6. SAFETY ELEMENT

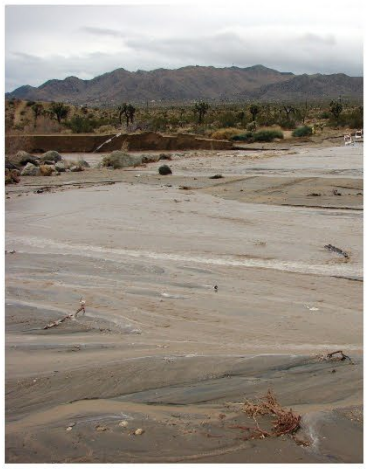

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TABLE OF CONTENTS

6. Safety Element

Figures

6 SAFETY ELEMENT

The Town of Yucca Valley is committed to maintaining access to vital services and protecting the community from geologic and seismic hazards, flooding, wildland fires, extreme weather and climate-related hazards, hazardous materials incidents, and other emergencies, such as urban fires and crime. Implementation of the Safety Element minimizes potential human injury and property damage by reducing exposure to these hazards and the risks of their occurrence. This Element enhances public safety through advance preparation for and proactive mitigation of potential hazards that could adversely affect residents, visitors, economic activities, and the built and natural environments.

Purpose, Scope, and Content

The Safety Element is a state-mandated General Plan element that must identify potential natural and human-created hazards that could affect the Town of Yucca Valley's (Town's) residents, businesses, and services. The purpose of the Safety Element is to establish a framework that anticipates these hazards and prepares the community to mitigate exposure to these risks.

The Safety Element conveys the Town's goals, policies, and actions to minimize the hazards to safety in and around Yucca Valley. 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 Yucca Valley 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.

The Safety Element serves the following functions:

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

- 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 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).

- 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 Yucca Valley 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 is part of a comprehensive effort to address the impacts of hazards in Yucca Valley. The Safety Element must be consistent with these other plans to minimize conflicts between documents and ensure that the Town 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.

The Safety Element is complementary to the Town of Yucca Valley's emergency preparedness planning documents, including the Hazard Mitigation Plan and Emergency Operations Plan. The Safety Element Technical Background Report is a comprehensive study of local geologic, seismic, flooding, fire, hazardous materials, and weather conditions prepared in association with the General Plan. The Safety Element Technical Background Report is a reference document for additional information on those hazards.

Other General Plan Elements

The Safety Element is one of several elements of the Yucca Valley 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 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 Open Space and Conservation 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 Town'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.

Yucca Valley Hazard Mitigation Plan

The Town of Yucca Valley's 2018 Hazard Mitigation Plan (HMP) 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 Yucca Valley. The Town of Yucca Valley prepared the 2018 HMP in accordance with the federal Disaster Mitigation Act of 2000 and the Federal Emergency Management Agency's HMP guidance. The mitigation actions in the HMP include both short-term and long-term strategies, and involve planning, policy changes, programs, projects, and other activities. The HMP and the Safety Element address similar issues, but the Safety Element provides a higher-level framework and set of policies, while the HMP focuses on more specific, often short-term, mitigation actions. The HMP, 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 2018 HMP is incorporated into this Safety Element by reference, as permitted by California Government Code Section 65302.6.

Climate Change Vulnerability

Changes to the global climate system are expected to affect future occurrences of natural hazards in and around Yucca Valley. Many hazards are projected to occur more frequently and intensely in coming years and decades, and in some cases, these trends have already begun. According to California's *Statewide Summary Report: Fourth Climate Change Assessment,*[1] Yucca Valley can expect to experience various changes to climate-related hazard events.

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 Town conducted a Climate Change Vulnerability Assessment in spring of 2021, to analyze Yucca Valley's susceptibility to climate-related hazards. The 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 58 different population groups and community assets. The Yucca Valley Climate Change Vulnerability Assessment conducted for this Safety Element indicated that Yucca Valley's populations and assets are most vulnerable to extreme heat, flooding, landslides, and wildfire. Populations in Yucca Valley tend to be most vulnerable to extreme heat, human health hazards, and wildfire, which directly affect health outcomes. Throughout the town, 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. An increase in droughts, extreme heat, and wildfire create higher vulnerabilities for chaparral, woodland, shrubland, and grassland ecosystems.

[1] 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.

The results of the Vulnerability Assessment are integrated into the discussion of hazards and other public safety issues throughout this Safety Element. A detailed discussion of expected future climate-related hazard events in Yucca Valley and a detailed discussion of the Vulnerability Assessment results is also provided in **Appendix C.**

Safety Element Organization

This Element outlines the existing and likely future hazardous conditions and other public safety issues in Yucca Valley, including:

- 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 Element provides details pertaining to probable locations of each hazard or issue likely to occur (per availability of data), past notable events in and around Yucca Valley, 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, and implementation strategies that support one or more of the Safety Element policies are in the General Plan Implementation Strategies.

6.1 Geologic Hazards

Geologic hazards are generally defined as surficial earth processes that have the potential to cause loss or harm to the community or the environment. The Town of Yucca Valley is susceptible to a variety of geologic hazards due to its steep terrain. Erosion, slope instability, rockfalls and rockslides, soil slips, and mudflows are all potential geologic hazards.

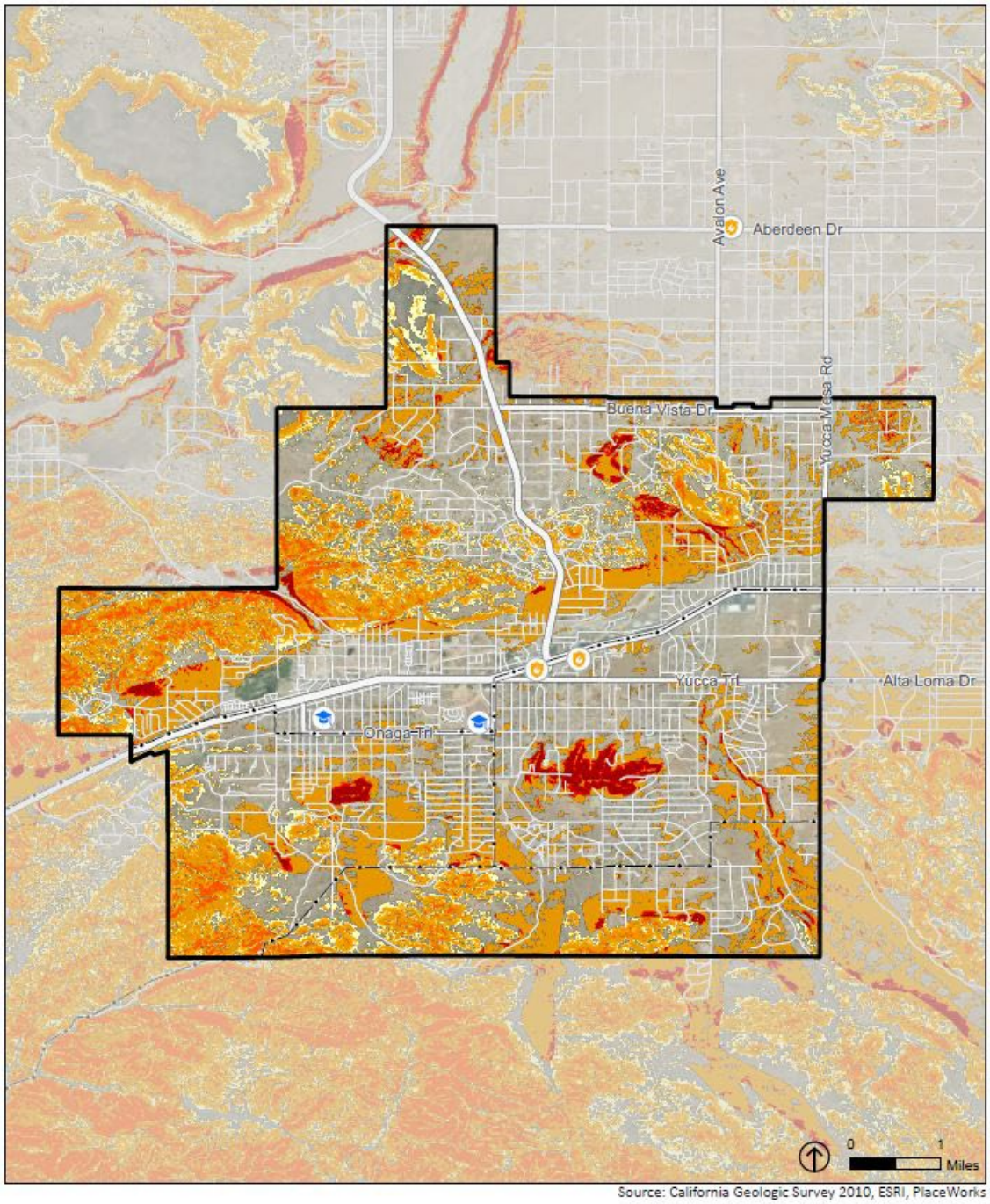
The Town of Yucca Valley encompasses highly variable terrain that includes a broad valley, gently sloping hills, and rugged mountains. Within the Town limits, elevation varies from 3,100 to 4,600 feet above sea level. This variety of topography reflects the community's complex geologic characteristics and hazards.

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 S-1 shows the landslide susceptibility in and around Yucca Valley. Landslide risk is greatest northwest and southwest of SR 62, particularly along hillsides.

Central Yucca Valley primarily consists of young alluvium soils, which are highly susceptible to erosion, especially where flood waters are concentrated. Much of the west side of the town consists of crystalline rocks known for good slope stability but are characterized by large boulders that potentially pose rockfall hazards. The other common soil in Yucca Valley is old alluvium, which is stable in areas of limited slope.

Mitigating these hazards can be accomplished by establishing appropriate development standards and through public awareness. Since the majority of geologic hazards can be avoided, it is important for the Town of Yucca Valley to protect the community and unique natural landscape through the goals and policies below.

Figure S-1
Landslide Susceptibility



Potential Changes to Geologic Risk in Future Years

Likelihood of Future Occurrence

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. San Bernardino 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.

Ground Failure: Mudslide, landslide, liquefaction, or soil compaction.

Landslide: A general term for a falling, sliding, or flowing mass of soil, rocks, water, and debris. Includes mudslides, debris flows, and debris torrents.

Slope Failures: Includes two types, major slide masses such as landslides and minor soil slips like mud or debris flows. Slope failures can occur on natural or human-made slopes. Failures are often the result of interrelated natural hazards, earthquake-induced rockfall, or storm-induced mudflows.

Climate Change and Geologic Hazards

While climate change is unlikely to increase earthquake frequency or strength, the threats from 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 soil compaction, 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.

GOAL S 1

Avoid loss of life, injury, and property damage from seismic and related geologic hazards.

Policies

Policy S 1-1 Collect and maintain data on soils and areas of steep slopes (15 percent or greater) or slopes prone to failure within the Town boundaries.

Policy S 1-2 Limit grading associated with development to the extent feasible to provide for planned improvements, while maintaining maximum natural and undisturbed vegetation to control soil disturbance and erosion.

Policy S 1-3 Require development proposals with a slope of 15 percent or greater and/or subject to rockfalls, landslides or excessive erosion to be accompanied by a geotechnical analysis and associated technical reports.

Policy S 1-4 Require development on slopes prone to failure or slopes 15 percent or greater to mitigate all geologic safety concerns during the permitting process.

6.2 Seismic Hazards

Alquist-Priolo Earthquake Fault Zone: A regulatory zone, delineated by the State Geologist, within which site-specific geologic studies are required to identify and avoid fault rupture hazards prior to subdivision of land and/or construction of most structures for human occupancy.

Fault: A fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side. A fault zone is a zone of related faults, which commonly are braided, but may be branching. A fault trace is the line formed by the intersection of a fault and the earth's surface.

Liquefaction: A process by which water-saturated granular soils transform from a solid to a liquid state during strong ground shaking.

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.

The Town of Yucca Valley is a seismically active area where earthquakes can pose a threat to personal safety and property. Earthquakes have the potential to impact transportation, utilities, public facilities, structural integrity, and economic activity. The undulating terrain that contributes to Yucca Valley's natural landform can be affected by earthquake-triggered hazards such as ground shaking, surface fault rupture, landslides, liquefaction, and subsidence, as shown in Figures S-2, *Regional Fault Zones and Traces,* and S-3, *Seismic Hazard Program Liquefaction Zone*. Earthquakes and associated hazards can disrupt vital service delivery; key transportation routes, including State Routes 62 and 247; and threaten lives and properties.

Earthquake risk is very high in the western portion of San Bernardino County, including the Town of Yucca Valley, 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 Yucca Valley, 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.

Several notable past earthquakes were felt strongly in Yucca Valley, but a concentration of intense seismic activity in 1992 was the most destructive in recent history. The Joshua Tree Earthquake struck on April 22, 1992, most likely centered on the Eureka Peak fault, approximately 12 miles south of Highway 62. This magnitude 6.1 earthquake injured over 30 people. On June 28, 1992, the magnitude 7.3 Landers Earthquake rocked Southern California and was the largest quake to have occurred in the continental United States in 40 years. The epicenter was in Landers, approximately 10 miles north of Yucca Valley. Several faults were involved, including Johnson Valley, which bisects the northern part of the Town. Several roads and buildings were damaged, over 400 people were injured in the region, and 3 people lost their lives, including one in Yucca Valley. The magnitude 6.4 Big Bear Earthquake struck approximately 3 hours after the Landers Earthquake. No additional damage in Yucca Valley was attributed to this quake.

State legislation has been enacted to help prevent property damage and injury in the event of an earthquake. The Alquist-Priolo Earthquake Fault Zoning Act establishes zones around the most active and well-defined faults in the state. In Yucca Valley, these faults include Morongo Valley, Pinto Mountain, Johnson Valley, Burnt Mountain, and Eureka Peak. Development within the zones can occur following geologic investigations that identify development standards and requirements for development projects that are designed to mitigate potential earthquake-related hazards. California's Unreinforced Masonry Law requires all cities and counties in Seismic Zone 4, as identified in the California Building Code, to identify potentially hazardous unreinforced masonry buildings in their jurisdictions. The number of unreinforced masonry structures is unknown and warrants study.

Learning from devastating earthquakes of the past, the Town of Yucca Valley continues to make strides to prevent damage and prepare its residents and business community for earthquakes in the future through enforcing state laws, coordinating emergency planning efforts, and educating the public.

Portions of the town 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 Town has delineated areas of known and suspected liquefaction hazard. Liquefaction susceptibility in the town ranges from low to very low. Areas identified as susceptible to liquefaction are identified in Figure S-3.

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.

Figure S-2
Regional Fault Zones and Traces

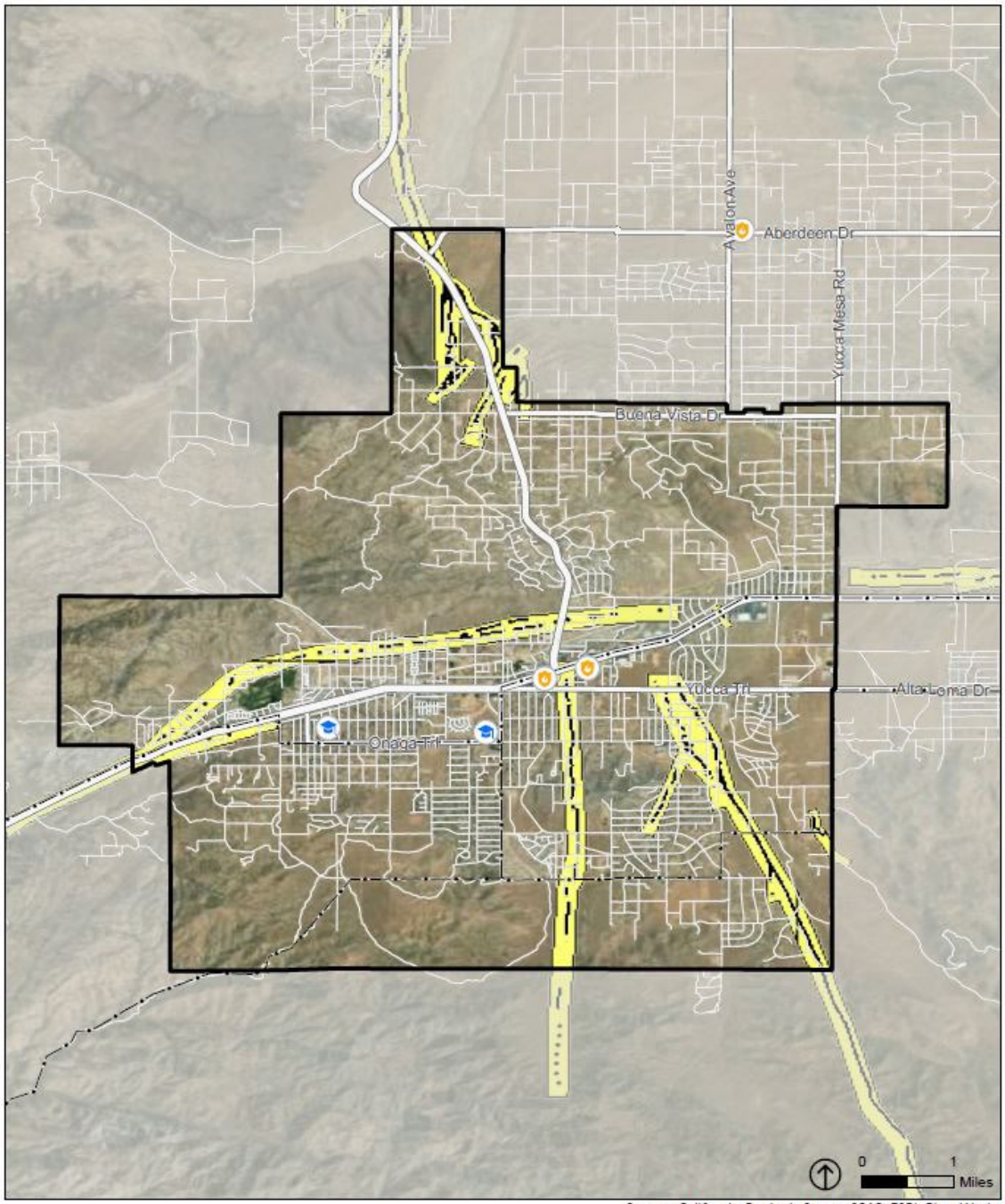
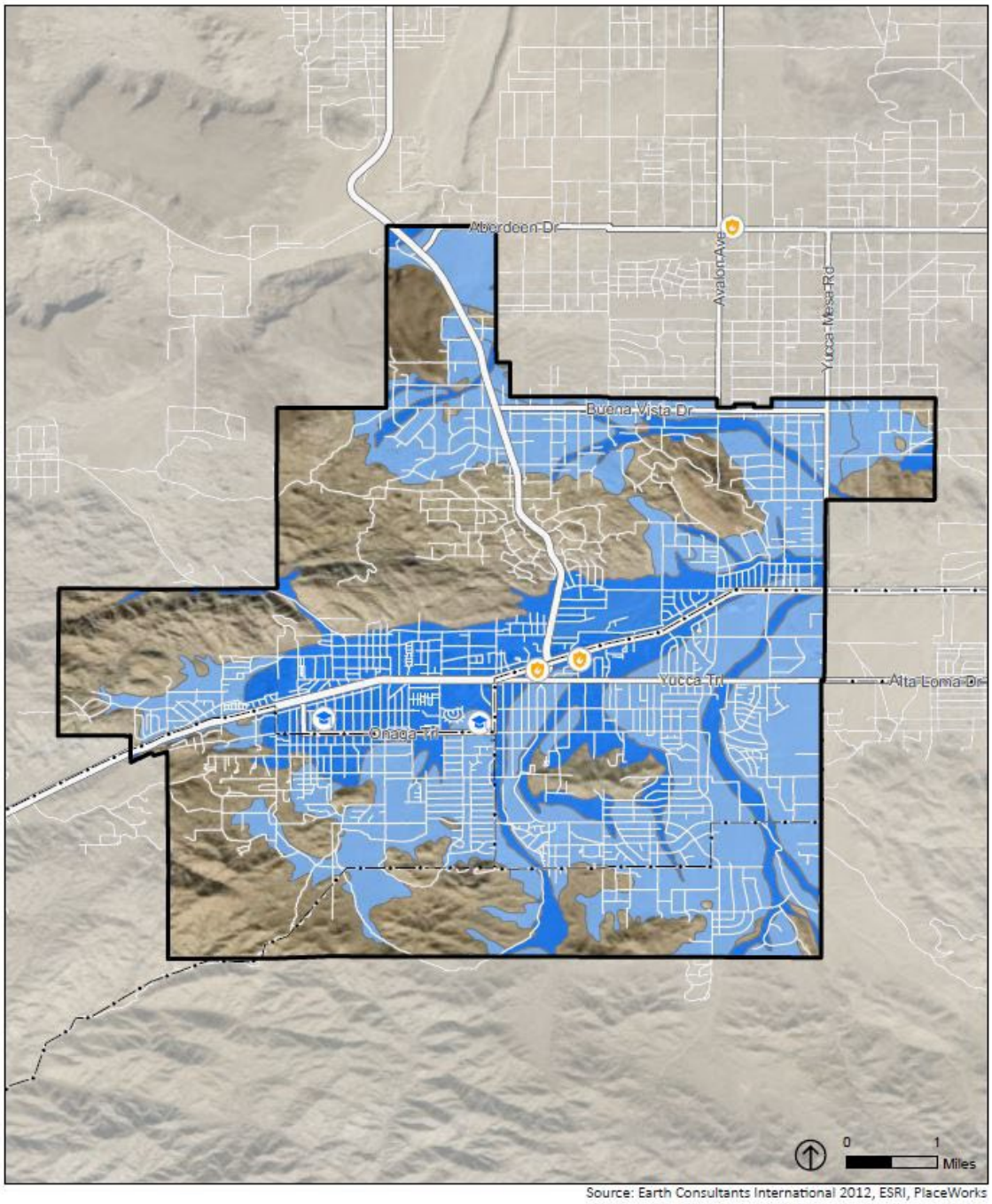


Figure S-3
Seismic Hazard Program Liquefaction Zone



Potential Changes to Seismic Risk in Future Years

Likelihood of Future Occurrence

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 town, although the town has felt ground shaking from earthquakes with epicenters located nearby. Large earthquakes from faults such as the San Andreas Fault may cause significant damage to homes and businesses in the town. Based on historical data and the location of Yucca Valley relative to active and potentially active faults, the town will likely experience a significantly damaging earthquake in the next two decades.

If serious shaking does occur, newer construction is generally 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.

Climate Change and Seismic Hazards

While climate change is unlikely to increase earthquake frequency or strength, the secondary effects associated with seismic hazards are expected to continue. In particular, areas susceptible to liquefaction pose a potentially destructive secondary effect of strong seismic shaking.

GOAL S 2

Avoid risk to life and minimize impacts to property, economic, social, and service functions that may result from seismic hazards.

Policies

Policy S 2-1 Participate in local and regional emergency preparedness planning efforts with public and quasi-public agencies (e.g., the San Bernardino County Sheriff's Department Emergency Services, the San Bernardino County Fire Protection District, Caltrans District 8, etc.) to ensure the continued functionality of major utility services and roadways in the event of a major earthquake.

Quasi-Public: Essentially a public good or service although under private ownership or control (e.g., the electric or gas company).

Policy S 2-2 Encourage and promote the development of groundwater recharge basins outside of areas with increased potential for liquefaction resulting from an earthquake.

Policy S 2-3 Require the location of heavily irrigated areas away from foundations and other structural supports to minimize the creation of a localized liquefaction hazards in areas of high seismicity.

Policy S 2-4 Evaluate development in areas identified as being subject to landslide, liquefaction, or subsidence (Figure 2-4) to minimize the potential of those hazards impacting property. Require new development in areas prone to geologic hazards to be designed to adequately reduce these hazards. 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.

Policy S 2-5 Implement development restrictions and seismic study requirements around active faults pursuant to the Alquist-Priolo Act to ensure that potential impacts of seismic hazards are mitigated.

Policy S 2-6 Maintain an inventory of unreinforced masonry structures in compliance with California's Unreinforced Masonry Law.

Policy S 2-7 Coordinate with the U.S. Geological Survey and California Geological Survey to ensure the Town obtains up-to-date mapping and data on the provision of earthquake predictions and fault zones.

Policy S 2-8 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.

6.3 Flood Hazards

Floods are natural and recurring events that are often unpredictable. Traversed by numerous ephemeral natural drainage courses and because Yucca Valley is subject to high intensity rainstorms, flooding is a significant hazard. Areas at an elevated risk of flooding are generally divided into 100- and 500-year flood zones.

Within Yucca Valley, the Federal Emergency Management Agency (FEMA) identified the following areas in a 100-year flood zone: Yucca Wash, Water Canyon, Old Woman Springs Creek, Covington Wash, East and West Burnt Mountain Creeks, Long Canyon, Hospital Canyon, and Piñon Creek. These areas have little or no drainage infrastructure, undersized pipes where runoff exceeds pipe capacity even for minor storms, obstructions, or damaged drainpipes. It is estimated that there are more areas affected by this flood zone that have yet to be identified by FEMA. Most of the 100-year flood zones are concentrated around Yucca Wash, which crosses the center of community east to west, making flood control an important safety issue. This and other flood zones in Yucca Valley are shown in Figure S-4, *Flood Hazard Zones*.

100-year events are not the only storms to cause flooding. Smaller storms can also result in property or infrastructure damage, especially when public and private floodways are not properly maintained. Floods are not only destructive to residential and commercial properties, but they can cause significant erosion to natural lands and ecosystems.

Most of the existing development in Yucca Valley has been completed without significant alteration to the natural terrain. As a result, natural drainage courses pass through developed or semi-developed areas. Small channels pass through private yards, and some structures are built within the flow paths of shallow drainages. Most streets, many of which are unpaved, follow the natural contours of the land, crossing arroyos and gullies without the benefit of culverts or bridges. These crossings can quickly become filled with high-velocity floodwaters, trapping vehicles or washing them downstream.

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

Flooding: A rise in the level of a water body or the rapid accumulation of runoff, including related mudslides and land subsidence, that results in the temporary inundation of land that is usually dry.

Floodway: A watercourse, including banks, that must remain clear to carry flood waters.

100-Year Flood Zone: Land with a 1 percent annual chance of flooding. Structures in a 100-year flood zone have a 26 percent chance of being flooded over the course of a 30-year mortgage, and only a 4 percent chance of being impacted by fire during the same time frame.

500-Year Flood Zone: Land with a 0.2 percent annual chance of flooding.

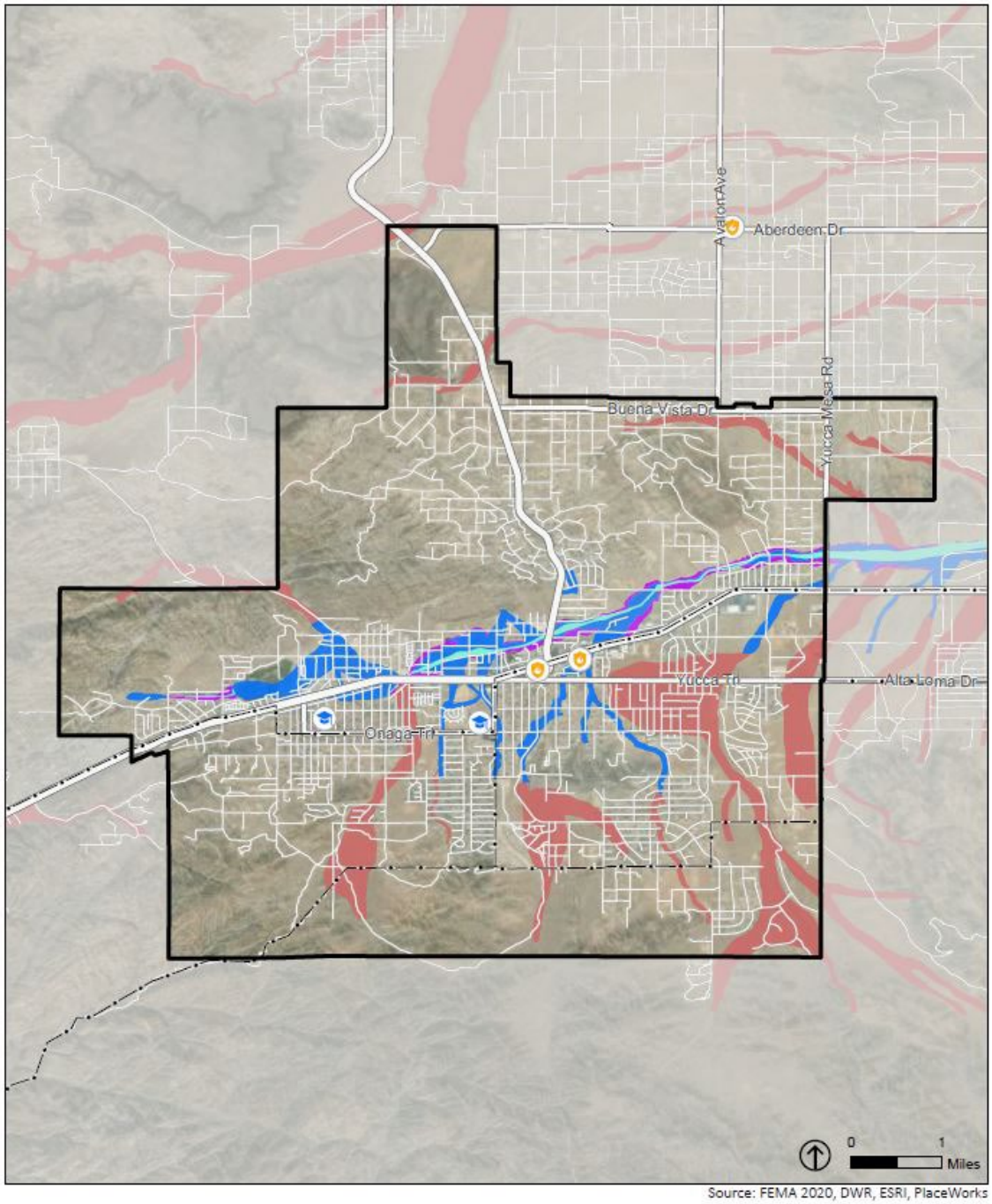
- **FEMA:** FEMA manages the National Flood Insurance Program (NFIP), providing insurance to the public in communities that participate in the program. FEMA is the main federal government agency contact during natural disasters and publishes the Flood Insurance Rate Maps (FIRM), which identify the extent of flood potential in flood-prone communities based on a 100-year flood (or base flood) event.

- **FIA:** 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.

- **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.

The Town can take precautions to prepare for and respond to a flood event and minimize severe damage to structures and facilities. Emergency preparedness planning is one of the primary ways the town can alleviate the dangers and risks associated with flood hazards. Implementing evacuation plans for the Town and critical care facilities as well as maintaining regional floodways will help to ensure that residents, businesses, and visitors remain safe during heavy rainstorms.

Figure S-4
Flood Hazard Zones



Potential Changes to Flood Risk in Future Years

Likelihood of Future Occurrence

Yucca Valley is traversed by Yucca Wash, Water Canyon, Old Woman Springs Creek, Covington Wash, East and West Burnt Mountain Creeks, Long Canyon, Hospital Canyon, and Piñon Creek, and is at risk to both creek flooding and localized stormwater flooding. Historically, the desert region of San Bernardino County and the Town of Yucca Valley have been subject to flooding events primarily during the winter and spring months when river systems swell with heavy rainfall runoff. Typically, stormwater is kept within defined limits by a variety of storm drainage and flood-control measures. Occasionally, extended heavy rainfall results 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 Town of Yucca Valley, much of the flood damage occurs in the floodway zones along SR 62. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

Floodwaters inundating a low-lying roadway.

Climate Change and Flood Hazards

Floods are among the most damaging natural hazards in Yucca Valley, 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 Yucca Valley and climate change may expand the parts of the town that are considered flood-prone. Although there are no specific flooding projections for the town, 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 town. Climate change is expected to increase the frequency and severity of droughts that cause soil to dry out and become compacted. When precipitation does return, more stormwater runs off the surface than can be absorbed into the ground, leading to 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. The loss of trees and other plants from wildfires or other climate-related exposures can therefore 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, increases in insurance rates, or restrictions of insurance coverage in vulnerable areas.

GOAL S 3

Minimized flooding and other hydrologic hazards and protect lives, property, and essential facilities within the community.

Policies

Policy S 3-1 Continue to manage and improve local drainage facilities to be consistent with or complementary to the Master Plan of Drainage.

Policy S 3-2 Seek funding for local drainage improvements to provide flood control protection, preserve natural landform, and create passive and active recreational open space amenities.

Wildland Fire: A nonprescribed fire, typically fueled by vegetation, occurring in areas where development is essentially non-existent. The line or zone where a wildfire and structures or other human development meet is called a wildland urban interface.

Defensible Space: The area adjacent to a structure or dwelling where wildland fire prevention or protection practices are implemented to provide defense from an approaching wildland fire or to minimize the spread of a structure fire to wildlands or surrounding areas. A 100-foot clearance is required by law. Defensible Space requirements are set by the state in the Public Resources Code (PRC 4291) and Government Code (GC 51182) for fuel modification to reduce fire danger. San Bernardino County Mountain Area Safety Taskforce recommends creating three zones to meet the defensible space requirement around a structure: a 10-foot ignition zone should be cleared closest to the structure, a 20-foot (or to property line) clean zone should be maintained from there, and lastly a 70-foot (or to property line) reduced fuel zone should be maintained along the outer edge of the property.

Peakload Water Supply: The supply of water available to meet both domestic water and firefighting needs during the particular season and time of day when domestic water demand on a water system is at its peak.

Fuel Modification Zone: A ribbon of land surrounding a development within a fire hazardous area that is designed to diminish the intensity of a wildland fire as it approaches the structures. Fuel modification includes both the thinning of combustible vegetation, and the removal and replacement of native vegetation with fire-resistive plant species.

Policy S 3-3 Collaborate with the San Bernardino County Flood Control District and other state and federal agencies to maintain flood-control infrastructure to minimize flood damage.

Policy S 3-4 Participate in regional planning efforts to monitor and regulate the use and removal of sewage disposal systems threatening the Town's groundwater basin.

Policy S 3-5 In locations where managed flood plains are recommended by the Master Plan of Drainage, no improvements shall be allowed to control or divert the flow of flood water.

Policy S 3-6 Discourage development within the 100-year floodplain. Where not feasible or existing development is within the 100-year flood zone, require development to be consistent with FEMA floodplain regulations to minimize risks associated with flood hazards.

Policy S 3-7 Collect and maintain data from FEMA and DWR regarding potential flood hazards within the town and ensure that information is made publicly available to community members to serve as an educational resource.

Policy S 3-8 Coordinate with FEMA regarding amendments to local Flood Insurance Rate Maps, recognizing the importance of redesignation of the 100- and 500-year flood plains within the town boundaries as facility improvements are completed.

Policy S 3-9 Coordinate with the San Bernardino County Flood Control District to enter into multi-use agreements within flood control facilities, allowing for safe, attractive recreational facilities while maintaining the function of the drainage facilities.

Policy S 3-10 Locate new development and/or critical facilities and infrastructure outside of flood hazard zones, to the extent feasible. The Town of Yucca Valley shall apply a minimum level of acceptable risk and disapprove projects that cannot incorporate adequate flood mitigation to the satisfaction of the Building Official or other responsible agency.

Policy S 3-11 During updates to the Safety Element, the Local Hazard Mitigation Plan, or at other times as appropriate, review the 500-, 100-, and 10-year flood hazard in the town by state, federal, county, and other standards, and use such sources to improve existing protection, and review protection standards proposed for new development and redevelopment.

Policy S 3-12 Identify areas of poor drainage and install new or upgrade existing drainage systems to accommodate drainage needs. Use natural infrastructure to the extent feasible.

Policy S 3-13 Support the policies and implementation actions of other General Plan elements that would limit and mitigate flood inundation hazards, including policies LU 1-14; OSC 1-6, 4-7, 4-12, and 4-13; and implementation actions: LU 2; OSC 9, OSC 10, OSC 15, OSC 16, OSC 17, OSC 20, OSC 21, and OSC 22.

6.5 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 Town of Yucca Valley. Generally, the fire season extends from early spring through late fall of each year during the hotter, drier 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 Yucca Valley: (1) wildfires, (2) wildland-urban interface fires, and (3) structural fires.

Wildfires

Wildfires can occur on mountains, hillsides, and grasslands. Vegetation, wind, temperature, humidity, and slope are all factors that affect how these fires spread. In Yucca Valley, native vegetation, such as chaparral, desert scrub, 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 town are undeveloped and consist of rugged topography with highly flammable vegetation. In particular, the hillside terrain in the northwestern and southern regions of the town have a substantial fire risk due to weather patterns, topography, and vegetation. Although wildland fires are often considered disruptive and dangerous, they are a necessary part of the ecosystem.

Wildland fires can reduce the amount of fuel build-up, thereby lowering the likelihood of a potentially large wildland fire. Fires often remove invasive plants that compete with native species for nutrients and space, and remove undergrowth, which allows sunlight to reach the forest floor, thereby supporting the growth of native species. The ashes that remain after a fire add nutrients often locked in older vegetation to the soil for trees and other vegetation. Fires can also provide a way for controlling insect pests by killing off the older or diseased trees and leaving the younger, healthier trees. Overall, wildland fires promote biological diversity and healthy ecosystems.

A wildland fire becomes a hazard when it grows out of control. When this happens, damage, loss of property, and sometimes loss of life are potential risks.

Undeveloped hillside areas in and adjacent to the town present a serious hazard because of the potential for large-scale wildland fires. Fire potential for Yucca Valley can occur at any time of the year from hot and dry conditions of the desert region. These conditions are now occurring later into the fall, which is when the Santa Ana winds typically begin, creating dangerous conditions that can quickly spread wildfires. 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). A wildland-urban interface defense zone is the area directly adjoining structures and evacuation routes that is converted to a less-flammable state to increase defensible space and firefighter safety. The wildland-urban interface threat zone is an additional strip of vegetation modified to reduce flame heights and radiant heat.

Hundreds of homes now border major forests and brush areas in California. With thousands of people living near and visiting wildland areas, the probability of human-caused fires is growing. Wildland-urban interface fires have occurred close to or encroached into the town, especially in large areas of grassland, scrub, and chapparal.

In the wildland-urban interface, efforts to prevent ignitions and limit wildfire loss 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 Fire Hazard Severity Zones, which designate wildfire areas as moderate, high, or very high severity. Incorporated areas, such as Yucca Valley, are considered Local Responsibility Areas (LRAs) and only have

designations of very high fire hazard severity zones within the town's limits. Significant portions of the town are located within a very high fire hazard severity zone. Figure S-5 shows the fire hazard severity zones in and around Yucca Valley and Figure S-6 identifies the wildland-urban interface. Wildland fires pose a significant threat to large areas of Yucca Valley, mostly in the west-northwest and south parts of town. Areas adjacent to the town that are susceptible to wildfires are also of concern as these conditions could exacerbate vulnerabilities within the town. A combination of factors including weather, topography, and vegetation put these areas at a high risk. Although wildland fires are often considered disruptive and dangerous, they are a necessary part of the ecosystem. A wildland fire becomes a hazard when it grows out of control. When this happens, damage and loss of property and sometimes loss of life are potential risks.

Structural Fires

Urban fires occur in built-up environments, destroying buildings and other human-made structures. These disasters are often because of 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 Town'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.

Figure S-5
Fire Hazard Severity Zones

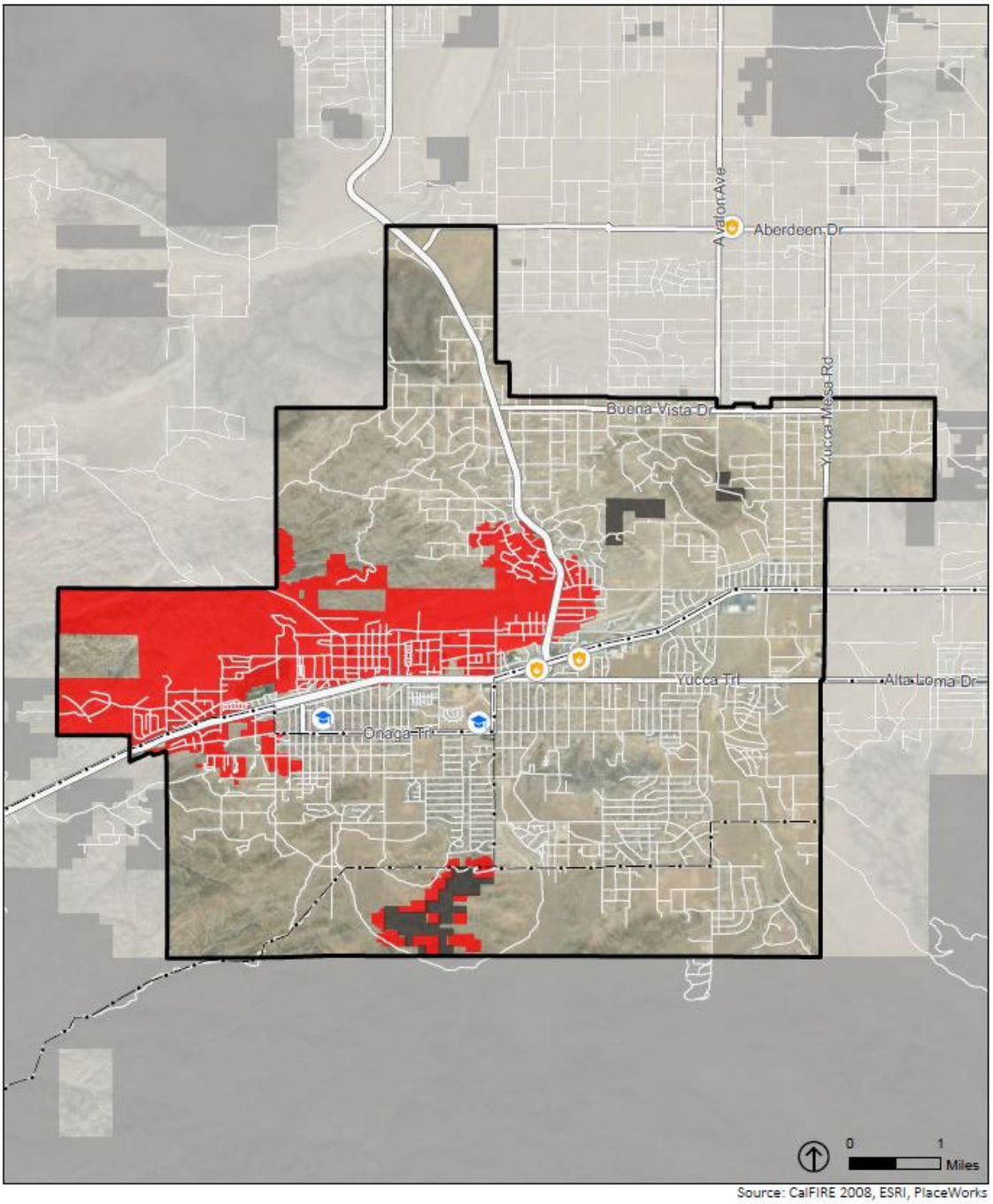
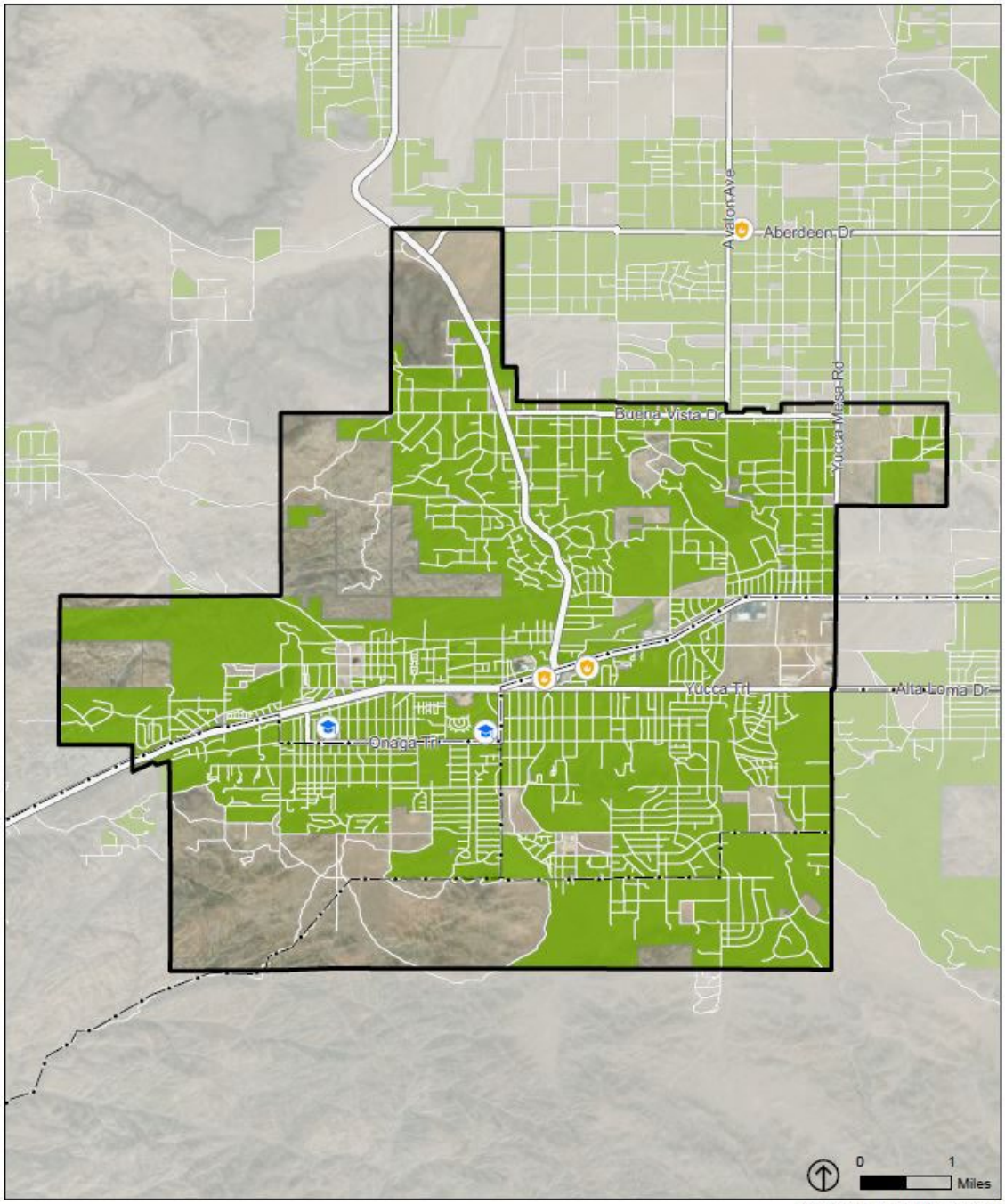


Figure S-6
Wildland-Urban Interface



Past Occurrences

Several historical wildland fires have impacted Yucca Valley, including the Acoma fire of 2008, which burned 356 acres but only destroyed one outbuilding in Town. The largest wildland fire, the 2006 Sawtooth-Millard-Heart Complex fire, was started by lightning and was the result of a merger of three separate wildland fires. It burned approximately 85,700 acres between Yucca Valley and San Gorgonio. In the Yucca Valley region, the fire destroyed 50 homes, 171 outbuildings, and 194 vehicles. It also caused a significant amount of damage to homes, businesses, and property. Seventeen individuals were injured, and one civilian died.

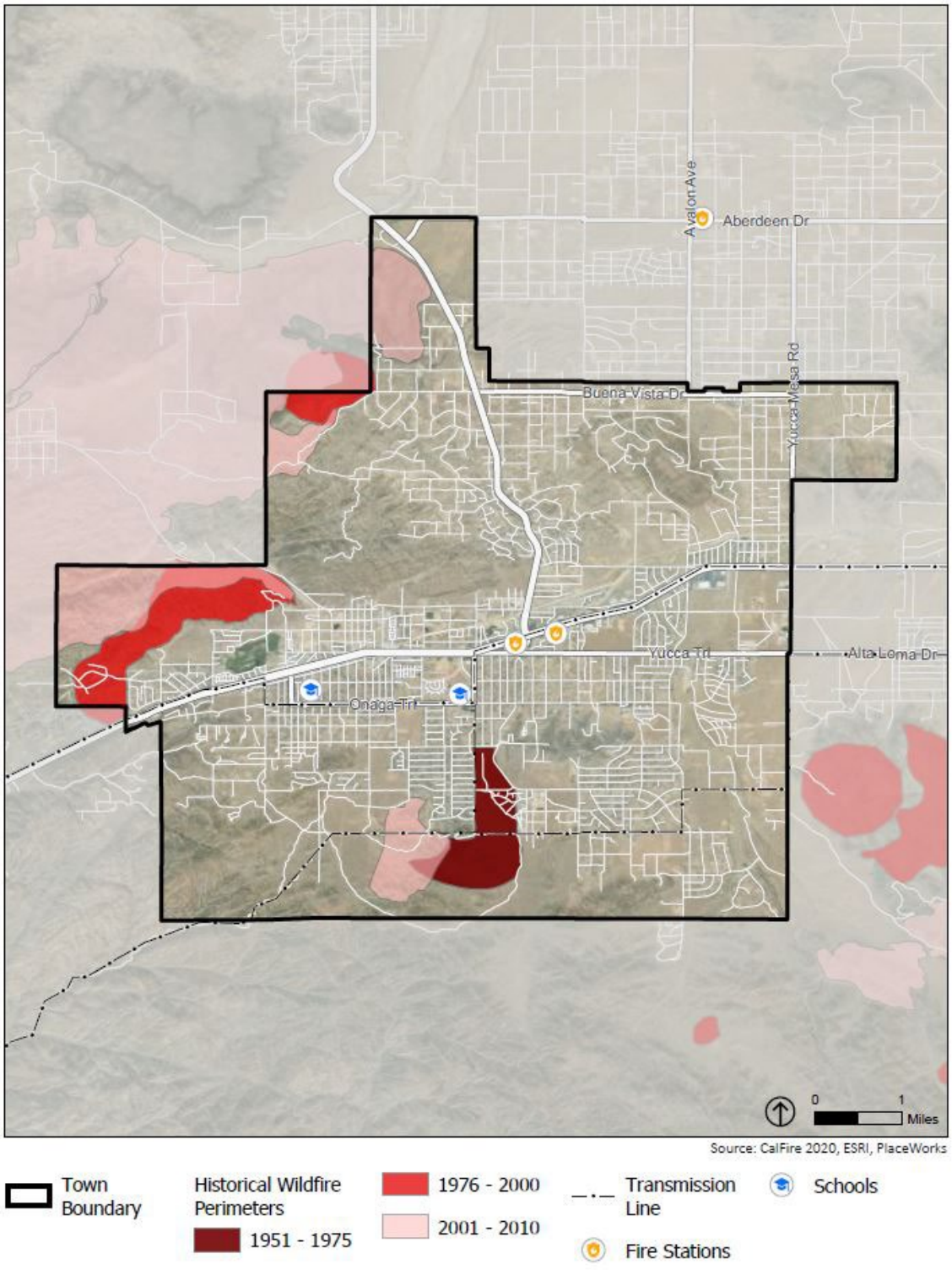
Figure S-7 shows the areas around Yucca Valley that have been burned by wildfires.

Fire Protection

Fire protection in Yucca Valley is provided by the San Bernardino County Fire Protection District, which operates one fire station within the Town limits (i.e., Fire Station No. 41), one in nearby unincorporated Yucca Mesa (i.e., Fire Station No. 42), and another in Joshua Tree (i.e., Fire Station No. 36).

Urban and wildland fire prevention and protection services are integral to protecting life and property in Yucca Valley. In preparation for a large-scale disaster, the San Bernardino County Fire Protection District trains a Community Emergency Response Team (CERT), organized under the supervision of a local volunteer who acts as the CERT Volunteer Coordinator and a local CERT Fire Liaison from the County Fire Protection District or another partner agency. This team of volunteers must complete coursework on disaster preparedness, fire safety, disaster medical operations, light search and rescue operations, disaster psychology, terrorism, and the CERT organization.

Figure S-7
Historical Wildfire Perimeters



Wildland fires have been—and will continue to be—a threat to the Town. In addition to providing fire safety standards in Yucca Valley, the San Bernardino County Fire Protection District also provides fire prevention and protection services. Several state and federal programs offer planning assistance for mitigating wildland fire hazards. CAL FIRE administers state and federal forestry programs aimed at reducing fuel loads and improving forest lands. California's Forest Improvement Program offers cost-share opportunities to assist landowners with land management planning and conservation. The Forest Stewardship Program is also offered by CAL FIRE. This program combines funds from state and federal sources to assist communities with multiple-ownership watershed and community issues related to pre-fire fuels treatment, forest health, and erosion control. The Town is part of the list of Communities at Risk, a federally funded program administered by the California Fire Alliance. This program makes grant funding available to "communities at-risk" in California for projects designed to reduce fire risks. As a designated at-risk community, Yucca Valley has the opportunity to apply for these resources.

Fuel modification zones and maintenance of defensible space are two methods that communities often employ to reduce the risk for fire. The state and county require a clearance of all flammable vegetation of 100-feet around a structure (to create a defensible space). Fire-resistant shrubs and trees are recommended, especially near structures. The Town of Yucca Valley addresses the issue of weeds and other vegetation as a potential fire hazard and identifies the steps that the Town takes to abate this hazard in the Town's Municipal Code.

Building construction standards for such items as roof coverings, fire doors, and fire-resistant materials help protect structures from external fires and contain internal fires for longer periods. The portion of a structure most susceptible to ignition from a wildland fire is its roof. During a wildland fire, roofs are easily ignited by burning cinders carried by winds or by direct contact with burning trees and large shrubs. Many modern building materials incorporate fire ratings, and some are noncombustible. The California Building Code, as adopted by the Town, should be referenced for more information. This General Plan identifies the goals and policies below to further protect residents and businesses from the risks associated with wildland fire hazards.

Potential Changes to Fire Risk in Future Years

Likelihood of Future Occurrence

Yucca Valley is at a high risk from wildfire, especially in the areas of chapparal, scrub, and grassland along hillsides. High fuel loads in the town, along with geographic and topographic 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 town, especially in these interface areas, the risk and vulnerability to wildfires will likely increase.

Fire hazard is among the highest-priority hazards in the town and is the hazard with the greatest potential for catastrophic loss. Wildfires can cause short-term and long-term disruption to the town, such as devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the town 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.

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 Town of Yucca Valley.

Climate Change and Wildfire

Changing climate conditions are expected to increase the wildfire risk in and around Yucca Valley. 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 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 of wildfire moving into 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).

An emergency services staging area during the Millard/Sawtooth Complex fire.

GOAL S 4

Avoid loss of life, injury, and minimize property damage from urban and wildland fire hazards.

Policies

Policy S 4-1 Require property owners within and adjacent to Very High Fire Hazard Severity Zones and the wildland-urban interface (WUI), as shown in Figures 6 and 7, to maintain a defensible space around structures consistent with San Bernardino County Fire Protection District standards.

Policy S 4-2 Coordinate with San Bernardino County Fire Protection District to implement a long-term fire protection training program and continue public education efforts to inform the community of wildland and urban fire hazards, evacuation routes, and ways to minimize damage caused by fires, such as through defensible space. The Town shall identify and map at-risk populations within the community and prioritize public outreach, as well as fire education and training among these populations.

Policy S 4-3 Coordinate with the San Bernardino County Fire Protection District to ensure that the District 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 4-4 Coordinate with the Hi-Desert Water District and Mojave Water Agency to maintain adequate water supply. Identify areas lacking adequate water service for firefighting, including capacity for peak load under a reasonable worst-case wildland fire scenario determined by San Bernardino County Fire Protection District. The Town shall identify areas lacking adequate water service, including areas where future development may occur.

Policy S 4-5 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 4-6 Update the Town's Fire Hazard Areas as new mapping becomes available.

Policy S 4-7 Develop and enforce fire-safe development codes to use as standards and regulations for fire protection, in accordance with the California Building Code, the California Fire Code, California Public Resources Code, Town Municipal Code for building and landscaping, and the San Bernardino County Fire Protection District regulations for new development in State Responsibility Areas (SRAs) or Very High Fire Hazard Severity Zones that meet or exceed the statewide minimums in the SRA Fire Safe Regulations.

Policy S 4-8 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.

Policy S 4-9 Require that conceptual landscaping plans for development in Very Fire Hazard Severity Zones identified by CAL FIRE and shown in Figure 6 be reviewed by the Planning Department and Fire Protection District 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.

(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 4-10 Require all new development projects with land classified as Very High Fire Hazard Severity Zones (VHFHSZs; Section 51177) or within areas defined as a wildland-urban interface, 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 4-11 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 4-12 Locate 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.

Policy S 4-13 Require project-specific fire-prevention plans and fuel modification around homes and subdivisions in areas of Very High Fire Hazard Severity Zones.

Policy S 4-14 Monitor fire-prevention measures (e.g., fuel reduction, fire breaks, etc.) required through project-specific fire-prevention plan to reduce long-term fire risks in Very High Fire Hazard Severity Zones.

Policy S 4-15 For existing non-conforming development, the Town 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 4-16 Develop programs 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.

Policy S 4-17 The Town shall work with CAL FIRE to maintain existing fuel breaks, vegetation clearance, and emergency access routes for effective fire suppression on public and private roads.

Policy S 4-18 The Town shall identify existing multifamily housing, emergency shelters, residential care homes (seven or more clients) located within an area classified as a State responsibility Area (California 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 4-19 Ensure that non-English-speaking residents or property owners in Very High Fire Hazard Severity Zones, the Wildland-Urban Interface, or otherwise within an area of elevated fire hazard have access to fire prevention plans or information pertaining to fire hazards in their native language.

Policy S 4-20 Support measures that help firefighting crews and emergency response teams respond to fire hazards or work under low-visibility conditions, such as high-visibility street and building address signage.

Policy S 4-21 Support the policies and implementation programs of other General Plan elements that would limit and mitigate fire hazards, including policies OSC 1-6, 2-3, 3-3, and 4-1 to 4-7; and Implementation Actions OSC 9, OSC 10, OSC 15, OSC 16, OSC 17, OSC 20, OSC 21, and OSC 22.

6.6 Extreme Weather

Severe weather conditions can cause substantial damage to property and infrastructure. Like other natural hazards, weather can also negatively impact daily economic activity and potentially result in injuries and/or loss of life. The Town of Yucca Valley is susceptible to high winds, thunderstorms, dust storms, extreme temperatures, drought, and winter storms resulting in hail, heavy snow, and/or ice. An additional risk with extreme weather conditions is that they can also trigger other types of hazards, such as floods, landslides, or wildland fires.

Windstorms

Windstorms are chronic events in Yucca Valley that cause extensive damage. Windstorms can occur in Yucca Valley almost any time during the year, but primarily in January, July, August, and December. It is estimated that the Town is impacted by windstorms approximately five times per year. Windstorms may travel in any direction and are only partly affected by terrain. These storms can potentially damage trees, power lines, and property. They also increase the chance of wildland fires. Windstorms, where winds can reach 65 miles per hour, frequently cause power outages in Town. Power outages may affect economic activity in Yucca Valley, although many businesses are prepared and use backup generators when needed.

Dust Storms

Dust storms are high wind events that pick up and distribute sand and other particles over large distances. In the Yucca Valley region, dust storms are usually the result of Santa Ana wind conditions, which occur most often in the fall and winter months. They can reduce visibility, damage buildings, and negatively impact the health of those in the community. The combination of wind and dust most often negatively impacts traffic through Town. Less frequent than windstorms, the damage from dust storms can be more severe.

A residential neighborhood after a heavy snowfall.

Winter Storms and Extreme Cold

Given its location, the Town of Yucca Valley occasionally receives sufficient snow and/or ice to interfere with commuting and other activities. Historically heavy snowstorms are more common in the areas of higher elevation and can result in the accumulation of a few inches or a few feet of snow. Winter storms occur on a yearly basis between December and March. Heavy snow and ice accumulation on rooftops, overhead utility lines, and tree

branches are the primary cause of property damage. These storms can also bring extreme cold. Populations that are more vulnerable to cold temperatures include the elderly, persons with medical conditions, infants, and small children. Caring for sensitive residents and visitors can be more challenging with snowy or icy road 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 Yucca Valley, the extreme heat threshold is 101.9 degrees Fahrenheit (°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. 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. 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. 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.

Drought

A drought is a long period when precipitation levels are well below normal. Yucca Valley chronically experiences drought cycles. Drought makes less water available for people, businesses, agricultural activities, and natural systems. 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. 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 approximately 90 percent of San Bernardino County was classified as being in "extreme" drought. As of spring 2021, southwestern San Bernardino County, including Yucca Valley, was classified as being in "severe" drought.

Potential Changes to Severe Weather and Climate-related Hazards in Future Years

Likelihood of Future Occurrence

According to historical hazard data, severe weather is an annual occurrence in Yucca Valley. 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 town. 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.

Extreme heat tends to occur on an annual basis and is likely to continue occurring annually. As Yucca Valley is located in the Mojave Desert at an elevation of approximately 3,300 feet, extremely high temperatures will continue to be a more common occurrence than cold temperatures.

Based on historical information, the occurrence of drought in California, including San Bernardino County, is cyclical, driven by climate patterns and has occurred frequently in the past. 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 Yucca Valley to drought include reduction in water supply and an increase in dry fuels for wildfires.

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 who rely on the State Water Project. Continued decline in the Sierra Nevada snowpack volume is expected, which may lead to lower volumes of available imported water.

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 Yucca Valley 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 Yucca Valley, possibly causing an increase in the frequency of severe weather events and any associated hazards. Some already-rare forms of severe weather in California, such as tornados, are not expected to increase in a noticeable way.

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 27 and 38 by the middle of the century (2041 to 2060), and to between 30 and 68 by the end of the century (2070 to 2099).

Overall, Yucca Valley 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, Yucca Valley residents will face increased risk of death from dehydration, heat stroke, heat exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

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 indicate 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.

GOAL S 5

A resilient community able to adapt to and mitigate impacts from climate-related hazards.

Policy S 5-1 Collaborate with local governments and special districts in San Bernardino County and the Inland Southern California Climate Collaborative to develop and implement regional climate change adaptation and resilience initiatives.

Policy S 5-2 Support implementation of the Resilient IE project to foster increased community resilience to climate-related hazards in Yucca Valley and across the wider region.

Policy S 5-3 Coordinate with the Mojave Water Agency and Hi-Desert Water District to explore ways to improve and increase storage capacity and generation efficiency.

Policy S 5-4 Coordinate with local governments and Morongo Basin Transit Authority to increase shading and heat-mitigating materials on pedestrian walkways and transit stops.

Policy S 5-5 Use the reported data and findings of applicable local, regional, or state documents or plans pertaining to climate-related hazards that could impact the Town of Yucca Valley, including the California Climate Change Assessment, Cal-Adapt.org, the California Adaptation Planning Guide, and the Safeguarding California Plan.

Policy S 5-6 Prepare for a reduced, long-term water supply resulting from more frequent and severe drought events, including working with the Hi-Desert Water District to implement extensive water conservation measures and ensure sustainable water supplies.

Policy S 5-7 Encourage renovation of existing Town-owned assets and design future facilities to increase community resilience and energy independence, including measures such as incorporating renewable energy generation systems, battery storage systems, energy-efficient design and features, wind barriers, protective architectural features, drought-resistant ground coverage, drought-tolerant green infrastructure, high-reflectivity pavement, and natural or green infrastructure, as feasible.

Policy S 5-8 Support regional efforts to ensure that persons experiencing homelessness or groups in the Town of Yucca Valley have access to temporary and/or emergency housing, food, and other essential living materials to keep them safe during hazard events.

Policy S 5-9 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 5-10 Ensure that lower-income households have access to information about low-cost programs (e.g., subsidies for National Flood Insurance Program participation, air-conditioning, low-cost healthcare) to protect their homes and wellbeing from hazards such as flooding, extreme heat, and severe weather.

Policy S 5-11 Support state, regional, and community-based programs designed to 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 5-12 Support the policies and implementation programs of other General Plan elements that would promote increased climate change resilience and community-wide adaptive capacity, including policies LU 1-26; H2-2; OSC 5-1 to 5-5, 6-1 to 6-6, 8-2, 8-4, 8-5, 8-6, 9-1 to 9-3, 9-6 to 9-9, 11-2, and 11-3; and Implementation Actions LU 16; C 23, C 24; OSC 10, OSC 11, OSC 12, OSC 17, OSC 23, OSC 24, OSC 25, OSC 26, OSC 27, OSC 28, OSC 33, OSC 35, OSC 36, OSC 37, OSC 38, OSC 40, OSC 41, OSC 46, and OSC 47.

6.8 Hazardous 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.

Hazardous Material: Any material that because of its quantity, concentration, or physical or chemical characteristics poses a significant present or potential hazard to human health and safety or the environment if released into the workplace or environment.

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 SR 62 and SR 247 that pass through Yucca Valley. Since 1970, there have been no reported roadway hazardous materials incidents.

At this time, the Town of Yucca Valley has a relatively small number of facilities that use or store hazardous materials. However, as the Town continues to grow, there is a potential for more generators of hazardous material and waste to locate in the area. Businesses that store hazardous materials and waste may include gas stations, auto shops, and dry cleaners, among others. One particular concern for any community is the proximity of hazardous materials generators or storage sites to schools and homes. Another consideration is the combined impact of seismic activity or flooding and the resulting release of these materials.

The Town uses county standards for the safe handling of these materials and partners with the county hazardous materials division as needed. Hazardous materials can be dangerous if not maintained and disposed of properly. Household-generated hazardous wastes can be disposed of or recycled through San Bernardino County programs and facilities. Collection facilities are located throughout the region, accepting motor oil, pesticides, batteries, electronics, etc. Standards and requirements set by state and local regulations ensure that businesses comply with safe handling practices.

Hazardous materials and waste within Yucca Valley are managed by the Certified Unified Program Agency (CUPA), a micro-agency within the San Bernardino County Department of Environmental Health. The CUPA with responsibility for the Town of Yucca Valley is the San Bernardino County Fire Protection District, Hazardous Waste Materials Division. The CUPA consolidates, coordinates, and makes consistent the regulatory activities of several hazardous materials and hazardous waste programs, including Hazardous Materials Management, California Accidental Release Prevention, Hazardous Waste Management, Underground Storage Tanks, Aboveground Storage Tanks, and Emergency Response.

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 California Department of Toxic Substances and Control (DTSC). Currently, the Town of Yucca Valley has a relatively small number of facilities that use or store hazardous materials. The Town uses County standards for the safe handling of these materials and partners with the county hazardous materials division as needed. Hazardous materials can be dangerous if not maintained and disposed of properly. Household-generated hazardous wastes can be disposed of or recycled through San Bernardino County programs and facilities. A review of the leaking underground storage tank list produced by the RWQCB and the DTSC EnviroStor database indicates two school investigation cleanup sites at Indio Avenue/Business Center Drive and Buena Vista Drive and Yucca Mesa Road, and nine leaking underground storage tank sites throughout the town.

The Town supports local regulating agencies in notifying the public if an imminent public health threat is posed by an outside factor. The transport of hazardous materials/wastes and explosives through the town is regulated by the California Department of Transportation (Caltrans). SR 62 and SR 247 are open to vehicles carrying hazardous materials/wastes. As a result, these roads pose a potential for spills or leaks from trucks transporting hazardous materials. Town 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 SR 62 and SR 247. The San Bernardino County Sheriff's Department, San Bernardino County Fire Protection District, San

Bernardino County Office of Emergency Services, and San Bernardino County Environmental Health Services are responsible for hazardous materials accidents at all locations within the town.

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 town in the past 50 years, it is unlikely a hazardous materials incident will occur in Yucca Valley 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 town 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.

The following set of comprehensive goals, policies, and actions have been established to protect Yucca Valley from the risks associated with hazardous materials.

GOAL S 6

Avoid the risk of loss of life, injury, and serious illness and minimize property damage resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous materials wastes.

Policy S 6-1 Collaborate with the County of San Bernardino and other appropriate agencies to facilitate the safe and immediate cleanup of all hazardous waste sites and to provide safe facilities for disposal in accordance with applicable federal, state, and local regulations.

Policy S 6-2 In conjunction with the San Bernardino County Fire Protection District, review and monitor potentially hazardous materials associated with industrial uses.

Policy S 6-3 Encourage businesses to utilize practices and technologies that will reduce the generation of hazardous waste.

Policy S 6-4 Promote the proper disposal, handling, transport, delivery, treatment, recovery, recycling, and storage of hazardous materials, and require all businesses that use, store, or produce hazardous materials to comply with the County Fire Protection District's Business Plan requirements.

Policy S 6-5 Cooperate with the state and gasoline station owners and operators in monitoring the conditions of subsurface tanks.

Policy S 6-6 Cooperate with regulators and encourage the enforcement of laws that require all users, producers, and transporters of hazardous materials and wastes to clearly identify such materials and notify the appropriate county, state, and/or federal agencies as required by law.

Policy S 6-7 Coordinate with the San Bernardino County Fire Protection District and the County Environmental Health Department to assure improved response to and capability for handling hazardous materials incidents.

Policy S 6-8 Prohibit any new facilities using, storing, or producing hazardous materials from being located directly adjacent to existing residential or school uses.

Policy S 6-9 Encourage use of on-site green infrastructure to protect and enhance community water quality with landscape features (e.g., berms, grasslands, plantings) that either contain released hazardous materials or process and/or absorb pollutants from infiltrating the soil or watershed.

Policy S 6-10 Support the policies and implementation programs of other General Plan elements that would limit and mitigate hazardous materials release hazards, including policies LU 1-19, 1-22, 1-23, 1-27, 2-10, 2-11; and OSC 10-1 to 10-5; Implementation Actions LU 5, LU 8; OSC 39, OSC 42, OSC 43, and OSC 44.

6.9 Disaster Preparedness, Response, and Recovery

Emergency services for the Town of Yucca Valley include police, fire, and emergency health services. The primary role of these service providers is to prevent, respond to, and assist in the recovery from naturally occurring and human-made hazards. Their services include monitoring criminal activity; traffic enforcement; preventing and fighting residential, commercial fires, and wildland fires; and community planning for the availability of health services and emergency transportation and evacuation routes. The goals, policies, and action items following the descriptions below govern public safety for the Town.

Police

The Town contracts with the San Bernardino County Sheriff's Department to provide police services. This department is responsible for crime prevention and protection services. The Department also educates the public and engages them through articles, public safety media announcements, and safety events throughout the year.

Creating a safe community also includes protecting the Town from crime and accidents. Crime Prevention through Environmental Design (CPTED) is one way that the community and Sheriff's Department can implement strategies that deter crime and create a safer streetscape. Projects can utilize CPTED practices such as adequate lighting and well-maintained landscaping as preventative measures against crime.

Urban and Wildland Fires

Urban and wildland fire prevention and protection services are integral to protecting life and property in Yucca Valley. Fire safety standards and protection are provided by the County of San Bernardino. In preparation for a large-scale disaster, the County Fire Protection District and the Town collaborate to train a Community Emergency Response Team (CERT). This team of volunteers must complete coursework on disaster preparedness, fire safety, disaster medical operations, light search and rescue operations, disaster psychology, terrorism, and the CERT organization.

Emergency Health Services

The Hi-Desert Medical Center is the sole provider of emergency and acute care, serving an 1,800-square-mile area of the Morongo Basin. This facility is the closest hospital to the Town of Yucca Valley. Smaller medical facilities in Town include urgent care centers and special service facilities. Due to limited regional emergency health facilities, the Town's Emergency Operations Plan (EOP) identifies San Bernardino County Department of Public Health as the primary agency responsible for public health and medical needs. The EOP provides direction for government officials and departments in emergency circumstances. When it comes to emergency healthcare, this agency will designate or set up facilities based on the severity of the situation. As the population continues to grow, these agencies and facilities will also expand to meet the health care needs of residents.

Emergency Preparedness

Emergency preparedness activities in Yucca Valley are conducted through the Town of Yucca Valley's Emergency Preparedness Division. The Emergency Preparedness Division is responsible for the planning, coordination, and management of disaster preparedness, mitigation, response, and recovery. To help keep the Town's residents and visitors prepared, safe, informed, and able to recover from any emergency or disaster, the Emergency Preparedness Division prepares and maintains emergency plans; coordinates emergency operations, maintains and restores essential systems; protects the use and distribution of resources; ensures continuity of government and services; and coordinates operations with other jurisdictions' emergency service organizations.

The Town of Yucca Valley provides the public with access to a CERT training program. The CERT Program provides for community and employee self-sufficiency to meet the general public's urgent lifesaving 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.

San Bernardino County uses the Telephone Emergency Notification System (TENS), a phone alert system to alert residents and businesses in San Bernardino County, including the Town of

Yucca Valley, 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. The San Bernardino County Sheriff's Department and Fire Protection District send high-speed mass notifications via telephone and text messages using TENS. TENS alerts do not generally go out to the entire County but instead are targeted to affected areas.

The Town of Yucca Valley also uses the Ready San Bernardino County App. The app provides you the ability to receive critical emergency alerts, find San Bernardino County emergency shelters, see current evacuation route maps, receive the latest news and weather, create an Emergency Preparedness Plan, and share your status with your contacts. During an emergency situation, the Town emergency response officials and the Town Manager will post information on the Town's website.

Other alert warning systems include the Integrated Public Alert and Warning System (IPAWS), Wireless Emergency Alerts (WEA), the Emergency Alert Systems (EAS), and the Emergency Digital Information System (EDIS).

The IPAWS is a modernization and integration of the nation's alert and warning infrastructure and will save time when time matters most, protecting life and property. Federal, State, territorial, tribal, and local alerting authorities can use IPAWS and integrate local systems that use Common Alerting Protocol (CAP) standards with the IPAWS infrastructure. IPAWS provides public safety officials with an effective way to alert and warn the public about serious emergencies using the EAS, WEA, the National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and other public alerting systems from a single interface.

During threatening emergencies, authorized government agencies can send WEAs to your mobile device. Messages regarding extreme weather, life-threatening emergencies, AMBER alerts, and Presidential Alerts during a national emergency are all sent through the WEA system.

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 NOAA's National Weather Service (NWS) work collaboratively to maintain the EAS and WEAs, 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 S-8 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.

According to the Resilient IE, Yucca Valley's evacuation network totals 37 miles. Approximately 8 miles of evacuation routes (21 percent) are in fire hazard zones, 7 miles (20 percent) are in flood hazard zones, and 21 miles (57 percent) are in landslide hazard zones.

Public Safety Power Shutoffs

The Town of Yucca Valley 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.

In October 2019, SCE conducted four large-scale events, shutting off power to approximately 160,000 customers, including those in San Bernardino County. The largest PSPS 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 PSPS. Ultimately, proactive de-energization was required for 126 circuits (including three transmission lines) affecting 126,364 customers, including some in San Bernardino County, over two weather systems.

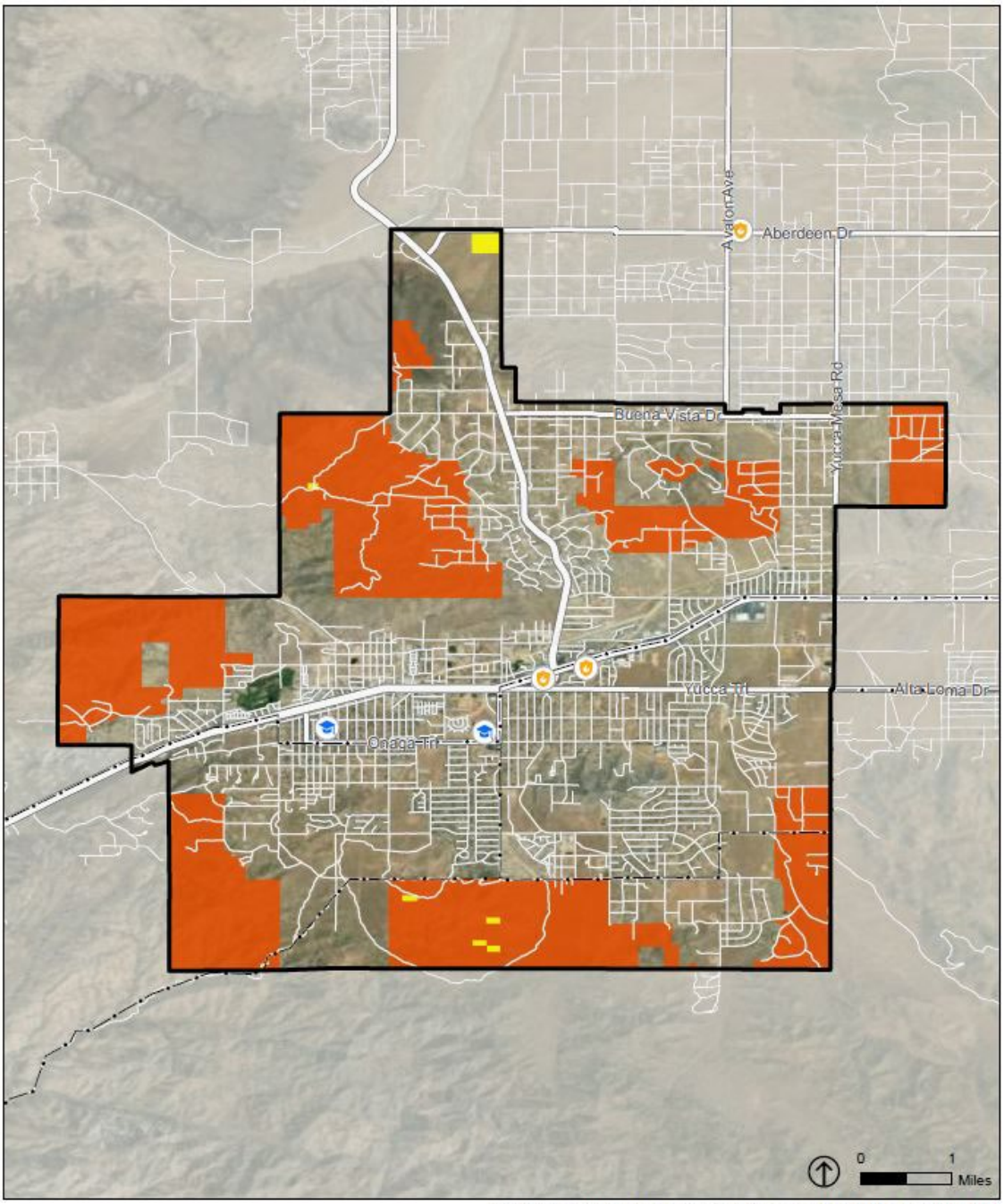
In January 2021, SCE conducted one large-scale event in response to a Santa Ana wind event, shutting off power to approximately 114,000 customers, including those in Yucca Valley. In December 2020, SCE conducted two large-scale events shutting off power to approximately 95,000 customers, including those in San Bernardino 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 PSPS. 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.

PSPS 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. PSPS 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. PSPS 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. 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 Yucca Valley are provided through a mutual-aid agreement with CAL FIRE and local fire departments. CAL FIRE provides a variety of public safety services, including fire protection, medical aid, rescue, hazardous materials response, and educational safety programs.

Figure S-8
Residential Parcels with Evacuation Constraints



Source: Town of Yucca Valley, County of San Bernardino, ESRI, PlaceWorks 2021

Town Boundary
Evacuation Constrained Parcel
Evacuation Constrained Parcel Within one or More Hazards
Transmission Line
Fire Stations
Schools

GOAL S 7

Prepare for and respond to natural and human-caused disasters to avoid the loss of life and minimize impacts to health, property, and the delivery of vital services in the event of an emergency.

Policy S 7-1 Coordinate with the San Bernardino County Sheriff's Department and Fire Protection District to ensure an appropriate level of police and fire protection to preserve and protect the health, welfare, and property of residents and businesses in the Town of Yucca Valley.

Policy S 7-2 Require the San Bernardino County Sheriff's Department and Fire Protection District to evaluate new development plans and comment on their ability to provide services.

Policy S 7-3 Encourage the evaluation of projects using design practices as a means of providing increased security in residential, commercial, and industrial development.

Policy S 7-4 Update and maintain the Emergency Operations Plan and Hazard Mitigation Plan, keeping them current with county, state, and federal requirements; include measures pertaining to human-made and natural hazards, such as flood, access, earthquakes, landslides, hazardous materials, evacuation, severe weather, and fire.

Policy S 7-5 Adopt and maintain the evacuation route network, as defined in the Resilient IE project, and ensure emergency evacuation routes are clearly identified with adequate signage throughout the town. The Town will also 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. The Town will work to ensure that evacuation transportation services are available for those with limited mobility or lacking access to a personal vehicle.

Policy S 7-6 Promote public and quasi-public education programs to enhance public safety.

Policy S 7-7 Coordinate with the San Bernardino County Fire Protection District, San Bernardino County Sheriff's Department, and other appropriate agencies for the provision of adequate equipment and personnel, as well as expanded levels of service, as necessary.

Policy S 7-8 Coordinate with San Bernardino County Office of Emergency Services and the National Weather Service to 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 7-9 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.

Policy S 7-10 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 7-11 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 7-12 Identify critical facilities in hazard-prone areas and work to relocate or harden these facilities to reduce risk of damage and loss of service.

Policy S 7-13 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.

Policy S 7-14 Ensure that communication systems used by emergency responders and key Town staff have sufficient redundancy and resiliency to meet Town needs during and after a hazard event.

Policy S 7-15 Support the policies and implementation programs of other General Plan elements that would promote the effectiveness of emergency response and services, including Policy OSC 11-3.

Policy S 7-16 Support resilience hubs and cooling centers throughout Yucca Valley.

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