



CITY OF  
WILDOMAR

# SAFETY ELEMENT

---

Adopted on  
October 13, 2021





# SAFETY ELEMENT



<b>1. Introduction</b>	<b>1</b>
Purpose, Scope, and Content	1
Regulatory Framework	2
Relationship to Other Documents	3
Relationship to the Emergency Management Department	4
Hazard Reduction	4
Vulnerable Communities	5
Climate Change Vulnerability	7
<b>2. Existing Conditions</b>	<b>10</b>
Code Conformance and Development Regulations	11
Seismic and Geologic Hazards	13
Flood and Inundation Hazards	27
Fire Hazards	40
Air pollution	53
Hazardous Waste and Materials	59
Disaster Preparedness, Response, and Recovery	63
Additional Climate-Related Hazards	73
Implementation Measures	79
<b>Appendices</b>	
Appendix A: Vulnerability Assessment Results	89

# SAFETY ELEMENT



## Tables

Table S-1: Chances of Significant Earthquakes on Major Riverside County Faults.....	15
Table S-2: Fires in Wildomar, 1950-2019.....	44
Table S-3: Implementation Measures .....	80

## Figures

Figure 1-0: Regional Fault Lines .....	16
Figure 2-0: Seismic Hazard Program Liquefaction Zone .....	18
Figure 3-0: Landslide Susceptibility .....	19
Figure 4-0: Subsidence Zone .....	22
Figure 5-0: Flood Hazard Zones .....	30
Figure 6-0: Dam Inundation.....	33
Figure 7-0: Fire Hazard Severity Zones.....	42
Figure 8-0: Wildland/Urban Interface.....	43
Figure 9-0: Historical Wildfire Perimeters.....	45
Figure 10-0: Diesel Particulate Percentile.....	56
Figure 11-0: Ozone Percentile .....	57
Figure 12-0: PM <sub>2.5</sub> Percentile .....	58
Figure 13-0: Residential Parcels with Evacuation Constraints .....	66

# SAFETY ELEMENT



## 1. INTRODUCTION

### PURPOSE, SCOPE, AND CONTENT

The Safety Element conveys the City of Wildomar’s (City’s) goals, policies, and actions to minimize the hazards to safety in and around Wildomar. This Safety Element will replace the 2003 County/City Safety Element upon adoption. It identifies the natural and human-caused hazards that affect existing and future development and provides guidelines for protecting residents, employees, visitors, and other community members from injury and death. It describes present and expected future conditions and sets policies and standards for improved public safety. The Safety Element also seeks to minimize physical harm to the buildings and infrastructure in and around Wildomar to reduce damage to local economic systems, community services, and ecosystems.

Some degree of risk is inevitable because the potential for many disasters cannot be completely eliminated and the ability to predict such disasters is limited. The goal of the Safety Element is to reduce the risk of injury, death, property loss, and other hardships to acceptable levels. One of the fundamental values of the Vision for Wildomar, as adopted by the City Council on April 12, 2017 (via Resolution No. 2017-12), highlights the importance of safety to the people of Wildomar:

*“The City of Wildomar will be a safe and active community with responsible growth and quality infrastructure while keeping a hometown feel.”*

This “value” underlies the policy direction of the Safety Element and is further defined by the following Vision statement:

*“Considerable protection from natural hazards such as earthquakes, fire, flooding, slope failure, and other hazardous conditions is now built into the pattern of development authorized by the General Plan.”*

Based on the direction provided by the Vision, and in compliance with state law, the primary objective of the Safety Element is to “reduce death, injuries, property damage, and economic and social impact from hazards.” The Safety Element serves the following functions:

- Develops a framework by which safety considerations are introduced into the land use planning process.

# SAFETY ELEMENT



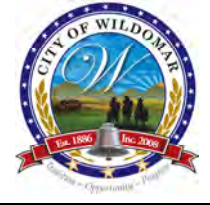
- Facilitates the identification and mitigation of hazards for new development, and thus strengthens existing codes, project review, and permitting processes.
- Presents policies directed at identifying and reducing hazards in existing development.
- Strengthens earthquake, flood, inundation, and wildland fire preparedness planning and post-disaster reconstruction policies.
- Identifies how hazards are likely to increase in frequency and intensity in the future and provides policies to increase community resilience.

## **REGULATORY FRAMEWORK**

Under state law, all counties and incorporated communities in California must prepare a General Plan, which must address several topics, one of which is public health and safety. The Safety Element addresses this topic in accordance with state requirements, which are laid out in California law, particularly Section 65302(g) of the California Government Code. State law requires that the Safety Element address the following:

- Protect the community from risks associated with a variety of hazards, including seismic activity, landslides, flooding, and wildfire, as required by the California Government Code Section 65302(g)(1).
- Map and assess the risk associated with flood hazards, develop policies to minimize the flood risk to new development and essential public facilities, and establish effective working relationships among agencies with flood protection responsibilities, as required by California Government Code Section 65302(g)(2).
- Map and assess the risk associated with wildfire hazards, develop policies to reduce the wildfire risk to new land uses and essential facilities, ensure there is adequate road and water infrastructure to respond to wildfire emergencies, and establish cooperative relationships between wildfire protection agencies, as required by California Government Code Section 65302(g)(3).
- Assess the risks associated with climate change on local assets, populations, and resources. Note existing and planned development in at-risk areas and identify agencies responsible for providing public health and safety and environmental protection. Develop goals, policies, and objectives to reduce the risks associated with climate change impacts, including locating new public facilities outside of at-risk areas, providing adequate infrastructure in at-risk areas, and supporting natural infrastructure for climate adaptation, as required by California Government Code Section 65302(g)(4).

# SAFETY ELEMENT



- Identify residential developments in any hazard area identified that do not have at least two emergency evacuation routes, as required by California Government Code Section 65302(g)(5).

## **RELATIONSHIP TO OTHER DOCUMENTS**

The Wildomar Safety Element does not exist in a vacuum but is instead one of several plans that address public safety and related topics. The Safety Element must be consistent with these other plans to minimize conflicts between documents and ensure that the City has a unified strategy to address public safety issues. The Safety Element incorporates information, technical analyses, and policies from these other documents where appropriate to help support this consistency.

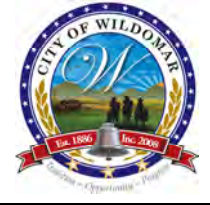
## **OTHER GENERAL PLAN ELEMENTS**

The Safety Element is one of several elements of the Wildomar General Plan. Other social, economic, political, and aesthetic factors must be considered and balanced with safety needs. Rather than compete with the policies of related elements, the Safety Element provides policy direction and designs safety improvements that complement the intent and policies of other General Plan elements. Crucial relationships exist between the Safety Element and the other General Plan elements. How land uses are determined in areas prone to natural hazards, what regulations limit development in these areas, and how hazards are mitigated for existing development, are all issues that tie the elements together. For instance, Land Use Element diagrams and policies must consider the potential for various hazards identified in the Safety Element and must be consistent with the policies to address those hazards. The Multipurpose Open Space Element is also closely tied to the Safety Element. Floodplains, for example, are not only hazard areas, but often serve as sensitive habitat for threatened or endangered species or provide recreation or passive open space opportunities for residents and visitors. As such, flood and inundation policies balance the need to protect public health and safety with the need to protect habitat and open space. Safety Element policies, especially those concerning evacuation routes and critical facilities, must also be consistent with those of the Circulation Element. The City's Circulation Plan routes are considered the backbone routes for evacuation purposes. Policies and information in this Safety Element should not conflict with those in other elements.

## **CITY OF WILDOMAR LOCAL HAZARD MITIGATION PLAN**

The City of Wildomar's Local Hazard Mitigation Plan (LHMP) is a plan to identify and profile hazard conditions, analyze risk to people and facilities, and develop mitigation actions to reduce or eliminate hazard risks in Wildomar. The City prepared the LHMP in accordance with the federal Disaster Mitigation Act of 2000

# SAFETY ELEMENT



and the Federal Emergency Management Agency’s (FEMA’s) LHMP guidance. The mitigation actions in the LHMP include both short-term and long-term strategies, and involve planning, policy changes, programs, projects, and other activities. The LHMP and Safety Element address similar issues, but the Safety Element provides a higher-level framework and set of policies, while the LHMP focuses on more specific mitigation, often short-term, actions. The LHMP, as its name implies, focuses on mitigation-related actions, while the Safety Element also includes policies related to emergency response, recovery, and preparation activities. The current LHMP is incorporated into this Safety Element by reference, as permitted by California Government Code Section 65302.6.

## **RELATIONSHIP TO THE EMERGENCY MANAGEMENT DEPARTMENT**

The County of Riverside Emergency Management Department (EMD) is responsible for providing emergency management services. EMD has four divisions that combine traditional emergency management, public health disaster management, and emergency medical services into a single, comprehensive, all hazards department. EMD works with local cities such as Wildomar, fire and law enforcement agencies, and special districts to support and implement emergency mitigation and preparation activities across Riverside County, secure resources for first responders, and coordinate with state and federal emergency agencies. EMD’s emergency preparation and response activities, including many of the Safety Element policies implemented by the City in coordination with EMD, are laid out in this Safety Element.

## **HAZARD REDUCTION**

Hazard-reduction programs are designed to improve the safety of existing development. For example, older structures, built to superseded code standards, may need seismic upgrading. Owners of older structures may voluntarily upgrade, be strongly incentivized to upgrade, or be required to do so. Additional examples of hazard-reduction programs include:

- Strengthening pipelines and developing emergency back-up capability by public utilities serving the City of Wildomar;
- Collaborating with water purveyors to ensure adequate fire flow during emergencies;
- Creating defensible space around buildings to prevent damage from wildfires;
- Planning for emergency response at the government and individual level to reduce the risk to the public from hazards; and



# SAFETY ELEMENT



- Identifying unsafe structures and posting public notices.

To reduce hazards in areas mapped as hazard zones, the City of Wildomar uses a combination of methods:

- Special investigation and reporting requirements;
- Land use planning;
- Real-estate disclosure;
- Incentives to encourage hazard mitigation;
- Public education; and
- Disincentives, including fines and fees for those who choose to take the risk of that hazard.

## **VULNERABLE COMMUNITIES**

Due to financial limitations, mobility challenges, and lack of access to medical care, the most vulnerable populations to environmental pollution and other hazards include households in poverty, seniors living alone, outdoor workers, and persons experiencing homelessness. Based on the CalEnviroScreen 3.0 model, which uses pollution and population characteristic indicators to assess pollution burden within communities, overall pollution burden is relatively low.<sup>1</sup> However, there are communities that may be disproportionately impacted by pollution and hazards.

Low-income communities in Wildomar provide an effective lens for assessing where pollution and hazards may disproportionately be affecting vulnerable communities. Therefore, this Safety Element defines vulnerable communities as low-income areas that are disproportionately affected by environmental pollution and other hazards that can lead to negative health effects. A low-income area is defined as an area with household incomes at or below 80 percent of the statewide median income or with household incomes at or below the threshold designated as low income by the Department of Housing and Community Development's list of state income limits, which is approximately \$59,993 in Wildomar.

---

<sup>1</sup> California Office of Environmental Health Hazard Assessment. 2018. CalEnviroScreen 3.0. <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>.

# SAFETY ELEMENT



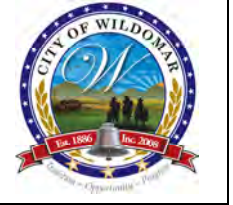
Vulnerable communities in Wildomar are particularly affected by pollution and hazards in the northwest region of the city, along Corydon Road and Mission Trail. Vulnerable communities are often affected first and at greater levels by pollution and climate-related impacts. These communities are burdened with poorer air quality and pollution and face a higher risk of flood and wildfire hazards. More specifically, air quality impacts are associated with elevated concentration levels of diesel particulate, ozone, and particulate matter 2.5 (PM<sub>2.5</sub>). Although flood risk is present, the 100- and 500-year flood zone is limited to areas along the city boundary, near Corydon Road and Mission Trail. To the east of Interstate 15 (I-15), vulnerable communities are within a very high wildfire hazard severity zone.

Some hazards, such as toxins or traffic hazards, may be dangerous enough to harm human health in isolation. However, some hazards may not be harmful to health by themselves, but become harmful when combined with other health risks to a community. This is a compounded health risk, often referred to as cumulative risk. Today, people are often exposed to multiple health risks, such as ozone and particulate matter, while concurrently living in unhealthy housing conditions and/or experiencing poverty and other socioeconomic stressors that are associated with negative health outcomes. These conditions are experienced more often by vulnerable communities.

“Environmental justice” is defined in California law as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. “Environmental justice” includes, but is not limited to, all of the following:

- The availability of a healthy environment for all people.
- The deterrence, reduction, and elimination of pollution burdens for populations and communities experiencing the adverse effects of that pollution, so that the effects of the pollution are not disproportionately borne by those populations and communities.
- Governmental entities engaging and providing technical assistance to populations and communities most impacted by pollution to promote their meaningful participation in all phases of the environmental and land use decision-making process.
- At a minimum, the meaningful consideration of recommendations from populations and communities most impacted by pollution into environmental and land use decisions.

# SAFETY ELEMENT



Environmental justice in the community can be implemented in various ways, such as through policies and actions that improve sustainability and resilience, protect community health, and prioritize safety. This Safety Element identifies where vulnerable communities experience existing and likely future hazardous conditions and other public safety issues in Wildomar and incorporates environmental justice into its policies and actions to address specific hazards for vulnerable communities in Wildomar. These policies and actions aim to reduce the unique or compounded health risks.

## **CLIMATE CHANGE VULNERABILITY**

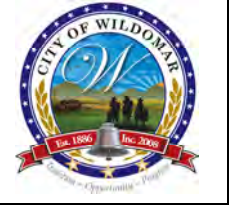
Changes to the global climate system are expected to affect future occurrences of natural hazards in and around Wildomar. Many hazards are projected to become more frequent and more intense in coming years and decades, and in some cases, these trends have already begun. According to California's *Fourth Climate Change Assessment*,<sup>2</sup> Wildomar can expect the following changes to climate-related hazard events:

- Both droughts and floods are expected to become more frequent as precipitation is expected to occur in fewer, more intense storms due to climate change. Although Wildomar is likely to experience little change in overall precipitation levels from climate change, the region is also expected to see an increase in the number of extreme precipitation events. As a result, floods are expected to occur more often in Wildomar, and climate change may expand the parts of the city that are considered flood-prone. Climate change is expected to increase the frequency and severity of droughts that cause soil to dry out and condense. When precipitation does return, more water runs off the surface rather than being absorbed into the ground, which can lead to floods.
- Warmer temperatures are projected to cause an increase in extreme heat events. Because extreme heat is relative to the area, this means that extreme heat events may occur anywhere in Riverside County. The number of extreme heat days, defined in Wildomar as a day when the high temperature is at least 105 degrees Fahrenheit (°F), is expected to rise from a historical annual average of 4 to between 25 and 37 by the middle of the century (2041 to 2060), and to between 34 and 58 by the end of the century (2070 to 2099). In addition to the increases in extreme heat events, Wildomar is expected to see an increase in the average daily high temperatures. Extreme heat poses a significant human health risk, especially to senior citizens, outdoor workers, and persons who do not have access to adequate cooling, including

---

<sup>2</sup> Bedsworth, Louise, Dan Cayan, Guido Franco, Leah Fisher, Sonya Ziaja. (California Governor's Office of Planning and Research, Scripps Institution of Oceanography, California Energy Commission, California Public Utilities Commission). 2018. *Statewide Summary Report. California's Fourth Climate Change Assessment*. Publication number: SUMCCCA4-2018-013.

# SAFETY ELEMENT



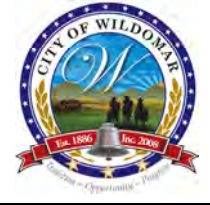
people experiencing homelessness. Some buildings and infrastructure systems may be damaged by very high temperatures, constraining their ability to meet community needs.

- Climate change can increase the rates of infection for various diseases because many of the animals that carry diseases are more active during warmer weather. There are a number of diseases that are linked to climate change and can be harmful to the health of Wildomar community members, such as hantavirus pulmonary syndrome, Lyme disease, West Nile fever, and influenza. Many of these diseases are carried by animals, such as mice and rats, ticks, and mosquitos, which are usually seen as pests even if they do not cause infections. Warmer temperatures earlier in the spring and later in the winter can cause these animals to be active for longer periods, increasing the time that these diseases can be transmitted.
- Wildomar is expected to see an increase in wildfires due to hotter, drier weather. Although the risk is greatest in the forested areas of western Riverside County along the San Jacinto Mountains, Wildomar may still experience an increase in wildfire activity. More frequent regional wildfires may also create poor air quality. Wildfire activity across Riverside County is expected to increase approximately 16 percent above historic levels by the middle of the century.
- Severe weather events, such as strong storms and high winds, may become more frequent and intense due to climate change. Climate change is expected to cause an increase in intense rainfall, which is usually associated with strong storm systems. Heavy rainfall may also contribute to an increased risk of landslides in the hills around Wildomar. In western Riverside County, most severe weather is linked to high winds. The types of dangers posed by severe weather vary widely and include injuries or deaths, damage to buildings and structures, fallen trees, roads blocked by debris, and fires sparked by lightning.

## VULNERABILITY ASSESSMENT RESULTS

Under California law, the Safety Element is required to include a vulnerability assessment that looks at how people, buildings, infrastructure, and other key community assets may be affected by climate change. The City conducted a Climate Change Vulnerability Assessment in spring of 2021, to analyze Wildomar’s susceptibility to climate-related hazards. The City of Wildomar’s vulnerability assessment, prepared in accordance with the most recent available guidance in the *California Adaptation Planning Guide*, assesses how eight different climate-related hazards (air quality, drought, extreme heat, flooding, human health hazards, landslides, severe weather, and wildfire) may affect 56 different population groups and community assets. Each population or asset received a score of V1 (minimal vulnerability) to V5 (severe vulnerability) for each climate-related hazard. The Climate Change Vulnerability Assessment indicates that Wildomar’s populations and assets are most vulnerable to wildfires, extreme heat, severe weather, and drought.

# SAFETY ELEMENT



Populations in Wildomar tend to be vulnerable to extreme heat, human health hazards, and wildfire, which directly affect health outcomes. As discussed previously, the most vulnerable communities include households in poverty, seniors living alone, outdoor workers, and persons experiencing homelessness. Vulnerable populations, especially those located on single-access roads, are also highly vulnerable to hazards, such as landslides, severe weather, flooding, and wildfire.

Citywide, energy delivery is vulnerable to multiple hazards, including severe weather, such as high winds that can trigger public safety power shutoff (PSPS) events, extreme heat that reduces the capacity and strains the system, and wildfires that damage the system, ultimately disrupting energy service. These conditions can damage communication infrastructure, decreasing network capacity. There may be a higher demand for communication services during severe weather, potentially putting stress on the network and increasing the risk of service interruptions. Furthermore, energy delivery services, specifically electricity delivery, is subject to harm during extreme heat events. Extreme heat can lead to power outages by causing mechanical failure of grid equipment, heat damage to power lines, and by creating a high demand for electricity to power air conditioners, all of which place stress on the network. This is likely to lead to greater service disruptions.

An increase in droughts, extreme heat, and wildfire create higher vulnerabilities for chaparral, woodland, and grassland habitat. Drought and extreme heat can stress vegetation, weakening or killing a variety of native species and habitats. Although chaparral, woodland, and grassland in the region are adapted to infrequent, low-intensity wildfire, many native species are still vulnerable to large and intense wildfire events. Moreover, grasslands pose an extreme risk due to their high, easily ignitable fuel loads and the invasion of non-native species has greatly increased the risk of severe wildfire events. Pests, such as shot hole borers, have increased due to drought and higher temperatures that impact tree health and make them more vulnerable to pests. Such pests can decimate woodland habitats and these species may not be able to recover. This can in turn affect local economic activities in Wildomar, such as outdoor recreation activities and commercial activity from visitors that travel through the city to get to state and national parks and forests.

PSPS events can also create vulnerabilities for Wildomar community members. The vast majority of homes and businesses do not have backup power supplies, so a loss of electricity can cause a loss of refrigeration for food and medical supplies, limit cooking, cause loss of heating or cooling (particularly dangerous during extreme heat or cold events), lighting, and limited or no access to the Internet or other information systems. Many businesses are forced to close during a PSPS, causing economic hardships and depriving community members of important services, such as grocery stores, gas stations, and banks/ATMs. PSPS events may also be harmful to people who depend on electrically powered medical devices. Some property owners have purchased backup power generators, although these produce high levels of noise, pollution, and odors.

# SAFETY ELEMENT



The Safety Element includes goals, policies, and implementation measures to increase community resilience and help lower vulnerability scores, particularly for the populations and assets that received a score of V4 or V5 in the Vulnerability Assessment. A full list of the Vulnerability Assessment results can be found in **Appendix A**.

## 2. EXISTING CONDITIONS

This section outlines the existing and likely future hazardous conditions and other public safety issues in Wildomar, including:

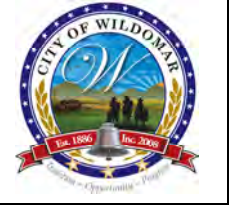
- Code conformance and development regulations
- Seismic and geologic hazards
- Flood and inundation hazards
- Fire hazards (urban and wildland)
- Hazardous waste and materials
- Disaster preparedness, response, and recovery
- Drought
- Extreme heat
- Severe weather

This section provides details pertaining to probable locations each hazard or issue is likely to occur (per availability of data), past notable events in and around Wildomar, agencies responsible for providing protection from these public safety issues, and other background information required by the State of California Government Code Section 65302(g)(4). Goals and policies are identified following the discussion of each hazard identified, and implementation measures that support one or more of the Safety Element policies are provided in Table S-3 at the end of this Safety Element.

Additionally, the City has prepared a Vulnerability Assessment that analyzes how climate-related hazards may harm the City of Wildomar. This assessment was prepared in accordance with the California-recommended guidance in the current *California Adaptation Planning Guide*. It incorporates the findings from a subregional



# SAFETY ELEMENT



vulnerability assessment prepared for western Riverside County as part of the Resilient IE project. This Vulnerability Assessment refines the findings from Resilient IE to focus on the City of Wildomar, thus more accurately reflecting the conditions and characteristics unique to Wildomar.

The Vulnerability Assessment considers the threats from all relevant climate-related hazards, which are events or physical conditions that have the potential to cause harm or loss and emphasizes changes to hazard frequency and severity due to climate change. The Vulnerability Assessment also assesses populations or assets facing potential harm from the hazards. This includes the risk of physical damage to buildings and infrastructure, social vulnerability of persons likely to be disproportionately harmed by hazards, potential disruption to the City’s economic engines, loss of important services, and damage to sensitive ecosystems. The results of the Vulnerability Assessment are integrated into the hazards and other public safety issues previously mentioned. A full list of the Vulnerability Assessment results is also provided in **Appendix A**.

## **CODE CONFORMANCE AND DEVELOPMENT REGULATIONS**

The City of Wildomar Department of Building and Safety provides technical expertise in reviewing and enforcing the City Building and Fire Codes. These codes establish site-specific investigation requirements, construction standards, and inspection procedures to ensure that development does not pose a threat to the health, safety, and welfare of the public. Every three years, the City’s Building and Fire Codes are adopted from the California Building and Fire Codes. These codes contain baseline minimum standards to guard against unsafe development.

At a minimum, it is imperative to enforce the most recently adopted regulatory codes for new development and significant redevelopment, including the City’s Zoning Ordinance and Land Use Ordinance (e.g., Water-Efficient Landscape Ordinance), which support the California Building and Fire Codes. The California Environmental Quality Act (CEQA) adds another level of safety review, requiring that environmental constraints be considered prior to approval of development projects. Additional guidelines and standards are introduced through the Safety Element. Special development regulations can reinforce and augment existing code standards by raising the level of hazard-conscious project design and mitigation engineering. Examples include additional geologic/geotechnical investigation and additional reinforcement of foundations in areas of potential ground failure.

While foundation investigations are required by the City of Wildomar’s Building Code, it is important to emphasize expected levels of investigation and protection. Furthermore, some requirements may only apply to critical facilities, such as detailed seismic analyses, could be expanded to include other structures and lifelines.

# SAFETY ELEMENT



Where engineering methods cannot mitigate the hazards, avoidance of the hazard is appropriate, such as where ground rupture along active or potentially active fault traces are identified during project investigation. Special minimum setbacks away from active faults, which are already required for critical facilities, can also be defined for other structures and lifelines.

**GOAL S-1: To provide development regulations consistent with State of California requirements and best practices.**

**POLICY S-1**      **Enforce state laws aimed at identification, inventory, and retrofit of existing vulnerable structures and mitigate hazard impacts through adoption and strict enforcement of current building codes, which will be amended as necessary when local deficiencies are identified.**

**POLICY S-2**      **Continue to enforce penalties against grading without permits and ensure the restoration of land damaged or degraded from grading activities. Continue to educate the public about the benefits of grading with permits and the penalties for grading without them. If the penalties are determined to be ineffective, explore whether levying greater penalties would be more effective in deterring illegal grading and ensuring proper restoration of damaged lands.**

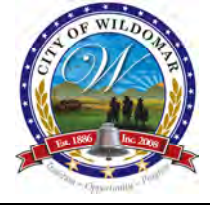
**POLICY S-3**      **Incorporate the current City of Wildomar Local Hazard Mitigation Plan into this Safety Element by reference, as permitted by California Government Code Section 65302.6.**

**POLICY S-4**      **Require structural and non-structural assessment and, when necessary, mitigation of other types of potentially hazardous buildings that:**

- (1) Are undergoing substantial repair or improvements resulting in more than half of the assessed property value, or
- (2) Are considered an element of blight in a redevelopment district. Potential implementation measures may include:
  - (a) Use of variances, tax rebates, fee waivers, credits, or public recognition as incentives.



# SAFETY ELEMENT



- (b) Inventory and structural assessment of potentially hazardous buildings based on screening methods developed by the Federal Emergency Management Agency.
- (c) Development of a mandatory retrofit program for hazardous, high-occupancy, essential, dependent, or high-risk facilities.
- (d) Development of a mandatory program requiring public posting of seismically vulnerable buildings.

## **SEISMIC AND GEOLOGIC HAZARDS**

Seismic and geologic hazards are risks caused by the movement of different parts of the Earth's crust, or surface. Seismic hazards include earthquakes and hazardous events caused by them. Geologic hazards are other hazards involving land movements that are not linked to seismic activity and are capable of inflicting harm to people or property.

### **SEISMIC HAZARDS**

Seismic activity occurs along boundaries in the Earth's crust, called faults. Pressure along the faults build over time and is ultimately released, resulting in ground shaking that we refer to as an earthquake. Earthquakes can also trigger other hazards, including surface rupture (cracks in the ground surface), liquefaction (causing loose soil to lose its strength), landslides, and subsidence (sinking of the ground surface). Earthquakes and other seismic hazards often damage or destroy property and public infrastructure, and falling objects or structures pose a risk of injury or death.

While Wildomar is at risk from many natural and human-caused hazards, the event with the greatest potential for loss of life or property and economic damage is an earthquake. This is true for most of Southern California, since damaging earthquakes affect widespread areas, trigger many secondary effects that can overwhelm the ability of local jurisdictions to respond. In Wildomar, earthquake-triggered effects include ground shaking, fault rupture, landslides, liquefaction, subsidence, and seiches. Earthquakes can also cause human-caused hazards such as urban fires, dam failures, and toxic chemical releases.

Earthquake risk is very high in the western portion of Riverside County, including the City of Wildomar, due to the presence of two of California's most active faults, the San Andreas and San Jacinto Faults. Most of the loss of life and injuries from earthquakes are due to damage and collapse of buildings and structures. Building codes for new construction have generally been made more stringent following damaging earthquakes. However, in

# SAFETY ELEMENT



Wildomar, structures built prior to the enactment of these improved building codes have generally not been upgraded to current standards and are vulnerable in earthquakes. Comprehensive hazard mitigation programs that include the identification and mapping of hazards, prudent planning and enforcement of building codes, and expedient retrofitting and rehabilitation of weak structures can significantly reduce the scope of an earthquake disaster.

Western Riverside County contains parts of several known active and potentially active earthquake faults, including the San Andreas Fault, San Jacinto Fault, and Elsinore Fault. The San Andreas Fault, the largest fault in California, runs from the Salton Sea north along the east side of the Coachella Valley, continuing north along the Transverse and Coast Ranges until running offshore in Mendocino County. The San Jacinto Fault runs from the Imperial Valley northwest through western Riverside County until it ends at the Cajon Pass. The Elsinore Fault zone extends from western Imperial County to the Chino Hills and runs along Riverside County's western border with Orange County. Historically, the San Andreas Fault is the most active among the fault network that cuts through rocks of the California coastal region. The San Jacinto Fault has had a higher level of moderate to large earthquakes during the past 50 to 100 years, although the rate of slip is not as high. The main trace of the Elsinore Fault zone has only seen one historical event greater than magnitude 5.2 – the earthquake of 1910, a magnitude 6 near Temescal Valley. Wildomar has experienced several noticeable ground movement incidents over the past years, but no local damage was sustained. Active faults located in close proximity to the city or that can cause damage to the city, include the following:

- **Elsinore Fault Zone:** This fault zone, which includes the Wildomar and Wolf Valley Faults, passes through the city on the west side of I-15. The fault zone is capable of generating earthquakes ranging in magnitude between 6.5 and 7.5.
- **Wildomar Fault:** As depicted on Figure 1-0, this fault strand of the Elsinore Fault zone runs northwest/southeast and is located in the city approximately 2,000 to 4,000 feet west of I-15. The areas adjacent to the fault are within a “Special Studies Zone,” as designated under the Alquist-Priolo Special Study Zone Act of 1972.
- **San Andreas Fault Zone:** This fault zone, located approximately 50 miles northeast of the city, is the dominant active fault in California. The maximum credible earthquake from this fault zone is a magnitude 8.3.
- **San Jacinto Fault Zone:** This fault zone is located approximately 30 miles northeast of the city and has a maximum credible earthquake magnitude of 7.5.

# SAFETY ELEMENT



In addition to these active faults, two potentially active faults, the Agua Caliente Fault zone and the Murrieta Hot Springs Fault, are also located near the city. In the event of an earthquake, the location of the epicenter, as well as the time of day and season of the year, would have a profound effect on the number of deaths and casualties, as well as property damage. There are a number of small-scale earthquakes that happen weekly, but larger scale or catastrophe shaking is less likely. Property and human life in Wildomar are at risk for a significant earthquake causing catastrophic damage and strains on response and mitigation resources. The county experiences hundreds of minor quakes and tremblers each month from the myriad of faults in the area. Studies indicate that stress is building up in major faults like the San Andreas. A major quake could happen at any time.

The San Andreas, San Jacinto, and Elsinore Faults are all capable of producing significant earthquakes, with a magnitude of 6.7 or greater. Table S-1 shows the chances of a major earthquake on these three faults within Riverside County by 2045, according to the Third California Earthquake Rupture Forecast. Other faults, both in and outside Riverside County, may also be capable of generating significant earthquakes with damaging effects in the county.

**TABLE S-1: CHANCES OF SIGNIFICANT EARTHQUAKES ON MAJOR RIVERSIDE COUNTY FAULTS**

Fault	Mean Chance by 2045			
	Magnitude 6.7 or greater	Magnitude 7.0 or greater	Magnitude 7.5 or greater	Magnitude 8.0 or greater
San Andreas	24.21%	21.29%	11.62%	3.15%
San Jacinto	6.71%	6.43%	5.29%	2.75%
Elsinore	3.66%	1.82%	0.95%	Less than 0.01%

*Chances shown are the maximum mean probability for segments of these faults within Riverside County.*

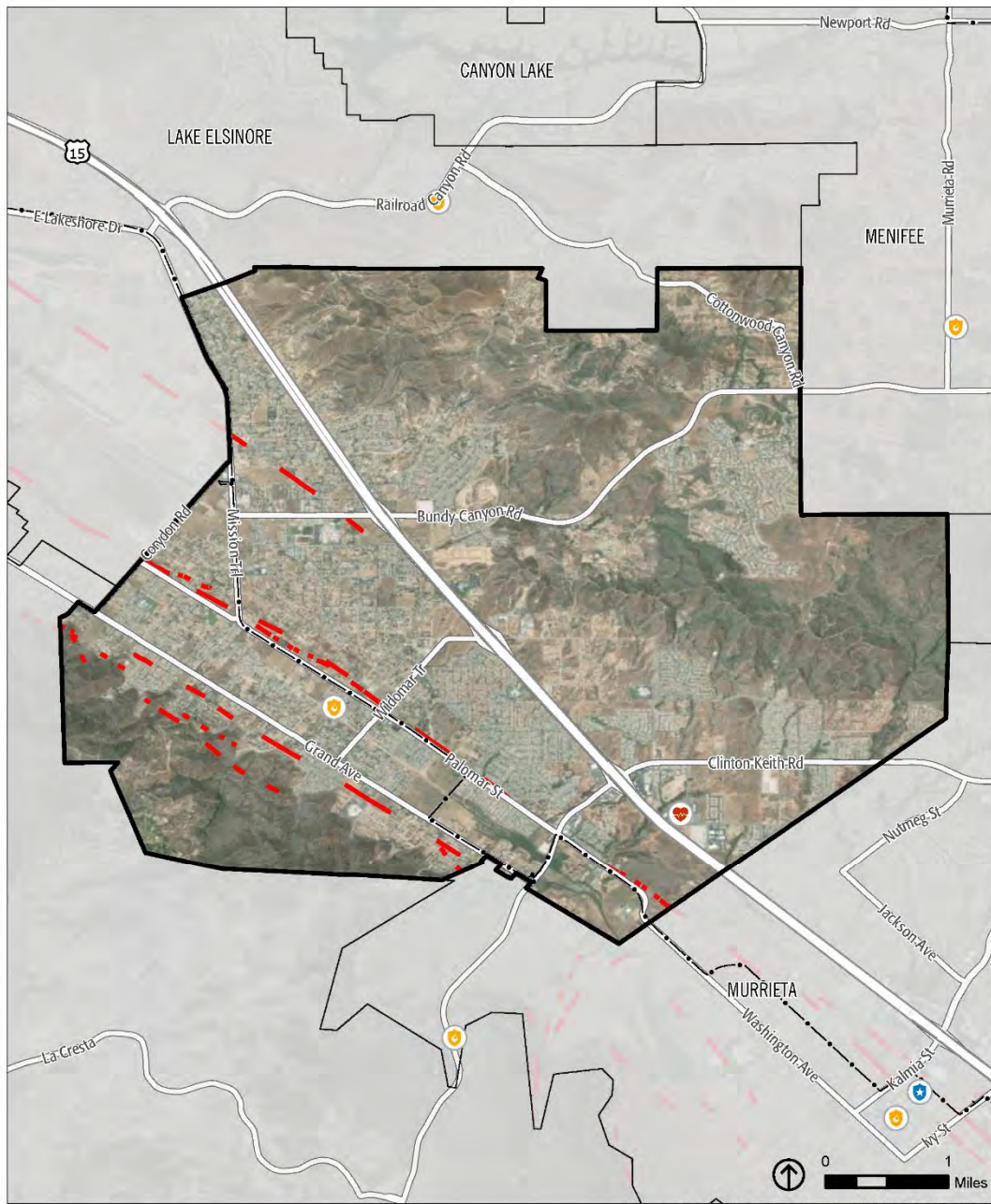
*Source: Third California Earthquake Rupture Forecast*

Figure 1-0 shows the fault lines in and around Wildomar.

# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR REGIONAL FAULT LINES



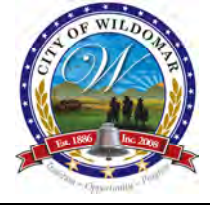
Source: California Geologic Survey 2020, ESRI, PlaceWorks

- City of Wildomar
- City Boundary
- Regional Fault Lines
- 🚓 Local Law Enforcement Office
- 🏥 Hospital
- 🚒 Fire Station
- Transmission Line

Figure 1-0



# SAFETY ELEMENT



Portions of the city are susceptible to liquefaction, which is a potentially destructive secondary effect of strong seismic shaking. Liquefaction occurs primarily in saturated, loose, fine- to medium-grained soils in areas where the groundwater table is within approximately 50 feet of the surface. Shaking causes the soils to lose strength and behave as liquid. Excess water pressure is vented upward through fissures and soil cracks and can result in a water-soil slurry flowing onto the ground surface. Liquefaction-related effects include loss of bearing strength, ground oscillations, lateral spreading, and flow failures or slumping. Site-specific geotechnical studies are the only practical and reliable way of determining the specific liquefaction potential of a site; however, a determination of general risk potential can be provided based on soil type and depth of groundwater. The City has delineated areas of known and suspected liquefaction hazard. In general, liquefaction susceptibility ranges from very low in the former lake footprint to moderate on much of the remainder of the valley floor and very high in the valley floor corridor formerly occupied by the axial riverine drainage. Areas identified as susceptible to liquefaction are identified in Figure 2-0.

Areas are susceptible to liquefaction based on a combination of known factors in some areas and the absence of known factors in other areas. Additionally, these potential hazard zones are not an absolute indication that the hazard truly exists nor are they an indicator of the extent of damage that may or may not occur at a given site. Research confirms there is a potential for liquefaction to occur; however, this research also confirms minimal liquefaction-induced ground settlement is anticipated to occur for the areas that were studied. In most cases, proper design and construction of subgrade soils and building foundations provides a mechanism to mitigate the risk of seismic hazards to an acceptable level in conformance with the California Building Code. The representation of areas having a liquefaction potential is only intended as notification to seek further site-specific information and analysis of this potential hazard as part of future site development. It should not be solely relied upon, without site-specific information and analysis, for design or decision-making purposes.

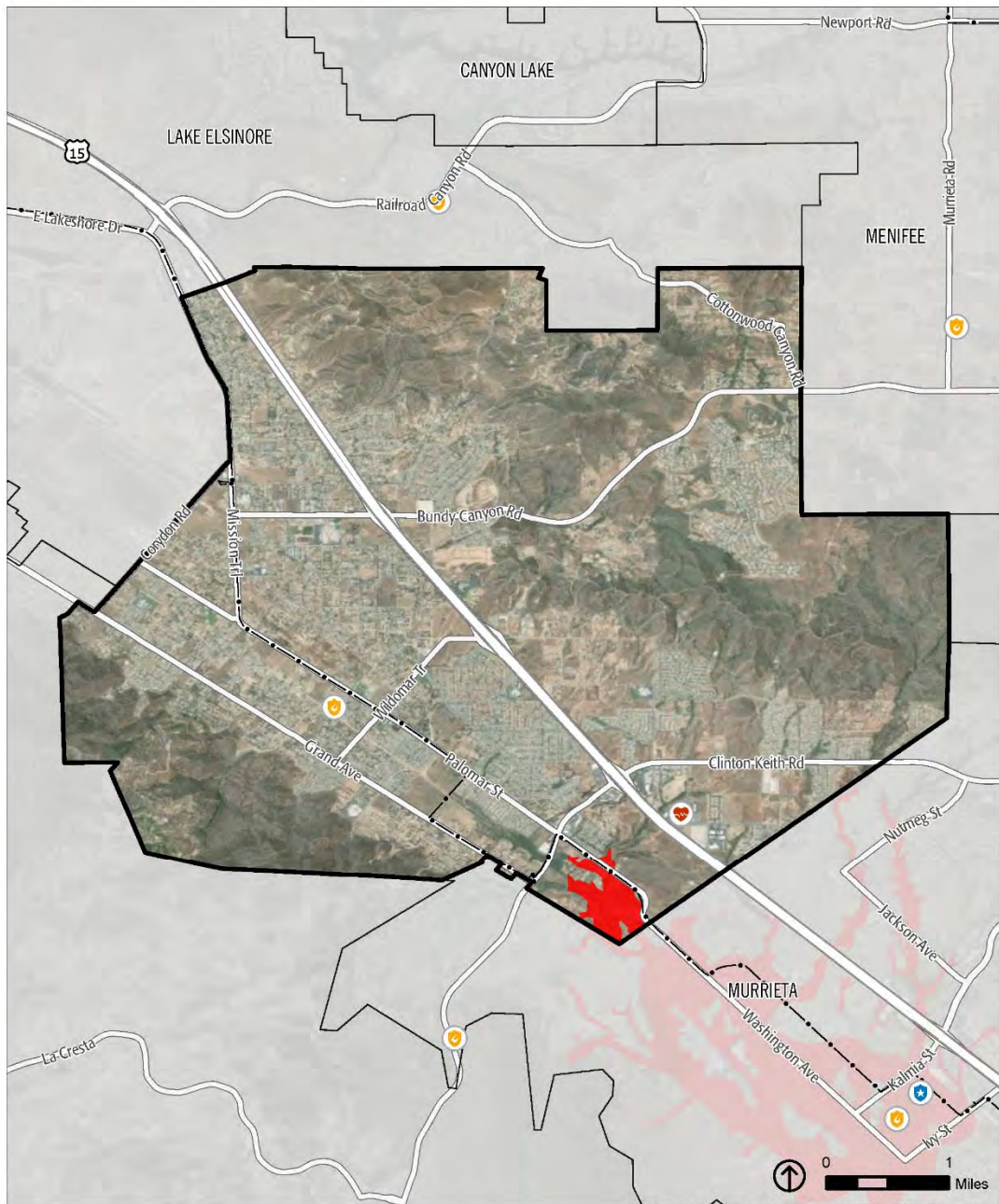
## **GEOLOGIC HAZARDS**

Geologic hazards, such as landslides and erosion, depend on the geologic composition of the area. Landslides and rock falls may occur in sloped areas, especially areas with steep slopes, and usually in areas of loose and fragmented soil. Landslides, rockfalls, and debris flows occur continuously on all slopes; some processes act very slowly, while others occur very suddenly, often with disastrous results. They often occur as a consequence of seismic activity or heavy rainfall, either of which may cause slopes to lose structural integrity and slide. There are predictable relationships between local geology and landslides, rockfalls, and debris flows. Slope stability is dependent on many factors and interrelationships, including rock type, pore water pressure, slope steepness, and natural or human-made undercutting. Figure 3-0 shows the landslide risk in and around Wildomar. Landslide risk is greatest south of Grand Avenue and throughout a majority of the land east of I-15, particularly along hillsides. Landslide susceptibility presents a significant risk to vulnerable communities as well. The highest threat for these communities occurs in the northern region of the city, north of Lemon Street and to the west and east of I-15.

# SAFETY ELEMENT



SAFETY ELEMENT  
CITY OF WILDOMAR  
**SEISMIC HAZARDS PROGRAM LIQUEFACTION ZONE**



Source: California Geologic Survey 2020, ESRI, PlaceWorks

- City of Wildomar
- City Boundary
- Liquefaction Zones
- Local Law Enforcement Office
- Hospital
- Fire Station
- Transmission Line

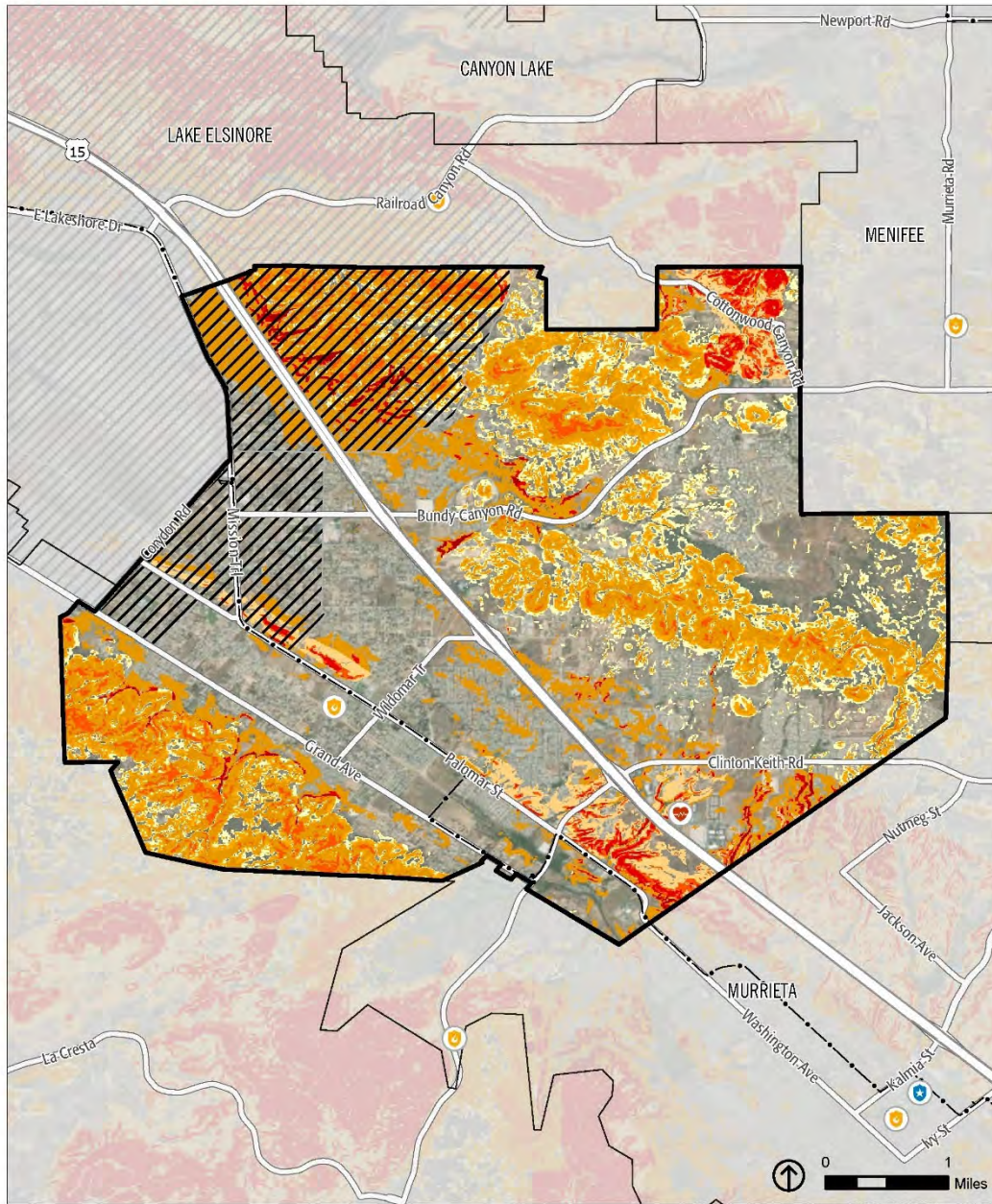
Figure 2-0



# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR LANDSLIDE SUSCEPTIBILITY



Source: California Geologic Survey 2020, ESRI, PlaceWorks



Figure 3-0

# SAFETY ELEMENT



Expansive soils have a significant amount of clay particles that can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils. The occurrence of these soils is often associated with geologic units having marginal stability. Expansive soils can be widely dispersed and can be found in hillside areas as well as low-lying alluvial basins. Although expansive soils are now routinely alleviated through the City’s adopted Building Code, problems related to past, inadequate codes constantly appear. Expansive soils are not the only cause of structural distress in existing structures. Poor compaction and construction practices, settlement, and landslides can cause similar damage, but require different mediation efforts. Once expansion has been verified as the source of the problem, mitigation can be achieved through reinforcement of the existing foundation, or alternatively, through the excavation and removal of expansive soils in an affected area.

Hydroconsolidation, or soil collapse, typically occurs in recently deposited, Holocene (less than 10,000 years old) soils that were deposited in an arid or semi-arid environment. Soils prone to collapse are commonly associated with human-made fill, wind-laid sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. When saturated, collapsible soils undergo a rearrangement of their grains, and the water removes the cohesive (or cementing) material. Rapid, substantial settlement results. In Wildomar, collapsible soils occur predominantly at the base of the mountains, where Holocene-age alluvial fan and wash sediments have been deposited during rapid runoff events. Typically, differential settlement of structures occurs when lawns or plantings are heavily irrigated in close proximity to the structure’s foundation. Forensic indications of collapsible soils include tilting or sagging floors, cracking or separating structures, and windows and doors that cannot open due to shifts in the building.

Erosion is the geological process in which earthen materials are worn away and transported by natural forces such as water or wind, causing the soil to deteriorate. Eroded topsoil can be transported into streams and other waterways. Water erosion is the removal of soil by water and transportation of the eroded materials away from the point of removal. The severity of water erosion is influenced by slope, soil type, soil water storage capacity, nature of the underlying rock, vegetation cover, and rainfall intensity and period. The impact of soil erosion on water quality becomes significant, particularly as soil surface runoff. Wind erosion is a serious environmental problem attracting global attention. Soil movement is initiated as a result of wind forces exerted against the surface of the ground. Dust particles in the air create major health problems. Atmospheric dust causes respiratory discomfort, may carry pathogens that cause eye infections and skin disorders, and reduces highway and air traffic visibility. Dust storms can cause additional problems. Buildings, fences, roads, crops, trees, and shrubs can all be damaged by abrasive blowing soil.



# SAFETY ELEMENT



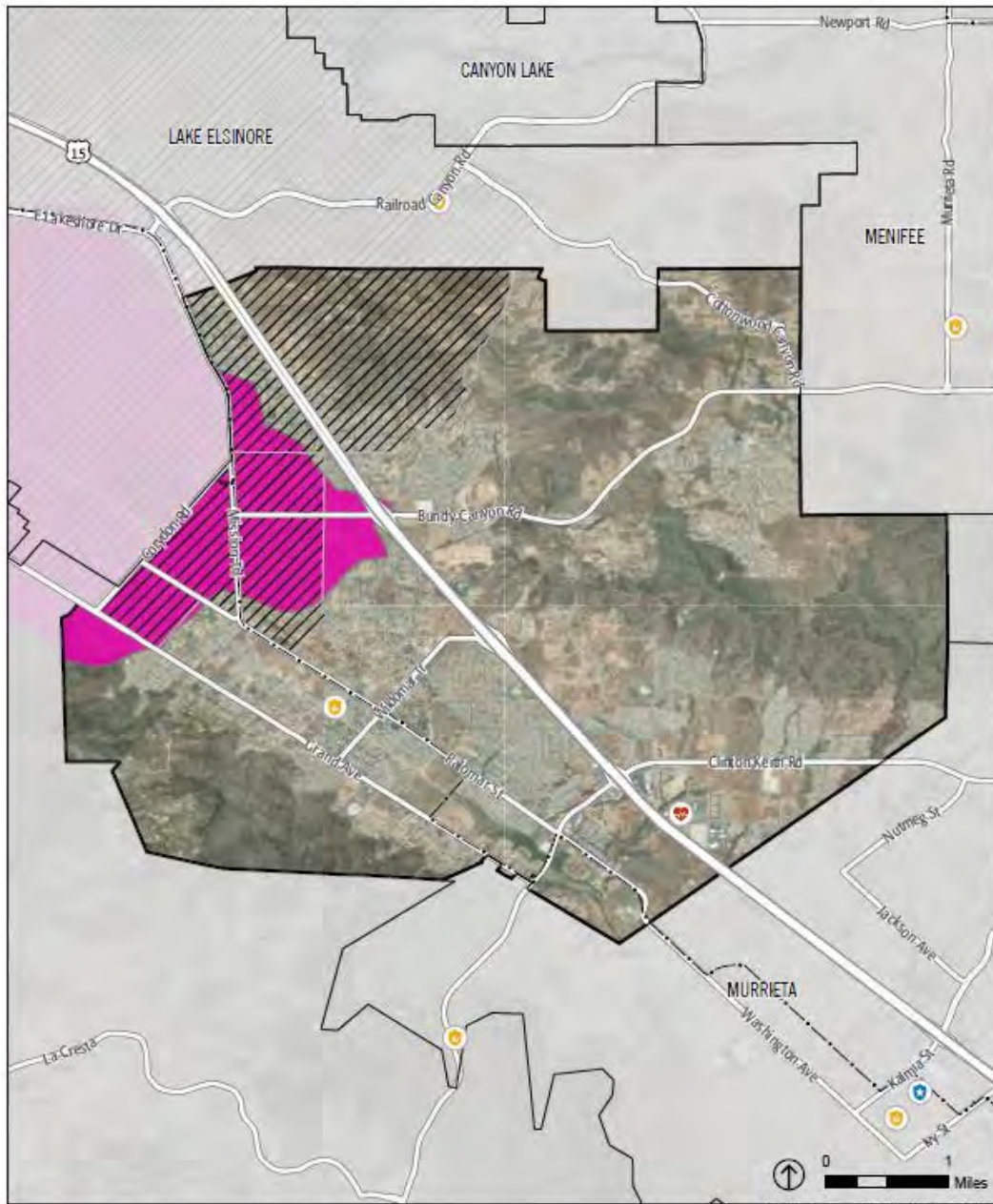
Slope instability can include deep-seated landslides, rockfalls, soil slumps, and debris flows. Without the presence of extensive flood-control devices, including large debris basins, areas with slope instability may be subject to debris flow inundation. Most often, debris flow inundation results in roadways and improvements blocked by boulders. Rarely do debris-flow-generating storms affect Wildomar. However, most areas with slope instability are within areas designated for open space or rural development.

Subsidence refers to the sudden sinking or gradual downward settling and compaction of soil and other surface material with little or no horizontal motion. It may be caused by a variety of human and natural activities, including earthquakes and water saturation. Areas identified as susceptible to subsidence are identified in Figure 3-0. Land subsidence and related issues have been well-documented in western Riverside County. Most of the early documented cases of subsidence affected only agricultural land or open space. As urban areas have expanded, so too have the impacts of subsidence on structures for human occupancy. Ground subsidence and associated fissuring in Wildomar have resulted from both falling and rising groundwater tables. In addition, many fissures have occurred along active faults that bound the San Jacinto Valley and Elsinore Trough. Subsidence typically occurs throughout a susceptible valley. In addition, differential displacement and fissures occur at or near the valley margin and along faults. In western Riverside County, the worst damage to structures as a result of regional subsidence may be expected at the valley margins. Alluvial valley regions are especially susceptible. Figure 4-0 shows the subsidence zones in and around Wildomar. As illustrated in Figure 4-0, areas near Palomar Street, Corydon Road, and Bundy Canyon Road are within a subsidence zone. Notably, vulnerable communities in the city reside in this subsidence zone and are at risk to ground subsidence impacts.

# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR SUBSIDENCE ZONE

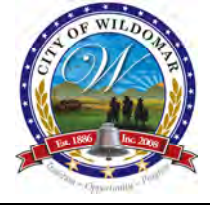


Source: USGS 2018, ESRI, PlaceWorks

- |                                       |  |                   |
|---------------------------------------|--|-------------------|
| City of Wildomar                      | Percent of Population whose income is below poverty level (2019) | Hospital          |
| City Boundary                         | > 15% of Population  | Fire Station      |
| Subsidence Zone - Groundwater Pumping | Local Law Enforcement Office                                     | Transmission Line |

Figure 4-0

# SAFETY ELEMENT



## POTENTIAL CHANGES TO GEOLOGIC AND SEISMIC RISK IN FUTURE YEARS

### Likelihood of Future Occurrence

#### *Seismic Risk*

Earthquakes are likely to continue to occur on an occasional basis and are likely to be small. They may cause no substantive damage and may not even be felt by most people. Major earthquakes are rare, but a possibility in the region. No major earthquakes have been recorded with epicenters within the city, although the city has felt ground shaking from earthquakes with epicenters located elsewhere. Large earthquakes from faults such as the San Andreas Fault may cause significant damage to homes and businesses in the city. Based on historical data and the location of Wildomar relative to active and potentially active faults, the city will likely experience a significantly damaging earthquake in the next two decades.

If serious shaking does occur, newer construction is in general more earthquake resistant than older construction because of improved building codes. Manufactured housing is very susceptible to damage because the foundation systems are rarely braced for earthquake motions.

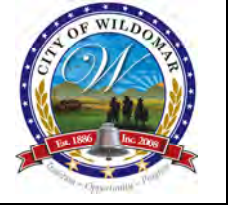
#### *Geologic Risk*

Minor landslides have occurred in the past, probably over the last several hundred years, as evidenced by both past deposits exposed in erosion gullies and recent landslide events. Western Riverside County has a history of landslides during seasons of high precipitation. With significant rainfall, additional failures are likely in landslide hazard areas and minor landslides will likely continue to impact the area when heavy precipitation occurs, as they have in the past. In addition, areas affected by recent fires show an increased landslide risk.

### Climate Change and Geologic and Seismic Hazards

While climate change is unlikely to increase earthquake frequency or strength, the threats from seismic and geologic hazards are expected to continue. Climate change may result in precipitation extremes (i.e., wetter rainfall periods and drier dry periods). While total average annual rainfall may not change significantly, rainfall may be concentrated in more intense precipitation events. Heavy rainfall could cause an increase in the number of landslides or make landslides larger than normal. Increased wildfire frequency can destabilize hillsides due to loss of vegetation and change soil composition, which can contribute to greater runoff and erosion. The combination of a generally drier climate in the future, which will increase the chance of drought and wildfires, and the occasional extreme downpour, is likely to cause more mudslides and landslides. Impacts from these conditions would compound landslide potential for the most susceptible locations.

# SAFETY ELEMENT



**GOAL S-2: To avoid the loss of life and injury and minimize property damage from seismic and related geological hazards.**

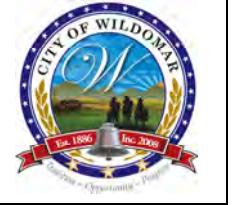
## **Fault Rupture**

**POLICY S-5 Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following policies:**

- (1) Require geologic studies or analyses for critical structures, and lifeline, high-occupancy, schools, and high-risk structures, within 0.5 miles of all Quaternary to historic faults shown on the Earthquake Fault Studies Zones map.
- (2) Require geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the City of Wildomar Engineering Geologist, is presented. The City of Wildomar may require geologic trenching of non-zoned faults for especially critical or vulnerable structures or lifelines.
- (3) Require that infrastructure systems, such as energy, communications, and transportation infrastructure, be designed to resist, without failure, their crossing of a fault, should fault rupture occur.
- (4) Support efforts by the California Department of Conservation, California Geological Survey, to develop geologic and engineering solutions in areas of ground deformation due to faulting and seismic activity, in those areas where a fault cannot be reliably located.
- (5) Encourage and support efforts by the geologic research community to better define the locations and risks of faults in and around the City of Wildomar. Such efforts could include data sharing and database development with regional entities, other local governments, private organizations, utility agencies or companies, and local universities.

**POLICY S-6 Require automatic natural gas shutoff earthquake sensors in high-occupancy industrial and commercial facilities, as well as new homes, and encourage them for all existing residences.**

# SAFETY ELEMENT



## **Seismically-Induced Liquefaction, Landslides, and Rockfalls**

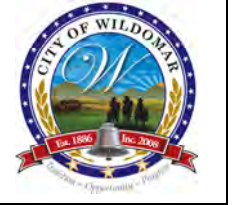
- POLICY S-7** Require geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landslides, or settlement, for any building proposed for human occupancy and any structure whose damage would cause harm, except for accessory buildings.
- POLICY S-8** Require that a state-licensed civil engineer investigate the potential for liquefaction in areas designated as underlain by “Susceptible Sediments” and/or “Shallow Groundwater” for all general construction projects and proposed critical facilities, except for accessory buildings.
- POLICY S-9** Require that engineered slopes be designed to resist seismically-induced failure as appropriate. For lower-risk projects, this may include requiring slope design to be based on pseudo-static stability analyses using soil engineering parameters that are established on a site-specific basis. For higher-risk projects, appropriate standards may include requiring the stability analyses to factor in the intensity of expected ground-shaking.
- POLICY S-10** Within landslide susceptibility areas or liquefaction zones shown in Figure 2-0 and Figure 3-0, require that cut-and-fill transition lots be over-excavated to mitigate the potential of seismically-induced differential settlement.

## **Landslides, Rockfalls, and Debris Flows**

- POLICY S-11** Require the following in landslide susceptibility classes III and above, or when deemed necessary by the California Environmental Quality Act, prior to the issuance of development permits or approval of project designs:
- (1) Preliminary geotechnical and geologic investigations, including certification regarding the stability of the site against adverse effects of earthquake and subsidence.
  - (2) Evaluations of site stability, including any possible impact on adjacent properties.



# SAFETY ELEMENT



(3) Consultant reports, investigations, and design recommendations required for grading permits, building permits, and subdivision applications, prepared by state-licensed professionals.

**POLICY S-12**      **Require new development in areas prone to geologic hazards (e.g., landslides, steep topography, slope instability) to be designed to adequately reduce these hazards and loss of native vegetation. Grading plans, environmental assessments, engineering and geologic technical reports, irrigation and landscaping plans, including ecological restoration and revegetation plans, shall be required as appropriate, to ensure the adequate demonstration of a project’s ability to mitigate these potential impacts. Any development in hillside areas shall prepare drainage plans to direct runoff and drainage away from potentially unstable slopes.**

**POLICY S-13**      **During permit review, identify and require mitigation of on-site slope instability, debris flow, and erosion hazards on lots undergoing substantial improvements. “Substantial improvements” means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement.**

**POLICY S-14**      **Conduct slope stabilization practices on existing public property and support slope stabilization activities on private property located on unstable hillside areas, especially slopes with recurring failures where City property or public right-of-way is threatened from slope instability, or where considered appropriate and urgent by the City of Wildomar Engineer, Fire Department, or Sheriff Department.**

**POLICY S-15**      **Encourage building retrofits that improve resiliency to geologic and seismic hazards.**

## **Subsidence and Expansive and Collapsible Soils**

**POLICY S-16**      **Require geotechnical studies within documented subsidence zones, as shown in Figure 4-0, as well as zones that may be susceptible to subsidence, prior to the issuance of development permits. Within the documented subsidence zones of the Elsinore Valley, the studies must address the potential for reactivation of these zones, consider the potential impact on the project, and provide adequate and acceptable mitigation measures.**

# SAFETY ELEMENT



**POLICY S-17**      **Coordinate with the County of Riverside and the Elsinore Valley Municipal Water District to develop a liaison program with all Riverside County water districts to prevent water extraction-induced subsidence.**

**POLICY S-18**      **Encourage and support efforts for long-term, permanent monitoring of topographic subsidence in the Elsinore Valley Groundwater Basin, irrespective of past subsidence.**

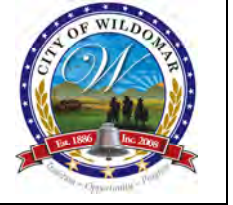
## **FLOOD AND INUNDATION HAZARDS**

Flooding is considered the rising and overflowing of a body of water onto normally dry land. History highlights floods as one of the most frequent natural hazards impacting communities in western Riverside County. Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide, causing substantial damage to structures, landscapes, and utilities, as well as life-safety issues. Flooding can be extremely dangerous, and even six inches of moving water can knock a person over given a strong current. Floodwaters can transport large objects downstream, which can damage or remove stationary structures, such as dam spillways. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services. Standing water can cause damage to roads, foundations, and electrical circuits.

Floods are usually caused by large amounts of precipitation, either from a period of very intense precipitation or a long period of steady precipitation. Historically, Wildomar has been at risk of flooding primarily during the winter and spring months when stream systems swell with heavy rainfall. This type of flood results from prolonged, heavy rainfall and is characterized by high peak flows of moderate duration and by a large volume of runoff. Flooding is more severe when prior rainfall has resulted in saturated ground conditions. Flooding susceptibility in Wildomar is primarily associated with the Murrieta Creek as well as smaller-scale and flash flood events.

Flash flooding is a common problem for western Riverside County and typically associated with short-duration, high-intensity precipitation events often during summer thunderstorms. Such events can occur even during a drought. Localized flooding also occurs in Wildomar at various times throughout the year, especially in the western side of the city and along Murrieta Creek. These areas are primarily a result of little or no drainage infrastructure, undersized pipes where runoff exceeds pipe capacity even for minor storms, obstructions, or damaged drainpipes. The majority of the damaged lines are on the west side of the city, where there are limited storm drainpipes and some of the oldest infrastructure in the system.

# SAFETY ELEMENT



Historically, precipitation in and around Wildomar has been low to moderate. Precipitation occurs mainly in the fall, winter, and spring months, from November through April. Although Wildomar occasionally experiences periods of significant drought, the city can also experience periods of substantial rainfall. When Wildomar does experience heavy rain, or rain over a period of days or weeks, many areas of the city are subject to flooding. Runoff from rain drains either naturally into creeks or flood-control facilities.

Both earthquake faults and developments reduce the total ground absorption area. Earthquake faults include bedrock features that create barriers to subsurface percolation, thus increasing the velocity and erosive capacity of stormwater runoff on hillsides. Development also creates impermeable surfaces (structures, pavement, streets). Stormwater runoff is augmented by water flows from development contributing to street flooding. Moreover, developed areas generate irrigation water runoff from landscaping, which may channel stormwater and other runoff flows into nearby underdeveloped areas and street gutters. Areas at an elevated risk of flooding are generally divided into 100- and 500-year flood zones. A 100-year flood zone has a 1-percent chance of experiencing a major flood in any given year, a 200-year flood zone has a 0.5-percent chance of flooding in any given year, a 500-year flood zone has a 0.2-percent chance of flooding in any given year. Figure 5-0 shows the 100- and 500-year flood zones in and around Wildomar, as well as the flood hazard zones overlaid by vulnerable communities. The highest threat for these communities occurs in the northwestern region of the city, along Corydon Road and Mission Trail. A small portion of this community along Corydon Road is within the 500-year flood zone and to the north along Mission Trail, a small portion is within both the 100- and 500-year flood zone.

Agencies responsible for flood control in Wildomar include FEMA, the Federal Insurance Administration (FIA), and the Department of Water Resources (DWR).

- **FEMA:** FEMA manages the National Flood Insurance Program (NFIP), providing insurance to the public in communities that participate in the program. FEMA is the main federal government agency contact during natural disasters and publishes the Flood Insurance Rate Maps (FIRM), which identify the extent of flood potential in flood-prone communities based on a 100-year flood (or base flood) event.
- **FIA:** The FIA is the primary agency that delineates potential flood hazard areas and floodways through the FIRMs and the Flood Boundary and Floodway Map. Flood insurance is required of all homeowners who have federally subsidized loans.



# SAFETY ELEMENT

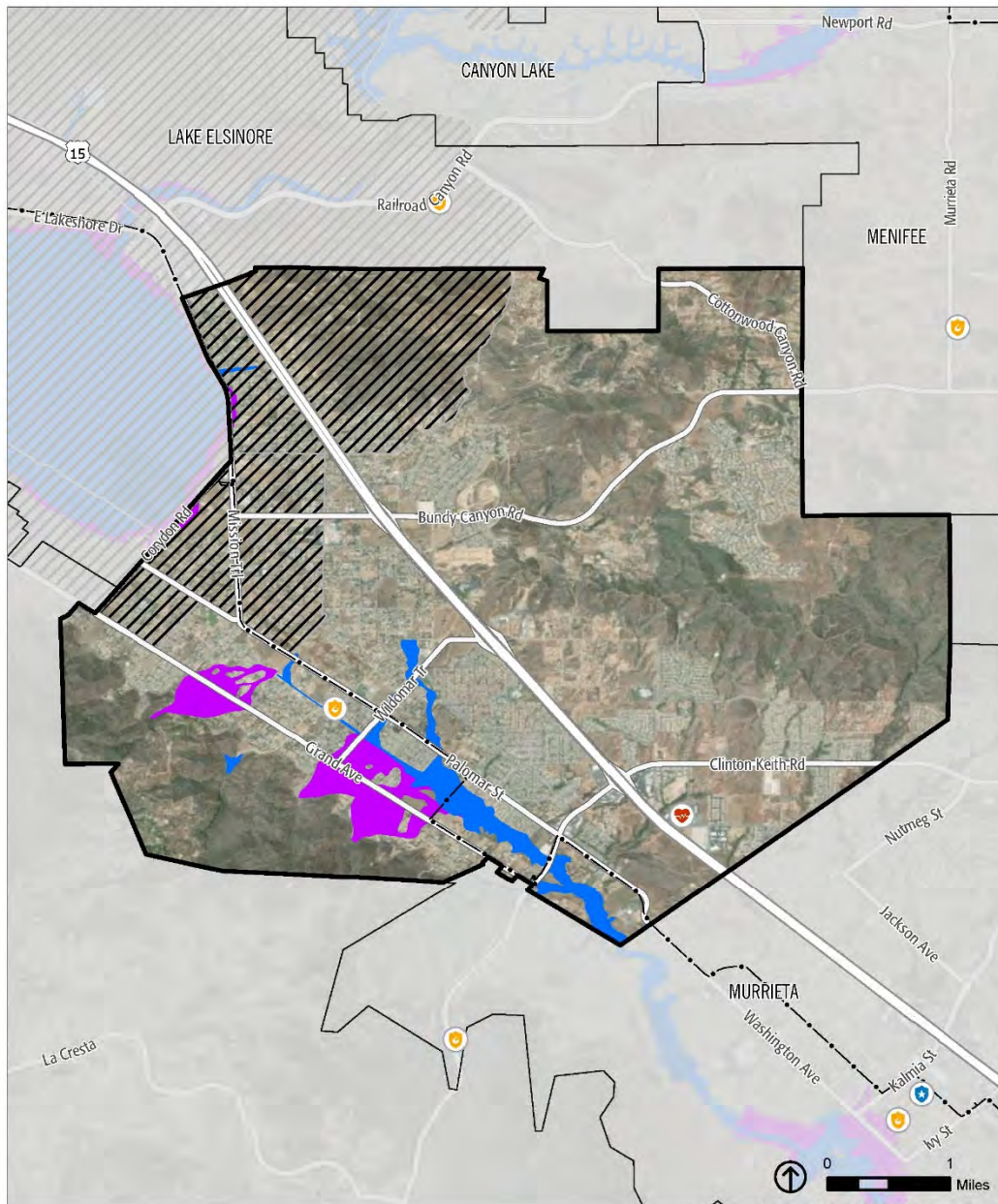


- **DWR:** DWR is responsible for managing and protecting California’s water. DWR works with other agencies to benefit the state’s people, and to protect, restore, and enhance the natural and human environments. DWR also works to prevent and respond to floods, droughts, and catastrophic events that would threaten public safety, water resources and management systems, the environment, and property.

# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR FLOOD HAZARD ZONES

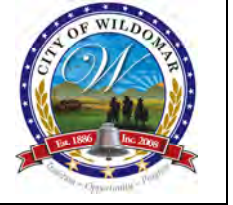


Source: FEMA 2020, ESRI, PlaceWorks

- |  |                              |                   |
|--|------------------------------|-------------------|
| City of Wildomar   | 100-Year Flood Zone          | Fire Station      |
| City Boundary  | 500-Year Flood Zone          | Transmission Line |
| Percent of Population whose income is below poverty level (2019) | Local Law Enforcement Office |                   |
| > 15% of Population  | Hospital                     |                   |

Figure 5-0

# SAFETY ELEMENT



Dam failure also poses a risk to the City of Wildomar. Dam break floods are usually associated with intense rainfall or prolonged flood conditions. A dam failure is an uncontrolled release of water from a reservoir through a dam as a result of structural failures or deficiencies in the dam. Dam failures can range from fairly minor to catastrophic and can potentially harm human life and property downstream from the failure. In addition, ecosystems and habitats are destroyed as a result of waters flooding them. Although dam failures are very rare, these events are not unprecedented. Additionally, the older that dams get, the more potential exists for catastrophic dam failures. There are four major causes of dam failures, which include the following:

- **Overtopping:** These failures occur as a result of poor spillway design, leading to a reservoir filling too high with water, especially in times of heavy rainfall. Other causes of this type of failure include settling of the crest of the dam or spillway blockage.
- **Foundation defects:** These failures occur as a result of settling in the foundation of the dam, instability of slopes surrounding the dam, uplift pressures, and seepage around the foundation. All of these failures result in structural instability and potential dam failure.
- **Piping and seepage failures:** These failures occur as a result of internal erosion caused by seepage and erosion along hydraulic structures such as the spillways. As well, erosion as a result of animal burrows and cracks in the dam structure contribute to these failures.
- **Conduit and valve failure:** These failures occur as a result of problems with valves and conduits.

Other dam failures arise as a result of other miscellaneous causes. Many dam failures are also the secondary result of other natural disasters, such as earthquakes, landslides, extreme storms, or heavy snow-melt. Other causes include equipment malfunction, structural damage, and sabotage.

In Wildomar, a major earthquake could cause a dam failure. Dams are constructed with safety features known as “spillways” that allow water to overtop the dam if the reservoir fills too quickly. Spillway overflow events, often referred to as “design failures,” result in increased discharges downstream and increased flooding potential. In a dam failure scenario, the greatest threat to life and property typically occurs in those areas immediately below the dam since flood depths and discharges generally decrease as the flood wave moves downstream. The primary danger associated with dam failure is the high-velocity flooding downstream of the dam and limited warning times for evacuation. The Diamond Valley Dam presents a downstream hazard to the City of Wildomar. Figure 6-0 identifies the areas at risk from dam failure. Dam failure risk extends from Mission Trail, in the northern portion of the city, to Grand Avenue, in the southern portion of the city. A majority of the area at risk is adjacent to Murrieta Creek. Dam failure presents a significant risk to vulnerable communities as

# SAFETY ELEMENT



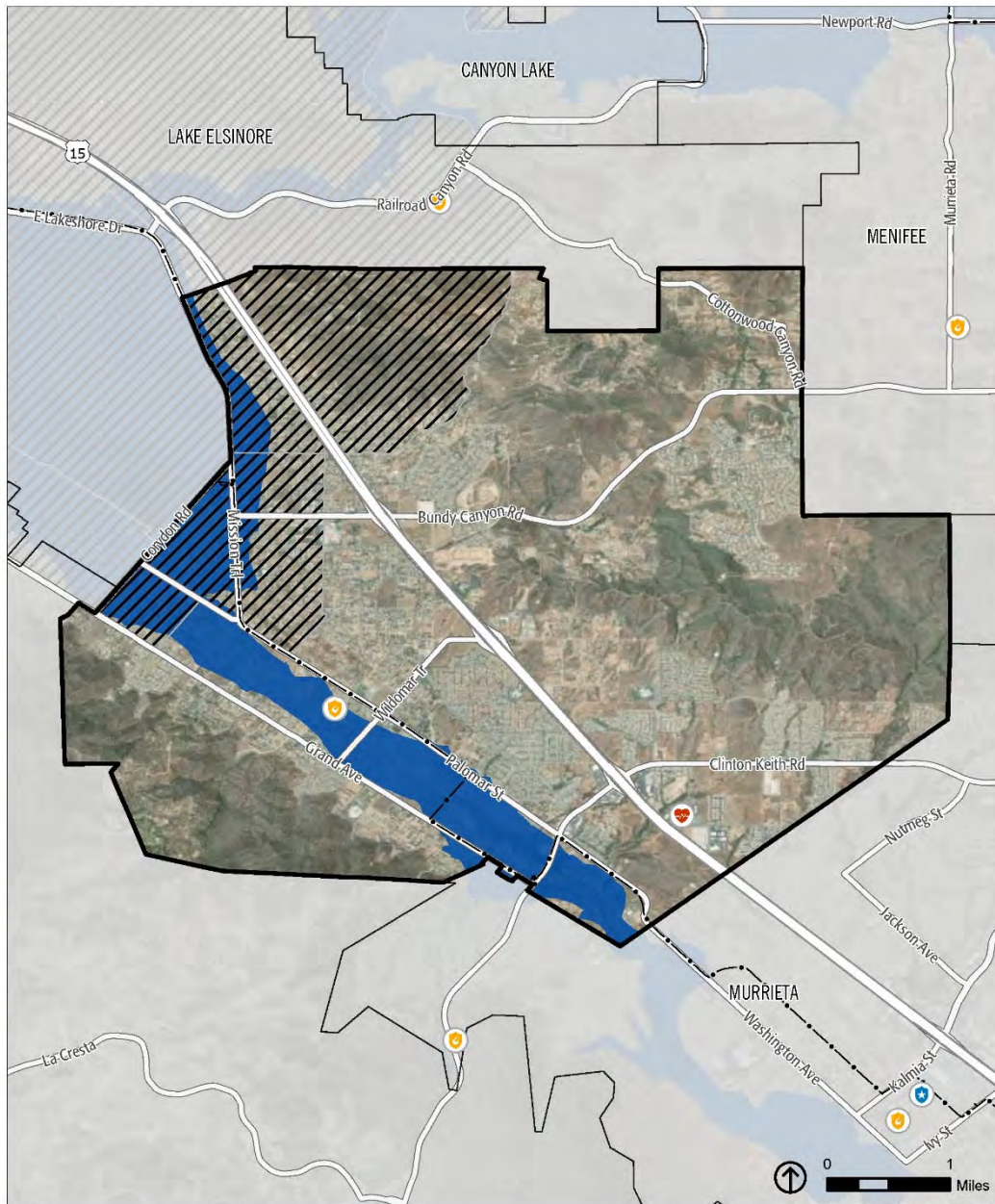
well. The highest threat for these communities occurs in the northwestern region of the city, along Corydon Road and Mission Trail. To the north of Lemon Street (Sedco Hills), dam failure presents a risk for populations living to the west of I-15.



# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR DAM INUNDATION



Source: OES 2017, ESRI, PlaceWorks

- City of Wildomar
- City Boundary
- Dam Inundation Area - Diamond Valley East Dam
- Local Law Enforcement Office
- Hospital
- Fire Station
- > 15% of Population
- Transmission Line

Figure 6-0

# SAFETY ELEMENT



## POTENTIAL CHANGES TO FLOOD RISK IN FUTURE YEARS

### Likelihood of Future Occurrence

Wildomar is traversed by Murrieta Creek and is at risk to both creek flooding and localized stormwater flooding. Historically, Riverside County and the City of Wildomar have been subject to previous flooding events primarily during the winter and spring months when river systems swell with heavy rainfall runoff. Normally, stormwater is kept within defined limits by a variety of storm drainage and flood-control measures. Occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage. Flooding has occurred both within the 100- and 500-year floodplains and in other localized areas. As land uses and climate conditions shift and as improvements are made to flood-control channels, the size of these flood zones is likely to change.

In the City of Wildomar, much of the flood damage occurs in the floodplains of Murrieta Creek. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

### Climate Change and Flooding

Floods are among the most damaging natural hazards in Riverside County, and climate change is expected to make flood events worse. Although climate change may not change average precipitation levels significantly, scientists expect that it will cause more years with extreme precipitation events. This means that more years are likely to see particularly intense storm systems that drop enough precipitation over a short enough period to cause flooding. Although Southern California is likely to experience a decrease in overall precipitation levels from climate change, the region is also expected to see an increase in the number of extreme precipitation events. A meteorological phenomenon known as the “atmospheric river,” a narrow stream of extremely moist air, is frequently responsible for the more intense storms that strike California. Atmospheric rivers generally deliver high levels of precipitation, up to 50 percent of the state’s total precipitation in any given year.

Because of this, floods are expected to occur more often in Wildomar and climate change may expand the parts of the city that are considered flood-prone. Although there are no specific flooding projections for the city, flood events are expected to become more frequent, and it is possible that the areas subject to flooding will expand.

There are some indirect effects of climate change that may also increase flooding in the city. Climate change is expected to increase the frequency and severity of droughts that cause soil to dry out and become hard. When precipitation does return, more water runs off the surface than is absorbed into the ground, which can lead to

# SAFETY ELEMENT



floods. Wildfires, which are also expected to become more frequent due to climate change, cause a similar effect by baking the surface of the ground into a harder and less-penetrable layer. Trees and other vegetation help slow water down, which lets the water absorb into the soil and prevents it from turning into runoff. Because of this, the loss of trees and other plants from wildfires, or other climate-related exposures can also increase flooding risk.

While the risk and associated short- and long-term impacts of climate change are uncertain, experts in this field tend to agree that among the most significant impacts include those resulting from increased heat and precipitation events that cause increased frequency and magnitude of flooding. Increases in damaging flood events will cause greater property damage, public health and safety concerns, displacement, and loss of life. Displacement of residents can include both temporary and long-term displacement, increase in insurance rates, or restriction of insurance coverage in vulnerable areas.

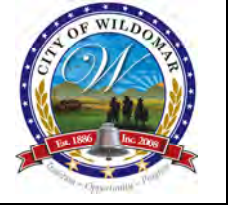
**GOAL S-3: To avoid the risk of loss of life and injury, and minimize the risk of damage to property, and economic and social dislocations resulting from flooding and inundation hazards.**

## **Flood and Inundation Hazard Abatement**

**POLICY S-19** For new construction and proposals for substantial improvements to residential and nonresidential development within 100-year floodplains as mapped by the Federal Emergency Management Agency (FEMA) or as determined by site-specific hydrologic studies for areas not mapped by FEMA, Wildomar shall apply a minimum level of acceptable risk and disapprove projects that cannot mitigate the hazard to the satisfaction of the Building Official or other responsible agency.

**POLICY S-20** All residential, commercial, and industrial structures shall be flood-proofed from the mapped 100-year storm flow, or to an appropriate level determined by site-specific hydrologic studies for areas mapped by the Federal Emergency Management Agency. This may require that the finished floor elevation be constructed at such a height as to meet this requirement. Nonresidential (commercial or industrial) structures may be allowed with a “flood-proofed” finished floor below the Base Flood Elevation (i.e., 100-year flood surface) to the extent permitted by state, federal, and local regulations. New critical facilities shall be constructed above-grade to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies. To the

# SAFETY ELEMENT



extent that residential, commercial, or industrial structures cannot meet these standards, they shall not be approved.

**POLICY S-21**      **Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or alternative methods are used to the maximum extent practicable. The intent is to balance floodway protection with prudent land use solutions, recreational needs, and habitat requirements, and as applicable to provide incentives for natural watercourse preservation.**

- (1) Prohibit the construction, location, or substantial improvement of structures in areas designated as floodways, except upon approval of a plan that provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.
- (2) Prohibit the filling or grading of land for nonagricultural purposes and for non-authorized flood-control purposes in areas designated as floodways, except upon approval of a plan that provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.

**POLICY S-22**      **Prohibit substantial modification to watercourses, unless the modification does not adversely affect adjacent wetlands or riparian habitat or become detrimental to adjacent property as a result of increased erosion, sedimentation, or water velocity. Modifications to watercourses shall be done in the least environmentally damaging manner practicable and shall restore natural conditions to the greatest extent possible, to maintain adequate wildlife corridors and linkages and maximize groundwater recharge.**

**POLICY S-23**      **Development within the floodway fringe shall only be allowed if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety. Such developments shall be required to be capable of withstanding flooding and minimize the use of fill. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects, or concentrations of flows.**



# SAFETY ELEMENT



- POLICY S-24**      **Require all projects in Wildomar to address and mitigate adverse impacts to the carrying capacity of local and regional storm drain systems.**
- POLICY S-25**      **Collaborate with neighboring jurisdictions to mitigate the impacts of new development in the City of Wildomar that could increase runoff onto parcels downstream in a neighboring jurisdiction and encourage neighboring jurisdictions to require development occurring adjacent to the city to consider the impact of flooding and flood-control measures on properties within Wildomar.**
- POLICY S-26**      **Ensure that new development and infrastructure projects do not create or exacerbate flood risks elsewhere in Wildomar or in neighboring communities.**
- POLICY S-27**      **Update stormwater infrastructure design requirements as needed to maintain consistency with federal, state, and local regulatory requirements, prioritizing vulnerable communities.**
- POLICY S-28**      **Ensure that new development projects and retrofits to existing large-scale projects incorporate design strategies and features to reduce the area of impervious surfaces and flood risks with natural drainage, as well as groundwater replenishment.**
- POLICY S-29**      **Identify areas of poor drainage and install new or upgrade existing drainage systems to accommodate drainage needs. Use natural infrastructure to the extent possible.**

## **High-Risk Facilities**

- POLICY S-30**      **Projects, including public facilities and other facilities essential for emergencies and large public assembly, within the area mapped as the City Regulatory Floodplain by the Federal Emergency Management Agency, shall not be approved unless the project is adequately protected from flood hazards, incorporates all required flood protection specific to that area in accordance with City ordinances and guidelines, and will not result in any increase in flood levels during the occurrence of a flood event. Such facilities shall have at least two routes for emergency egress and ingress, and the project design shall minimize the potential for debris or flooding to block emergency routes, either through the construction of dikes, bridges, or large-diameter storm drains under roads used for primary access.**

# SAFETY ELEMENT

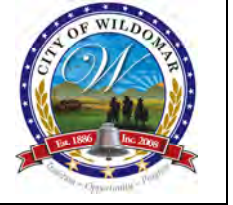


- POLICY S-31** Existing essential, dependent-care, and high-risk facilities not in conformance with provisions of the City of Wildomar zoning shall be required to upgrade or modify building use to a level of safety consistent with the inundation risk.
- POLICY S-32** Development using, storing, or otherwise involved with substantial quantities of on-site hazardous materials shall not be permitted within a 100-year floodplain or dam inundation zone, unless all standards for evaluation, anchoring, and flood-proofing have been satisfied. Hazardous materials shall be stored in watertight containers, not capable of floating, to the extent required by state and federal laws and regulations. Facilities storing substantial quantities of hazardous materials within inundation zones shall be adequately flood-proofed and hazardous materials containers shall be anchored and secured to prevent flotation and contamination.
- POLICY S-33** Dependent-care facilities shall be required to have all flood-vulnerable electrical circuitry flood-proofed.
- POLICY S-34** High-risk facilities, such as essential public and quasi-public facilities and hazardous materials sites, shall be required to maintain and rehearse inundation response plans.
- POLICY S-35** Use power of public land acquisition and other land use measures to create open space zoning of inundation zones in non-developed areas subject to flooding, as mapped by the Federal Emergency Management Agency. In areas that are destined for redevelopment and subject to flooding, low-density land uses should be encouraged and developers shall be required to meet Wildomar’s minimum level of acceptable risk and incorporate mitigation measures, where feasible.

## **Risk Assessment**

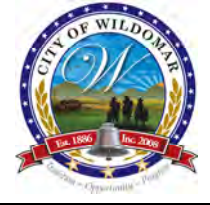
- POLICY S-36** Continue to assess the flood risk within Wildomar and upgrade facilities and infrastructure at risk, prioritizing vulnerable communities.

# SAFETY ELEMENT



- POLICY S-37** Designs and upgrades of street storm drains shall be based on the depth of inundation, relative risk to public health and safety, the potential for hindrance of emergency access and regress from excessive flood depth, and the threat of contamination of the storm drain system with sewage effluent. In general, the 10-year flood flows shall be contained within the top of curbs and the 100-year flood flows within the street right-of-way.
- POLICY S-38** During updates to the Safety Element, the Local Hazard Mitigation Plan, or at other times as appropriate, review the 500-year, 100-year, and 10-year flood hazard in the city by state, federal, county, and other standards, and use such sources to improve existing protection, review protection standards proposed for new development and redevelopment, update emergency response plans, and evaluate how low-income areas may be disproportionately affected.
- POLICY S-39** Promote flood-control measures that maintain natural conditions within Wildomar’s regulatory floodplain of rivers and streams.
- POLICY S-40** Encourage the use of Specific Plans to allow increased densities in certain areas of a proposed development or apply Transfer of Development Credits to encourage the placement of appropriate land uses in natural hazard areas, including open space, passive recreational uses, or other development capable of better adapting to these hazards.
- POLICY S-41** Take an active role in acquiring property in high-risk flood zones and designating the land as open space for public use or wildlife habitat.
- POLICY S-42** Coordinate with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, the Resource Conservation District, the Federal Emergency Management Agency, the California Department of Water Resources, and the Riverside County Flood Control and Water Conservation District, in defining existing and potential flood problem areas.
- POLICY S-43** Continue to assess the dam inundation risk within Wildomar and upgrade facilities and infrastructure at risk.

# SAFETY ELEMENT



## **FIRE HAZARDS**

Fire hazards include both wildfires and urban fires. California is recognized as one of the most fire-prone and consequently fire-adapted landscapes in the world. The combination of complex terrain, Mediterranean climate, and productive natural plant communities, along with ample natural ignition sources, has created conditions for extensive wildfires. Wildfire is an ongoing concern for the City of Wildomar. Generally, the fire season extends from early spring through late fall of each year during the hotter, dryer months. Fire conditions arise from a combination of high temperatures, low-moisture content in the air and plant matter, an accumulation of vegetation, and high winds. Three types of fires are of concern to Wildomar: (1) wildfires, (2) wildland-urban interface fires, and (3) structural fires.

## **WILDFIRES**

Wildfires occur on mountains, hillsides, and grasslands. Vegetation, wind, temperature, humidity, and slope are all factors that affect how these fires spread. In Wildomar, native vegetation, such as chaparral, sage, and grassland provide fuel that allows fire to spread easily across large tracts of land. These plant species are capable of regeneration after a fire, making periodic wildfires a natural part of the ecology of these areas. Portions of the city are undeveloped and consist of rugged topography with highly flammable vegetation. In particular, the hillside terrain in the southwestern region near the Elsinore Mountains, as well as the hillside terrain east of I-15, have a substantial fire risk. Undeveloped hillside areas in and adjacent to the city present a serious hazard because of the potential for large-scale wildland fires. Fire potential for Riverside County is typically greatest in the months of August, September, and October, when dry vegetation coexists with hot, dry Santa Ana winds. However, in Wildomar, fires with conflagration potential can occur at any time of the year. Seasonal drought conditions exacerbate fire hazards.

## **WILDLAND-URBAN INTERFACE FIRES**

The wildland-urban interface is an area where buildings and infrastructure (e.g., cell towers, schools, water supply facilities) mix with areas of flammable wildland vegetation. This interface is sometimes divided into the defense zone (areas in close proximity to communities, usually about a quarter-mile-thick) and threat zones (an approximately one-and-a-quarter-mile buffer around the defense zone). Hundreds of homes now border major forests and brush areas. With thousands of people living near and visiting wildland areas, the probability of human-caused fires is growing. Wildfires and urban interface fires have occurred close to or encroached into the city, especially in large areas of grassland, scrub, and chapparal. The most recent fire was the 2019 Tenaja Fire, located south of Wildomar in the rural community of La Cresta. The fire burned approximately 1,926 acres

# SAFETY ELEMENT



and damaged three structures but did not encroach into the city. Other notable fires that occurred within Wildomar are listed in Table S-2.

In the wildland-urban interface, efforts to prevent ignitions and limit wildfire losses hinge on hardening structures and creating defensible space through a multi-faceted approach, which includes engineering, enforcement, education, emergency response, and economic incentive. Different strategies in the defense and threat zones of the wildland-urban interface help to limit the spread of fire and reduce the risk to people and property.

Wildfire threat within California is described by Wildfire Hazard Severity Zones, which designate hazardous areas within State Responsibility Areas (SRAs) as moderate, high, or very high. However, incorporated areas such as Wildomar are considered Local Responsibility Areas (LRAs) and only designate very high fire hazard severity zones. Significant portions of the city are located within a very high fire hazard severity zone. Figure 7-0 shows the wildfire risk zones in and around Wildomar and Figure 8-0 identifies the wildland-urban interface. The highest threat occurs along the eastern side of I-15, as well as the western side of Grand Avenue, on land that is on and adjacent to hillsides with large areas of dry grass and chapparal. Areas adjacent to the city that are susceptible to wildfires are also of concern as these conditions could exacerbate vulnerabilities within the city. As illustrated in Figure 7-0, the highest threat for vulnerable communities occurs in the northern region of the city, north of Lemon Street and east of I-15. These communities are entirely within a very high fire hazard severity zone.

## STRUCTURAL FIRES

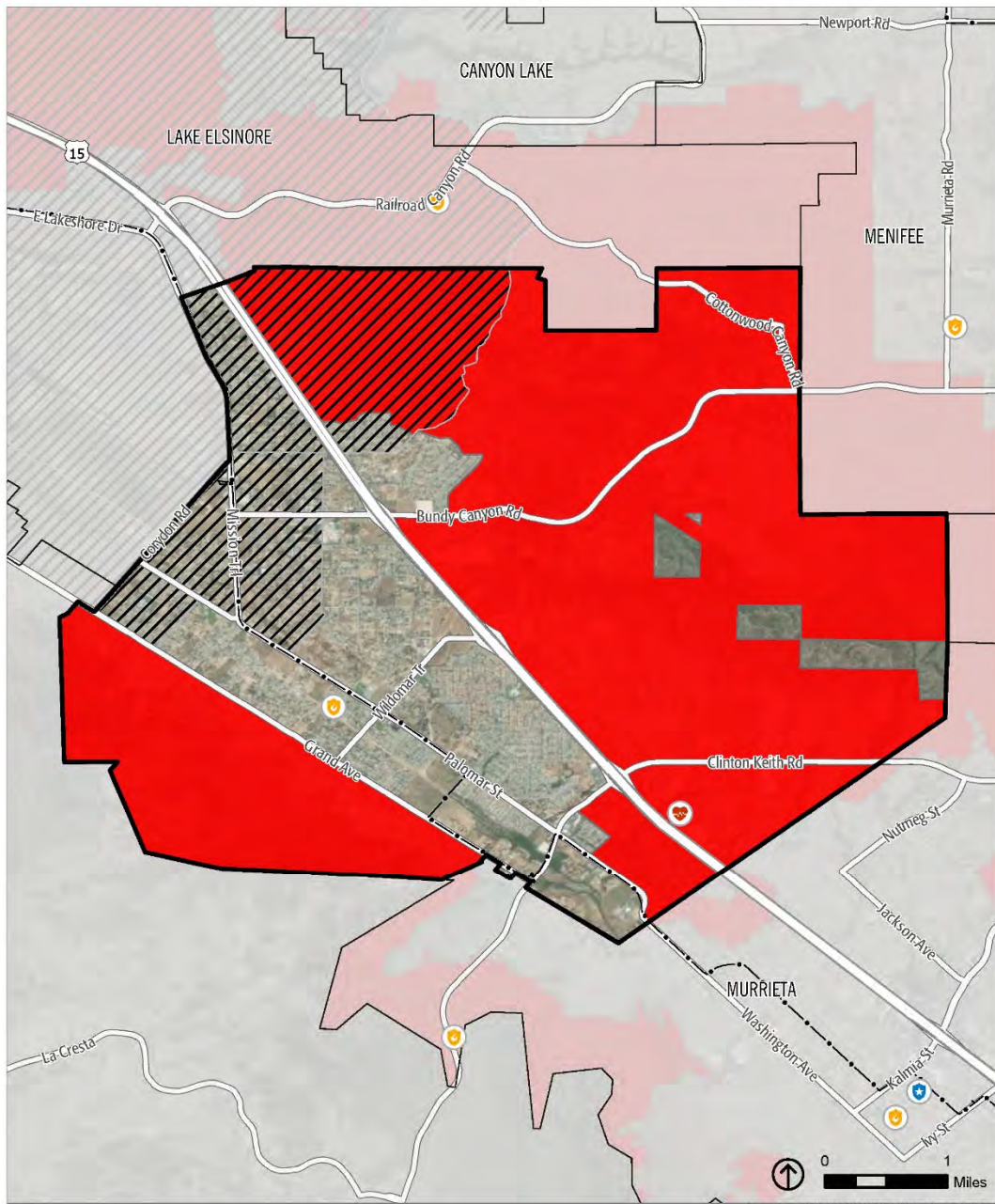
Urban fires occur in built-up environments, destroying buildings and other human-made structures. These disasters are often due to faulty wiring or mechanical equipment, combustible construction materials, or the absence of fire alarms and fire sprinkler systems. Structural fires are largely from human accidents, although deliberate fires (arson) may be a cause of some events. Older buildings that lack modern fire safety features may face greater risk of damage from fires. To minimize fire damage and loss, the City's Fire and Building Codes, based on the California Fire and Building Codes, sets standards for building and construction. It requires the provision of adequate water supply for firefighting, fire-retardant construction, and minimum street widths, among other things. Fire prevention awareness programs and fire drills are conducted to train residents to respond quickly and correctly to reduce injury and losses during fires.



# SAFETY ELEMENT



SAFETY ELEMENT  
CITY OF WILDOMAR  
**FIRE HAZARD SEVERITY ZONES**



Source: CalFIRE 2010, ESRI, PlaceWorks

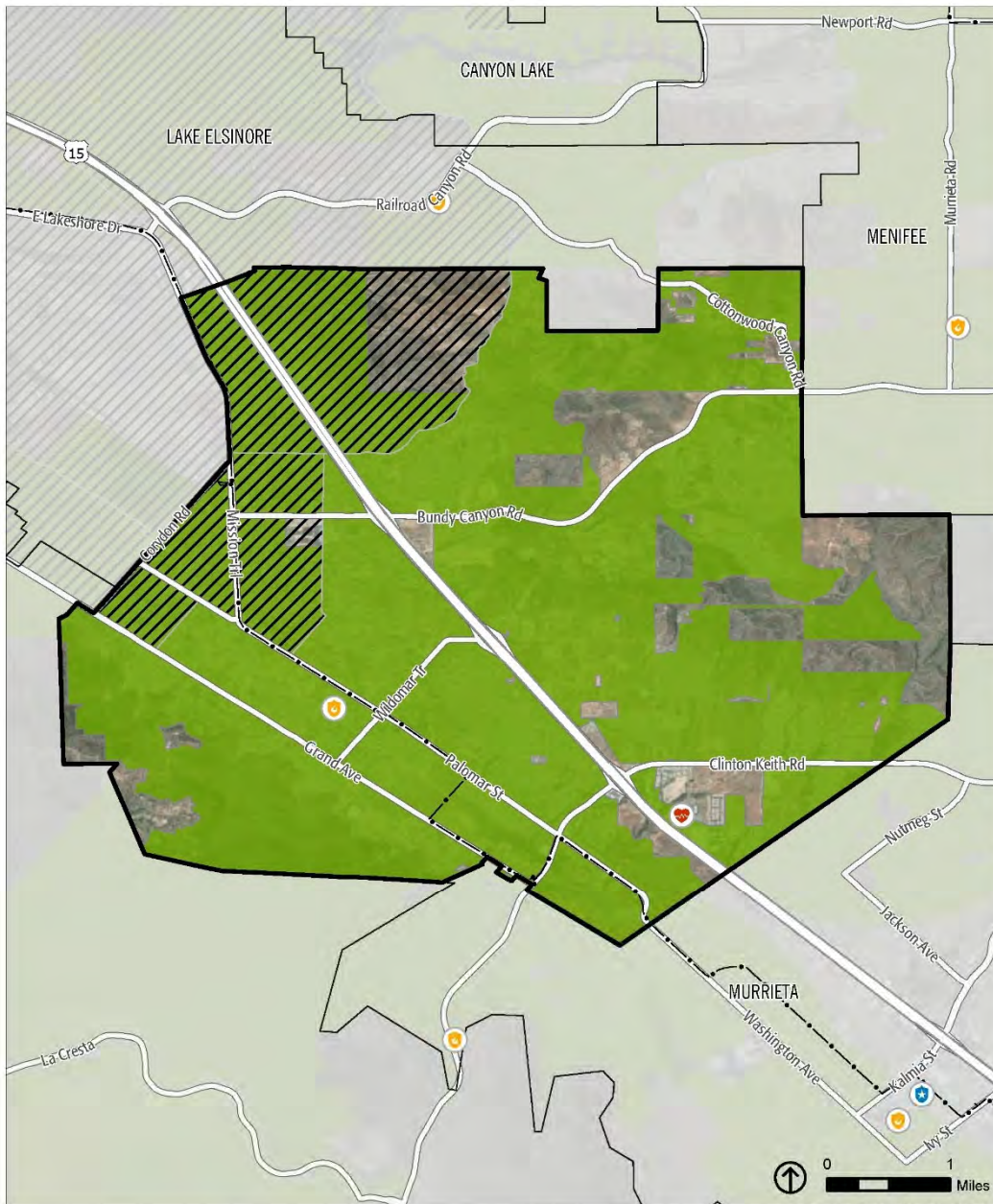
- |                  |  |                                     |                              |                   |
|------------------|--|-------------------------------------|------------------------------|-------------------|
| City of Wildomar | Percent of Population whose income is below poverty level (2019) | Local Responsibility Area           | Local Law Enforcement Office | Fire Station      |
| City Boundary    | > 15% of Population  | Very High Fire Hazard Severity Zone | Hospital                     | Transmission Line |

Figure 7-0

# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR WILDLAND/URBAN INTERFACE



Source: ESRI, PlaceWorks 2021



Figure 8-0



# SAFETY ELEMENT



## PAST OCCURRENCES

Table S-2 contains a list of fires that have occurred in the city dating back to 1950. Figure 9-0 shows the areas burned by historical wildfires in and around Wildomar.

**TABLE S-2: FIRES IN WILDOMAR, 1950-2019**

Fire Name	Date		Acres Burned	Vegetation Type	Cause	Structures	
	Start	End				Destroyed	Damaged
Morrell Fire	8/4/1950	N/A	5,118	Grass/Brush	Undetermined	N/A	N/A
Gilbert Fire	7/26/1955	N/A	486	Grass/Brush	Undetermined	N/A	N/A
Sandia Fire	9/11/1956	N/A	2,053	Grass/Brush	Undetermined	N/A	N/A
Pederson Fire	6/16/1957	N/A	1,979	Brush	Undetermined	N/A	N/A
Howell Fire	5/15/1959	N/A	369	Grass/Brush	Undetermined	N/A	N/A
Lemon Fire	8/22/1978	N/A	2,943	Grass/Brush	Undetermined	N/A	N/A
Wildomar Fire	6/14/1979	6/15/1979	101	Grass/Brush	Undetermined	N/A	N/A
Turner Fire	11/15/1980	N/A	31,447	Grass/Brush	Undetermined	N/A	N/A
Cottonwood Fire	6/14/1981	N/A	1,279	Grass/Brush	Undetermined	N/A	N/A
1981 Fire	6/14/1981	N/A	9,182	Grass/Brush	Arson	N/A	N/A
Rail Fire	9/2/1982	N/A	476	Grass/Brush	Undetermined	N/A	N/A
1987 State Fire	10/2/1987	N/A	3,276	Grass/Brush	Equipment Use	N/A	N/A
1999 State Fire	3/13/1999	N/A	127	Grass/Brush	Undetermined	N/A	N/A
Gafford Fire	5/1/2004	5/2/04	406	Brush	Undetermined	2	0
Lakeview Fire	7/12/2004	7/12/04	361	Grass/Brush	Undetermined	0	0
Wright Fire	10/5/2007	10/5/07	31	Grass/Brush	Undetermined	0	0
Rock Fire	8/18/2010	8/19/10	39	Brush	Human	0	0

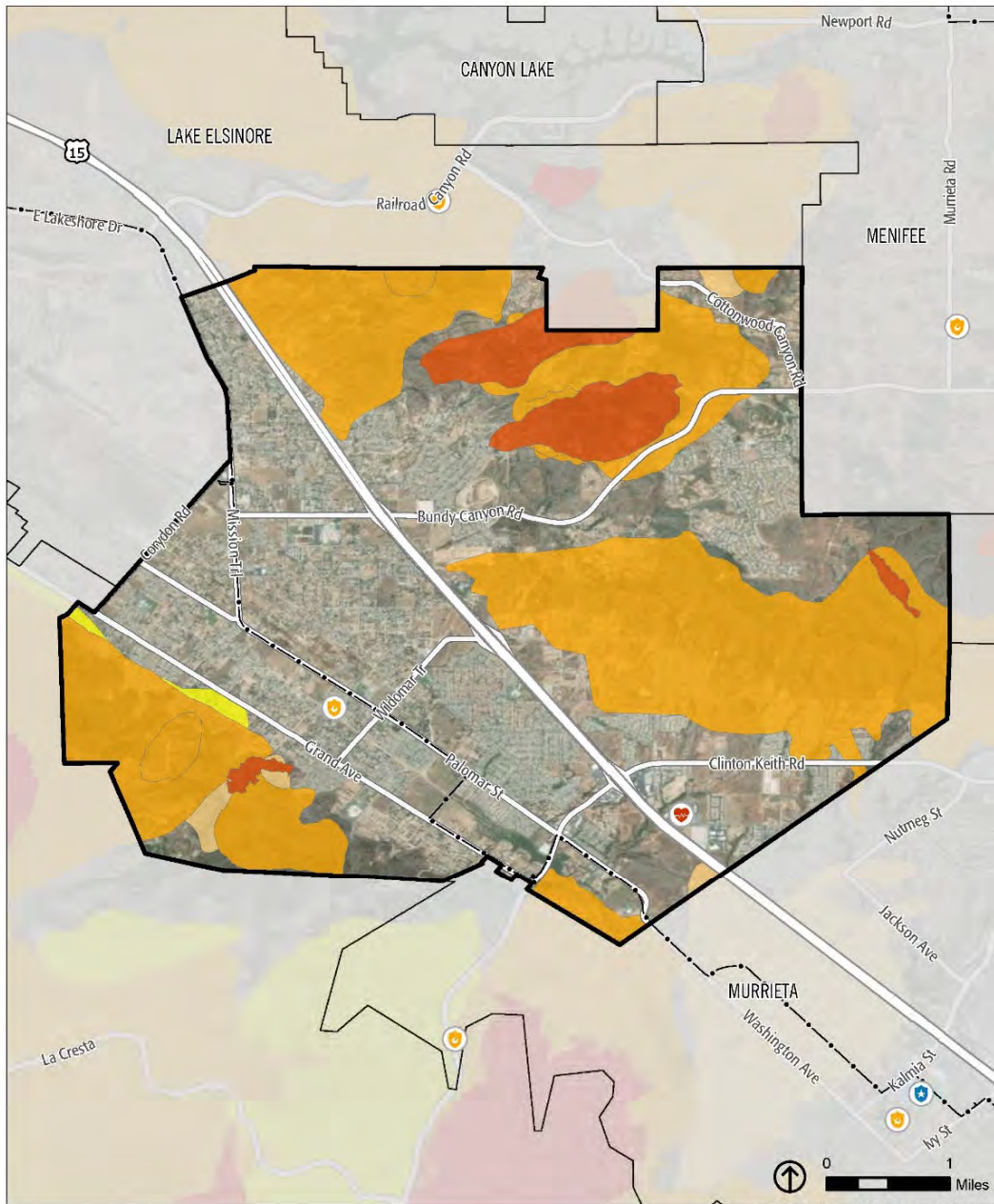
Sources: California Fire Perimeters 1878 – 2019: Fire and Resource Assessment Program; Hartford Courant, 2004



# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR HISTORICAL WILDFIRE PERIMETERS

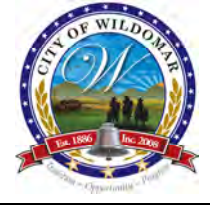


Source: CalFire 2020, ESRI, PlaceWorks



Figure 9-0

# SAFETY ELEMENT



## **FIRE PROTECTION**

Fire protection in Wildomar is provided by the Riverside County Fire Department and the California Department of Forestry and Fire Protection (CAL FIRE). The City has a partnership with the Riverside County Fire Department and CAL FIRE to provide fire suppression, emergency medical, technical rescue, fire prevention, and related services to the city. The Riverside County Fire Department and CAL FIRE participate in a Cooperative Fire Response Agreement, where fire agencies have agreed to automatically support each other on incidents using the closest available resource.

The Riverside County Fire Department is one of the largest regional fire service organizations in California. It is staffed with a combination of County of Riverside and CAL FIRE personnel and responds to both urban and wildland emergencies. The Riverside County Fire Department serves a vast geographic area and diverse communities. Wildomar Fire Station 61 is located at 32637 Gruwell Street in the City of Wildomar.

## **POTENTIAL CHANGES TO FIRE RISK IN FUTURE YEARS**

### **Likelihood of Future Occurrence**

Wildomar is at a high risk from wildfire, especially in the areas of grassland and chaparral along hillsides. High fuel loads in the city, 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 historic fire season, August to October, the dry vegetation combined with continued growth in the wildland-urban interface areas, resulted in wildfire ignitions. Any fire, once ignited, has the potential to quickly become a large, out-of-control fire. As development continues throughout the city, especially in these interface areas, the risk and vulnerability to wildfires will likely increase.

Fire hazard is among the highest-priority hazards in the city and is the hazard with the greatest potential for catastrophic loss. Wildfires can cause short-term and long-term disruption to the City, such as devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the city by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water storage capacity, and degrading water quality. Fires may also result in casualties and can destroy buildings and infrastructure.

# SAFETY ELEMENT



Although the physical damages and casualties arising from wildland-urban interface fires may be severe, it is important to recognize that they also cause significant economic impacts by resulting in a loss of function of buildings and infrastructure. In some cases, the economic impact of this loss of services may be comparable to the economic impact of physical damages or, in some cases, even greater. Economic impacts of loss of transportation and utility services may include traffic delays/detours from road and bridge closures and loss of electric power, potable water, and wastewater services. Fires can also cause major damage to power plants and power lines needed to distribute electricity to operate facilities. The effects can be far-reaching in terms of the number of acres involved, the toll on human life, and the economic consequences. Fire will continue to be a high-risk hazard for the City of Wildomar.

## **Climate Change and Wildfire**

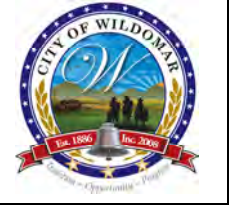
Changing climate conditions are expected to increase the wildfire risk in and around Wildomar. Warmer temperatures brought on by climate change can exacerbate drought conditions. Droughts can kill or dry out plants, creating more fuel for wildfires. Warmer temperatures are also expected to increase the number of pest outbreaks, such as the shot hole borer, creating more dead trees and increasing the fuel load. Warmer temperatures are also expected to occur later in the year, extending the wildfire season, which is likely to begin earlier in the year and extend later than it has historically. Wildfire occurring later or earlier in the year are more likely to occur during Santa Ana wind events, which can cause wildfires to move more quickly and increase the likelihood to burning in the wildland-urban interface areas. According to the California Fourth Climate Change Assessment, overall burned area may increase by as much as 60 percent during Santa Ana wind events (typically October to March), and 75 percent during periods without Santa Ana winds (typically April to September).

**GOAL S-4: To avoid the risk of loss of life and injury and minimize risk of property damage, community disruption, and economic loss resulting from urban and wildland fires.**

## **Building Code and Performance Standards**

**POLICY S-44 All proposed development and construction within Fire Hazard Severity Zones shall be reviewed by the Riverside County Fire Department and Wildomar Building and Safety Department for consistency with the following requirements before the issuance of any building permits:**

# SAFETY ELEMENT



- (1) All proposed development and construction shall meet minimum state, county, and local standards for fire safety, as defined in the City of Wildomar Building or Fire Codes, or by City zoning, or as dictated by the Building Official or the Transportation Land Management Agency based on building type, design, occupancy, and use.
- (2) In addition to the standards and guidelines of the California Building Code, California Fire Code, the Wildomar Municipal Code, and other appropriate fire safety provisions, developments shall incorporate additional standards for high-risk, high-occupancy, and dependent facilities where appropriate under the City of Wildomar Fire Code. These shall include assurance that structural and nonstructural architectural elements of the building will not impede emergency egress for fire safety staffing/personnel, equipment, and apparatus; nor hinder evacuation from fire, including potential blockage of stairways or fire doors.
- (3) Proposed development and construction in Very Fire Hazard Severity Zones shall provide secondary public access, in accordance with City of Wildomar ordinances. There shall be multiple points of ingress and egress that allow for emergency response vehicle access. Points of access shall also include visible street signs and sufficient water supplies and infrastructure for structural fire suppression.
- (4) Proposed development and construction in Very Fire Hazard Severity Zones shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the Riverside County Fire Chief.
- (5) Proposed development and construction in Very Fire Hazard Severity Zones shall provide a fire protection plan that includes defensible space or fuel modification zones to be located, designed, constructed, and maintained to provide adequate defensibility from wildfires.
- (6) Prior to the approval of all parcel maps and tentative maps, the City shall require as a condition of approval, the developer meet or exceed the California Fire and Building code including Title 14 Regulations, particularly those regarding road standards for ingress, egress, and fire equipment access (see California Government Code, Section 66474.02.).

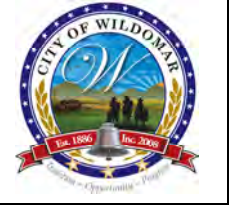
# SAFETY ELEMENT



- POLICY S-45** Monitor fire-prevention measures (e.g., fuel reduction) required through a site-specific fire-prevention plan to reduce long-term fire risks in Very High Fire Hazard Severity Zones.
- POLICY S-46** For existing non-conforming development, the City shall work with property owners to improve or mitigate access, water supply and fire flow, signing, and vegetation clearance to meet current State and/or locally adopted fire safety standards.
- POLICY S-47** Require proposed development in Very High Fire Hazard Severity Zones to be located where fire and emergency services are available or will be constructed as part of the proposed development activities. These services shall meet the minimum travel times identified in Riverside County Fire Department Fire Protection and Emergency Management Services’ Strategic Master Plan.
- POLICY S-48** The City shall require all new development projects with land classified as state responsibility areas (Public Resources Code Section 4102), land classified as very high fire hazard severity zones (VHFHSZs; Section 51177), or within areas defined as a “wildland urban interface” (WUI), to prepare a long-term comprehensive fuel reduction and management program, including provisions for multiple points of ingress and egress to improve evacuation and emergency response access and adequate water infrastructure for water supply and fire flow, and fire equipment access.
- POLICY S-49** Require that conceptual landscaping plans for development in Very Fire Hazard Severity Zones identified by CAL FIRE and shown in Figure 7-0 be reviewed by Planning and Fire Departments prior to the issuance of development permits. The conceptual landscaping plan of the proposed development shall, at a minimum, include:
- (1) Site plan, planting plan, planting palette, and irrigation plan to reduce the risk of fire hazards with consideration to site conditions, including slope, structures, and adjacencies.
  - (2) Defensible space maintenance plan.



# SAFETY ELEMENT



- (3) Provision of multiple points of ingress and egress to improve evacuation and emergency response access and adequate water infrastructure for water supply and fire flow, and fire equipment access.

**POLICY S-50**      **Site design for development in Very Fire Hazard Severity Zones shall be required to account for topographical conditions and reduce the increased risk for sites located near ridgelines, plateau escarpments, saddles, hillsides, peaks, or other areas where the terrain or topography affect its susceptibility to wildfires by:**

- (1) Providing fuel modification zones with removal of combustible vegetation while minimizing visual impacts and limiting soil erosion.
- (2) Replacing combustible vegetation with fire-resistant vegetation to stabilize slopes.
- (3) Submitting topographic map with site-specific slope analysis.
- (4) Submitting erosion and sedimentation control plans.
- (5) Providing a minimum 30-foot setback from the edge of the fuel modification zones.
- (6) Minimizing disturbance of 25 percent or greater natural slopes.

**POLICY S-51**      **Locate new critical public facilities outside of Fire Hazard Severity Zones. Critical facilities include emergency shelters, emergency command and communication facilities, and hospital and healthcare centers. If no feasible alternative site exists, ensure that these facilities incorporate all necessary protections to allow them to continue to serve community needs during and after disaster events.**

**POLICY S-52**      **Site all new non-critical public facilities in areas outside of identified fire hazard severity zones and wildland-urban interface or fire threat areas, as feasible.**

## **Wind-Related Hazards**

**POLICY S-53**      **Use ongoing brush clearance fire inspections to educate homeowners and residents on fire prevention tips by implementing an annual citywide weed abatement program, especially in vulnerable communities.**

# SAFETY ELEMENT



**POLICY S-54**      **Coordinate with the County of Riverside Fire Department and CAL FIRE to develop high-visibility fire prevention programs, including those offering voluntary home inspections and promoting awareness of home fire prevention measures.**

## **General and Long-Range**

**POLICY S-55**      **Conduct and implement long-range fire safety planning, including stringent building, fire, subdivision, and municipal code standards, improved infrastructure, evacuation plans, and improved mutual-aid agreements with the private and public sector.**

**POLICY S-56**      **Continue to work cooperatively with CAL FIRE to maintain existing fuel breaks and emergency access routes for effective fire suppression, and to strengthen fire-fighting capabilities and successfully respond to multiple fires.**

**POLICY S-57**      **The City shall identify existing multifamily housing, emergency shelters, residential care homes (seven or more clients) located within an area classified as an SRA (Public Resources Code Section 4102) or land classified as VHFHSZ (Section 51177) with inadequate access/evacuation routes, and implement an evacuation plan consisting of evacuation routes and or shelter-in-place plans.**

**POLICY S-58**      **Maintain inter-jurisdictional cooperation and coordination, including automatic aid agreements with fire protection/suppression agencies in Riverside County.**

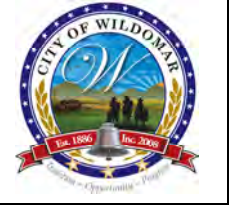
**POLICY S-59**      **Develop a program to use existing nearby reservoirs, such as Railroad Canyon, tanks, and water wells in the city for emergency fire suppression water sources.**

**POLICY S-60**      **When updating the Safety Element, the Local Hazard Mitigation Plan, or at other times as appropriate, review inter-jurisdictional fire response agreements, and improve firefighting resources as recommended in the Riverside County Fire Department Fire Protection Plan and Emergency Medical Services (EMS) Strategic Master Plan to keep pace with development, to ensure that:**

- Fire reporting and response times do not exceed the goals listed in the Riverside County Fire Department Fire Protection Plan and EMS Strategic Master Plan identified for each of the development densities described.



# SAFETY ELEMENT



- Fire-flow requirements (e.g., water for fire protection) are consistent with City of Wildomar Fire Code.
- The planned deployment and height of aerial ladders and other specialized equipment and apparatus are sufficient for the intensity of development desired.

**POLICY S-61** Continue to use the Riverside County Fire Department Fire Protection Plan and Emergency Medical Services (EMS) Strategic Master Plan as the foundational document to implement the Safety Element’s goals and objectives.

**POLICY S-62** Encourage property owners to use clustering and Transfer of Development Rights (TDR) program when developing lands within Fire Hazard Severity Zones by:

- Restricting the development of a property through placement of conservation easement.
- Acquiring conservation easements similar to that of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

**POLICY S-63** Identify, map, and update Fire Hazard Severity Zone maps on an ongoing and as-needed basis.

**POLICY S-64** Coordinate with the Riverside County Fire Department to ensure that the Department has appropriate municipal staffing and Office of the Fire Marshal staff to address development pressure and adequately respond to long-range fire safety planning.

**POLICY S-65** Implement a coordination program with fire protection and emergency service providers to reassess fire hazards after wildfire events and adjust fire prevention and suppression needs.

**POLICY S-66** The City shall develop policies and provide updates, as appropriate, that ensure recovery and redevelopment after a large fire reduces future vulnerabilities to fire hazard risks through site preparation, redevelopment layout design, fire-resistant landscape planning, and fire retarding building design and materials.

# SAFETY ELEMENT



**POLICY S-67**      **Coordinate with the Riverside County Fire Department to implement a long-term fire protection training and education program for the City of Wildomar and its citizens.**

**POLICY S-68**      **Require automatic natural gas shutoff earthquake sensors in high-occupancy industrial and commercial facilities and encourage these sensors for all residences.**

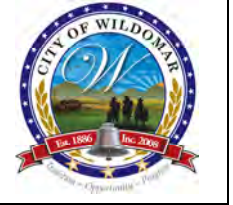
## **AIR POLLUTION**

Healthy air quality can be defined as the degree to which ambient air is pollution free. Although air pollution has been regulated for decades, California still has some of the worst air in the country. Air pollution can cause many serious health effects. For example, inhaling small particles called particulate matter can lead to asthma attacks and heart and lung disease with smaller particles capable of traveling farther into the lungs.

The specific pollutants of concern in Wildomar include diesel particulate, ozone, and PM<sub>2.5</sub>. Diesel particulate is considered a toxic air contaminant (TAC). TACs are air pollutants that can cause serious health effects from exposure at extremely low levels – a safe level of exposure may not even exist. Diesel particulate is a particulate matter from diesel-fueled engines. Ozone and PM<sub>2.5</sub> are two of six criteria air pollutants that harm health and the environment for which the US Environmental Protection Agency (EPA) and California set acceptable concentration levels for ambient air. Criteria and toxic air pollutants can cause some of the most severe health impacts.

- People exposed to diesel particulate at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. Health effects can include damage to the immune system as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs. Long-term (chronic) inhalation of diesel particulate matter is likely a lung cancer risk. Short-term (i.e., acute) exposure can cause irritation and inflammatory responses and may exacerbate existing allergies and asthma.
- Ozone is a key ingredient of “smog” and is a gas that is formed when volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>), both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. Ozone is a secondary criteria air pollutant. Ozone concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. Ozone poses a health threat to those who

# SAFETY ELEMENT



already suffer from respiratory diseases as well as to healthy people. Breathing ozone can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. Ozone also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas.

- PM<sub>2.5</sub> is a suspended particulate matter that consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Inhalable fine particles, or PM<sub>2.5</sub>, have an aerodynamic diameter of 2.5 microns or less (i.e.,  $\leq 2.5$  millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. PM<sub>2.5</sub> may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that PM<sub>2.5</sub>, which penetrates deeply into the lungs, is more likely than PM<sub>10</sub> to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms. Particulate matter can also cause environmental effects, such as visibility impairment, environmental damage, and aesthetic damage.

Vulnerable communities in Wildomar face compounded health risk from exposure to elevated concentration levels of diesel particulate, ozone, and PM<sub>2.5</sub>. These communities are exposed to multiple health risks from pollutants such as these, while concurrently living in unhealthy housing conditions and/or experiencing poverty and other socioeconomic stressors that are associated with negative health outcomes. Although these conditions can occur anywhere throughout Wildomar, they are more often experienced by vulnerable communities. As illustrated in Figures 10-0 through 12-0, air pollution impacts to vulnerable communities is greatest in the northwest region of the city, along Corydon Road and Mission Trail. According to these figures, over 15 percent of the population's income in this region is below the 2019 poverty level.

Figure 10-0 shows that the diesel particulate percentile is 1 to 20 percent (lowest scores) for vulnerable communities living near Palomar Street, Corydon Road, and Bundy Canyon Road. To the north of Lemon Street (Sedco Hills), diesel particulate percentile is 41 to 60 percent for vulnerable communities living to the west and east of I-15.

Figure 11-0 shows that the ozone percentile is 71 to 80 percent for vulnerable communities living near Palomar Street, Corydon Road, and Bundy Canyon Road. To the north of Lemon Street (Sedco Hills), ozone percentile is 81 to 90 percent for vulnerable communities living to the west and east of I-15.

# SAFETY ELEMENT



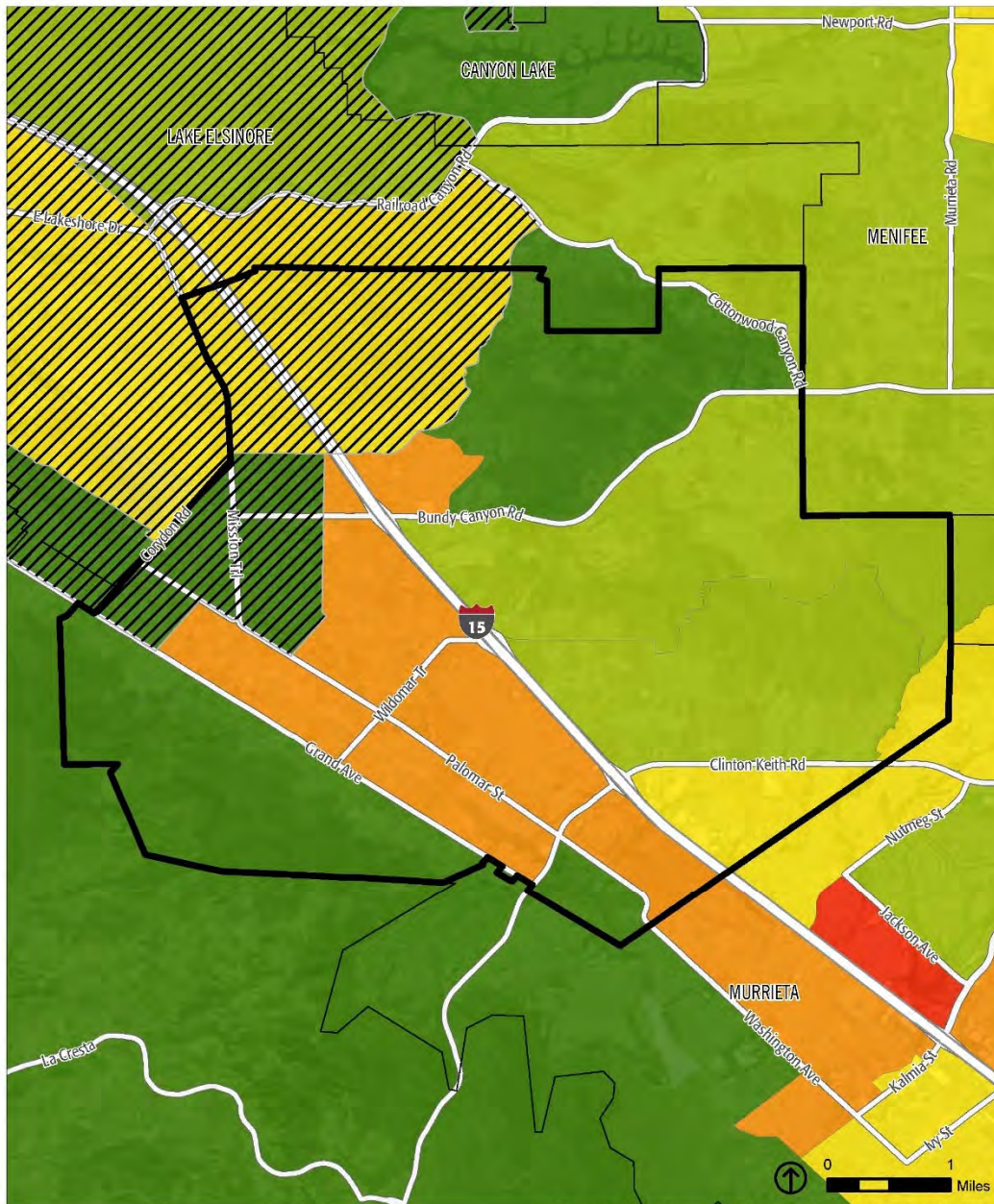
Figure 12-0 shows that the PM<sub>2.5</sub> percentile is 11 to 40 percent for vulnerable communities living near Palomar Street, Corydon Road, and Bundy Canyon Road. Similarly, to the north of Lemon Street (Sedco Hills), ozone percentile is 11 to 40 percent for vulnerable communities living to the west and east of I-15.

Among the vulnerable communities in this region of the city, air pollution impacts from exposure to elevated concentration levels of diesel particulate, ozone, and PM<sub>2.5</sub> are greatest to the north of Lemon Street (Sedco Hills) for populations living to the west and east of I-15.

# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR DIESEL PARTICULATE PERCENTILE



Source: CalEnviroScreen 4.0 2021, U.S. Census, ESRI, PlaceWorks 2021

Percent of Population whose income is below poverty level (2019)  
 > 15% of Population

City of Wildomar  
 City Boundary

Diesel Particulate Percentile  
 1 - 20% (Lowest Scores)  
 21 - 40%  
 41 - 60%

61 - 80%  
 81 - 100% (Highest Scores)

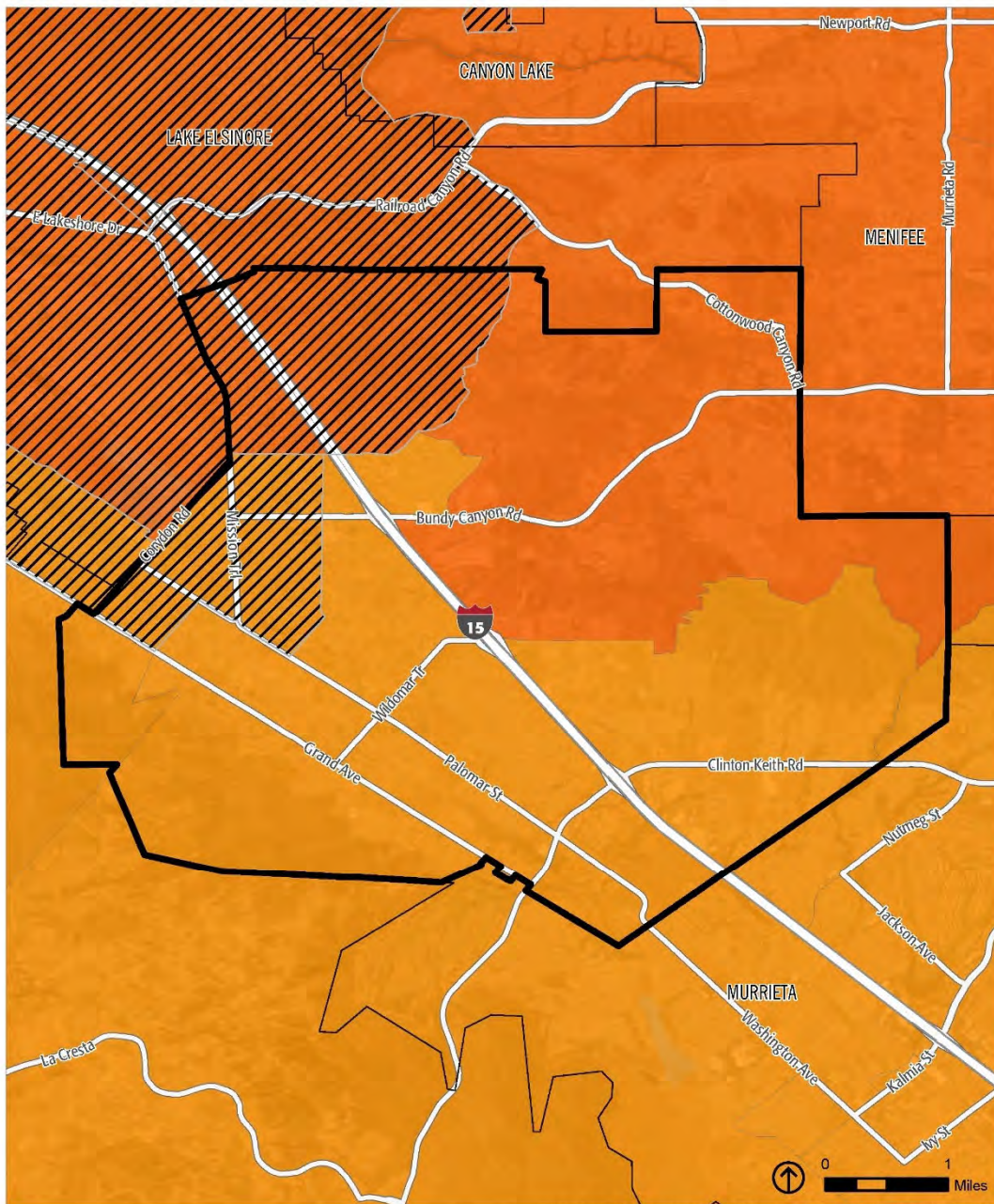
Figure 10-0



# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR OZONE PERCENTILE



Source: CalEnviroScreen 4.0 2021, U.S. Census, ESRI, PlaceWorks 2021

Percent of Population whose income is below poverty level (2019)  
 (Hatched) > 15% of Population

(Thick black line) City of Wildomar  
 (Thin black line) City Boundary

Ozone Percentile  
 (Light orange) 71 - 80%  
 (Dark orange) 81 - 90%

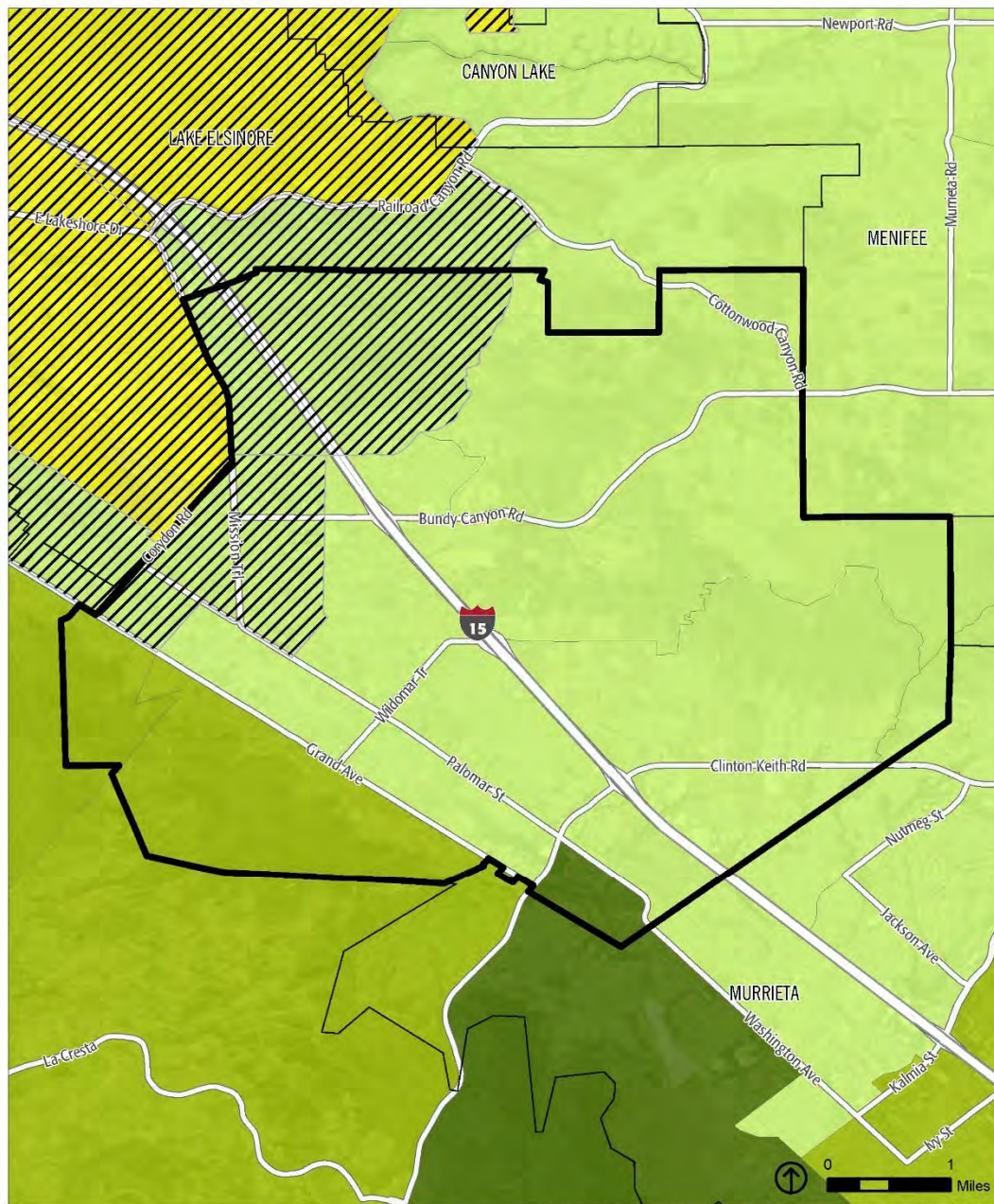
Figure 11-0



# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR PM 2.5 PERCENTILE



Source: CalEnviroScreen 4.0 2021, U.S. Census, ESRI, PlaceWorks 2021

Percent of Population whose income is below poverty level (2019)  
 > 15% of Population

City of Wildomar  
 City Boundary

PM 2.5 Percentile  
 21 - 30%  
 31 - 40%

41 - 50%  
 51 - 60%

Figure 12-0

# SAFETY ELEMENT



**GOAL S-5: Equitable and healthy air quality so that no community bears the disproportionate burden of environmental hazards and health risks.**

**POLICY S-69**      **Require a cumulative health risk assessment, including consideration of truck traffic impacts, when a project potentially affects sensitive receptors in vulnerable communities, and require appropriate mitigation based on the findings of the assessment.**

**POLICY S-70**      **Require new development to locate sensitive receptors, such as homes, schools, playgrounds, sports fields, childcare centers, senior centers, and long-term health care facilities as far away as possible from significant pollution sources.**

**POLICY S-71**      **When evaluating air quality impacts of projects in vulnerable communities, use thresholds of significance that match or are more stringent than the air quality thresholds of significance identified in the current South Coast Air Quality Management District (SCAQMD) Air Quality Guidelines.**

**POLICY S-72**      **Preserve, restore, and enhance natural landscapes in and near vulnerable communities for their role in improving air quality and community health.**

**POLICY S-73**      **Prioritize new street tree plantings and increase the tree canopy in vulnerable communities, in particular areas with high elevated concentration levels of diesel particulate, ozone, and PM<sub>2.5</sub>.**

## **HAZARDOUS WASTE AND MATERIALS**

Hazardous materials are materials that pose a significant risk to public safety or human or environmental health. These include toxic chemicals, flammable or corrosive materials, petroleum products, and unstable or dangerously reactive materials. They can be released through human error, malfunctioning or broken equipment, or as an indirect consequence of other emergencies (e.g., if a flood damages a hazardous material storage tank). Hazardous materials can also be released accidentally during transportation, as a consequence of vehicle accidents.

# SAFETY ELEMENT



A release or spill of bulk hazardous materials could result in fire, explosion, toxic cloud, or direct contamination of water, people, and property. The effects may involve a local site or many square miles. Health problems may be immediate, such as corrosive effects on skin and lungs, or gradual, such as the development of cancer from a carcinogen. Damage to property could range from immediate destruction by explosion to permanent contamination by a persistent hazardous material.

Most hazardous materials in the region are being transported on truck routes along major roadways, such as I-15. Southern California Edison is currently in the process of decommissioning the San Onofre Nuclear Generating Station. The site is in Pendleton, California, approximately 22 miles southwest of Wildomar. Decommissioning is a well-defined Nuclear Regulatory Commission process that involves safely transferring the used nuclear fuel into storage, followed by the eventual removal and disposal of radioactive components and materials from the site. Decommissioning removes radiological material from the site and eliminates potential industrial hazards. Radiological material, including low-level radioactive waste from the site, and other hazardous materials could potentially be transported via I-15 through Wildomar to be disposed of in other locations. The most vulnerable areas along this route are considered the on-/off-ramps and interchanges. Since 1970, there have been no reported roadway hazardous materials incidents.

Several state agencies monitor hazardous materials/waste facilities. Potential and known contamination sites are monitored and documented by the Regional Water Quality Control Board (RWQCB) and the Department of Toxic Substances and Controls (DTSC). A review of the leaking underground storage tank list produced by the RWQCB and the DTSC EnviroStor database indicates two leaking underground storage tanks in the city at 33986 Orange Street and 36485 Inland Valley Drive and three school investigation cleanup sites at La Estrella Road/George Porras Road, 35450 Frederick Street, and Bundy Canyon Road/Orchard Street.

If an imminent public health threat is posed by an outside factor, the City will support local regulating agencies in notifying the public. The transport of hazardous materials/wastes and explosives through the city is regulated by the California Department of Transportation (Caltrans). I-15 is open to vehicles carrying hazardous materials/wastes. City streets are generally not designated as hazardous materials/waste transportation routes, but a permit may be granted on a case-by-case basis. Transporters of hazardous wastes are required to be certified by the United States Department of Transportation (DOT) and manifests are required to track the hazardous waste during transport. The danger of hazardous materials/waste spills during transport does exist and will potentially increase as transportation of these materials increase on I-15. The Riverside County Sheriff's Department, Riverside County Fire Department, CAL FIRE, Riverside County EMD, and Riverside County Division of Environmental Health are responsible for hazardous materials accidents at all locations within the city.

# SAFETY ELEMENT



## POTENTIAL CHANGES TO HAZARDOUS MATERIALS IN FUTURE YEARS

### Likelihood of Future Occurrence

Given that there have been no hazardous materials incidents in transport through the city in the past 50 years, it is unlikely a hazardous materials incident will occur in Wildomar every year. Moreover, according to Caltrans, most incidents are related to releases of fluids from the transporting vehicles themselves and not the cargo, thus the likelihood of a significant hazardous materials release within the city is more limited and difficult to predict.

### Climate Change and Hazardous Materials

Climate change is unlikely to affect hazardous materials transportation incidents. However, increases in the frequency and intensity of hazards, such as floods, landslides, and severe storms, may create a greater risk of hazardous materials releases during these events.

**GOAL S-6: To avoid the risk of loss of life, injury, and serious illness and minimize damage to property and economic and social dislocations resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous materials wastes.**

**POLICY S-74** Enforce land use policies and siting criteria related to hazardous materials and waste through ongoing implementation of the programs identified in the County of Riverside Hazardous Waste Management Plan (CHWMP).

**POLICY S-75** Review all proposed development projects that manufacture, use, or transport hazardous materials for compliance with the CHWMP. Such projects shall provide a buffer zone, to be determined by the City, between the installation and property boundaries sufficient to protect public safety.

**POLICY S-76** Require that applications for discretionary development projects that will generate hazardous wastes or use hazardous materials include detailed information on hazardous waste reduction, recycling, and storage.

**POLICY S-77** Ensure that industrial facilities are constructed and operated in accordance with current safety and environmental protection standards.



# SAFETY ELEMENT



- POLICY S-78** Regulate the storage of hazardous materials and wastes and require secondary containment and period examination for all such materials.
- POLICY S-79** Require that any business that handles a hazardous material prepare a plan for emergency response to a release or threatened release of a hazardous material, including providing updated information to emergency responders on the type and quantity of hazardous materials kept on-site.
- POLICY S-80** Identify sites that are inappropriate for hazardous material storage, maintenance, use, and disposal facilities due to potential impacts on adjacent land uses and the surrounding natural environment. Prohibit the siting of new or expanded hazardous material sites on such sites, including areas identified as vulnerable communities.
- POLICY S-81** Ensure that the use and disposal of hazardous materials in Wildomar complies with local, state, and federal safety standards.
- POLICY S-82** Require commercial businesses, utilities, and industrial facilities that handle hazardous materials to install automatic fire and hazardous materials detection, reporting, and shut-off devices, and install an alternative communication system in the event power is out or telephone service is saturated following an earthquake, as required by the Wildomar Fire Code.
- POLICY S-83** Prohibit any new facilities using, storing, or producing hazardous materials from being located directly adjacent to existing residential or school uses.
- POLICY S-84** Encourage use of on-site green infrastructure to protect and enhance community water quality with landscape design (e.g., berms, grasslands, plantings) to either contain released hazardous materials or to process and/or absorb pollutants from infiltrating the soil or watershed.
- POLICY S-85** Advocate for and coordinate with local, regional, and state agencies in efforts to remediate or treat contaminated surface water, groundwater, or soils in or affecting vulnerable communities.



# SAFETY ELEMENT



**POLICY S-86**      **Coordinate with state and federal agencies to ensure community safety from any radioactive material transported on Interstate 15.**

## **DISASTER PREPAREDNESS, RESPONSE, AND RECOVERY**

Riverside County Emergency Services establishes the responsibilities of the various Riverside County agencies in times of a disaster. Disaster preparedness and response planning includes identifying short-term actions to reduce the scope of an emergency and managing necessary resources in the event of a disaster. After any disaster, particularly an earthquake, short-term disaster recovery requires many operations that are less urgent than fire suppression or medical attention but are equally important.

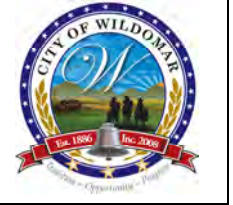
### **EMERGENCY PREPAREDNESS**

Emergency preparedness activities in Wildomar are conducted through the County of Riverside EMD. EMD, in cooperation with the City, and fire and law enforcement agencies, provides emergency management services. EMD prepares emergency and contingency plans, ranging from evacuation plans to emergency operations plans that help specify the roles and responsibilities of first responders and emergency management personnel for an incident. Moreover, EMD plans and organizes trainings and exercises involving the City of Wildomar as well as other local, state, federal, and regional agencies.

The Riverside County Fire Department and CAL FIRE are prepared to handle most everyday emergencies, such as all types of fire, medical, or hazardous situations. However, during a disaster, the number and scope of incidents may exceed the fire department's and CAL FIRE's ability to provide effective emergency services. For this reason, Wildomar provides the public with access to a community emergency response team (CERT) training program. The CERT Program provides for community and employee self-sufficiency to meet the general public's urgent life-saving and sustenance needs until emergency personnel arrive. The CERT Program educates people about disaster preparedness and trains them in basic response skills, such as fire safety, light search and rescue, and disaster medical operations. CERT members assist their fellow citizens/coworkers in their community or workplace following a disaster. CERT members take an active role in their community by preparing for a disaster, thus reducing their own impact risk.

The City of Wildomar uses Alert RivCo, a phone alert system to alert residents and businesses in Riverside County who are affected, threatened, or might be endangered by an emergency event or a disaster, such as wildfires, floods, hazardous materials, severe weather, and certain law enforcement incidents. Alert RivCo is

# SAFETY ELEMENT



part of a group of alert and warning tools used in the county. Other systems include the Emergency Alert Systems (EAS) and the Emergency Digital Information System (EDIS).

The EAS is a national public warning system commonly used by state and local authorities to deliver important emergency information, such as weather and AMBER alerts, to affected communities. EAS participants – radio and television broadcasters, cable systems, satellite radio and television providers, and wireline video providers. FEMA, the Federal Communications System, and National Oceanic and Atmospheric Administration’s (NOAA’s) National Weather Service (NWS) work collaboratively to maintain the EAS and Wireless Emergency Alerts, which are the two main components of the national public warning system and enable authorities at all levels of government to send urgent emergency information to the public. The EDIS is a wireless data cast-based emergency and disaster information service operated by the State of California Governor’s Office of Emergency Services and is an enhancement to the EAS. These systems are available in multiple languages. With advanced warning, evacuation can be effective in reducing injury and loss of life during a catastrophic event. Figure 13-0 shows residential parcels with evacuation constraints. All parcels within an evacuation constraint are located in a least one hazard-prone area and may have only one emergency evacuation route. The lack of multiple emergency access points limits roadway access for these properties, which may create difficulties if there is a need to evacuate, especially in vulnerable communities. Notably, the Farm Specific Plan project area (east of I-15 and south of Bundy Canyon Road) is within a hazard-prone area that lacks multiple emergency access points.

## **DISASTER PREPAREDNESS**

In recent years, the County of Riverside has expanded its emergency preparedness planning. The County of Riverside is required under state law to prepare and maintain a Standardized Emergency Management System (SEMS) Multi-hazard Functional Plan. The California Governor’s Office of Emergency Services has extensive guidelines outlining the requirements of the Riverside County SEMS.

## **PUBLIC SAFETY POWER SHUTOFFS**

The City of Wildomar is served by Southern California Edison (SCE). Electricity utilities throughout California, including SCE, have begun to occasionally “de-energize,” or turn off the electricity for, power lines that run through areas where there is an elevated fire risk. This is intended to reduce the risk of power lines sparking or being damaged and starting a wildfire. These activities, called public safety power shutoffs (PSPSs), result in a loss of power for customers served by the affected power lines. A PSPS may occur at any time of the year, usually during high wind events, high temperatures, and dry conditions. PSPS events may be limited to specific communities or they may affect broad swaths of the state.

# SAFETY ELEMENT



In January 2021, SCE conducted one large-scale event in response to a Santa Ana wind event, shutting off power to approximately 114,000 customers, including those in Riverside County. In December 2020, SCE conducted two large-scale events shutting off power to approximately 95,000 customers, including those in Riverside County. The largest PSPS event during this time occurred on December 4 and ended on December 14, 2020. During this event, 197,729 customers in seven counties (San Bernardino, Riverside, Orange, Kern, Los Angeles, Tuolumne, and Ventura) were identified as under consideration for PPS. During this event, SCE de-energized circuits not originally in scope when unexpected high wind conditions were observed in the areas of concern. Ultimately, SCE proactively de-energized 73,137 customers in areas of Inyo, Kern, Mono, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties.

In October 2019, SCE conducted four large-scale events, shutting off power to approximately 160,000 customers, including those in Riverside County. The largest PPS event during this time occurred on October 27 and ended on October 31, 2019. During this event, 498,660 customers in 12 counties (Fresno, Inyo, Kern, Los Angeles, Madera, Mono, Orange, Riverside, San Bernardino, Tulare, Tuolumne, and Ventura) served by 352 distribution circuits and seven transmission lines were identified as under consideration for PPS. Ultimately, proactive de-energization was required for 126 circuits (including three transmission lines) affecting 126,364 customers, including some in Riverside County, over two weather systems. PPS events can impact emergency management activities. A loss of power can make it more difficult for homes or businesses to receive emergency notifications if needed. PPS events can also create vulnerabilities for community members that lack backup power supplies and depend on electricity for heating or cooling homes and buildings, lighting, and internet. PPS events may also be harmful to people who depend on electrically powered medical devices. Additionally, community members may be faced with economic hardships and be deprived of important services, such as grocery stores, gas stations, and banks/ATMs. Traffic lights and other traffic control systems may not work, which can complicate any evacuation needs and may hinder emergency response (see Figure 13-0 for evacuation constraints). Although critical public health and safety facilities often have backup generators, the loss of power may also disable other key infrastructure systems.

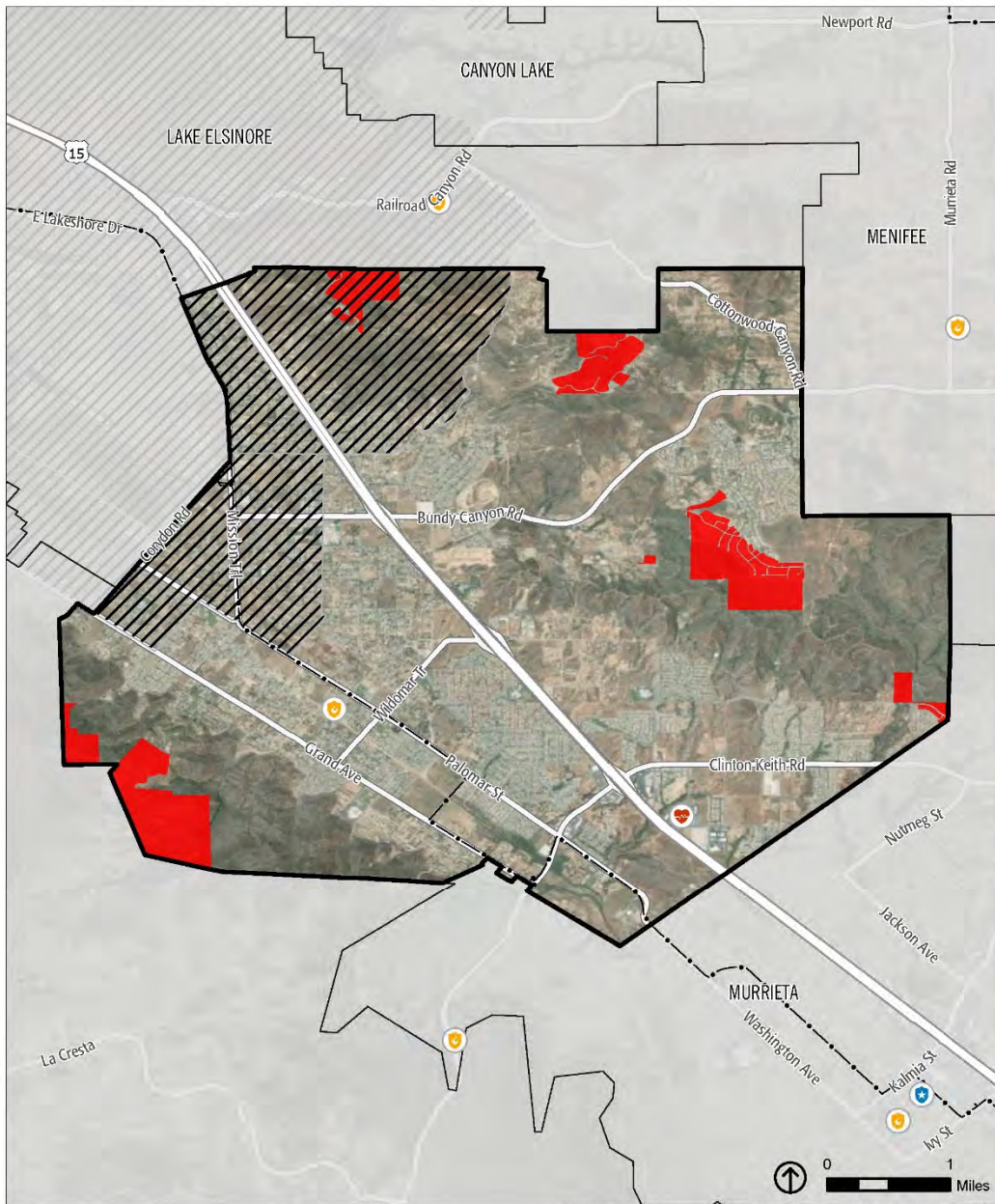
## MUTUAL-AID AGREEMENTS

Additional emergency management and response services in Wildomar are provided through a mutual-aid agreement with the Riverside County Fire Department and CAL FIRE. The Riverside County Fire Department and CAL FIRE provide a variety of public safety services, including fire protection, medical aid, rescue, hazardous materials response, and educational safety programs.

# SAFETY ELEMENT



## SAFETY ELEMENT CITY OF WILDOMAR RESIDENTIAL PARCELS WITH EVACUATION CONSTRAINTS



Source: City of Wildomar, County of Riverside, ESRI, PlaceWorks 2021

\*All residential parcels with an evacuation constraint are located in at least one hazard prone area

- City of Wildomar
- City Boundary
- Percent of Population whose income is below poverty level (2019)
- > 15% of Population
- Evacuation Constrained Parcel\*
- 🚓 Local Law Enforcement Office
- 🏥 Hospital
- 🚒 Fire Station
- Transmission Line

Figure 13-0



# SAFETY ELEMENT



**GOAL S-7: To ensure the maintenance of an Emergency Management Response Plan to effectively prepare for, respond to, recover from, and mitigate the effects of natural and human-caused disasters.**

## **Disaster Preparedness**

**POLICY S-87 Implement and update the City of Wildomar’s Local Hazard Mitigation Plan, as directed by the California Governor’s Office of Emergency Services and the Federal Emergency Management Agency, and maintain mutual-aid agreements with federal, state, and local agencies, as well as the private sector, to assist in:**

- (1) Clearance of debris in the event of widespread slope failures, collapsed buildings or structures, or other circumstances that could result in blocking emergency access or regress
- (2) Heavy search and rescue
- (3) Fire suppression
- (4) Hazardous materials response
- (5) Temporary shelter
- (6) Geologic and engineering needs
- (7) Traffic and crowd control
- (8) Building inspection

**POLICY S-88 Provide alerts about potential, developing, and ongoing emergency situations through extensive early-warning and notification systems that convey information to all residents, in multiple languages and formats to ensure it is widely accessible.**

**POLICY S-89 Ensure residents that speak languages other than English have access to communication, educational materials, and assistance in evacuation, short-term, and long-term recovery activities.**



# SAFETY ELEMENT



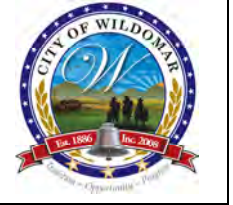
- POLICY S-90** Encourage private businesses, consortiums, and neighborhoods to be self-sufficient in an emergency by maintaining a fire control plan, including an on-site firefighting capability and volunteer fire response teams to respond to small fires, evacuation plans, and identifying medical personnel or residents capable and certified in first-aid and CPR.
- POLICY S-91** Conduct citywide drills for earthquakes and other hazards as appropriate. Use the Federal Emergency Management Agency’s HAZUS Program to develop internal scenarios for emergency response and test back-up power generators in public facilities and other critical facilities taking part in the earthquake drill. During emergency drills, encourage communication and cooperation between emergency response staff and designated contacts at hospitals, high-occupancy buildings, and dependent-care facilities.
- POLICY S-92** Develop a system to respond to short-term increases in hazard on the southern San Andreas Fault, based on probabilities associated with foreshocks.
- POLICY S-93** As feasible, install solar energy and battery backup systems at critical public and private facilities to ensure continuation of services if the power grid is disrupted.
- POLICY S-94** Maintain and continue to improve management and emergency dissemination of information using portable computers with geographic information systems (GIS) and disaster-resistant Internet access, to obtain:
- Hazardous Materials Disclosure Program Business Plans regarding the location and type of hazardous materials;
  - Real-time information on seismic, geologic, or flood hazards; and
  - The locations of high-occupancy, immobile populations, potentially hazardous building structures, utilities, and other lifelines.
- POLICY S-95** Continue to improve information sharing, coordination, and collaboration among public agencies, disadvantaged and vulnerable communities, and community-based organizations.

# SAFETY ELEMENT



- POLICY S-96** Regularly review and clarify emergency evacuation plans for dam failure, flood inundation, fire, and hazardous materials releases. The City shall also continue to maintain, periodically update, and test the effectiveness of the Emergency Operations Plan and develop plans for short-term and long-term post-disaster recovery.
- POLICY S-97** Maintain a City Emergency Operations Plan to include the National Incident Management System (N.I.M.S.).
- POLICY S-98** Coordinate with local and State Emergency Management agencies using the Standardized Emergency Management System (S.E.M.S.) and N.I.M.S. to facilitate multi-agency emergency response.
- POLICY S-99** Monitor the effectiveness of public safety, preparedness, and hazard mitigation policies under changing climate conditions to continue to protect the community as local and regional conditions change.
- POLICY S-100** Regularly update all appropriate planning documents, including the Safety Element, the Local Hazard Mitigation Plan, emergency operations plans, and other public safety plans, and ensure these updates integrate adaptation considerations for climate-related hazards.
- POLICY S-101** Develop a blueprint for managing evacuation plans, including allocation of buses, designation and protection of disaster routes to maximize capacity and redundancy, and creation of traffic-control contingencies. Ensure that evacuation transportation services are available for those with limited mobility or lacking access to a personal vehicle.
- POLICY S-102** Coordinate with utility companies to minimize service interruptions, such as Public Safety Power Shutoffs, before, during, and after hazardous conditions, including options to harden and underground utility lines.
- POLICY S-103** Adopt inundation alert and readiness levels corresponding with official forecasts by the State Office of Emergency Services, regarding earthquake prediction and potential for dam failure.

# SAFETY ELEMENT



## Critical Facilities and Lifelines

**POLICY S-104** Strengthen the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and encourage structural and nonstructural design and construction. Damage must be minimized for critical facilities, and susceptibility to structural collapse must be minimized, if not eliminated.

- (1) Ensure that special development standards, designs, and construction practices reduce risk to tolerable levels for projects involving critical facilities, large-scale residential development, and major commercial or industrial development through conditional use permits and the subdivision review process. If appropriate, impact fees should be assessed to finance required actions.
- (2) Require mitigation measures to reduce potential damage caused by ground failure for sites determined to have potential for liquefaction. Such measures shall apply to critical facilities, utilities, and large commercial and industrial projects as a condition of project approval.
- (3) Require that planned lifeline utilities, as a condition of project approval, be designed, located, structurally upgraded, fit with safety shutoff valves, designed for easy maintenance, and have redundant backup lines where unstable slopes, earth cracks, active faults, or areas of liquefaction cannot be avoided.
- (4) Review proposed uses of fault setback areas closely to ensure that county infrastructure (roads, utilities, drains) are not unduly placed at risk by the developer. Insurance, bonding, or compensation plans should be used to compensate the County of Riverside for the potential costs of repair.

**POLICY S-105** Promote strengthening of planned and existing utilities and lifelines, the retrofit and rehabilitation of existing weak structures, and the relocation of certain critical facilities.

**POLICY S-106** Identify critical facilities in hazard-prone areas and work to relocate or harden these facilities to reduce risk of damage and loss of service.

# SAFETY ELEMENT



- POLICY S-107**      **Coordinate with the Public Utilities Commission (PUC) and/or use the Capital Improvement Program, to strengthen, relocate, or take other appropriate measures to safeguard high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits that:**
- Extend through areas of high liquefaction potential.
  - Cross active faults.
  - Traverse earth cracks or landslides.
- POLICY S-108**      **Require additional design considerations for lifelines within subsidence areas.**
- POLICY S-109**      **Communicate climate risks to energy utilities and request they ensure that new and upgraded infrastructure is climate resilient.**
- POLICY S-110**      **During the development review process, when developing alternatives and adaptation projects for consideration, the city shall require applicants to identify natural infrastructure that may be used through the conservation, preservation, or sustainable management of open space to reduce climate change hazards, where feasible.**
- POLICY S-111**      **Establish a network of equitably located resilience hubs throughout Wildomar and ensure that resilience hubs are situated outside of areas at risk from hazard impacts to the extent possible, offer refuge from extreme heat and extreme weather events, as well as poor air quality and disasters, and are equipped with renewable energy generation and backup power supplies. Such facilities should be in easily accessible locations and be available to all community members, including vulnerable communities, as needed. Resilience hubs consist of well-used, existing community-serving facilities that are upgraded to provide local communities with shelter, water, and electricity during these events or disasters.**
- POLICY S-112**      **Ensure that all public services, municipal operations, and critical facilities can continue operating during and after a hazard or emergency event to meet community needs to the greatest extent possible.**

# SAFETY ELEMENT



**POLICY S-113** Prohibit development of critical facilities that are proposed in dam failure inundation areas unless no feasible alternative exists and apply hazardous materials safety guidelines within such zones.

**POLICY S-114** The City will require development applications in and adjacent to the Farm Specific Plan project area to evaluate the feasibility of the extension of Sunset Avenue to connect with La Estrella Street and provide additional ingress and egress for emergency response vehicles and residents.

## **Public Information and Outreach**

**POLICY S-115** Conduct public outreach and education efforts to inform people in Wildomar of the hazard risks, vulnerabilities, and threats in the community, especially in vulnerable communities, and what steps community members should take to reduce their risks and provide all materials and information in both English and Spanish by default, as well as any other languages, as requested.

**POLICY S-116** Forge productive working relationships and foster good communication with researchers, other government agencies, and providers of mitigation services.

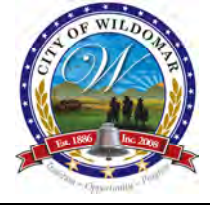
**POLICY S-117** The City shall coordinate and share data, experience, and strategies with other emergency management agencies in state or regional efforts on disaster preparedness coordination and disaster response procedures.

**POLICY S-118** Maximize use of technology and the Internet to effectively distribute emergency communications and alerts to members of the public to improve resiliency.

**POLICY S-119** Ensure that communication systems used by emergency responders and key City staff have sufficient redundancy and resiliency to meet City needs during and after a hazard event.



# SAFETY ELEMENT



## **ADDITIONAL CLIMATE-RELATED HAZARDS**

### **DROUGHT**

A drought is a long period when precipitation levels are well below normal. Wildomar chronically experiences drought cycles. Since the 1950s, Riverside County has received an average of 8 inches of rainfall per year, although that number can vary greatly between years.

Drought makes less water available for people, businesses, agricultural activities, and natural systems. Less snow falling in mountainous areas causes water levels in lakes and reservoirs to drop, which can affect recreation activities. Local ecosystems that are not well adapted to drought conditions can be more easily harmed by it. During drought events, the flow of water in creeks and streams is reduced, creating more slow-moving or standing water. This can concentrate sediment and toxins in the low water levels, causing harm to plants and animals. Many fish species also prefer specific stream flow speeds, especially for spawning and egg incubation, and changes to stream velocity as a result of drought conditions can affect reproduction. Droughts can also indirectly lead to more wildfires, and the stress caused by water shortages can weaken plants, making them more susceptible to pests and diseases.

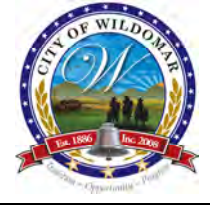
The U.S. Drought Monitor recognizes a five-point scale for drought events: D0 (abnormally dry), D1 (moderate drought), D2 (severe drought), D3 (extreme drought), and D4 (exceptional drought). According to the U.S. Drought Monitor, the most intensive drought conditions in recent years occurred during most of 2007, when all of Riverside County was classified as being in “extreme” drought. As of spring 2021, western Riverside County, including Wildomar, was classified as being in “moderate” drought. For 74 percent of the time since 2000, at least half of Riverside County has been under some level of drought conditions and 48 percent of the time since 2000, all of Riverside County has faced drought conditions. These figures do not include times when sources of Riverside County’s imported water may have also been under drought events.

### **Potential Changes to Drought in Future Years**

#### *Likelihood of Future Occurrence*

Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. Drought affects different sectors in different ways and with varying intensities. Adequate water is the most critical issue for commercial and domestic use. As the population in the city continues to grow, so will the demand for water.

# SAFETY ELEMENT



Based on historical information, the occurrence of drought in California, including Riverside County, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual drought with adverse impacts can vary in duration, and the period between droughts is often extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users. The impacts of Wildomar to drought include reduction in water supply and an increase in dry fuels.

Most of the imported water used comes from the State Water Project via the Sierra Nevada range and the Colorado River Aqueduct. Reduced winter precipitation levels and warmer temperatures have greatly decreased the size of the Sierra Nevada snowpack (the volume of accumulated snow), which in turn makes less fresh water available for communities throughout California. Continued decline in the Sierra Nevada snowpack volume is expected, which may lead to lower volumes of available imported water.

## *Climate Change and Drought*

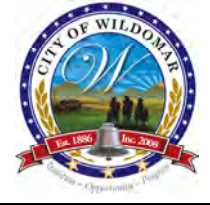
Although droughts are a regular feature of California's climate, scientists expect that climate change will lead to more frequent and more intense droughts statewide. Overall, precipitation levels are expected to stay similar, and may even increase in some places. However, the state's current data say that there will be more years with extreme levels of precipitation, both high and low, as a result of climate change. This is expected to cause more frequent and intense droughts compared to historical norms. Higher air temperatures are expected to increase evaporation, causing more water loss from lakes and reservoirs, exacerbating drought conditions.

## **EXTREME HEAT**

While there is no universal definition of extreme heat, California guidance documents define extreme heat as temperatures that are hotter than 98 percent of the historical high temperatures for the area, as measured between April and October of 1961 to 1990. Days that reach this level are called extreme heat days. In Wildomar, the extreme heat threshold is 105°F. An event with five extreme heat days in a row is called a heat wave.

Health impacts are the primary concern with this hazard, though economic impacts are also an issue. The Centers for Disease Control and Prevention (CDC) recognizes extreme heat as a substantial public health concern. Historically, NOAA data indicates that about 175 Americans succumb to the demands of summer heat, although this number has increased in recent years. From 2004 to 2018, studies by the U.S. Department of Health and Human Services indicate that there is an average of 702 deaths annually that are directly or indirectly linked to extreme heat.

# SAFETY ELEMENT



Extreme heat events are dangerous because people exposed to extreme heat can suffer a number of heat-related illnesses, including heat cramps, heat exhaustion, and (most severely) heat stroke. Elderly persons, small children, chronic invalids, those on certain medications or drugs, and persons with weight and alcohol problems are particularly susceptible to heat reactions. The elderly and individuals below the poverty level are the most vulnerable to extreme heat. Nursing homes and elder-care facilities are especially vulnerable to extreme heat events if power outages occur, and air conditioning is not available. In addition, individuals below the poverty level may be at increased risk to extreme heat if use of air conditioning is not affordable. Areas with lower extreme heat thresholds are not necessarily at lower risk, as persons and community assets used to cooler temperatures may be less prepared for extreme heat events.

Very high temperatures can harm plants and animals that are not well adapted to them, including natural ecosystems. Extreme heat can increase the temperature of water in lakes, streams, creeks, and other water bodies, especially during drought events when water levels are lower. In some cases, water temperatures may exceed comfortable levels for a number of plants and animals, causing ecological harm. Outdoor workers in construction or landscaping are also much more exposed to the elements than most people, so they are more susceptible to extreme heat conditions and the potential illnesses associated with very high temperatures.

Indirectly, extreme heat puts more stress on power lines, causing them to run less efficiently. The heat also causes more demand for electricity (usually to run air conditioning units), and in combination with the stress on the power lines, may lead to brownouts and blackouts.

## **Potential Changes to Extreme Heat in Future Years**

### *Likelihood of Future Occurrence*

Extreme heat tends to occur on an annual basis and is likely to continue occurring annually. As Wildomar is located in western Riverside County and at relatively low elevation, extremely high temperatures will continue to be a more common occurrence than cold temperatures.

### *Climate Change and Extreme Heat*

The warmer temperatures brought on by climate change are likely to cause an increase in extreme heat events. Depending on the location and emissions levels, the state Cal-Adapt database indicates the number of extreme heat days is expected to rise from a historical annual average of 4 to between 25 and 37 by the middle of the century (2041 to 2060), and to between 34 and 58 by the end of the century (2070 to 2099).

# SAFETY ELEMENT



Overall, Wildomar is expected to see an increase in the average daily high temperatures. Although the temperature increases may appear modest, the projected high temperatures are substantially greater than historical norms. These increases also make it more likely that an above-average high temperature will cross the extreme heat threshold. As temperatures increase, Wildomar will face increased risk of death from dehydration, heat stroke, heat exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

## SEVERE WEATHER

Severe weather is generally any destructive weather event, but usually occurs in Wildomar as localized storms that bring heavy rain, hail, lightning, and strong winds. Severe weather is usually caused by intense storm systems, although types of strong winds can occur without a storm. The types of dangers posed by severe weather vary widely and may include injuries or deaths, damage to buildings and structures, fallen trees, roads and railways blocked by debris, and fires sparked by lightning. Severe weather often produces high winds and lightning that can damage structures and cause power outages. Lightning from these storms can ignite wildfires and structure fires that can cause damage to buildings and endanger people. Objects can also be struck directly, which may result in an explosion, burn, or total destruction. Lightning happens occasionally and there have been six injuries and one death reported from lightning events since 1950. Hail events are rare and there have been no reported injuries from hail in Wildomar. In Riverside County, most severe weather is linked to high winds. High winds, often accompanying severe storms, can cause significant property and crop damage, threaten public safety, and have adverse economic impacts from business closures and power loss.

Santa Ana winds have caused large amounts of damage and increased the fire damage level dramatically. Santa Ana winds are generally defined as warm, dry winds that blow from the east or northeast (offshore). These winds occur below the passes and canyons of the coastal ranges of Southern California. Santa Ana winds often blow with exceptional speed in the Santa Ana Canyon. The complex topography of Southern California, combined with various atmospheric conditions, creates numerous scenarios that may cause widespread or isolated Santa Ana events. Commonly, Santa Ana winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra Nevada and west of the Rocky Mountains, including most of Nevada and Utah). Santa Ana winds commonly occur between October and April with December having the highest frequency of events. Summer events are rare. Wind speeds are typically north to east at 40 miles per hour (mph) through and below passes and canyons with gusts to 58 mph. Stronger Santa Ana winds can have gusts greater than 69 mph over widespread areas and, in rare instances, gusts greater than 115 mph in specific areas. Frequently, the strongest winds in the basin occur during the night and morning hours due to the absence of a sea breeze.

# SAFETY ELEMENT



All wind events, including Santa Ana winds, pose several different types of threats. By themselves, the winds pose a threat to the health of people and structures in the county. Dust and plant pollen blown by the wind can create breathing problems. The winds can blow roofs off buildings and cause tree limbs to fall on structures. High winds also increase the threat of wildfires. Winds may dry out brush and forest areas, increasing the fuel load in fire-prone areas. Winds may spark wildfires by knocking down power lines or causing them to arc. If fires do start, high winds can push flames quickly into new areas, contributing to rapid spread of wildfires and making them harder to control.

## **Potential Changes to Severe Weather in Future Years**

### *Likelihood of Future Occurrence*

According to historical hazard data, severe weather is an annual occurrence in western Riverside County. Damage and disaster declarations related to severe weather have occurred and will continue to occur in the future. Heavy rain and thunderstorms are the most frequent type of severe weather occurrences in the county. Wind and lightning often accompany these storms and have caused damage in the past. However, actual damage associated with the primary effects of severe weather have been limited. It is the secondary hazards caused by severe weather, such as floods and fire, that have had the greatest impact on the county. In general, any severe storm that affects Riverside County has local effects in Wildomar as well. Thunderstorms, high winds, and lightning can each have localized impacts on infrastructure, properties, and public safety. Transportation, including freight shipping, faces increased congestion when severe storms occur.

### *Climate Change and Severe Weather*

Climate change is expected to cause an increase in intense rainfall, which is usually associated with strong storm systems. This means that Wildomar could see more intense storms in the coming years and decades. Such an increase may not affect all forms of severe weather and may not always be apparent.

While average annual rainfall may increase only slightly, climate change is expected to cause an increase in the number of years with intense levels of precipitation. Heavy rainfall can increase the frequency and severity of other hazards, including flooding and landslides. Climate change is also expected to increase the total number of intense storms that affect Wildomar, possibly causing an increase in the frequency of severe weather events and any associated hazards. Some already-rare forms of severe weather, such as tornados, are not expected to increase in a noticeable way.



# SAFETY ELEMENT



## **GOAL S-8: To ensure a resilient community able to adapt to climate-related hazards.**

- POLICY S-120** Collaborate with local governments and special districts in western Riverside County as well as with Inland Southern California Climate Collaborative to develop and implement regional climate change adaptation and resilience initiatives.
- POLICY S-121** Support implementation of the Resilient IE project to foster increased community resilience to climate-related hazards in Wildomar and across the wider region.
- POLICY S-122** Use the reported data and findings of applicable local, regional, or state documents or plans pertaining to climate-related hazards that could impact the City of Wildomar, including the California Climate Change Assessment, the California Adaptation Planning Guide, and the Safeguarding California Plan.
- POLICY S-123** Prepare for a reduced, long-term water supply resulting from more frequent and severe drought events, including working with regional water providers to implement extensive water conservation measures and ensure sustainable water supplies.
- POLICY S-124** Renovate existing City-owned assets and design future facilities to incorporate renewable energy generation systems, battery storage systems, and energy-efficient design and features, as feasible.
- POLICY S-125** Coordinate with water agencies and irrigation districts to explore ways to improve and increase storage capacity and generation efficiency.
- POLICY S-126** Work with healthcare providers to support free or reduced-cost vaccinations for vector-borne diseases that are widely available for Wildomar residents.
- POLICY S-127** Coordinate with local governments and Riverside Transit Agency to increase shading and heat-mitigating materials on pedestrian walkways and transit stops.
- POLICY S-128** Ensure that unhoused persons or groups in the City of Wildomar have access to temporary and/or emergency housing, food, and other essential living materials to keep them safe during anticipated hazard events.

# SAFETY ELEMENT



- POLICY S-129** Encourage new developments and existing property owners to incorporate sustainable, energy-efficient, and environmentally regenerative features into their facilities, landscapes, and structures to reduce energy demands and improve on-site resilience. Support financing efforts to increase community access to these features.
- POLICY S-130** Ensure that lower-income households have access to low-cost programs (e.g., subsidies for National Flood Insurance Program participation, air-conditioning, low-cost healthcare) to protect their homes and wellbeing from climate-related hazards.
- POLICY S-131** Promote and expand the use of drought-tolerant green infrastructure, including street trees and landscaped areas, as part of cooling strategies in public and private spaces.
- POLICY S-132** Use natural resources and infrastructure to absorb the impacts of climate-related hazards and associated natural hazards, as feasible.
- POLICY S-133** Ensure that workers in outdoor industries have the training and resources to be adequately protected from environmental hazards, including extreme heat, poor air quality, and diseases.
- POLICY S-134** Encourage the use of high-reflectivity pavement in new or significantly retrofitted large-scale paving projects, such as parking lots.

Implementation Measures Table S-3 identifies implementation measures and the policies that they support, as well implementation guidance, including responsible departments, time frames, and funding sources.

# SAFETY ELEMENT



**TABLE S-3: IMPLEMENTATION MEASURES**

	<b>Implementation Measure</b>	<b>Applicable Policy</b>	<b>Responsible Department</b>	<b>Time Frame</b>	<b>Funding Source</b>
S-1	The City shall conduct an evaluation of City-owned buildings and facilities in areas prone to flood, landslide/debris flows, and wildfire to maximize defensible space and outdoor fireproofing, improve drainage systems, stabilize nearby slopes, and take actions to harden the property as needed. The evaluation shall be reviewed biannually and updated as needed.	S-1	Planning Department	Ongoing	General Fund / Capital Improvement Program / Bonds
S-2	Continue to implement the City’s most currently adopted Building Codes to ensure that development is constructed in a structurally and seismically safe manner. To the extent feasible, conduct periodic seismic safety inspections to ensure compliance with adopted codes.	S-12	Building and Safety Department	Ongoing	General Fund / Fines
S-3	The City shall require and review preliminary soils reports submitted by applicants for every major subdivision and for each individual lot or project site where critically expansive soils have been identified or are expected to exist.	S-16	Building and Safety Department / Planning Department	Ongoing	General Fund / Development Fees

# SAFETY ELEMENT



	Implementation Measure	Applicable Policy	Responsible Department	Time Frame	Funding Source
S-4	The City shall update the Zoning Ordinance as necessary to comply with state requirements for flood control.	S-19 S-27 S-28 S-30 S-39	Planning Department	Ongoing	General Fund
S-5	Consult with the Riverside County Flood Control and Water Conservation District as well as upstream and downstream jurisdictions regarding regional approaches for the planning, construction, operation, and maintenance of drainage and flood-control facilities. Include these entities in the referral of project applications as appropriate.	S-25 S-26 S-29 S-35 S-42	Planning Department / Public Works Department / Engineering Department	Ongoing	General Fund
S-6	The City shall annually provide flood protection safety information via social media and posting on the City website to educate citizens about safety during flood conditions, including the dangers of driving on flooded roads.	S-36	Planning Department	Ongoing	General Fund / Grant Programs
S-7	The City shall conduct regular cleaning and maintenance of storm drains along key roadways, especially in advance of the rainy season. The City shall address potential ponding and the need for storm drain improvements on major roadways.	S-36	Public Works Department	Ongoing	General Fund

# SAFETY ELEMENT



	Implementation Measure	Applicable Policy	Responsible Department	Time Frame	Funding Source
S-8	Continue to implement the City’s most currently adopted Fire Codes to ensure that development is constructed in a structurally safe manner. To the extent feasible, conduct periodic fire safety inspections to ensure compliance with adopted codes.	S-44 S-50	Fire Department	Ongoing	General Fund / Fines
S-9	Coordinate with Southern California Edison (SCE) to ensure areas below and adjacent to power lines are kept clear of plant matter and other accumulated debris.	S-45	Fire Department / Planning Department / Public Works Department	Ongoing	General Fund
S-10	Require continued operation of programs for fuel breaks, brush management, controlled burning, revegetation, and fire roads.	S-45	Fire Department / Planning Department	Ongoing	General Fund
S-11	When reviewing long-term comprehensive fuel reduction and management programs for discretionary projects, the City shall require these plans to include a risk analysis; fire response capabilities discussion; fire safety requirements, including defensible space, infrastructure, and building ignition resistance; mitigation measures and design considerations for non-conforming fuel modification; wildfire education; and maintenance and limitations. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas and incorporated into the covenants, conditions, and restrictions (CC&Rs) as appropriate.	S-46	Planning Department	Ongoing	General Fund Development Fees



# SAFETY ELEMENT



	Implementation Measure	Applicable Policy	Responsible Department	Time Frame	Funding Source
S-12	Develop a Defensible Space Ordinance or Landscape Ordinance that provides specific guidelines and requirements for the design and maintenance of public and private landscapes in Very High Fire Severity Zones, as defined by CAL FIRE.	S-49	Planning Department / Public Works Department/ CAL FIRE	Ongoing	General Fund
S-13	Encourage and identify opportunities to incentivize owners of existing properties and new development projects, to adopt the defensible space landscaping zones as defined by CAL FIRE. When needed, clear excess dried vegetation across the city in areas identified by the Riverside County Fire Department.	S-49	Fire Department / CAL FIRE / Planning Department / Public Works Department	Ongoing	General Fund / Developer Cost / Bureau of Reclamation Drought Resiliency Grants
S-14	Maintain automatic aid agreements with other fire protection/suppression agencies in Riverside County.	S-55 S-57	Fire Department	Ongoing	General Fund
S-15	The City shall work with CAL FIRE to develop a plan that includes an assessment and projection of future emergency service needs and emergency training opportunities.	S-55	Planning Department / CAL FIRE	Ongoing	General Fund
S-16	The City shall work with the Elsinore Valley Municipal Water District to maintain adequate water supply and identify areas lacking adequate water service for firefighting, including capacity for peak load under a reasonable worst-case wildland fire scenario, to be determined by CAL FIRE. The City shall identify areas lacking adequate water service, where future development may occur.	S-56	Planning Department / Fire Department / CAL FIRE	Ongoing	General Fund

# SAFETY ELEMENT



	Implementation Measure	Applicable Policy	Responsible Department	Time Frame	Funding Source
S-17	The City shall periodically evaluate fire protection services in the city to determine if fire protection resources are being effectively and efficiently used.	S-64	Planning Department / CAL FIRE	Ongoing	General Fund
S-18	The City shall work with CAL FIRE and the Riverside County Fire Department to maximize the use of resources to develop functional and/or operational consolidations and standardization of services and to maximize the efficient use of fire protection resources.	S-64	Planning Department / CAL FIRE	Ongoing	General Fund
S-19	Assist the South Coast Air Quality Management District in establishing and implementing Community Air Monitoring Plans for vulnerable communities.	S-68 S-71	Planning Department	Ongoing	General Fund
S-20	Coordinate with State and regional regulatory entities and community members to fund citizen-led data collection, monitor pollution exposure, and identify and implement solutions in disadvantaged communities.	S-70 S-73	Planning Department	Ongoing	General Fund
S-21	Prepare an urban forest master plan for the city that includes quantified goals and tracking methods, prioritizing vulnerable communities.	S-72 S-73	Planning Department	By 2025	General Fund / Grant Funding
S-22	Develop and adopt a set of landscaping-as-remediation/mitigation guidelines for sites engaging with hazardous materials as well as contaminated sites in the city.	S-75	Planning Department	By 2025	General Fund

# SAFETY ELEMENT



	Implementation Measure	Applicable Policy	Responsible Department	Time Frame	Funding Source
S-23	Require existing and new commercial and industrial uses involving the use, handling, transport, or disposal of hazardous materials in the city to disclose their activities in accordance with Riverside County guidelines and the requirements of California law.	S-77 S-81	Planning Department / Fire Department / Engineering Department / Public Works Department	Entitlement process and through routine inspections	General Fund
S-24	Designate the Riverside County Fire Department as the keeper of a database of all properties in Wildomar engaging with hazardous materials and include such information as their address, their owner’s contact information, and a list of all the hazardous materials on site.	S-80	Fire Department	Ongoing	General Fund
S-25	Require that construction activities cease if ground or water contamination is discovered during construction until the contamination is reported and the extent of the contamination, as well as necessary actions for remediation, have been identified to the satisfaction of the appropriate agency. Require that remediation activities be completed to the satisfaction of the appropriate responsible agency (i.e., Riverside County Department of Environmental Health, San Diego Regional Water Quality Control Board, Department of Toxic Substances Control, or the City of Wildomar, depending upon the type of contamination).	S-81	Fire Department	Entitlement process and through routine inspections	General Fund

# SAFETY ELEMENT



	Implementation Measure	Applicable Policy	Responsible Department	Time Frame	Funding Source
S-26	Provide informational and educational materials on the City's website for residents and vulnerable communities living near areas with hazardous materials or contaminated sites discussing the potential hazard risks associated with a hazardous materials release.	S-85	Planning Department	Ongoing	General Fund / Fines
S-27	The City shall develop and maintain agreements with other local, state, and federal agencies to ensure coordinated disaster response.	S-87 S-95 S-99 S-117	Fire Department / Police Department / Planning Department	Ongoing	General Fund
S-28	The City shall continue to work with the County to update the Local Hazard Mitigation Plan upon its expiration to ensure that Wildomar maintains eligibility for pre-disaster mitigation funding.	S-87	Planning Department	Ongoing	General Fund
S-29	The City shall support hiring multi-lingual staff and offer language training to existing staff to improve communication and assistance with non-English-speaking residents	S-89	Planning Department	Ongoing	General Fund
S-30	The City shall adopt and implement current emergency management principles and practices in all aspects of its emergency operations plan.	S-96	Planning Department	Ongoing	General Fund

# SAFETY ELEMENT



	Implementation Measure	Applicable Policy	Responsible Department	Time Frame	Funding Source
S-31	The City shall work with local schools and community centers to create resilience hubs that can serve as gathering places during emergencies and interruptions in services, and contain access to water, electricity, and other necessary services.	S-111	Planning Department / Public Works Department	Ongoing	General Fund
S-32	The City shall work with local medical providers and the Inland Valley Medical Center to ensure that medical facilities are prepared to meet any increased demand from hazardous events.	S-112	Planning Department / Public Works Department	By 2022	General Fund
S-33	Join the Inland Southern California Climate Collaborative to effectively address and build resilience to climate-related hazards that pose a threat to the community.	S-120 S-121	Planning Department	By 2023	General Fund
S-34	The City shall integrate the results and adaptive policies of the Climate Vulnerability Assessment into other City planning documents where feasible, including this General Plan Safety Element, the Local Hazard Mitigation Plan, Zoning Ordinance, building code, and other applicable codes.	S-122	Planning Department	By 2022	General Fund
S-35	The City shall annually review the climate adaptation and resiliency strategies and shall update them as needed to ensure compliance with state laws and community needs.	S-123 S-124 S-128	Planning Department	Annually	General Fund



# SAFETY ELEMENT



	Implementation Measure	Applicable Policy	Responsible Department	Time Frame	Funding Source
S-36	The City shall update the Vulnerability Assessment every three to five years to incorporate new technology, programs, and policies to improve adaptation to climate-related hazards.	S-123 S-124 S-128	Planning Department	Ongoing	General Fund
S-37	Where feasible, the City shall encourage the use of existing natural features and ecosystem processes, or the restoration of, when considering alternatives and adaptation projects through the conservation, preservation, or sustainable management of open space. This includes, but is not limited to, the conservation, preservation, or sustainable management of any form of aquatic or terrestrial vegetated open space, such as parks, rain gardens, and urban tree canopies. It also includes systems and practices that use or mimic natural processes, such as permeable pavements, bioswales, and other engineered systems, such as levees that are combined with restored natural systems, to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife.	S-129 S-131 S-132	Planning Department	Ongoing	General Fund / Development Fees

# SAFETY ELEMENT



## APPENDIX A: VULNERABILITY ASSESSMENT RESULTS

The table below shows the results of the Vulnerability Assessment prepared for Wildomar, in accordance with the requirements of Senate Bill 379. For each population or asset that may be vulnerable to each climate-related hazard, the population or asset is scored on a scale of zero to five:

0: Not vulnerable

V1: Minimal vulnerability

V2: Low vulnerability

V3: Moderate vulnerability

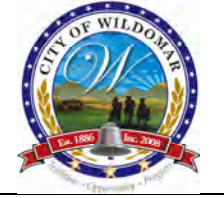
V4: High vulnerability

V5: Severe vulnerability

The vulnerability scores reflect both the severity of climate-related impacts and the ability of populations and assets to resist and recover from these effects. Refer to the “Climate Change” and “Vulnerable Populations and Assets” sections of the Safety Element for additional details on the Vulnerability Assessment method.

POPULATIONS AND ASSETS	AIR QUALITY	DROUGHT	EXTREME HEAT	FLOOD	HUMAN HEALTH HAZARDS	LANDSLIDES	SEVERE WEATHER	WILDFIRE
<b>POPULATIONS</b>								
Children age <10	V4		V4		V2			V4
Linguistically isolated populations	V2		V2	V1	V2		V3	V2
Healthcare workforce (doctors, nurses)			V1	V1	V3		V1	V2
Homeless persons	V5	V3	V5	V4	V5		V5	V5
Household renters	V2	V3	V2	V2		V2	V3	V2
Householders age >65	V3		V4	V3	V3	V4	V2	V4
Households in poverty	V4	V4	V4	V4	V3	V3	V3	V4
Households overpaying for housing (>30% of income)	V3	V2	V2	V3	V1	V2	V1	V2
Individuals chronically ill	V4	V1	V4	V3	V5	V3	V4	V4
Individuals uncertain about available resources because of citizenship	V2		V2	V2	V2		V3	V2
Individuals with disabilities	V2		V3	V3	V2	V3	V3	V4

# SAFETY ELEMENT



POPULATIONS AND ASSETS	AIR QUALITY	DROUGHT	EXTREME HEAT	FLOOD	HUMAN HEALTH HAZARDS	LANDSLIDES	SEVERE WEATHER	WILDFIRE
Individuals without access to lifelines	V3		V3	V4	V3	V3	V3	V4
Low-income individuals	V3	V4	V4	V4	V3	V2	V2	V3
Outdoor workers	V5	V4	V5	V2		V1	V3	V4
Overcrowded households	V2	V1		V2	V2		V1	V2
Pregnant or nursing women	V4		V3	V1	V5		V1	V2
Seasonal residents/migrant workers	V5	V4	V4	V2	V2	V2	V3	V4
Senior citizens living alone	V4		V5	V4	V4	V5	V3	V5
Bridges						V3	V3	V2
City Halls and government offices							V1	V2
Commercial structures				V4		V1	V3	V3
Communication infrastructure			V1	V2		V2	V2	V2
Community gathering areas				V1		V1	V1	V2
Dams				V1		V4	V1	V1
Energy transmission/delivery			V4	V3		V3	V4	V4
Evacuation routes						V3	V2	V4
Fire stations							V1	
Fueling infrastructure and pipelines			V1	V3		V3	V2	V3
Healthcare facilities			V1			V1	V2	V3
Major roads and highways			V3			V3	V2	V3
Natural gas pipelines				V2		V4		V3
Parks		V1	V2			V3	V3	V2
Police/sheriff stations				V2			V1	
Public open space and protected land		V3	V1	V1		V2	V3	V4
Residential structures				V4		V4	V2	V4
Schools and childcare centers				V3		V3	V2	V2

# SAFETY ELEMENT



POPULATIONS AND ASSETS	AIR QUALITY	DROUGHT	EXTREME HEAT	FLOOD	HUMAN HEALTH HAZARDS	LANDSLIDES	SEVERE WEATHER	WILDFIRE
Senior care centers				V3		V2	V1	
Sidewalks, bikeways, trails				V2		V3	V1	V2
Transit infrastructure				V3		V2	V3	V2
Transportation facilities and infrastructure			V1	V3		V2	V2	V3
Water and wastewater treatment		V2	V1	V4		V3	V2	V1
Chaparral		V3	V3			V2	V2	V3
Coastal sage scrub		V2	V3	O		V3	V1	V3
Grassland		V3	V2	O		V2	V2	V2
Riparian scrub, woodland, and forest		V4	V3	O		V3	V3	V5
Woodland and forests		V3	V3			V3	V2	V4
State and federally owned land	V2	V3	V3	V1	V2	V3	V1	V3
Education and health services			V2	V3	V3	V1	V2	V2
Retail shopping centers			V1	V1	V3	V1	V1	V1
Major employers			V1	V3	V1	V1	V2	V2
Communications			V2	V1		V1	V2	V3
Energy Delivery		V2	V4	V2		V3	V4	V4
Emergency medical response			V1	V2	V2	V2	V2	V2
Government administration	V1			V1	V1			V1
Public safety			V1	V2	V2	V3	V2	V3
Transit access			V3	V2		V2	V3	V2
Water and wastewater		V3	V2	V4		V3	V3	V4

# SAFETY ELEMENT



This page intentionally left blank.







2040 Bancroft Way, Suite 400  
Berkeley, California 94704  
t 510.848.3815

[www.placeworks.com](http://www.placeworks.com)