather	10	10
Dam Inundation	10	10

The risk assessment results were derived from the consolidated averages of individual assessments conducted by the HMP Planning Team. The team identified five human-caused hazard categories of concern: Hazardous Materials Release, Cyber-threats, Terrorism, Active Shooter/Mass Shooting, and Epidemic/Pandemic/Vector-Borne Disease. It was collectively agreed that these issues are better addressed in the City's Emergency Operations Plan and/or the Safety Element of the General Plan, as the focus of the LHMIP is natural hazard events. These five human-caused hazard categories were included in the Hazard Prioritization Worksheet and Hazard Assessment Matrix for contextual purposes.

15

Earthquake Risk

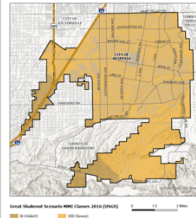
Hesperia is near significant fault lines, including the San Andreas Fault, making it vulnerable to earthquakes in seismically active Southern California. The city promotes preparedness through community education, emergency planning, and building code enforcement, along with regular drills and outreach.

Earthquake Incidents

- August 2024:** A 4.8 magnitude earthquake struck near Hesperia, causing brief shaking but no injuries or damages.
- September 2024:** A smaller 3.2 magnitude quake was recorded, causing minimal disturbance but raising awareness of local seismic activity.

16

Seismic Shaking Potential



VIII (Severe) – Intense ground shaking that can cause considerable damage to well-built structures and significant damage to poorly constructed buildings. Strong shaking may result in falling objects and potential injuries, but some structures may remain standing.

IX (Violent) – Severe ground shaking that can cause significant structural damage and lead to widespread destruction. Most buildings and structures will experience complete failure, and there is a high risk of injuries or fatalities.

17

Wildfire Risk

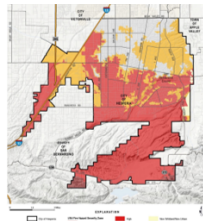
Hesperia has dry, hot summers and limited rainfall, making it susceptible to wildfires fueled by vegetation like sagebrush and chaparral. To mitigate this risk, Hesperia employs fire protection measures, including vegetation management, firebreaks, and community outreach on fire safety, while collaborating with San Bernardino County Fire and CAL FIRE.

Wildfire Incidents

- June 16, 2024 – Chase Fire:** A five-acre brush fire ignited at 9 PM behind Chase Avenue in Hesperia. Firefighters quickly contained the blaze, which threatened homes along Danbury Ave. by 9:45 PM.
- June 20, 2024 – Hesperia Fire:** The Hesperia Fire started near Arrowhead Lake Road in Hesperia and burned more than 1,078 acres. Quick action from agencies like the San Bernardino County Fire Protection District and Cal Fire prevented injuries and property damage.
- July 2, 2024 – Hwy 173 Fire:** A brush fire was reported at 2:30 PM near Lake Arrowhead Road and Highway 173, burning 1-2 acres with minimal smoke. Forward spread was halted, and additional resources were canceled.
- July 3, 2024 – Santa Fe Fire:** At 5:45 PM, a vegetation fire was reported near Santa Fe Ave E and Muscatel St in Hesperia, burning 17 acres. San Bernardino County Fire deployed 40 firefighters with multiple resources.
- August 24, 2024 – Summit Fire:** A wind-driven fire was reported at 3:59 PM north of Highway 173, south of Hesperia, burning 76 acres. San Bernardino County Fire responded with 19 engines, 3 helicopters, and multiple support units.

18

Wildfire Severity Zones



19

Flood Risk

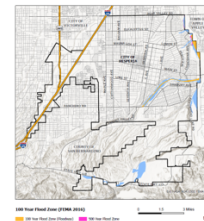
Hesperia experiences arid conditions but can face intense rainfall during winter storms and monsoons, making it prone to flash floods. The city has taken steps to manage flood risks through drainage improvements and retention basins, along with regular flood zone assessments and public education campaigns.

Severe Storms and Flooding Incidents

- December 23-24, 2021:** Heavy rains brought 6" in the mountains and over 8" in Lytle Creek. The northern Inland Empire saw 2-5", while lower elevations received 0.75-3". Flooding occurred in the Mojave River in Hesperia.
- January 9-10, 2023:** An atmospheric river caused 4 to 9.5" of rain in San Bernardino County, leading to flooding and road blockages in Hesperia. Several swiftwater rescues took place, including one in Desert Hot Springs.
- February 2-6, 2024:** San Bernardino County declared a Local Emergency due to extreme weather. Governor Newsom issued a State of Emergency for several counties, including San Bernardino.

20

Flood Zones



21

Extreme Weather Risk

Hesperia is characterized by a semi-arid climate with hot summers and mild winters. However, it is susceptible to extreme weather events, particularly during transitional seasons. Hesperia enhances resilience against extreme weather through education, early warning systems, partnering with the national weather service, etc.

Extreme Weather

- Winter Storms (2021, 2023, 2024):** Severe winter storms brought unusually heavy rainfall and/or snow to the region, resulting in localized flooding, road closures, and power outages. These events highlighted the community's vulnerability to sudden weather changes.
- Heat Waves:** Hesperia frequently experiences extreme heat, particularly during summer months. Record high temperatures have been recorded, leading to health advisories and increased demand for water and electricity.
- High Winds:** The area can experience strong winds, especially during the Santa Ana wind events, which can exacerbate wildfire risks and cause damage to structures and vegetation.

22

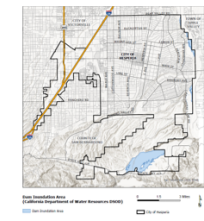
Dam Inundation Risk

Hesperia is near several dams, including the Mojave Forks Dam, Cedar Springs Dam, and Lake Arrowhead Reservoir, which are vital for flood control and water supply. The city enhances community safety through public education, emergency action plans, and ongoing dam monitoring.

- Historical Events:**
- 1980s Flooding:** Heavy rainfall raised concerns about dam capacity and led to a review of emergency response plans.
- Recent Assessments:** Ongoing evaluations focus on dam safety, structural integrity, and seismic impact.

23

Dam Inundation Areas



24

Vulnerability Assessment

- The vulnerability assessment involved data gathering on historical hazard events, critical infrastructure, and community demographics, using Geographic Information Systems (GIS).
- By mapping historical hazard events and overlaying them with current land use and infrastructure, GIS helped visualize vulnerability hotspots.
- This spatial analysis revealed which areas are at greatest risk, enabling the planning team to identify affected populations, such as vulnerable groups or critical facilities.
- Additionally, GIS highlighted essential assets—like schools, hospitals, and utilities—allowing for targeted mitigation strategies that prioritize the protection of both people and infrastructure in hazard areas.

25

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Mitigation Strategy

Our next focus was a mitigation strategy to guide the City of Hesperia in future hazard mitigation efforts by reducing vulnerabilities through targeted policies and projects. It ensures compatibility with existing planning and defines roles and resources for successful implementation.

This strategy outlines the key outcomes of the Hesperia LHMP planning process, following a problem-solving methodology:

- Estimate potential impacts (Vulnerability Assessment)
- Describe the problem (Identifying the Problem)
- Assess existing safeguards and resources (Capabilities Assessment)
- Develop goals and objectives (Mitigation Goals, Objectives, and Projects)
- Determine and select appropriate actions (Goal, Objective, and Mitigation Action Matrix).

26

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Capabilities Assessment

The City uses different tools and authorities to handle emergencies, including both voluntary and mandatory measures. These involve community efforts and actions like educating citizens, enforcing codes, and improving emergency preparedness.

Hesperia's capabilities are organized into four categories:

- Agencies and People
- Plans
- Codes and Regulations
- Mitigation Programs and Financial Resources

27

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Mitigation 5-Year Progress Report

- In the 2023-24 CIP Program, the City has initiated projects that reduce hazard losses such as:
 - Ranchero Road Improvements
 - Aqueduct Crossing Improvements on Main St
 - Ranchero Road Aqueduct Crossing
 - CD80 Street Improvements for roads in serious need of rehabilitation and storm flow improvements
 - Maple Ave. Street Improvement Project
 - 2023 Emergency Storm Repairs
 - Installation of Retention Basins (Temecula Ave and Walnut St)
 - A-04 Drainage Program
 - Catalpa Road Basin
 - 1-15 Corridor Water Project (Fire-hazard suppression)
 - Reclaimed Water Distribution System
- The City of Hesperia is also launching a pavement rehabilitation project to repair approximately 23 miles of roadway throughout the City.

31

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Goals

These goals are similar to the 2017 goals but have been modified for clearer language and better alignment with the City's Safety Element of the General Plan and community priorities:

- A community prepared to withstand and recover from natural disasters, human health hazards, and other emergencies.
- Minimize injury, loss of life, property damage, economic and social disruption caused by:
 - Seismic shaking and other earthquake induced hazards.
 - Flooding and inundation hazards.
 - Wildland and urban fires.
- A community resilient to drought, extreme heat, severe weather events, and other climate-related hazards.
- Reduce the impacts of climate change on the city.

32

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Prioritization Process

As part of the mitigation actions development and review, the HMPC also prioritized the actions. The prioritization efforts looked at the risks and threats from each hazard, financial costs and benefits, technical feasibility, and community values, among others.



33

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Public Input for Mitigation Priorities

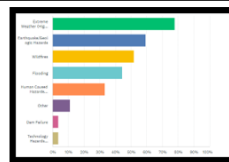
Public input was crucial in validating mitigation priorities, with community surveys revealing residents' perceptions of hazard threats.

- On March 12, 2024, the City released a Local Hazard Mitigation Plan (LHMP) Survey, highlighting primary hazard concerns.
- A second survey on August 6, 2024, focused on community activities to reduce vulnerability.
- On October 2, 2024, a Stakeholder Hazard Mitigation Feedback Form and a draft of the 2024 LHMP were shared with stakeholders for review.

31

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Top Respondent Hazard Concerns



Hazard	Count
Earthquake	11
Flood	10
Fire	9
Drought	8
Wildfire	7
Severe Weather	6
Other	5

32

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Priority Mitigation Measures

	VERY IMPORTANT	MODERATELY IMPORTANT	NOT IMPORTANT	TOTAL
Prevention - Administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, land use preservation, and floodplain regulations.	41.0%	0.0%	0.0%	11
Project Inspection - Actions that involve modification of existing buildings to protect them from a hazard or removal from the hazardous area. Examples include seismicity, hazardous materials, and fire safety.	41.0%	41.0%	11.0%	11
Natural Resource Protection - Actions that, in addition to preventing, hazard events, and protect or restore the functions of natural systems. Examples include floodplain protection, riparian restoration, and dune restoration.	0.0%	0.0%	11.0%	11
Structural Projects - Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard. Examples include dams, levees, additional retention basins, drainage modification, retaining walls, and stormwater.	0.0%	0.0%	0.0%	11
Emergency Services - Actions that protect people and property during and immediately after a hazard event. Examples include training, equipment, disaster planning, emergency response training, and protection of critical emergency facilities or systems.	0.0%	0.0%	0.0%	11
Public Education and Awareness - Actions to inform citizens about hazards and the techniques they can use to protect themselves and their property. Examples include outreach programs, school education programs, public workshops, etc.	18.4%	11.0%	11.0%	11

33

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We Want to Hear from You!

- Agencies and Organizations may Complete the 2024 Stakeholder Hazard Mitigation Feedback Form
 - Provide general feedback on the draft 2024 HMP
 - Identify hazards that have the largest consequence on your agency/organization
 - Provide useful data resources
 - Provide best practice recommendations on reducing risks
 - Priorities in Hazard Mitigation
- HMP draft approval – Attend City Council meeting (Date TBD)
- Final HMP Council approval – Attend City Council Meeting (Date TBD)

34

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Questions?

Jacquelyn Castillo
Management Analyst
jcastillo@hesperia.ca.gov

35

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City of Hesperia – 2024 Hazard Mitigation Plan Update:

Stakeholder Meeting – November 4, 2024

Name	Title	Department/Agency	Email/Phone
Christine Plasting	Procurement Mgr.	VITA	cplasting@vita.org 760-995-3583
Jacquelyn Castillo	Management Analyst	City of Hesperia	jmcattillo@hesperia.ca.gov (760) 947-1589
Melinda Sayre	Dep City Mgr	Hesp	
Virginia Gutierrez	Director, Facilities Planning	Hesp. Unified Schl Dist	760-244-4411 #4304 virginia.gutierrez@hesperia.ca.gov 760-244-1651
Ryan Leonard	Principal Planner	Planning	rleonard@cityofhesperia.ca.gov
Christine Kirby	Sergeant	Hesperia Police Dept	chkirby@shcsd.org
Amanda Paslak	Public Information Off/SS	Hesperia PD	apaslak@shcsd.org
CASSANDRA SANCHEZ	Director of PW	Hesperia	csanchez@hesperia.ca.gov
Tammy Pelayes	Asst. to City Manager	City of Hesperia	tpelayes@hesperia.ca.gov tpelayes@hesperia.ca.gov



2024 Stakeholder Hazard Mitigation Feedback Form

Agency/Organization:	
Name:	
Phone Number:	
Email Address:	

1. Do you have a general comment on the draft 2024 Local Hazard Mitigation Plan? Please provide your comment(s).

2. Do you have a specific question or comment about the draft 2024 Local Hazard Mitigation Plan? If so, please provide the section and page number in addition to your comment.

3. Have you participated in the Local Hazard Mitigation Plan Update Process previously? If yes, in what capacity?

4. Would you like to receive more information about the Local Hazard Mitigation Plan Update process?

5. What is the best way for us to share further information about the Local Hazard Mitigation Plan Update process with you?

- ☐ City website
☐ Social media
☐ In Person Meeting
☐ Webinar
☐ Other (please specify): _____



2024 Stakeholder Hazard Mitigation Feedback Form

6. What natural hazards have the largest consequence on your agency/organization and why?

Natural Hazard	Comments
Earthquake	
Flooding	
Wildfire	
Severe/High Winds	
Extreme Heat	
Severe Rainstorm/Thunderstorm	
Dam Failure/Inundation	

7. Where might your agency/organization need help in addressing these natural hazard risks?



2024 Stakeholder Hazard Mitigation Feedback Form

8. Does your agency/organization host or use data that would be useful in the plan update? If yes, please provide details.

9. Are there any best practices in your agency/organization related to reducing risk that we can document and build upon during this planning update?

10. What are your agency/organization priorities and interests in terms of hazard mitigation?

11. Are there any areas of the draft 2024 LHMP that your agency/organization would like to be expanded upon or addressed?

Stakeholder Comments/Feedback

2024 Stakeholder Hazard Mitigation Feedback Form

Agency/Organization: Hesperia Unified School District
 Name: Virginia Gutierrez
 Phone Number: 760.244.5411 #9304
 Email Address: Virginia.Gutierrez@hesperia.k12.ca.us

1. Do you have a general comment on the draft 2024 Local Hazard Mitigation Plan? Please provide your comments:
Have not read the draft yet.

2. Do you have a specific question or comment about the draft 2024 Local Hazard Mitigation Plan? If yes, please provide the question and page number in addition to your comment:
Have not read the draft yet.

3. Have you participated in the Local Hazard Mitigation Plan Update Process previously? If yes, in what capacity?
Yes

4. Would you like to receive more information about the Local Hazard Mitigation Plan Update process?
Yes, please

5. What is the best way for us to share further information about the Local Hazard Mitigation Plan Update process with you?
☒ City website
☐ Social media
☐ In-person meeting
☐ Other (please specify): _____

1 of 2

1

2024 Stakeholder Hazard Mitigation Feedback Form

6. What natural hazards have the largest consequence on your agency/organization and why?

Natural Hazard	Consequence
Earthquake	<u>Shakeouts on our street how to get information to parents</u>
Flooding	
Wildfire	
Severe High Winds	
Extreme Heat	
Toxic Hazards/Threats	
Don't Know/Unsure	

7. Where might your agency/organization need help in addressing these natural hazard risks?
Education, ability of students to make decisions and make a natural disaster

2 of 2

2

2024 Stakeholder Hazard Mitigation Feedback Form

8. Does your agency/organization hold or use data that would be useful in the plan update? If yes, please provide details:
Yes - Schools used as evacuation centers

9. Are there any best practices in your agency/organization related to reducing risk that we can document and build upon during the planning update?
Communication - getting reliable information out to the community

10. What are your agency/organization priorities and interests in terms of hazard mitigation?
Community working with the parents that people can better educate

11. Are there any areas of the draft 2024 LHMPP that your agency/organization would like to be expanded upon or addressed?
Have not read the draft yet.

3 of 2

3

2024 Stakeholder Hazard Mitigation Feedback Form

Agency/Organization: San Bernardino Co. So
 Name: Sergeant Christine Kirby / Fire
 Phone Number: 760.947.1510
 Email Address: ckirby@sbcso.org

1. Do you have a general comment on the draft 2024 Local Hazard Mitigation Plan? Please provide your comments:
None

2. Do you have a specific question or comment about the draft 2024 Local Hazard Mitigation Plan? If yes, please provide the question and page number in addition to your comment:
None

3. Have you participated in the Local Hazard Mitigation Plan Update Process previously? If yes, in what capacity?
Yes, so, consult - I attended w/ at Mission

4. Would you like to receive more information about the Local Hazard Mitigation Plan Update process?
Yes

5. What is the best way for us to share further information about the Local Hazard Mitigation Plan Update process with you?
☒ City website
☐ Social media
☐ In-person meeting
☐ Other (please specify): _____

1 of 2

1

2024 Stakeholder Hazard Mitigation Feedback Form

6. What natural hazards have the largest consequence on your agency/organization and why?

Natural Hazard	Consequence
Earthquake	<u>located near our city (fault lines)</u>
Flooding	
Wildfire	
Severe High Winds	
Extreme Heat	<u>Living in the desert and having frequent heat waves</u>
Toxic Hazards/Threats	
Don't Know/Unsure	

7. Where might your agency/organization need help in addressing these natural hazard risks?
None

2 of 2

2

2024 Stakeholder Hazard Mitigation Feedback Form

8. Does your agency/organization hold or use data that would be useful in the plan update? If yes, please provide details:
None, information in this plan

9. Are there any best practices in your agency/organization related to reducing risk that we can document and build upon during the planning update?
None

10. What are your agency/organization priorities and interests in terms of hazard mitigation?
Fire prevention, fire safety, fire resources in people in need about fire safety

11. Are there any areas of the draft 2024 LHMPP that your agency/organization would like to be expanded upon or addressed?
In still working of how to fire, no!

3 of 2

3

2024 Stakeholder Hazard Mitigation Feedback Form

Agency/Organization: City of Hesperia - Planning Dept
 Name: David Leonard
 Phone Number: 760-244-5451
 Email Address: David.L@hesperia.ca.us

1. Do you have a general comment on the draft 2024 Local Hazard Mitigation Plan? Please provide your comments:
Have not read the draft yet.

2. Do you have a specific question or comment about the draft 2024 Local Hazard Mitigation Plan? If yes, please provide the question and page number in addition to your comment:
None

3. Have you participated in the Local Hazard Mitigation Plan Update Process previously? If yes, in what capacity?
Member of the 2021 Local Hazard Mitigation Plan

4. Would you like to receive more information about the Local Hazard Mitigation Plan Update process?
Yes

5. What is the best way for us to share further information about the Local Hazard Mitigation Plan Update process with you?
☒ City website
☐ Social media
☐ In-person meeting
☐ Other (please specify): _____

1 of 2

1

2024 Stakeholder Hazard Mitigation Feedback Form

6. What natural hazards have the largest consequence on your agency/organization and why?

Natural Hazard	Consequence
Earthquake	<u>Planned National Disaster and at the City of Hesperia Plan/State of California will have similar consequences on our organization</u>
Flooding	
Wildfire	
Severe High Winds	
Extreme Heat	
Toxic Hazards/Threats	
Don't Know/Unsure	

7. Where might your agency/organization need help in addressing these natural hazard risks?
None

2 of 2

2

2024 Stakeholder Hazard Mitigation Feedback Form

8. Does your agency/organization hold or use data that would be useful in the plan update? If yes, please provide details:
Yes, in the City of Hesperia Plan/State of California

9. Are there any best practices in your agency/organization related to reducing risk that we can document and build upon during the planning update?
State of California, fire, disaster, and safety in our community, fire, disaster, and safety in our community

10. What are your agency/organization priorities and interests in terms of hazard mitigation?
Land use, fire, disaster, and safety in our community

11. Are there any areas of the draft 2024 LHMPP that your agency/organization would like to be expanded upon or addressed?
None

3 of 2

3

 **2024 Stakeholder Hazard Mitigation Feedback Form**

Agency/Organization: Water Valley Transit Authority
Name: Benjamin Planching
Phone Number: 562-955-5513
Email Address: benjamin.planching@wvta.org

1. Do you have a general comment on the draft 2024 Local Hazard Mitigation Plan? Please provide your comments:
Strongly supporting the plan. Following is a link to the plan: https://www.hesperia.org/2024/01/24/2024-local-hazard-mitigation-plan/

2. Do you have a specific question or comment about the draft 2024 Local Hazard Mitigation Plan? If so, please provide the section and page number to better help your comment:
Page 101, Risk Assessment - Attached to the report.

3. Have you participated in the Local Hazard Mitigation Plan Update Process previously? If yes, in what capacity?
Yes, as a member of the plan.

4. Would you like to receive more information about the Local Hazard Mitigation Plan Update process?
Yes

5. What is the best way for us to share further information about the Local Hazard Mitigation Plan Update process with you?
a) By email
c) In Person Meeting
d) Other (please specify): social media

1 of 3 pgs

1

 **2024 Stakeholder Hazard Mitigation Feedback Form**

6. What natural hazards have the largest consequences on your agency/organization and why?

Hazard	Comments
Earthquake	Damage to roads, many homes, schools, businesses, especially those with no seismic upgrades.
Flooding	Damage to roads.
Wildfire	Damage to roads, schools, businesses, homes, and people. Also, damage to businesses when they need to close.
Severe/High Winds	
Coastal Storm	
Slippery Road Conditions	
Deep Potholes/Obstacles	Water springs over the road, causing people to lose control of the vehicle, resulting in many deaths and injuries.

7. Where might your agency/organization need help in addressing these risks/hazards?
Help in addressing potholes, especially in the city center.

2 of 3 pgs

2

 **2024 Stakeholder Hazard Mitigation Feedback Form**

8. Does your agency/organization have or use data that would be useful in the plan update? If yes, please provide details:
Yes, we have data on the number of people who have been injured or killed in the city center.

9. Are there any best practices in your agency/organization related to reducing risk that we can document and build upon during the planning update?

10. What are your agency/organization's greatest and strongest points of resilience?
Our strong point is our ability to recover quickly from disasters.

11. Are there any areas of the draft 2024 LHM that your agency/organization would like to be expanded upon or addressed?

3 of 3 pgs

3

Public Engagement Opportunity – November 12, 2024

City Website Information

Hazard Mitigation

This webpage serves as an information source and document repository for City of Hesperia's Hazard Mitigation Plan (HMP). The City of Hesperia's HMP must be updated every five years to ensure the plan remains current with natural hazard events and maintains eligibility for State and Federal Hazard Mitigation Grant funding. This webpage will remain permanently active to document past, current and future hazard mitigation planning efforts for the public and City officials alike.

Local Hazard Mitigation Plan

Public comment on the City's draft Local Hazard Mitigation Plan (LHMP) Update is now open! The LHMP is the City's primary hazard mitigation document detailing past and current hazards and methods to address them.



What's New in the Draft LHMP?

- **Community Demographics & Profile:** A detailed breakdown of Hesperia's population, infrastructure, and development trends to understand our community's needs.
- **Hazard Risk Assessment:** A comprehensive review of natural hazards impacting Hesperia, including wildfires, flooding, extreme heat, earthquakes, and more.
- **Vulnerability Assessment:** Identifies areas at greatest risk, vulnerable populations, and critical infrastructure.
- **Mitigation Strategies:** Includes prioritized actions to reduce risks, along with a **Capabilities Assessment** and **Hazard Mitigation Goals** to guide future preparedness efforts.

We Want Your Feedback!

Read the draft plan and take our **Public Survey!** Your feedback is essential as we finalize the plan.

Survey Timeline:

The survey closes on November 26th - share your thoughts before it closes!

<https://www.surveymonkey.com/r/lhmp2024draft>

[City of Hesperia LHMP 2024 Draft](#)

Resources

- [2017 Hazard Mitigation Plan - Final Draft](#)
- [Hazard Mitigation Survey Results](#)
- [HMP Stakeholder Meeting](#)

Social Media Post

Public Survey: Hesperia Local Hazard Mitigation Plan Draft

Thank you for taking the time to provide your input on the draft of the Hesperia Local Hazard Mitigation Plan. Your feedback is important in helping us improve our preparedness for natural and man-made hazards. Please take a few moments to share your thoughts.

1. How familiar are you with the Hesperia Local Hazard Mitigation Plan?

- ☐ Very familiar
- ☐ Somewhat familiar
- ☐ Not familiar at all

2. What do you think of the goals and strategies outlined in the draft plan?

- ☐ Very clear and relevant
- ☐ Somewhat clear, but could use more detail
- ☐ Not clear or relevant
- ☐ No opinion

3. Do you believe the draft plan adequately addresses the hazards most relevant to Hesperia?

- ☐ Yes, it covers all the important hazards
- ☐ Some hazards are addressed, but more could be included
- ☐ No, it doesn't cover the most important hazards
- ☐ Not sure

4. Are there any specific hazards or risks you feel should be prioritized in the plan? (Please specify)

5. Do you feel that the proposed mitigation strategies are realistic and achievable?

- ☐ Yes, they seem feasible
- ☐ Some are feasible, but others may need adjustment
- ☐ No, they seem unrealistic
- ☐ Not sure

6. How do you feel about the community engagement process for this plan?

- ☐ Very good, I feel informed and involved
- ☐ Good, but there could be more outreach
- ☐ Somewhat unconcerned.
- ☐ Not enough engagement or information
- ☐ No opinion

7. What improvements or suggestions do you have for the plan or the mitigation strategies?

8. Would you like to be kept informed of updates to the Hesperia Local Hazard Mitigation Plan?

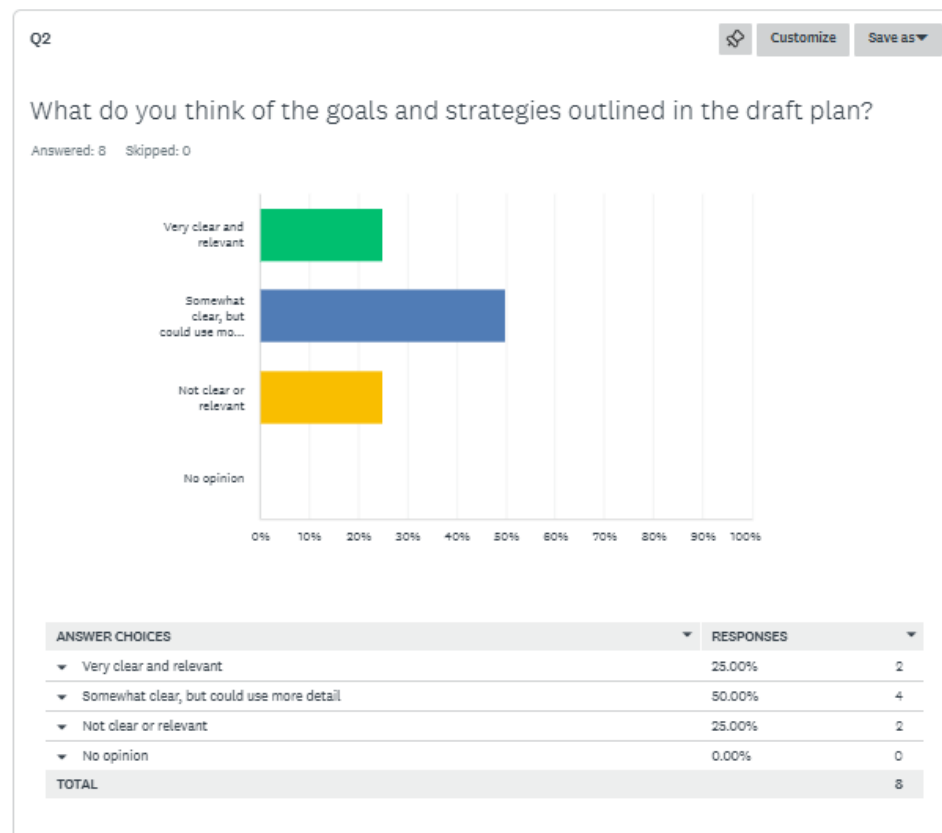
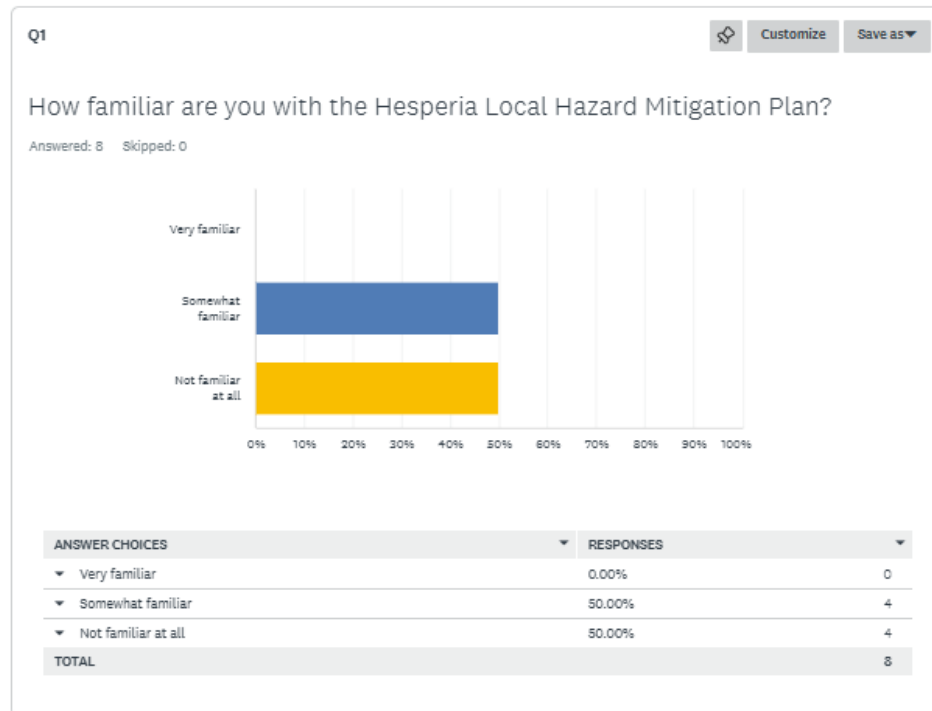
- ☐ Yes, please keep me informed
- ☐ No, I don't need updates

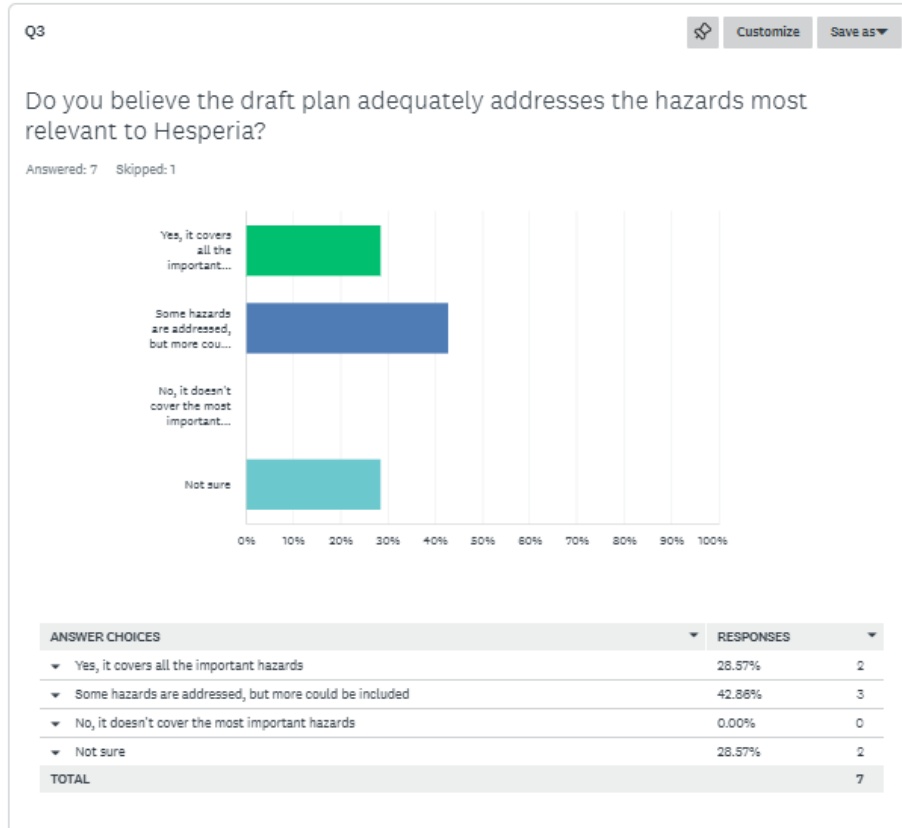
9. Any additional comments or concerns?

Done

Public Survey: Hesperia Local Hazard Mitigation Plan Draft Results

Page 1





Q4

Are there any specific hazards or risks you feel should be prioritized in the plan? (Please specify)

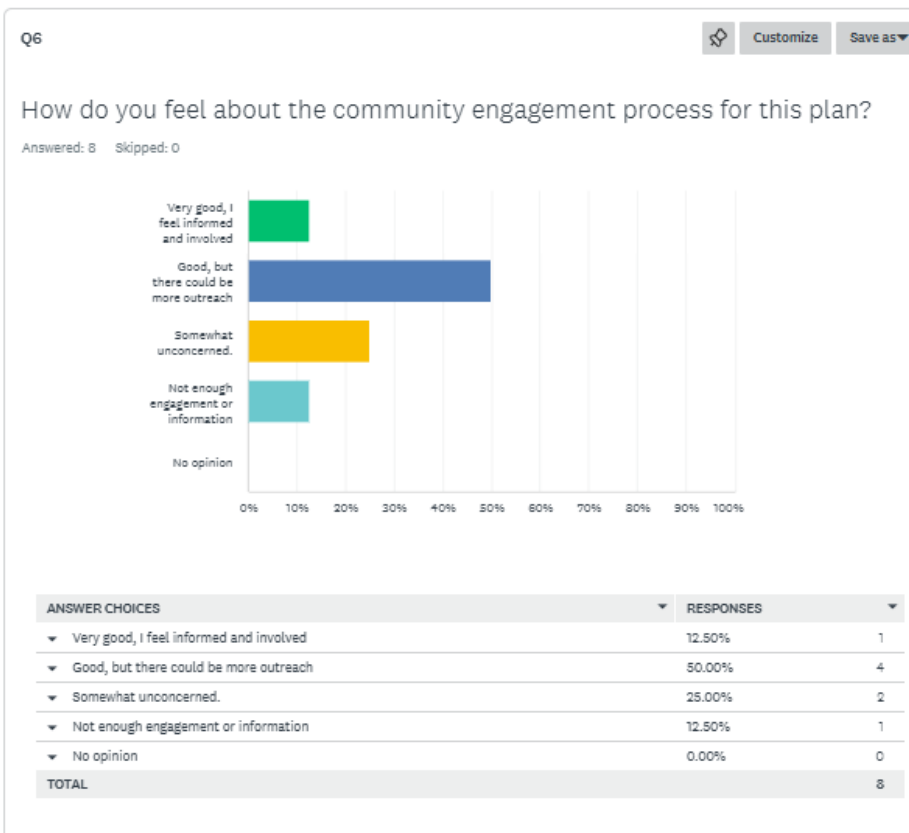
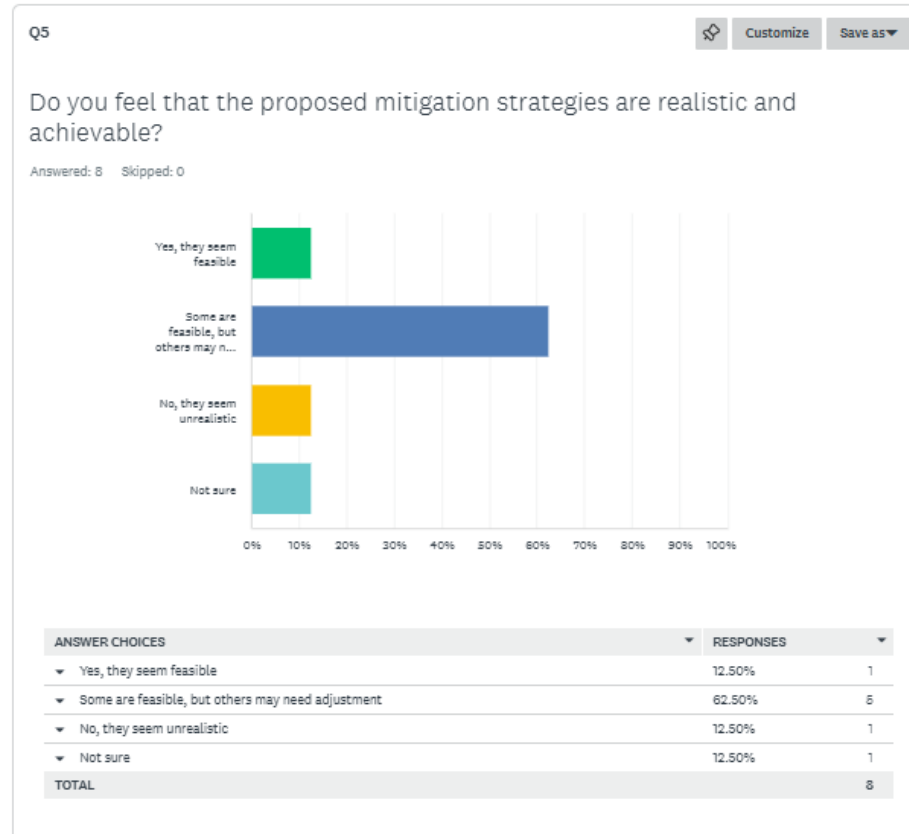
Answered: 4 Skipped: 4

RESPONSES (4) WORD CLOUD TAGS (0) Sentiments: OFF

Search Responses Filter: by tag

Showing 4 responses

- ☐ What I see is on the east side of the RR tracks there's only three ways of getting to the 15 freeway and if there's a big quake it most likely will destroy all of the bridges out, the other thing is if there's a catastrophic Flooding there's no drainage anywhere in the city it only flows to the Low lying areas
11/13/2024 12:53 PM [View respondent's answers](#) [Add tags](#)
- ☐ All the ones not included
11/12/2024 08:54 PM [View respondent's answers](#) [Add tags](#)
- ☐ Sink holes... sometimes when a road washes out. Pending on location ... Action plan of where to evacuate to incase of natural disaster
11/12/2024 07:12 PM [View respondent's answers](#) [Add tags](#)
- ☐ Earthquake and fire
11/12/2024 06:26 PM [View respondent's answers](#) [Add tags](#)



Q7

 Save as ▼

What improvements or suggestions do you have for the plan or the mitigation strategies?

Answered: 2 Skipped: 6

RESPONSES (2)

WORD CLOUD

TAGS (0)

 Sentiments: OFF  Search Responses Filter: by tag ▼☐ Showing 2 responses

☐ And what you're saying any catastrophic earthquakes where are we to go freeways will be destroyed and major overpasses will be destroyed and most likely all Communications will be down you need to plan for all of this the other thing is a catastrophic flooding you need to have an expert come out here to the city and check the city streets out to see where and if the city can fix the flow of water major downpours

11/13/2024 12:53 PM

[View respondent's answers](#) [Add tags ▼](#)

☐ 1) Website dedicated to each component in this plan that can easily be updated 2) Add Rancho Cucamonga & Eastvale to cities that are closest (Income is higher there and it's with 30 miles of Hesperia).

11/12/2024 07:12 PM

[View respondent's answers](#) [Add tags ▼](#)

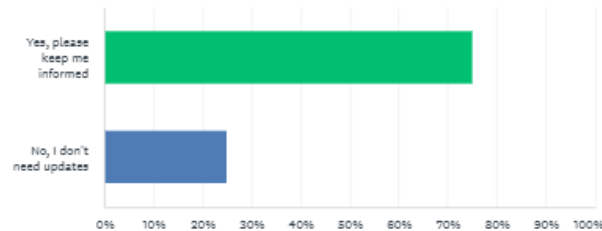
Q8

 Customize

Save as ▼

Would you like to be kept informed of updates to the Hesperia Local Hazard Mitigation Plan?

Answered: 8 Skipped: 0



ANSWER CHOICES ▼

RESPONSES ▼

▼ Yes, please keep me informed

75.00%

6

▼ No, I don't need updates

25.00%

2

TOTAL

8

Q9

Save as ▼

Any additional comments or concerns?

Answered: 3 Skipped: 5

RESPONSES (3)

WORD CLOUD

TAGS (0)

Sentiments: OFF

Search Responses

Filter: by tag ▼

Showing 3 responses

My major concern is I never heard of this before now the city has to make a major effort to get the people of Hesperia in formed on this

11/13/2024 12:53 PM

[View respondent's answers](#)

[Add tags ▼](#)

Na

11/12/2024 08:54 PM

[View respondent's answers](#)

[Add tags ▼](#)

N/A. And our city website should be nicer ... honestly, the website doesn't reflect a city on the move ...

11/12/2024 07:12 PM

[View respondent's answers](#)

[Add tags ▼](#)

Public Engagement Opportunity – December 9, 2024 CCAC Meeting – LHMP Planning Process

City Website Information

What is Hazard Mitigation?

About the Project

Planning Process

Planning Team

Risk Assessment

Draft Plan

You Are Here: [Home](#) > [Your Government](#) > [City Manager](#) > [City Departments](#) > [Departments A - E](#) > [Community Relations](#) > [Emergency Preparedness](#) > [Hazard Mitigation](#)

Hazard Mitigation

This webpage serves as an information source and document repository for City of Hesperia's Hazard Mitigation Plan (HMP). The City of Hesperia's HMP must be updated every five years to ensure the plan remains current with natural hazard events and maintains eligibility for State and Federal Hazard Mitigation Grant funding. This webpage will remain permanently active to document past, current and future hazard mitigation planning efforts for the public and City officials alike.



Local Hazard Mitigation Plan

Public comment on the City's draft Local Hazard Mitigation Plan (LHMP) Update is now open! The LHMP is the City's primary hazard mitigation document detailing past and current hazards and methods to address them.

What's New in the Draft LHMP?

- **Community Demographics & Profile:** A detailed breakdown of Hesperia's population, infrastructure, and development trends to understand our community's needs.
- **Hazard Risk Assessment:** A comprehensive review of natural hazards impacting Hesperia, including wildfires, flooding, extreme heat, earthquakes, and more.
- **Vulnerability Assessment:** Identifies areas at greatest risk, vulnerable populations, and critical infrastructure.
- **Mitigation Strategies:** Includes prioritized actions to reduce risks, along with a **Capabilities Assessment** and **Hazard Mitigation Goals** to guide future preparedness efforts.

We Want Your Feedback!

We invite you to join us at the **City Council Advisory Meeting on December 9, 2024 at 6:00pm**, where we will present a brief PowerPoint overview of the plan and provide an opportunity for the public to share any final thoughts.

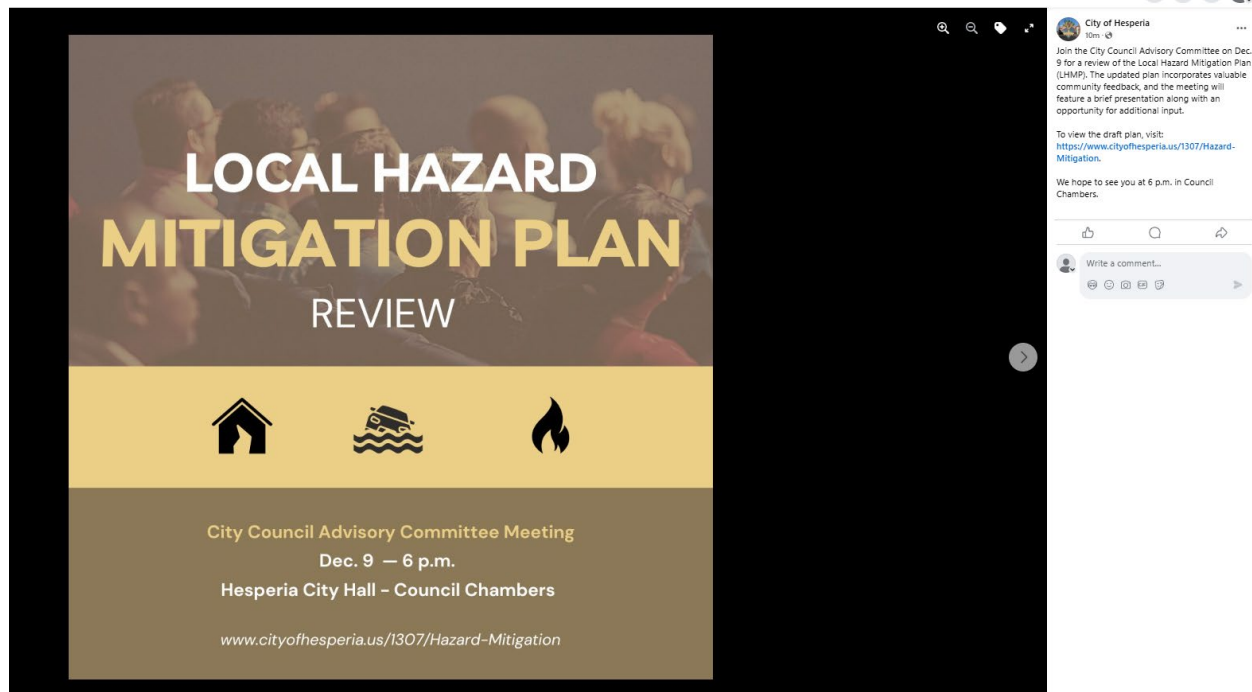
For questions regarding the LHMP planning process, please contact Jacquelyn Castillo at jmcastillo@hesperiacal.gov.

Access the draft LHMP below:

[City of Hesperia LHMP 2024 Draft](#)

Resources

- [2017 Hazard Mitigation Plan - Final Draft](#)
- [Hazard Mitigation Survey Results](#)
- [HMP Stakeholder Meeting](#)

Social Media Post

Agenda

CITY COUNCIL ADVISORY COMMITTEE SPECIAL MEETING



Special Meeting Agenda

Regular Meetings- 1st Thursday
March, June, September, December

Monday, December 9, 2024

6:00 PM

Council Chambers
9700 Seventh Avenue
Hesperia, CA 92345

City Council Advisory Committee Members

Martial Haprov, Chair
Roman Aguilar III, Vice Chair
Kelly Gregg
Ramon Franco
Arley Arsineda

Council Member Allison Lee,
Council Liaison
Rachel Molina, City Manager

Documents produced by the City and distributed less than 72 hours prior to the meeting regarding any item on the agenda will be made available in the City Clerk's office located at 9700 Seventh Avenue during normal business hours or on the City's website.



NOTE: In compliance with the Americans with Disability Act, if you need special assistance to participate in this meeting, please contact the City Clerk's Office at (760) 947-1007 or (760) 947-1026. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility.



City of Hesperia

Meeting Agenda

City Council Advisory

Monday, December 9, 2024

6:00 PM

Council Chambers

SPECIAL MEETING AGENDA
HESPERIA CITY COUNCIL ADVISORY COMMITTEE
9700 Seventh Ave., Hesperia, CA 92345

CALL TO ORDER - 6:00 p.m.

- A. Pledge of Allegiance
- B. Invocation
- C. Roll Call

PUBLIC COMMENTS

Please complete a "Comment Card" and give it to the Secretary. Comments are limited to three (3) minutes per individual. State your name for the record before making your presentation. This request is optional, but very helpful for the follow-up process.

Under the provisions of the Brown Act, Members are prohibited from taking action on oral requests. However, Members may respond briefly or refer the communication to staff.

CONSENT CALENDAR

- 1. Page 3 Consideration of the September 16, 2024 City Council Advisory Committee Draft Meeting Minutes.

Recommended Action:

It is recommended that the City Council Advisory Committee approve the draft meeting minutes from the special meeting held September 16, 2024.

Staff Person: Administrative Secretary Yvonne Kliewer

Attachments: [Draft Meeting Minutes.pdf](#)

2. Page 5

Public Engagement Opportunity for the City's Local Hazard Mitigation Plan Update

Recommended Action:

It is recommended that the City Council Advisory Committee (CCAC) receive and file the Local Hazard Mitigation Plan update and provide an opportunity for members of the public to comment on the content of the plan.

Staff Person: Management Analyst Jacquelyn Castillo and Assistant to the City Manager Tammy Pelayes

Attachments: [Public Engagement Opportunity-City's Local Hazard Mitigation Plan Update.pdf](#)
[Appendix 1 - City of Hesperia - Local Hazard Mitigation Plan \(Draft\) 2024.pdf](#)

ITEMS FOR CONSIDERATION**3. Page 318**

Pride Enhancement Program Honoree Selection

Recommended Action:

It is recommended that the City Council Advisory Committee (CCAC) review nominations and select an honoree for the City's Pride Enhancement Program.

Staff Person: Management Analyst Jacquelyn Castillo

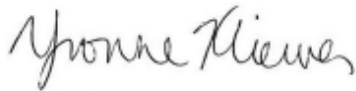
Attachments: [SR CCAC PEP Honoree Selection December 2024.pdf](#)
[Attachment 1 - Pride Enhancement Program Nominees \(2\).pdf](#)

COMMITTEE MEMBER AND STAFF COMMENTS

Committee Members and/or staff may make comments of general interest to the Committee.

ADJOURNMENT

I, Yvonne Kliewer, City Council Advisory Committee Secretary for the City of Hesperia, California do hereby certify that I caused to be posted the foregoing agenda on Tuesday, December 3, 2024 at 5:30 p.m. pursuant to California Government Code §54954.2.



Yvonne Kliewer
City Council Advisory Committee Secretary



City of Hesperia
Special Meeting Minutes - Draft
City Council Advisory

Monday, September 16, 2024

6:00 PM

Council Chambers

SPECIAL MEETING AGENDA
CITY COUNCIL ADVISORY COMMITTEE
9700 Seventh Ave., Hesperia, CA 92345

CALL TO ORDER - 6:00 p.m.

- A. Pledge of Allegiance-led by Arley Arsineda
- B. Invocation-led by Ramon Franco
- C. Roll Call

Present: 3 - Martial Haprov, Ramon Franco and Arley Arsineda

Absent: 2 - Kelly Gregg and Roman Aguilar III

PUBLIC COMMENTS

Public comments opened at 6:02 pm, there were no white cards, and public comments closed at 6:02 pm

**Presentation of CAP Procedures and Guidelines by April Pelletier, Economic Development
Administrative Analyst**

After the PowerPoint presentation committee members asked questions and April Pelletier and Nathan Freeman, Director of Development Services responded.

CONSENT CALENDAR

1. Consideration of the June 6, 2024 City Council Advisory Committee Draft Meeting Minutes.

Recommended Action:

It is recommended that the City Council Advisory Committee approve the draft meeting minutes from the Regular Meeting held June 6, 2024.

Sponsor: Administrative Secretary Yvonne Kliever

A motion was made by Committee Member Arsineda, seconded by Committee Member Franco, that this item be approved. The motion carried by the following vote:

Aye: 3 Ramon Franco, Martial Haprov, and Arley Arsineda
Nay: 0
Abstain: 0

ITEMS FOR CONSIDERATION**2. Pride Enhancement Program Honoree Selection****Recommended Action:**

It is recommended that the City Council Advisory Committee (CCAC) review nominations and select an honoree for the City's Pride Enhancement Program.

Sponsor: Management Analyst Jacquelyn Castillo

A motion was made by Committee Member Arsineda, seconded by Committee Member Franco, that the winner is nomination number 5 and, after discussion by committee members, the runner up is nomination number 3 and that this item be approved and forwarded to the City Council for award. The motion carried by the following vote:

Aye: 3 - Ramon Franco, Martial Haprov, and Arley Arsineda
Nay: 0
Abstain: 0

COMMITTEE MEMBER AND STAFF COMMENTS

Various committee members and Council Member Lee made comments of gratitude for the program and staff efforts.

ADJOURNMENT

Committee Chair Haprov adjourned the meeting at 6:26 pm.

Yvonne Kliewer
City Council Advisory Committee Secretary

Staff Report*City of Hesperia*
STAFF REPORT

DATE: December 9, 2024

TO: Chair and Board Members, City Council Advisory Committee

FROM: Rachel Molina, City Manager

BY: Melinda Sayre, Deputy City Manager/City Clerk
Tammy Pelayes, Assistant to the City Manager
Jacquelyn Castillo, Management Analyst

SUBJECT: Public Engagement Opportunity for the City's Local Hazard Mitigation Plan Update

RECOMMENDED ACTION

It is recommended that the City Council Advisory Committee (CCAC) receive and file the Local Hazard Mitigation Plan update and provide an opportunity for members of the public to comment on the content of the plan.

BACKGROUND

The Local Hazard Mitigation Plan (LHMP) is a comprehensive strategy developed to reduce, prevent, or eliminate the potential impacts of both natural and manmade disasters. Its primary goal is to reduce the loss of life and property. The Federal Emergency Management Agency (FEMA) mandates that jurisdictions adopt a Hazard Mitigation Plan in order to qualify for grant funding for hazard mitigation assistance and reimbursement for emergency-related expenses during declared emergencies. The plan must be updated every five years, with the last update for Hesperia occurring in 2017.

ISSUES/ANALYSIS

To update this plan, a Planning Team was formed comprised of representatives from the City Manager's Office, Planning, Engineering, Public Works and Public Safety. The drafting of the new plan is being accomplished in six phases:

- **Phase 1** – Pre-Planning: Data collection and formation of the planning team to establish objectives and timelines.
- **Phase 2** – Risk Assessment: Identification and analysis of potential hazards and vulnerabilities.
- **Phase 3** – Mitigation Strategy Development: Stakeholder brainstorming and evaluation of actions to reduce risks, including policy changes and public education.
- **Phase 4** – Plan Preparation: Consolidation of mitigation strategies into a draft document.
- **Phase 5** – Review and Approval: Stakeholder and public feedback before formal adoption by the governing body.
- **Phase 6** – Implementation and Monitoring: Execution of the plan, securing funding, and establishing metrics to monitor progress and ensure ongoing effectiveness.

Page 2 of 2

Staff Report to the Chair and Board Members, City Council Advisory Committee
Public Engagement Opportunity for the City's Local Hazard Mitigation Plan Update
December 9, 2024

FISCAL IMPACT

There are no fiscal impacts identified with this item.

ATTACHMENT(S)

1. 2024 Hesperia Local Hazard Mitigation Plan (Draft)

PowerPoint Presentation

City of Hesperia Public Engagement Opportunity for the City's 2024 Local Hazard Mitigation Plan Update

City of Hesperia
CCAC Meeting – LHPM Planning Process
December 9, 2024

Purpose of the LHMP

- Purpose of the LHMP:**
 - To document sustained actions aimed at reducing natural hazard impacts that affect Hesperia such as wildfire, flooding, earthquakes, and severe weather.
 - Required by FEMA to remain eligible for grant funding after disaster declarations.
- Important Notes:**
 - The LHMP is NOT an emergency response plan.
 - It is a long-term mitigation strategy for reducing risk over time.

Mitigation Techniques

- Mitigation techniques are key strategies designed to reduce the impact of disasters and enhance community resilience.
- Prevention:** Efforts to reduce the likelihood of a disaster (e.g., land use planning, building codes).
- Property Protection:** Actions to reduce damage to structures (e.g., retrofitting buildings, floodproofing).
- Public Education and Awareness:** Informing residents about risks and safety measures.
- Natural Resource Protection:** Conservation of natural buffers (e.g., wetlands, forests) to reduce hazard impacts.
- Emergency Services:** Enhancing emergency preparedness, response, and recovery capabilities.
- Structural Projects:** Infrastructure improvements to protect communities (e.g., levees, firebreaks).

Primary Objectives of the LHMP

- Primary Objectives:**
 - Mitigate Identified Risks:** Address specific hazards like wildfire, flooding, and earthquakes.
 - Reduce Risks to Property and Life:** Focus on actions that minimize the impact of natural disasters on people and property.
 - Create a Useful Planning Document:** A tool for decision-makers to prioritize and plan mitigation projects.

HMP Planning Process – 6 Phases

PHASE 1: Organize Planning Process, Review Existing Plan
PHASE 2: Organize Resources, Natural Hazards Analysis, Threat Analysis, Scenario Development
PHASE 3: Update Mitigation Strategy, Risk & Disaster, Assessments, Update mitigation strategy, Emergency Strategy
PHASE 4: Implement Plan & Management Strategy, Implementation Plan, Progress Reporting, Continuing Improvement
PHASE 5: Draft Plan Updates, Mitigation Measures, Update Services, Technical Edits
PHASE 6: Review, Public Review, HMP Plan Review Tool, Report Card & Results, Plan Adoption

LHMP Planning Schedule

03/2024: Organize Resources
04/2024: Risk Assessment
05/2024: Stakeholder Engagement Strategy
06/2024: Maintenance Strategy
11/2024: Draft Plan Updates
12/2024: Review and Adoption

Assign planning committee, review existing plan
Data acquisition, natural hazard analysis, etc.
Receive information from public
Goals and objectives mitigation strategy
Update actions, technical edits
Public review, required edits/revisions, plan adoption

Outreach

Stakeholder Meetings:

- HMPCC Stakeholder Meetings (March-July 2024): Focused on local hazard knowledge, mitigation strategies, and climate adaptation.
- Stakeholder Engagement Opportunity #1 (August 22, 2024): Email outreach to stakeholders for participation in a survey and feedback on mitigation strategies.
- Stakeholder Engagement Opportunity #2 (November 4, 2024): A meeting with stakeholders to gather regional input on shared mitigation efforts.

Public Engagement:

- March 12, 2024: The City released a Local Hazard Mitigation Plan (LHMP) Survey, highlighting primary hazard concerns.
- August 6, 2024: A second survey was released to the public that focused on community activities to reduce vulnerability.
- October 2, 2024: Stakeholder Hazard Mitigation Feedback Form and a draft of the 2024 LHMP were shared with stakeholders for review.
- November 12, 2024: Shared draft with the community to gather additional feedback through a Public Survey.

Addressing Community Concerns

- Evaluation Planning During Hazard Events:**
 - Specific evaluation needs will depend on the emergency. However, the primary needs for evaluation include: 1-15, 34, 35, and 36, and those needs are addressed in these major modes. The General Plan's Safety Element identifies potential needs, including those with other emergency and response needs that may be considered.
 - Consensus about initial needs to 1-15, especially after an emergency, are addressed with alternative evaluation modes, such as local calls, media, highways, and other emergency modes set by response teams. Public transportation, emergency workers, and communities from activities will also be available. The City works closely with local fire, police, and emergency management teams, along with regional agencies, to ensure safe evaluations and manage resources during legal events.
- Communication Resilience:**
 - The City is improving communication during emergencies by using backup systems like satellite phones, team radios, and radio broadcasts. Other technologies are being explored to make sure residents get important information, such as regular community meetings (radio call).
- Flooding & Drought:**
 - The San Bernardino County Flood Control District manages flood control in Hesperia, including dams, basins, and storm drains. They monitor weather and activate flood control systems during major storms, working with emergency teams to respond quickly to flooding. The City collaborates with the District to improve infrastructure, such as installing new storm drains and retention basins. Examples include the 4-15 Drainage Program and retention basins on Temecula Ave, Walnut St, and Catalina Rd to enhance flood protection.
- Wildfire & Heat Resilience:**
 - The City regularly checks roads for potholes and potholes, focusing on areas at higher risk. Current projects include retaining roads, widening roads, and improving drainage. The City is also working on a pavement rehabilitation program.

Goals

These goals are similar to the 2017 goals but have been modified for clearer language and better alignment with the City's Safety Element of the General Plan and community priorities.

- A community prepared to withstand and recover from natural disasters, human health hazards, and other emergencies.
- Minimize injury, loss of life, property damage, economic and social disruption caused by:
 - Seismic shaking and other earthquake induced hazards.
 - Flooding and inundation hazards.
 - Wildland and urban fires.
- A community resilient to drought, extreme heat, severe weather events, and other climate-related hazards.
- Reduce the impacts of climate change on the city.

2017 LHMP Hazards Identified

2017 HAZARD ASSESSMENT MATRIX	
	Impact
Probability	Low
High	Earthquake/Geo hazards Flooding Wildfire
Medium	High Winds Severe Thunderstorms Hazardous Materials
Low	Extreme Heat Drought Climate Change Inflation Terrorism Lightning

Updating 2024 Hazards

- The 2024 HMP Plan focuses on natural hazards.
- The HMP Planning Team evaluated (16) different hazards based on hazards recommended for consideration by FEMA, the State of California, San Bernardino County, and Hesperia's 2017 HMP.
- The HMP Planning Team opted to take a common sense and risk-based approach in evaluating hazards unique to Hesperia.
 - For example, the evaluation did not include hazards such as sea-level rise, storm surge, coastal flooding, or tsunami as Hesperia is not a coastal community where these hazards would be a concern.
- The team considered historical hazard incidents and disaster declarations.
- Hazards were grouped into broad categories and scored using a weighted methodology, replacing the previously fully scoring method. This makes the assessment more nuanced and aligned with FEMA standards.

HMP Planning Team Risk Assessment Results 2024

CITY OF HESPERIA HAZARD RISK ASSESSMENT MATRIX			
HAZARD	SEVERITY	LIKELIHOOD	RISK
Earthquake/Geo hazards	High	Medium	High
Flooding	Medium	Medium	Medium
Wildfire	High	Medium	High
High Winds	Medium	Medium	Medium
Severe Thunderstorms	Medium	Medium	Medium
Hazardous Materials	Medium	Medium	Medium
Extreme Heat	Medium	Medium	Medium
Drought	Medium	Medium	Medium
Climate Change	Medium	Medium	Medium
Inflation	Medium	Medium	Medium
Terrorism	Medium	Medium	Medium
Lightning	Medium	Medium	Medium

The risk assessment results were derived from the consolidated averages of individual assessments conducted by the HMP Planning Team. The team identified five human-caused hazard categories of concern: Hazardous Materials Release, Cyber-theft, Terrorism, Active Shooter/Mass Shooting, and Epidemic/Pandemic/Veteran-Borne Disease. It was collectively agreed that these issues are better addressed in the City's Emergency Operations Plan and/or the Safety Element of the General Plan, as the focus of the LHMP is natural hazard events. These five human-caused hazard categories were included in the Hazard Prioritization Worksheet and Hazard Assessment Matrix for contextual purposes.

Vulnerability Assessment

- The vulnerability assessment involved data gathering on historical hazard events, critical infrastructure, and community demographics, using Geographic Information Systems (GIS).
- By mapping historical hazard events and overlaying them with current land use and infrastructure, GIS helped visualize vulnerability hotspots.
- This spatial analysis revealed which areas are at greatest risk, enabling the planning team to identify affected populations, such as vulnerable groups or critical facilities.
- Additionally, GIS highlighted essential assets—like schools, hospitals, and utilities—allowing for targeted mitigation strategies that prioritize the protection of both people and infrastructure in hazard areas.

Mitigation 5-Year Progress Report

- In the 2023-24 CIP Program, the City has initiated projects that reduce hazard losses such as:
 - Ranchero Road Improvements
 - Aqueduct Crossing Improvements on Main St
 - Ranchero Road Aqueduct Crossing
 - COBIO Street Improvements for roads in serious need of rehabilitation and storm flow improvements
 - Mable Ave. Street Improvement Project
 - 2023 Emergency Storm Repairs
 - Installation of Retention Basins (Temecula Ave and Walnut St)
 - 4-15 Drainage Program
 - Catalina Road Basin
 - 1-15 Conduit Water Project (Fire-hazard suppression)
 - Reclaimed Water Distribution System
- The City of Hesperia is also launching a pavement rehabilitation project to repair approximately 23 miles of roadway throughout the City.

Questions?

Jacquelyn Castillo
Management Analyst
jcastillo@hesperiaca.gov

B-96

Appendix C - Resolution of Adoption and FEMA Letter

RESOLUTION NO. 2025-12

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HESPERIA, CALIFORNIA, ADOPTING THE 2024 LOCAL HAZARD MITIGATION PLAN UPDATE, AND AUTHORIZING FUTURE NON-SUBSTANTIVE AMENDMENTS TO THE PLAN

WHEREAS, President William J. Clinton signed H.R. 707, the Disaster Mitigation and Cost Reduction Act of 2000, into law on October 30, 2000; and

WHEREAS, the Disaster Mitigation Act of 2000 requires that all jurisdictions be covered by a Local Hazard Mitigation Plan (LHMP) in order to remain eligible for post-disaster funding from the Federal Emergency Management Agency (FEMA); and

WHEREAS, the City of Hesperia, through the City Manager's Office, has acted as the lead agency in the development of the 2024 Local Hazard Mitigation Plan Update; and

WHEREAS, the City Manager's Office coordinated the development of the Plan in collaboration with multiple City departments and stakeholders; and

WHEREAS, the City Manager's Office is the designated authority within the City of Hesperia to oversee the implementation and administration of the Plan; and

WHEREAS, the City of Hesperia recognizes the importance of mitigating potential losses from natural hazards before they occur and is committed to proactively planning for disaster resilience; and

WHEREAS, the 2024 Local Hazard Mitigation Plan identifies potential hazards, assesses vulnerabilities, and outlines mitigation strategies to reduce future risk; and

WHEREAS, the California Governor's Office of Emergency Services (Cal OES) has reviewed the Plan on behalf of FEMA; and

WHEREAS, formal adoption of the Plan by the City Council is required prior to final approval by FEMA; and

WHEREAS, the City Council finds that adoption of the 2024 Local Hazard Mitigation Plan Update is in the best interest of the City of Hesperia and its residents.

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF HESPERIA CITY COUNCIL AS FOLLOWS:

- Section 1. The City Council hereby adopts the City of Hesperia 2024 Local Hazard Mitigation Plan Update in accordance with the requirements of the Disaster Mitigation and Cost Reduction Act of 2000 and directs the City Manager's Office to submit the adopted Plan to Cal OES and FEMA for final approval.

- Section 2. The City Council authorizes the City Manager, or designee, to make non-substantive administrative and operational updates to the Plan as necessary to maintain its compliance and effectiveness.
- Section 3. The City Council authorizes the City Manager, or designee, to carry out the duties and responsibilities associated with the implementation and maintenance of the Local Hazard Mitigation Plan.
- Section 4. A certified copy of the City of Hesperia 2024 Local Hazard Mitigation Plan Update shall be placed on file with the City Clerk's Office and made available for public review.

ADOPTED AND APPROVED this 6th day of May 2025.


Allison Lee, Mayor

ATTEST:


Jessica Giber
Assistant City Clerk



U.S. Department of Homeland Security
FEMA Region 9
1111 Broadway, Suite 1200
Oakland, CA 94607

FEMA

May 22, 2025

Jacquelyn Castillo
Management Analyst
City of Hesperia
9700 Seventh Ave.
Hesperia, CA 92345

Reference: Hazard Mitigation Plan Approval
City of Hesperia, CA

Dear Jacquelyn Castillo:

The 2025 City of Hesperia Hazard Mitigation Plan was officially adopted by the City of Hesperia and submitted for final review and approval to the Federal Emergency Management Agency (FEMA). FEMA confirms this plan meets the requirements of the Code of Federal Regulations, Title 44, Part 201, Section 6 (44 C.F.R. 201.6).

FEMA approves this plan for five years with an effective date of May 7, 2025, which is the completion date of our final review. To maintain grant eligibility, the City of Hesperia must review, update, and resubmit the plan to FEMA before **May 6, 2030**.

While local mitigation plans may include additional content to meet Element H: Additional State Requirements or other local objectives, FEMA's approval only applies to elements required by its *Local Mitigation Planning Policy Guide* (FP-206-21-0002).

This plan approval ensures eligibility for project grants under FEMA's Hazard Mitigation Assistance programs, including the Hazard Mitigation Grant Program (HMGP), HMGP Post-Fire, Flood Mitigation Assistance (FMA), and Safeguarding Tomorrow Revolving Loan Fund (STORM RLF). Funding requests are reviewed individually for eligibility and other program requirements.

Thank you for your continued commitment to reducing risk and enhancing community safety. If you have any questions about the planning or review process, please contact the FEMA Region 9 Hazard Mitigation Planning Team at fema-r9-mitigation-planning@fema.dhs.gov.

Sincerely,

**KATHRYN J
LIPIECKI**

Kathryn Lipiecki
Director, Mitigation Division
FEMA Region 9

Digitally signed by KATHRYN J
LIPIECKI
Date: 2025.05.22 09:59:08 -07'00'

www.fema.gov

City of Hesperia Hazard Mitigation Plan Approval Notice
May 22, 2025
Page 2 of 2

Enclosure (1)

City of Hesperia Plan Review Tool, dated May 7, 2025

cc: Alison Kearns, Planning and Implementation Branch Chief, FEMA Region 9
Robyn Fennig, State Hazard Mitigation Officer, California Governor's Office of
Emergency Services
Victoria LaMar-Haas, Hazard Mitigation Planning Chief, California Governor's Office of
Emergency Services

www.fema.gov



Local Hazard Mitigation Plan Implementation Handbook

May 2024

What Is This Handbook?

The Local Hazard Mitigation Plan (LHMP) for the City of Hesperia features an evaluation of the City's hazards as well as a variety of corresponding mitigation actions. These actions are intended to preserve public safety, maintain critical municipal government operations and services when hazard events emerge, and empower community members to take on hazard mitigation at an individual level. This Implementation Handbook (Handbook) is intended for use by City staff and decision-makers after the LHMP is adopted. It will:

- Give clear instructions following the adoption of the LHMP.
- Simplify future updates to the LHMP.
- Assist the City in preparing grant funding applications related to hazard mitigation.
- Guide annual plan review actions.

How do I Use This Handbook?

This Handbook can help City staff and decision-makers in several different situations. If and when the events listed below occur, consult the respective sections of this Handbook for advice on how best to proceed:

- A disaster proclamation has been issued by the Hesperia City Council
- A disaster proclamation has been issued by the State of California
- A disaster declaration has been signed by the Federal Government
- I want to apply for mitigation grant funding
- Hesperia is undergoing its budgeting process
- Hesperia is holding its annual meeting of the Hazard Mitigation Planning Committee
- Hesperia is updating the following policy and regulatory documents:
 - The Local Hazard Mitigation Plan
 - The Safety Element of the General Plan
 - The Housing Element of the General Plan
 - The Zoning Code

Who Maintains This Handbook?

The Hazard Mitigation Planning Committee (HMPC) leader is responsible for maintaining this Handbook. At the time of writing, the current HMPC leader is Jacquelyn Castillo from the City Manager's Office of Emergency Management. The HMPC may delegate this responsibility to someone else should they choose.

What to do when a disaster has been proclaimed or declared

Disasters may be proclaimed or declared by the Hesperia City Council, the State of California, or the federal government. Responsibilities may differ depending on who proclaims or declares the disaster. If multiple organizations proclaim or declare a disaster, consult all applicable lists.

The Hesperia City Council

If the Hesperia City Council (or the Director of Emergency Services, if the City Council is not in session) proclaims a Local Emergency, take the following steps:

- ☐ Update **Attachment 1** with information about the disaster. Include information about cumulative damage, including any damage outside of Hesperia.
- ☐ Discuss opportunities for local assistance with the representatives from the California Office of Emergency Services (Cal OES).
- ☐ If the disaster damages local infrastructure or City-owned facilities, repair or rebuild the structure to be more resilient, following applicable hazard mitigation actions. A list of actions, organized by hazards, is included in **Attachment 4**.
- ☐ **Chapter 6** of the Hesperia LHMP states that the City should consider updating the LHMP if a disaster causes a loss of life in the community, even if there is no state disaster proclamation or federal disaster declaration that includes part or all of the city. If there is a loss of life in Hesperia, consider updating the LHMP. Consult the section on updating the LHMP in this Handbook for details.

The State of California

If the State of California proclaims a disaster for Hesperia, or an area that includes part or all of Hesperia, take the following steps:

- ☐ Update **Attachment 1** with information about the disaster. Include information about cumulative damage, including any damage outside of Hesperia.
- ☐ Collaborate with representatives from Cal OES to assess the damage from the event.
- ☐ Discuss opportunities for local assistance with representatives from Cal OES.
- ☐ If the disaster damages local infrastructure or City-owned facilities, repair or rebuild the structure to be more resilient, following applicable hazard mitigation actions. A list of actions, organized by hazards, is included in **Attachment 4**.
- ☐ If the disaster may escalate into a federal disaster declaration, begin any necessary coordination with representatives from the Federal Emergency Management Agency (FEMA).
- ☐ **Chapter 6** of the Hesperia LHMP states that the City should consider updating the LHMP if a disaster leads to a state disaster proclamation or federal disaster declaration that includes part or all of Hesperia, even if there is no loss of life. Consider updating the LHMP. Consult the section on updating the LHMP in this Handbook for details.

The Federal Government

If the federal government declares a disaster for Hesperia, or any area that includes part or all of Hesperia, take the following steps:

- ☐ Update **Attachment 1** with information about the disaster. Include information about cumulative damage, including any damage outside of Hesperia.
- ☐ Collaborate with Cal OES and FEMA representatives to assess the damage.
- ☐ Determine if Hesperia will be eligible for public assistance funds related to the federal disaster declaration. These funds can be used to reimburse the City for response and recovery activities. If the City is eligible, work with FEMA and Cal OES representatives to enact the necessary requirements and receive funding.
- ☐ If the disaster damages local infrastructure or City-owned facilities, repair or rebuild the structure to be more resilient, following applicable hazard mitigation actions. A list of actions, organized by hazards, is included in **Attachment 4**.
- ☐ The Hazard Mitigation Grant Program (HMGP) is a FEMA program that helps fund hazard mitigation activities after a disaster event. Hesperia may be eligible for funding because of the federal disaster declaration, although not all activities may meet the program's requirements. If Hesperia is eligible, work with FEMA to apply for this funding.
- ☐ **Chapter 6** of the Hesperia LHMP states that the City should consider updating the LHMP if a disaster leads to a state disaster proclamation or federal disaster declaration that includes part or all of Hesperia, even if there is no loss of life. Consider updating the LHMP. Consult the section on updating the LHMP in this Handbook for details.

I Want to Apply for Mitigation Grant Funding

There are three potential grant funding programs that FEMA administers for hazard mitigation activities. Two of these programs, the Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) funding sources, are available to communities with an LHMP that complies with FEMA guidelines and has been adopted within the past five years. The third funding program is the Hazard Mitigation Grant Program (HMGP), which is available for communities that are part of a federal disaster declaration. This section discusses the BRIC and FMA programs and how to apply for them. The HMGP is discussed under the "Federal Government" subsection of the above "What to Do When a Disaster Has Been Proclaimed or Declared" section.

Building Resilient Infrastructure and Communities (BRIC)

Building Resilient Infrastructure and Communities (BRIC) will support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC is a FEMA pre-disaster hazard mitigation program that replaced the Pre-Disaster Mitigation (PDM) program.

The BRIC program's guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency.

Development projects must be identified in a hazard mitigation plan that meets FEMA guidelines and has been adopted within the past five years. When applying to this program, review the list of hazard mitigation actions in **Attachment 4** to see which projects may be eligible. Planning efforts for communities that lack a valid hazard mitigation plan may be eligible for funding if the effort would create a valid hazard mitigation plan. All BRIC grant applications are processed through the State. To learn more, consult with Cal OES representatives or visit the FEMA webpage for the program. At the time of writing, this webpage is available at <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>.

TAKE THE FOLLOWING STEPS TO APPLY FOR BRIC FUNDING:

- ☐ Confirm that the program is currently accepting funding applications. Check with representatives from Cal OES or consult the Cal OES webpage on the BRIC program. At the time of writing, this webpage is available at <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>.
- ☐ Identify the actions from the hazard mitigation strategy (see Attachment 4) that call on the City to pursue funding or list grants as a potential funding source. Confirm that the actions are consistent with the requirements of the BRIC grant.
- ☐ Coordinate with Cal OES representatives to compile and submit materials for the grant application.

Flood Mitigation Assistance

The FMA grant program is a competitive, national program that awards funding for physical development projects and planning efforts that mitigate against long-term damage from flooding. The funding is only available to communities participating in the National Flood Insurance Program (NFIP), which Hesperia currently does. Communities must also have a valid hazard mitigation plan that meets FEMA guidelines to be eligible, and all projects must be consistent with the list of actions in the hazard mitigation strategy. When applying to this program, review the list of hazard mitigation actions in **Attachment 4** to see which projects may be eligible. As with the BRIC program, applications for the FMA program must be processed through the State. To view more information, consult with Cal OES representatives or visit the FEMA webpage on the program. At the time of writing, this webpage is available at <https://www.fema.gov/grants/mitigation/floods>.

TAKE THE FOLLOWING STEPS TO APPLY FOR FMA FUNDING:

- ☐ Confirm that the program is currently accepting funding applications. Check with representatives from Cal OES or consult the Cal OES webpage on the FMA program. At the time of writing, this webpage is available at <https://www.fema.gov/grants/mitigation/floods>.
- ☐ Identify the actions from the hazard mitigation strategy (**see Attachment 4**) that call on the City to pursue funding or list grants as a potential funding source. Confirm that the actions are consistent with the requirements of the FMA grant.
- ☐ Coordinate with Cal OES representatives to compile and submit materials for the grant application.

Hesperia is going through the budgeting process

Hesperia's budget process is an ideal opportunity to secure funding for hazard mitigation actions and to ensure that hazard mitigation efforts are incorporated into the City's fiscal priorities. Hesperia currently operates on an annual budget cycle that runs from July 1st to June 30th.

During this process, City staff should take the following steps to incorporate hazard mitigation into Hesperia's annual budget:

- ☐ Include hazard mitigation activities into Hesperia's list of Capital Improvement Projects (CIP). Review the list of hazard mitigation actions in Attachment 4 and identify the projects that can be included in the CIP or can support efforts within the CIP.
- ☐ Review the risk and threat assessments in the LHMP (Chapter 3 and Chapter 4) to ensure that all items in the CIP list are planned, designed, and constructed to minimize the threat from hazard events.
- ☐ Identify opportunities to identify stand-alone hazard mitigation actions through the annual budget process. Include appropriate items from Attachment 4 in the budget as stand-alone line items, particularly items that the Hazard Mitigation Planning Committee (Planning Committee) considered a high priority.
- ☐ Set aside staff to conduct hazard mitigation activities, including time to participate in Planning Committee meetings and research, prepare, and submit BRIC and FMA grant opportunities (consult the "I Want to Apply for Mitigation Grant Funding" section above).
- ☐ Ensure hazard mitigation activities are reflected in each department's priorities and earmarked time for specific goals.

Hesperia is Conducting its Annual meeting of the Hazard Mitigation Planning Committee

The hazard mitigation planning process brings together representatives from multiple City departments as well as other relevant stakeholders. It provides a forum to discuss the hazards in Hesperia and how to mitigate them effectively. As mentioned in **Chapter 6** of the LHMP, the Planning Committee should meet at least once each year, beginning a year after the LHMP is adopted. During these meetings, the Planning Committee should discuss implementation progress and integration of hazard mitigation actions in other City documents. At these meetings, the Planning Committee can review the status of the hazard mitigation actions and discuss whether completed or in-progress actions are working as expected. These meetings also allow the Planning Committee to strategically plan for the upcoming year.

It may help for the Planning Committee to meet early in the year, in advance of annual budget activities. **Attachment 3** contains an example of a Planning Committee Meeting Agenda.

The annual meeting should include representatives from City departments and other organizations that originally prepared the LHMP. Representatives from other relevant organizations should also be invited. During the preparation of the current LHMP, the following individuals were part of the Planning Committee:

Table 1-1: Hesperia HMPC Members		
Name	Title	Department
Jacquelyn Castillo (Project Manager, POC)	Management Analyst	City Manager's Office
Melinda Sayre	Deputy City Manager	City Manager's Office
Tammy Pelayes	Assistant to the City Manager	City Manager's Office
Kelly Brady	Public Relations Analyst	City Manager's Office
Ryan Leonard	Principal Planner	Community Development (Planning Department)
Andrew Lemke	Building Official	Community Development (Building and Safety)
Rubi Arellano	Community Development Supervisor	Community Development (Building and Safety)
Cassandra Sanchez	City Engineer	Community Development (Engineering)
Benjamin Leslie	GIS Technician	GIS/Information Technology Program

Brian Blackwell	Operations Manager/Streets Division	Public Works
April Antonio	Administrative Analyst	Economic Development
Keith Cheong	Senior Accountant	Finance
Kelly Anderson	Assistant Fire Chief	San Bernardino County Fire Department
Steve Tracy	Battalion Chief	San Bernardino County Fire Department
Steve Allen	Lieutenant	Police Department

In advance of Planning Committee meetings, consider using **Attachment 1** to maintain an accurate list of recent disaster events that have occurred in and around Hesperia since the LHMP was adopted. At the Planning Committee meeting, review the Plan Maintenance Table (**Attachment 2**) to identify any gaps in the LHMP or any other component of the plan that needs updating. This also allows Planning Committee members the opportunity to review the actions in the hazard mitigation strategy (**Attachment 4**) and ensure that they are implemented as intended.

Hesperia is updating its policy and regulatory documents

If Hesperia is updating the LHMP, the Safety Element or Housing Element of the General Plan, or the Zoning Code, consult the following applicable section.

Local Hazard Mitigation Plan

All LHMPs should be updated every five years. This helps keep the plan up to date and ensures that it reflects the most recent guidance, requirements, science, and best practices. An updated LHMP also helps keep Hesperia eligible for hazard mitigation grants that require a valid, recent LHMP (see "I Want to Apply for Mitigation Grant Funding"), along with an increased amount of post-disaster recovery funds.

The update process for the LHMP takes approximately one year. To ensure that a new LHMP comes into effect before the previous one expires, the update process should begin no later than four years after the plan is adopted. Updates may occur sooner at the City's discretion. Potential reasons for updating the LHMP sooner may include a state disaster proclamation or federal disaster declaration that covers part or all of Hesperia, or if a disaster leads to a loss of life in Hesperia (see the "What to Do When a Disaster Has Been Proclaimed or Declared" section), as discussed in **Chapter 6** of the LHMP.

Take the following steps to update the LHMP:

ASSEMBLE THE HAZARD MITIGATION PLANNING COMMITTEE

- ☐ Convene a Planning Committee meeting no later than four years after the LHMP is adopted. Invite the regular Planning Committee members, along with representatives from other organizations that may have a role to play in the update process.
- ☐ Review the current status of mitigation actions, including if there are any that are not being

implemented as planned or are not working as expected. Determine if there have been any changes in hazard events, regulations, best practices, or other items that should be incorporated into an updated LHMP.

- ☐ Decide if there is a need for a technical consultant to assist with the LHMP update and conduct consultant selection activities if needed. If a consultant is desired, the selection process should begin a few months before the update begins.
- ☐ Create and implement a community engagement strategy based on the strategy prepared for the existing LHMP. Describe in-person and online engagement strategies and materials, including ideas for meetings and workshops, draft community surveys, content for websites and press releases, and other materials that may be useful.

UPDATE THE RISK AND THREAT ASSESSMENTS

- ☐ Review and update the risk assessment to reflect the most recent conditions in Hesperia. Consider recent hazard events, new science associated with hazards and climate change, new development and land use patterns, and other recent changes in local conditions.
- ☐ Evaluate the status of all key facilities. Update this list if new facilities have been constructed or if existing facilities have been decommissioned. Re-assess the threat to key facilities.
- ☐ Review the demographics of community residents and update the threat assessment for vulnerable populations and other community members.
- ☐ Assess any changes to the threat to all other community assets, including key services, other facilities, and economic drivers.

UPDATE THE MITIGATION ACTIONS

- ☐ Update the existing hazard mitigation actions to reflect actions in progress. Remove actions that have been completed or revise them to increase their effectiveness. Revise actions that have been abandoned or delayed to make them more feasible or remove them from the list of mitigation actions if they are no longer appropriate for Hesperia.
- ☐ Develop mitigation actions to improve the status of hazard mitigation activities in Hesperia by addressing any issues not covered by the existing LHMP.
- ☐ The ability to expand current mitigation capabilities will generally be reliant upon the budgeting allocated for each department/program for that fiscal year. The level at which these programs may or may not be expanded upon, will be dependent upon the amount of funding received. FEMA has released a series of guides over the past few years which highlight some of the ways in which jurisdictions can expand mitigation. Some strategies for increasing current mitigation capabilities may include:
 - City should actively identify, adopt, and enforce the most current set of development codes and standards available. Strongly encouraging new development to be constructed to higher standards than currently required, increasing resilience within the community.
 - Engaging parts of the community that may not be actively involved in mitigation efforts.
 - Expanding the number and types of organizations involved in mitigation planning and implementation, increasing both efficiency and bandwidth.
 - Fostering new relationships to bring underrepresented populations and partners to the hazard mitigation planning process.

- During the annual LHMP review, the HMPC should look for opportunities to fund and expand/enhance the effectiveness of current mitigation actions.
- During annual budgeting processes, the City should identify new funding sources (bonds, grants, assessment districts, etc.) that can be used to support existing capabilities enhancements.
- ☐ Ensure that the feedback from the community engagement activities is reflected in the new and updated mitigation actions.

REVIEW AND ADOPT THE UPDATED PLAN

- ☐ Review the other chapters and appendices of the LHMP to reflect any changes made through the update process.
- ☐ Release the updated plan to the Planning Committee members and revise the plan to reflect any comments by Planning Committee members.
- ☐ Distribute the updated Plan to any appropriate external agencies not included in the Planning Committee and revise the plan as appropriate in response to any comments.
- ☐ Release the updated plan publicly for review and make revisions to the plan to reflect public comments.
- ☐ Submit the plan to Cal OES and FEMA for approval and make any necessary revisions.
- ☐ Submit the plan to the Hesperia City Council for adoption.

The Safety Element of the General Plan

The Safety Element is a required component of Hesperia's General Plan. It can be updated as a stand-alone activity or as part of a more comprehensive process to update multiple sections or all of the General Plan. The Safety Element does not need to be updated on any set schedule, but updates should be frequent enough for the element to remain current and applicable to the community.

Local communities can incorporate their LHMP into their Safety Element as allowed under Section 65302.6 of the California Government Code, as long as the LHMP meets minimum federal guidelines. This allows communities to be eligible for an increased share of post-disaster relief funding from the State if a hazard situation occurs, as per Section 8685.9 of the California Government Code.

Take the following steps to incorporate the LHMP into the Safety Element:

INCORPORATE NEW REQUIREMENTS INTO THE SAFETY ELEMENT, AND ENSURE THAT THE LHMP IS CONSISTENT WITH THE SAFETY ELEMENT

- ☐ Review the requirements for Safety Elements in Section 65302(g) of the California Government Code and for LHMPs in Section 65302.6. Ensure that both documents meet all state requirements.
- ☐ Ensure that the information in both plans does not contradict each other and that any inconsistencies are corrected to use the most accurate and appropriate information. This information should include a community description, a risk assessment, and a threat assessment.
- ☐ Ensure that the policies in the Safety Element support the LHMP and provide a planning framework for specific hazard mitigation actions.

The Housing Element of the General Plan

The Housing Element is a required component of Hesperia's General Plan. Section 65583 of the California Government Code requires a Housing Element to analyze and plan for new residential growth in a community, including residential growth for households with an annual income below the area median. Like an LHMP, state regulations require the Housing Elements to be updated regularly to remain current and valid.

The Housing Element is not required to contain any information or policies related to hazards, although it may include policies that address retrofitting homes to improve resiliency. However, state law links the regular schedule of Housing Element updates to mandatory revisions to other General Plan elements. For example, Section 65302(g)(2) of the California Government Code requires that communities that update their Housing Element on or after January 1, 2009, also update their Safety Element to include specific information and policies related to flood protection. As the LHMP is incorporated into the Safety Element, updates to the Housing Element may indirectly trigger updates to the LHMP.

To update the LHMP concurrent with updates to the Housing Element, take the following steps:

ENSURE THAT THE LHMP MEETS ANY NEW REQUIREMENTS FOR THE SAFETY ELEMENT THAT MAY BE TRIGGERED BY A HOUSING ELEMENT UPDATE

- ☐ Section 65302(g) of the California Government Code lists several requirements for the Safety Element of the General Plan. Some of these requirements are triggered by updates to the Housing Element. Check to see if there are any new requirements of this nature. Note that the requirement is linked to the new Housing Element's adoption date, not the date the update process begins.
- ☐ Because the LHMP is incorporated into the Safety Element, any amendments or revisions to the Safety Element triggered by the Housing Element update may be made directly in the LHMP. Requirements triggered by the Housing Element are unlikely to require a full rewrite of the LHMP, but the process should fully involve the Planning Committee and include appropriate community engagement.
- ☐ Adopt the updated LHMP and incorporate it into the Safety Element. If necessary, amend the Safety Element to ensure the two documents are consistent (review the "Incorporate New Requirements Into the Safety Element, and Ensure that the LHMP is Consistent with the Safety Element" subsection above).

The Hesperia Municipal Code

Hesperia's Municipal Code contains a set of standards that guide land uses and development in the community. These standards include where different types of buildings and land use activities may be located, how these structures must be built, and how they must be operated or maintained. The Municipal Code may include requirements that structures (particularly new structures or those undergoing substantial renovations) incorporate hazard-resistant features, be located outside the most hazard-prone areas, or take other steps to reduce hazard vulnerability.

All communities in California are required to adopt the minimum state Building Standard Code (BSC), which includes some hazard mitigation requirements for new or significantly renovated structures. The BSC is generally updated every three years, with supplemental code updates halfway into each update cycle. Title 15, "Buildings and Construction," of Hesperia's Municipal Code contains building regulations

and incorporates the BSC. Other sections of the Code adopt additional standards as desired by the City that adapts the BSC to Hesperia's local context.

As a participant in the National Flood Insurance Program (NFIP), Hesperia is required to incorporate Floodplain Management Requirements, which is located in Title 8, Chapter 13 – Flood Hazard Protections Prevention Regulations. These regulations establish standards for developing and operating facilities within flood-prone areas. Other sections of the Hesperia

Municipal Code may include additional standards related to hazard mitigation activities.

With the exception of the Floodplain Management Regulations and the minimum standards in the BSC, Hesperia is not required to incorporate hazard-related requirements in the Municipal Code. However, the Municipal Code is an effective tool for implementing hazard mitigation measures related to the siting, construction, and operation of new buildings and other structures. Substantial updates to the Municipal Code, including the Buildings and Construction and Zoning Code sections, should be done in a way that is consistent with the LHMP.

INCLUDE HAZARD-RELATED REQUIREMENTS IN APPLICABLE SECTIONS OF THE HESPERIA CODE OF ORDINANCES

- ☐ If the BSC is being updated, evaluate the hazard-related requirements of all sections in the new BSC. Identify any areas where it may be feasible to add or revise standards to help reduce the threat from hazard events. Ensure that these standards are consistent with the LHMP. Consider whether standards should be applied to all structures, to specific types of structures, or to structures in a limited area (such as a flood plain).
- ☐ If the Zoning Code is being updated, ensure that all requirements do not expose community members or community assets to an excessive risk of harm. Where feasible, use the requirements to strengthen community resiliency to hazard events. Ensure that these standards are consistent with the LHMP. Consider possible standards such as overlay zones that strengthen zoning requirements in hazard-prone areas, landscaping and grading requirements that buffer development from hazards, siting, and design standards that make structures more resilient, and other strategies as appropriate.

Use this table to fill out the information about any disaster events that have occurred in Hesperia or nearby and have affected the community. Include the date and location of the disaster event, the damages associated with the event, and any information about disaster proclamations or declarations resulting from the event.

[illegible]

† If the disaster was proclaimed or declared by the local, state, and/or federal government.

Attachment 2: Plan Maintenance Table

Use this table when reviewing the LHMP as part of the Planning Committee's annual activities. For each section of the LHMP, note if any changes should be made to make the plan more effective for the community. This includes noting if anything in the LHMP is incorrect or if any important information is missing. Make revisions consistent with these notes as part of the next update to the LHMP.

Section	Is Anything Incorrect?	Is Anything Missing?	Should Any Other Changes Be Made?
Multiple sections or throughout			
Chapter 1: Introduction			
Chapter 2: Community Profile			
Chapter 3: Risk Assessment			
Chapter 4: Threat Assessment			
Chapter 5: Mitigation Strategy			
Chapter 6: Plan Maintenance			
Appendices			

Attachment 3: Sample Agenda and Topics for the Hazard Mitigation Planning Committee

This attachment includes a sample agenda and discussion topics for the annual meeting of the Planning Committee. Meetings do not have to follow this order or structure, but the items included in this attachment should be addressed as part of the annual meeting. During the update process for the LHMP, it is likely that the Planning Committee will meet more frequently. The meetings of the Planning Committee during the update process will involve different discussion topics.

ITEM 1: RECENT HAZARD EVENTS

- 1.1. What hazard events have occurred this past year in Hesperia or nearby in a way that affected the community?
 - Identify events that caused loss of life or significant injury to Hesperia community members, significant property damage in Hesperia, or widespread disruption to Hesperia.
 - More minor events should also be identified if there is a need for a community response to mitigate against future such events.
- 1.2. What are the basic facts and details behind any such hazard events?
 - Consider the size and location of the affected area, any measurements of severity, any injuries and deaths, the cost of any damage, the number of people displaced or otherwise impacted, and other relevant summary information.
 - Ensure that these facts and details are clearly recorded for future plan updates, including using the Disaster Information Table (**Attachment 1**).

ITEMS 2: MITIGATION ACTION ACTIVITIES

- 2.1. What mitigation actions have been fully implemented? Are they working as expected, or do they need to be revised?
- 2.2. What mitigation actions have started to be implemented since the Planning Committee last met? Is the implementation of these actions proceeding as expected, or are there any barriers or delays? If there are barriers or delays, how can they be removed?
- 2.3. What mitigation actions are scheduled to begin implementation in the next year? Are there any factors that could delay implementation or weaken the effectiveness of the actions? How can these factors be addressed?
- 2.4. What resources are needed to support planned, in-process, or ongoing mitigation actions? Does the City have access to these resources? If not, how can the City obtain access to these resources?

ITEM 3: INFORMATION SHARING

- 3.1. Is the City communicating with all appropriate local jurisdictions, including neighboring communities, San Bernardino County, and special districts? This should include information on district-specific hazard situations, mitigation actions, and other relevant information.
- 3.2. Is the City communicating with the appropriate state and federal agencies? Is the City receiving information about new regulations, best practices, and data related to hazard mitigation activities?

- 3.3. Are there opportunities for the City to improve coordination with local, state, and federal jurisdictions and agencies?

ITEM 4: BUDGETARY PLANNING

- 4.1. What are the financial needs for Hesperia to support the implementation of planned and in-process mitigation actions, including ongoing items? Is there sufficient funding for all measures in the LHMP that are planned for the next year, including in-process and ongoing items? If sufficient funding is unavailable, how can the City obtain these funds?
- 4.2. If it is not feasible for the City to support all planned, in-process, or ongoing mitigation actions, which ones should be prioritized?
- 4.3. Are there hazard-related activities not included in the LHMP that should be budgeted for? Can the City obtain the necessary funding for these activities?

ITEM 5: STRATEGIC PLANNING

- 5.1. Which grants are available for hazard mitigation activities, and which activities are best positioned to secure funding?
- 5.2. How should the agencies and other organizations represented on the Planning Committee coordinate to maximize the chances of receiving funding?
- 5.3. Are there any scheduled or anticipated updates to other City documents that could relate to hazard mitigation activities? How can the Planning Committee share information with staff and any technical consultants responsible for these updates and ensure that the updates will enhance community resiliency?
- 5.4. What capital projects are scheduled or anticipated? Are these capital projects being designed and built to be resistant to hazard events? Are there opportunities for these projects to support hazard mitigation activities?
- 5.5. How can Planning Committee members coordinate efforts with those responsible for capital projects to take advantage of economies of scale that will make implementing hazard mitigation activities easier?
- 5.6. Has it been four years since the adoption of the LHMP? If so, lay out a timeline for plan update activities, including additional meetings of the Planning Committee. Identify if a technical consultant is needed and begin the contracting process.
- 5.7. Are there any other opportunities for Planning Committee members and the organizations they represent to coordinate efforts?

ITEMS 6: NEW BUSINESS

- 6.1. Are there any other items related to the Planning Committee's mission?

Attachment 4: Hazard Mitigation Strategy

Table 5-4: Mitigation Action Implementation Plan

Action No.	Mitigation Action Description	Responsible Department(s)	Relative Cost	Timeframe	Potential Funding Source	Priority
Preparedness Activities						
PA 1.1	Conduct regular emergency preparedness drills and training exercises for City staff.	City Manager's Office	\$	Ongoing (Annually)	General Fund/ Grants	N/A
PA 1.2	Continue agreements with local school districts to ensure that school facilities can act as evacuation sites during major emergencies.	City Manager's Office	\$	In Progress (As Needed)	General Fund/ Grants	N/A
PA 1.3	Partner with SBC Fire to promote CERT training to the community to educate residents about disaster preparedness on basic response skills, such as fire safety, light search and rescue, and disaster medical operations.	City Manager's Office, San Bernardino County Fire District	\$	Initiate by 2025-2026	General Fund/ Grants	N/A
PA 1.4	Continue to ensure effective emergency notifications through multiple media formats, about pending, imminent, or ongoing emergency events. Ensure that information is accessible to persons with access and functional needs.	City Manager's Office	\$	In Progress (As Needed)	General Fund/ Grants	N/A
PA 1.5	Ensure that community evacuation plans include provisions for community members who do not have access to private vehicles or are otherwise unable to drive.	City Manager's Office, SBC Sheriff's Dept.	\$\$	Initiate by 2025-2026	General Fund/ Grants	N/A
PA 1.6	Ensure that the City has an adequate supply of sandbags for residents and businesses, including prefilled sandbags for individuals who may be unable to fill them on their own.	City Manager's Office, Public Works	\$	In Progress (As Needed)	General Fund/ Grants	N/A
Multiple Hazards						

MH 1.1	Conduct routine updates to Facility Conditions Assessments for City-owned infrastructure and other utilities and coordinate with other agencies to ensure inspections of other important infrastructure.	Public Works, Facilities, Engineering	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
MH 1.2	Repair, as feasible, all major deficiencies discovered by inspections to prevent collapse, failure, or damage in the event of a natural disaster.	Public Works, Facilities, Engineering, Building and Safety	\$\$\$	Initiate by 2026	General Funds, BRIC/HMPG Grants, Other Grants	High
MH 1.3	Work closely with community groups to increase awareness of hazard events and resiliency opportunities among socially vulnerable community members, including those experiencing homelessness.	City Manager's Office, Community	\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
MH 1.4	Avoid building new City-owned key facilities in mapped hazard areas. If no feasible sites outside mapped areas exist, ensure that such facilities are hardened against hazards beyond any minimum building requirements/ mitigation standards.	Public Works, Engineering, Building and Safety	\$	In Progress (As Needed))	General Funds, BRIC/HMPG Grants, Other Grants	Low
MH 1.5	Closely monitor changes in the boundaries of mapped hazard areas resulting from land use changes or climate change and adopt new mitigation actions or revise existing ones to ensure continued resiliency.	Community Development, Planning	\$	In Progress (As Needed))	General Funds, BRIC/HMPG Grants, Other Grants	Low
MH 1.6	Integrate policy direction and other information from this Plan into other City documents, including the General Plan, Emergency Operations Plan, and Capital Improvements Program.	All Departments	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
MH 1.7	Monitor funding sources for hazard mitigation activities.	City Manager's Office	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
MH 1.8	Integrate climate change mitigation and adaptation information and analysis into future LHMP updates and other City Plans, where practicable.	City Manager's Office, Planning	\$	Initiate 2024-2025	General Funds, BRIC/HMPG Grants, Other Grants	Low
Earthquake/Geologic Hazards						
EQ 1.1	Develop a Public Information Program (PIP) for earthquake awareness and mitigation. The program should focus on reducing injury and property damage and encourage partnerships, activities, and products to educate the public about earthquake science and motivate residents and businesses to prepare for earthquakes.	City Manager's Office	\$	Initiate 2025-2026	General Funds, BRIC/HMPG Grants, Other Grants	Medium

EQ 1.2	Conduct an educational campaign to encourages simple earthquake mitigation activities (i.e., water heater straps, furniture anchoring, gas shut-off tools, and other emergency supplies) to reduce strain on City resources during an event.	City Manager's Office	\$	Initiate 2025-2026	General Funds, BRIC/HMPG Grants, Other Grants	Medium
EQ 1.3	Periodically update the seismically vulnerable buildings and structures inventory and pursue funding to incentivize retrofits of these structures to be more resilient to earthquakes in accordance with State and Local building standards and Historic Preservation Program requirements. Assess soft story conditions for apartment buildings constructed prior to 1980.	Building and Safety	\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Low
EQ 1.4	Encourage the installation of resilient (seismically appropriate) piping for new or replacement pipelines in close coordination with utility providers.	Public Works	\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
EQ 1.5	To the extent feasible, construct all new and significantly retrofitted City-owned facilities to remain operational in the event of a major earthquake.	Public Works, Facilities, Engineering	\$\$\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Low
EQ 1.6	Improve local understanding of the threat of a major earthquake by conducting a citywide scenario modeling potential loss of life and injuries, destroyed and damaged structures, and interruptions to key services.	City Manager's Office, Public Works	\$	Initiate by 2026	General Funds, BRIC/HMPG Grants, Other Grants	Medium
EQ 1.7	Monitor groundwater elevations in areas where liquefaction and subsidence may be a concern.	Public Works	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
Flood						

FL 1.1	Identify project candidates and sources of funding to improve drainage conveyance, and/or mitigate peak flow in local tributaries.	Public Works	\$\$\$	Future Planning Process	General Funds, BRIC/HMPG Grants, Other Grants	Medium
FL 1.2	Identify potential flood improvements that reduce inundation from both storm flows and potential dam inundation effects.	Public Works, California Division of Safety of Dams, USACE	\$	Initiate by 2026	General Funds, BRIC/HMPG Grants, Other Grants	Medium
FL 1.3	Conduct frequent cleanings of storm drain intakes, especially before and during the rainy season.	Public Works	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
FL 1.4	Track areas where ponding frequently occurs during heavy rainfall and monitor intersections that frequently flood during rain events and identify improvements to alleviate these conditions.	Public Works, Engineering	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	High
Wildfire						
WF 1.1	Partner with the County of San Bernardino Fire Department to design, develop and construct mitigation programs and facilities that provide training opportunities in support of fuel reduction in open space, creeks, around critical facilities, and urban/wildland areas.	San Bernardino County Fire District	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
WF 1.2	Improve and enforce weed abatement policies, by enhancing public education and encouraging the public to take responsibility for wildfire protection.	Code Enforcement	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
WF 1.3	Provide information and resources to residents city-wide on ways to improve resilience to home fires, including procedures for fallen powerlines.	San Bernardino County Fire District	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
Extreme Weather (High Winds, Extreme Heat, Severe Rainstorms)						

EW 1.1	Conduct outreach to residents and businesses before the severe winds/weather (Santa Ana Wind events) on proper tree maintenance and identification of potentially hazardous trees. (Hazards address: High winds, Severe Weather/Storm)	City Manager's Office/PIO	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Low
EW 1.2	Evaluate long term capacity of designated cooling centers to provide sufficient relief from extreme heat. Assess the need to expand services as the frequency, length, and severity of future heatwaves potentially change as a result of climate change. (Hazards addressed: Extreme Heat)	City Manager's Office	\$	Future Planning Process	General Funds, BRIC/HMPG Grants, Other Grants	Low
EW 1.3	<i>Promote early notification to residents in advance of a severe weather event, focusing on effective communication methods with vulnerable populations to better ensure they have adequate time to prepare.</i> (Hazards Addressed: Severe Weather)	City Manager's Office, SBC Sheriff's Dept., San Bernardino County Fire District	\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
EW 1.4	Conduct routine updates to Facility Conditions Assessments for City-owned infrastructure and repair, as feasible, any storm related damages.	Public Works, Facilities and Maintenance	\$\$	In Progress (As Needed)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
Dam Inundation						
DI 1.1	Coordinate with dam owners/operators, state and federal agencies to collectively identify threats to the City and the region and identify ways to retrofit/strengthen the dams under their control.	City Manager's Office, California Division of Safety of Dams, USACE	\$	Ongoing (Annually)	General Funds, BRIC/HMPG Grants, Other Grants	Medium
DI 1.2	Implement an early warning system/protocol that notifies downstream communities in the event of a potential dam failure incident.	City Manager's Office, California Division of Safety of Dams, USACE	\$\$	Future Planning Process	General Funds, BRIC/HMPG Grants, Other Grants	Low