CITY OF MONTAGUE
SAFETY ELEMENT

Adopted November 6, 2025

CITY OF MONTAGUE
230 S. 13TH STREET
MONTAGUE, CA 96064

Figures*

* The maps included herein are provided for information purposes only and are subject to change. Lines, roads, topography, and other planimetric features shown on the maps are compiled from different sources and may not be current or reliable. The City of Montague assumes no liability for the accuracy of the data shown on the maps.

7.1 INTRODUCTION

The purpose of the Safety Element is to promote public safety and the protection of residents and property in the City through identification of natural and human-derived hazards with the potential to impact Montague, by incorporating identified hazard and risk considerations into the land use planning process, and through the inclusion of strategies to mitigate such hazards to the extent feasible.

7.2 STATUTORY REQUIREMENTS

California Government Code Section 65302(g) requires that each city and county develop a Safety Element, "… for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; other seismic hazards … and other geologic hazards known to the legislative body; flooding; and wildland and urban fires." The Safety Element must also identify residential developments in hazard areas lacking sufficient emergency egress; include mapping of known fire, flood, and seismic and other geologic hazards; and address evacuation routes, military installations, water supply requirements, and minimum road widths and clearances around structures as they relate to fire and geologic hazards.[1] Climate change impacts and adaptation strategies must be addressed in the Safety Element or through adoption of a Local Hazard Mitigation Plan or other document that includes this information.

7.3 EMERGENCY SERVICES

7.3.1 Law Enforcement

Police protection services for the City are provided under contract by the Siskiyou County Sheriff's Office. Montague has contracted with the County for law enforcement services since 1983, with the level of service periodically adjusted to address escalating costs. As of 2025, the City receives approximately 2,800 hours of law enforcement coverage per year. The Sheriff's Office is located approximately 6.5 road miles west of Montague at 305 Butte Street in Yreka. The Siskiyou County Sheriff's Office maintains mutual aid agreements with surrounding jurisdictions, including California and Oregon counties, city police departments, the California Highway Patrol (CHP), and the California Department of Forestry and Fire Prevention (CAL FIRE). In addition to the Sheriff's Office, CHP provides law enforcement along State Route 3 (SR 3).

7.3.2 Fire Protection

Fire protection services for the City of Montague, including structural firefighting, wildland fire suppression, and airport rescue and firefighting, are provided by the City of Montague Fire Department. The Fire Department also provides Basic Life Support and support for Haz-Mat responses. Under contract to the Montague Fire Protection District, the Fire Department extends these services outside city limits to an approximately 230-square mile service area that encompasses the City's sphere of influence. In 2025, and for the past eight years, Fire Department staffing has been at or near capacity, and typically includes a chief, an assistant chief, and 20 to 22 volunteer firefighters. The Fire Department welcomes new volunteers as positions

[1] The nearest military installation is approximately 50 miles northeast of the City of Montague. The City is not affected by operations at, or associated with, the installation, including aircraft training routes or special use airspace. Consequently, the Safety Element does not discuss hazards relative to these types of facilities.

become available. The Montague Fire Department fire station is centrally located at 121 10th Street, and response times within the City are typically under five minutes. The fire station is in moderate condition but requires additional capacity for the Fire Department's current apparatus inventory. The Department maintains automatic and mutual aid agreements with adjoining jurisdictions, including CAL FIRE.

The Fire Suppression Rating Schedule (FSRS) is a scoring system used by the Insurance Services Office (ISO) to rank a community's fire protection capabilities on a scale of 1 to 10. A high score of 1 is awarded to communities with superior fire protection capabilities and a classification of 10 is assigned to communities with fire protection capabilities that do not meet minimum criteria for ISO recognition. At the time of the most recent ISO rating in 2014, the City of Montague Fire Department received a Public Protection Classification (PPC) score of 3Y, indicating a superior fire department, but the water supply was noted as being incapable of meeting the minimum FSRS fire flow criteria of 250 gallons per minute (GPM) for two hours. According to the City Engineer, it is not evident how this could have been the case, as fire flows in Montague substantially exceed minimum FSRS criteria and were capable of doing so at the time of the 2014 rating. To this end, a recent audit of the Fire Department was completed by ISO, but the Department's new rating has not yet been released.

7.3.3 Medical Services

The nearest hospital to the City of Montague is Fairchild Medical Center (FMC), located approximately 7.6 road miles west in the City of Yreka. FMC and its clinics provide a variety of healthcare services, including emergent, medical, surgical, and ancillary services such as laboratory and imaging. The 25-bed hospital includes a Level IV Trauma Center and FMC in the process of constructing a new emergency department to increase capacity. According to FMC, its facilities meet the highest seismic rating and the organization maintains constant preparation and readiness for the next disaster. Located slightly further away in Mt. Shasta (35 road miles south of Montague) is Dignity Health's Mercy Medical Center (MMC), a 25-bed hospital offering similar healthcare services as FMC in addition to a Level III Trauma Center. Patients brought to MMC requiring a Level II Trauma Center are taken by air ambulance to Dignity Health's MMC in Redding. Medical air transport is provided by REACH Air Medical Services and PHI Air Medical, both of which operate air ambulances out of the Redding Municipal Airport. Depending upon the type of care needed, there are additional hospitals in Ashland, Medford, and Redding. For ground ambulatory services, Mount Shasta Ambulance Service provides advanced life support and emergency medical transport services to all areas of the City and Shasta Valley.

7.3.4 Disaster Management

The Siskiyou County Office of Emergency Services (OES), located in the City of Yreka, is the primary disaster management agency for Siskiyou County. Siskiyou County OES coordinates with local, state, and federal agencies to prepare for, respond to, and recover from emergencies and disasters. This includes helping communities like Montague develop the resources to mitigate risks, such as emergency preparedness plans, and supporting training for first responders.

Through the Ready Siskiyou program, Siskiyou County OES makes resources for disaster preparation and response available to the public. During large-scale events, Siskiyou County OES activates and maintains the Emergency Operations Center that is used to coordinate and support responses among the various agencies. Following major incidents, Siskiyou OES facilitates post-disaster response and recovery by providing technical advice, assisting with emergency

declarations, and working with the California Governor's Office of Emergency Services to obtain Presidential proclamations.

7.4 EMERGENCY PREPAREDNESS

7.4.1 Local Hazard Mitigation Plan

In addition to the information contained herein, the City of Montague participated in the development of the Siskiyou County Local Hazard Mitigation Plan (LHMP). The LHMP was developed in accordance with the Disaster Mitigation Act of 2000 (DMA 2000) and followed FEMA's Local Hazard Mitigation Plan guidance. The LHMP incorporates a process where hazards are identified and profiled, the people and facilities at risk are analyzed, and mitigation actions are developed to reduce or eliminate hazard risk. The implementation of these mitigation actions, which include both short- and long-term strategies, involve planning, policy changes, programs, projects, and other activities. The current LHMP is incorporated into the City of Montague General Plan Safety Element by reference and is available on the City's website.

7.4.2 Community Wildfire Protection Plan

The primary purpose of the Community Wildfire Protection Plan for Siskiyou County (CWPP) is to provide guidance that enhances protection of human life and to help Siskiyou County communities become more adaptable to wildfire, while reducing the wildfire threat to community values such as structures, critical infrastructure, businesses, and natural and historic resources. The CWPP is designed to guide future actions by residents, property owners, business owners, homeowners associations, fire safe councils, agencies, and citizens. It provides an understanding of how to plan and implement specific actions to reduce wildfire threat, live more safely in a wildfire prone environment, and build more resilient communities.

7.4.3 Water Conservation Program

California Water Code Section 375 authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies. The purpose of Section 375 is to help local water suppliers manage and conserve their water supplies, especially in the context of California's recurring droughts and the constitutional mandate to prevent the waste or unreasonable use of water. Adoption of a water conservation program allows water suppliers to better manage potable water supplies and avoid or mitigate the effects of drought and supply shortages. For cities that rely on surface waters for their water supply, such as Montague, water conservation programs can be essential to ensuring a reliable and sustainable minimum supply of water for the public health, safety, and welfare. As of 2025, the City of Montague has not yet adopted a water conservation program.

7.4.4 Evacuation and Preparedness Plan

The Siskiyou County Local Transportation Commission (SCLTC) is in the process of developing the Siskiyou County Evacuation and Preparedness Plan in coordination with the County of Siskiyou, tribal governments, and the nine cities in Siskiyou County, including Montague. The objectives of the Evacuation and Preparedness Plan are to:

- Develop an understanding of current emergency preparedness plans and how transportation organizations, assets, and services are included in them.
- Analyze infrastructure deficiencies and recommend improvements to help mitigate risks related to natural disasters.

- Create and adopt a region-wide evacuation and preparedness plan detailing standardized practices and protocols for transportation services and evacuation centers for use by Siskiyou County OES, local and regional fire departments, local law enforcement personnel, transit and other transportation providers, the County, cities, and other local jurisdictions.
- Work to ensure regional cooperation, coordination, and capacity building with respect to emergency plans.
- Educate the public, with an emphasis on vulnerable communities, on related emergency protocols developed in the plan (e.g., designated locations for transportation evacuation, emergency shelters, etc.).

7.4.5 CAL FIRE Unit Plans

CAL FIRE utilizes strategic plans to guide its operations and resource allocation in wildfire prevention and suppression, as well as natural resource management. These plans are developed collaboratively with input from various stakeholders and focus on reducing wildfire risk, protecting lives and property, and managing California's forests. CAL FIRE's unit plans are specific to each of CAL FIRE's administrative units and focus on pre-fire management, hazard reduction, and wildfire response within their respective areas. They complement other planning documents like community wildfire protection plans and general plan safety elements. Unit fire plans often address issues like ingress/egress routes, operational training, and fuels reduction. The Unit Strategic Fire Plan for CAL FIRE's Siskiyou Unit was most recently updated in May 2025 and includes the following goals:

- Identify and evaluate wildland fire hazards and recognize life, property, and natural resource assets at risk, including watershed, habitat, social, and other values of functioning ecosystems.
- Promote and support local land use planning processes as they relate to individual landowner objectives and responsibilities and the protection of life, property, and natural resources from risks associated with wildland fire.
- Facilitate the collaborative development and sharing of all analyses and data collection across all ownerships for consistency in type and kind.
- Support and participate in the collaborative development and implementation of local, county, and regional plans that address fire protection and landowner objectives.
- Increase fire prevention awareness, knowledge, and actions implemented by individuals and communities to reduce human loss, property damage, and impacts to natural resources from wildland fires.
- Integrate fire and fuels management practices with landowner/land manager priorities across jurisdictions.
- Determine the level of resources necessary to effectively identify, plan, and implement fire prevention using adaptive management strategies.
- Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
- Implement post-fire assessments and programs for the protection of life, property, and natural resource recovery.

7.4.6 Other Disaster Preparedness Resources

7.4.6.1 Emergency Preparedness Guidebook

The Siskiyou County Department of Public Health and Siskiyou County OES collaboratively developed The Siskiyou County Emergency Preparedness Guidebook to help prepare and keep Siskiyou County residents safe in the event of an emergency. The Guidebook includes a list of resources for staying informed prior to and during an incident, it details the steps to take when planning to evacuate, it describes the evacuation process, and it includes instructions for preparing for wildfires, smoke-related hazards, contaminated water supplies, earthquakes, volcanic eruptions, flood hazards, and power outages. Opportunities and programs for public involvement to increase a community's emergency response capacity are also identified. The Siskiyou County Department of Public Health prints and makes hardcopies of the Guidebook available to the public, and it publishes a digital version to the Department's website along with other resources, such as an Access and Functional Needs registry that is used to identify individuals who require additional assistance during emergencies or disasters.

7.4.6.2 ReadySiskiyou

ReadySiskiyou is a public notification system utilized by Siskiyou County OES that allows the public to sign up for and receive time-sensitive phone, text, and email alerts about emergencies and other important community information, including severe weather, evacuations, unexpected road closures, and missing persons.

7.4.6.3 Genasys Protect

Genasys Protect (formerly Zonehaven Aware) is an evacuation management tool utilized by Siskiyou County OES that helps first responders and communities more effectively plan, communicate, and execute evacuations through evacuation zones developed and approved in close collaboration with law, fire, and emergency service agencies. Using Genasys Protect, emergency responders and the public can identify Siskiyou County addresses and evacuation zones on an online map and view current evacuation information for the area. The current evacuation zones in and around the City of Montague, as identified by Genasys Protect, are shown on **Figure 7-1, Evacuation Zones** at the end of the Safety Element.

7.4.7 Evacuation Routes

The City of Montague strives to be prepared for natural disasters and other emergency events requiring evacuation in partnership with surrounding jurisdictions and Siskiyou County OES. In accordance with California Government Code Section 65302.15(a), the City of Montague has identified State Route 3 (SR 3), S 11th Street/Montague Grenada Road, N 11th Street/Montague Ager Road, and E Webb Street/Ball Mountain Little Shasta Road as the City's evacuation routes (see **Figure 7-2, Evacuation Routes**). The evacuation routes are consistent with those routes identified by the County of Siskiyou in its General Plan Safety Element. These roadways were identified due to their higher capacity relative to other streets in the planning area in accordance with the functional classifications assigned to them by the California Department of Transportation (Caltrans). As discussed in the Circulation Element, Caltrans has classified SR 3, S 11th Street/Montague Grenada Road, and N 11th Street/Montague Ager Road as "major collectors" and Ball Mountain Little Shasta Road as a "minor collector." Areas adjacent to the evacuation routes inside city limits are largely free of significant fuel loading and overhead vegetation, however, additional vegetation clearance and on-street parking restrictions should be implemented to improve public safety during emergency events. Ongoing coordination with the

County and Caltrans will be necessary to ensure the evacuation routes under their ownership and control provide sufficient capacity, safety, and viability for evacuations under a range of emergency scenarios.

Which direction evacuations will proceed will depend upon the specific disaster, but in general evacuations are expected to move people out of the City and away from the specific hazard on SR 3. SR 3 has the highest capacity of any roadway in the planning area and it quickly leads west out of the City to the City of Yreka and Interstate 5 (I-5). The nearest hospital is in Yreka and the Siskiyou County Fairgrounds in Yreka regularly serves as the evacuation center during emergencies. Though significantly less direct than SR 3, N 11th Street/Montague Ager Road leads north through farmland and rangeland to eventually reconnect with I-5 near Hornbrook. Travelling south from Montague on S 11th Street/Montague Grenada Road provides two options for reaching I-5, one by way of its connection with Oberlin Road approximately one mile south of city limits, and the other via County Highway A-12 six miles south of Montague. Travelling east on Ball Mountain Little Shasta Road away from the City is the least direct and lowest capacity route. For this reason, most evacuations are expected to move westward toward I-5.

The use of the City's evacuation routes under a variety of scenarios is discussed below.

- Following a volcanic eruption, or in advance of an eruption if there is sufficient warning, residents will be directed to either evacuate of shelter in place depending upon the nature of the eruption and distance to the hazard. For ash fall, the most likely direct impact to the City from an eruption of either the Mount Shasta or Medicine Lake volcanoes, sheltering in place is likely to be sufficient. However, if there are secondary effects, such as a fast moving wildfire sparked by a lateral blast or pyroclastic flows, the Incident Commander will make an assessment of areas at risk in close coordination with other agencies, and the Siskiyou County Sheriff's Office will direct the evacuation, if needed, accordingly.
- Earthquakes occur suddenly and for the most part without warning. Evacuation may be necessary post-disaster if the ground shaking causes a secondary disaster, such as a fire, hazardous materials spill, or landslide. The direction of the evacuation would be determined by the Siskiyou County Sheriff's Office based on an assessment of which areas are at risk from secondary hazards. If a landslide triggered by an earthquake were to affect Montague, it would most likely occur on the slopes of Gregory Hill at the southeastern edge of city limits or on a smaller hill on the airport property. Evacuation routes would likely be unaffected.
- Much of the wildfire activity in the area has historically occurred in the hills and mountainous areas surrounding the Shasta Valley, though there have also been several fires on the valley floor as well. A significant portion of the City is identified as Wildland Urban Interface and areas of the City in the south and west are located in a High Fire Hazard Severity Zone. Should winds driven by an afternoon thunderstorm spread a wildfire into the City, evacuation of potentially affected neighborhoods is likely. The direction to evacuate would be determined by the Siskiyou County Sheriff's Office based on an assessment of the areas at risk.
- Localized flooding due to storm events can and does occur within the planning area, typically where low spots in the topography capture storm water. Less often flooding occurs within the Oregon Slu floodplain. The appropriate evacuation routes to use in the event of flooding will depend on where flooding is more severe and on the evacuee's destination. Evacuation may involve merely getting out of the low spots and onto higher ground. However, if flooding is widespread in the community, the evacuation route(s) to follow would be determined by the Siskiyou County Sheriff's Office based on an

assessment of affected areas. Should a major flood occur, roads to the north, south, and west of Montague would likely become impassable prior to the floodwaters reaching the City.

- Releases of hazardous materials, either as a result of a leak or due to an accidental spill, generally will require the evacuation of a relatively small area, generally within a one- to two-mile radius of the release. However, due to the small size of the City, that potentially encompasses all of Montague. The direction to evacuate would be designated by the Siskiyou County Sheriff's Office based on an assessment of the leak location, prevailing wind directions, traffic flow, and location of the emergency shelter, if any, opened for the event.

7.4.7.1 Single-Access Roadways

A key element of being able to safely evacuate is having access to multiple ingress and egress routes in case one roadway becomes blocked. Although multiple access points are not explicitly required in the City's Subdivision Ordinance, or elsewhere in City Code, Montague was designed with and has historically developed with an interconnected, grid-based road network. The development of some roadways within the network is incomplete, particularly in less developed areas of the City, and a few streets have been designed with only one point of ingress and egress. Therefore, in an effort to eventually improve access to all areas of the City, an assessment of dead-end roadways throughout Montague was prepared.

As part of the assessment, single-access roadways longer than 800 feet were called out separate from roadways 800 feet or less. This is because Section 1273.08 (Dead End Roads) of the State's Minimum Fire Safe Regulations (Title 14 of the California Code of Regulations (CCR), Division 1.5, Chapter 7. Subchapter 2, Articles 1-5) limits roads without more than one access point to 800 feet in length when they serve parcels zoned for less than one acre, which are most lots in the City. The State's Minimum Fire Safe Regulations do not apply to development in the City of Montague, as there are no areas of the City presently designated as being in a Very High Fire Hazard Severity Zone. Nevertheless, the State's Minimum Fire Safe Regulations serve as valuable guidelines with which to evaluate single-access roadways and other development in the City for purposes of fire safety.

As determined through the City's assessment, there is only one "dead-end" road in Montague that exceeds 800 feet in length. This is Del Monte Street at the northeastern end of the City. The roadway provides ingress and egress for eight developed residential properties and is designed to connect with East Street. While it does in fact connect, only about 850 feet of the roadway's 1,525-foot length are paved. The remaining 675 feet closest to East Street are unimproved and only a single lane has been established. While there is little need for additional paved road surface at this time, as there is no development along the unpaved stretch of Del Monte Street, the unpaved stretch should be evaluated and improved as needed to ensure it can support and safely be accessed by multiple emergency response and other vehicles during emergencies. Other single-access roadways in Montague include a one-lane access road to the City's water tank that is approximately 575 feet long; 400-foot long Churchill Street, which provides access to two residential properties; a 420-foot segment of S 14th Street that serves five residential properties; 400 feet of S 10th Street that serves four residential properties and limited nonresidential development; 400 feet of S 7th Street that serves five residential properties; 300 feet of S 7th Street that serves three residential properties; 700-foot long Lotus Lane, which serves four residential properties; and a 200-foot segment of S 6th Street that serves two residential properties. These roadways are shown on **Figure 7-3, Single-Access Roadways** at the end of the Safety Element.

The single-access roadways located south of E Scobie Street are in a High Fire Hazard Severity Zone and should be prioritized for interconnectivity.

7.4.8 Road Minimum Widths and Turnouts

Minimum road widths and turnouts are essential for designing a safe environment so that emergency vehicles can access all areas of the City. At present, the City has adopted limited street standards. These are included in the City's 1990 Subdivision Ordinance and do not include standards for minimum road widths or turnouts. Although Montague has yet to adopt standards for road widths and turnouts, the streets in Montague have historically been developed within 80-foot rights-of-way and include two paved travel lanes that vary from 10 to 18 feet in width. This is consistent with the road width requirements of the State's Minimum Fire Safe Regulations, which require all roads in Very High Fire Hazard Severity Zones to be constructed to provide a minimum of two 10-foot traffic lanes, not including shoulder and striping. One way roads are permitted by the State's Minimum Fire Safe Regulations provided they do not exceed 2,640 feet in length; connect at both ends to a road with two traffic lanes providing for travel in different directions; provide access to an area zoned for no more than 10 residential units; and include a turnout at the approximate midpoint. As previously discussed, because there are no areas of Montague in a Very High Fire Hazard Severity Zone, the State's Minimum Fire Safe Regulations do not apply inside city limits. However, the standards serve as valuable guidelines for evaluating roadways and other development in the City for purposes of fire safety. Accordingly, where city roadways do not meet these standards, the roads should be evaluated for safety and, if necessary, improvements scheduled in the Siskiyou County Regional Transportation Plan (RTP) as funding allows.

7.4.9 Municipal & Emergency Water Supplies

The City contracts with the Montague Water Conservation District (MWCD) for its municipal water supply. Based on the City's contract with MWCD, the City's has a supply capacity of 1.15 million gallons (MG) per day. The MWCD provides the City with water from three different sources depending upon the time of the year, delivering water via a series of canals and ditches. As water is delivered from the MWCD, it is diverted into settling ponds for initial pretreatment. The water is first conveyed to a 1.0 MG settling pond and then to a second pond with a 10.0 MG capacity.[2] Once the majority of the suspended sediments and particulate matter have settled, the water is conveyed to the City's water treatment plant where it is clarified, filtered, disinfected, and conveyed to a 1.0 MG tank constructed in 2007.

To ensure the City maintains adequate water supply and fire flows for existing and future development, the City has an ongoing program of upgrading its water system as funding allows, and the City and others have been successful at obtaining grants for this purpose. Recent grant funded water system improvements include improvements to the water treatment plant that made the City's water significantly more palatable and construction of a new diversion point and pump station on the Shasta River to convey water from a location closer to the City and significantly reduce transmission loss. With construction of the City's 1.0 MG water tank in 2007, the City's water delivery system is capable of delivering 1,000 gallons per minute (GPM) for 48 hours, including during those times when system demand is at its highest (i.e., peak load conditions).[3] Once the City's water storage is depleted, the supply of water available to meet the City's domestic water and firefighting needs drops to 800 GPM.

[2] On at least one occasion in the past, aircraft have used water from the second settling pond for firefighting.
[3] There is expected to be some variability in pressure depending upon location within the distribution system.

7.4.10 Defensible Space

Defensible space is the area around a structure where vegetation and other combustible materials are managed to slow or stop the spread of wildfire. Defensible space can protect structures from direct flame impingement and radiant heat, as well as reduce the number of burning embers. It also helps to safeguard fire fighters who may be attempting to save the structure during a fire. It is considered crucial for structure survivability during wildfires.

California Government Code Section 51182 requires that any person owning, leasing, controlling, operating, or maintaining an occupied structure in a Very High Fire Hazard Severity Zone maintain 100 feet of defensible space around that structure. In the immediate five feet surrounding the structure, the most intense fuel modification is required. This zone must be kept ember-resistant through use of non-combustible hardscaping, pruning overhead vegetation, removing branches within 10 feet of chimneys, regular debris removal, and relocating combustibles outside this zone. In the intermediate area surrounding the structure (5-30 feet or to the property line), grass must be kept short, trees kept trim, dead and dying plants and dry vegetation removed, and trees, shrubs, and other combustible items kept separate. In the extended zone surrounding the structure (30-100 feet or to the property line), grass must be kept short, dried vegetation removed, vertical and horizontal spacing established between lawn, shrubs, and trees, and the areas around wood piles, outbuildings, and propane tanks kept clear.

Because no area of the City is designated as being in a Very High Fire Hazard Severity Zone, California Government Code Section 51182 does not apply and the creation of defensible space, while advisory, has never been a requirement inside city limits. For this reason, the City works with the County, other agencies, and the community to improve resident awareness of the benefits of defensible space and home hardening and to encourage their creation.

7.5 HAZARDS

Emergency preparedness measures in the City of Montague and elsewhere are driven by the hazards and risks affecting the area. For Montague, vulnerabilities include the City's climate and setting, seismic and geologic hazards, urban and wildland fires, flooding, hazardous materials spills, and the effects of climate change, such as increased drought, wildfire, extreme weather, and flooding.

7.5.1 Climate and Setting

The City of Montague is located at an average elevation of 2,539 feet above sea level in the Shasta Valley. The valley encompasses an area of roughly 340 square miles in a divide between the Klamath Mountains to the west and the Cascade Range to the east. The topography within the City slopes gently toward the west/northwest and a few small hills, or hummocks, punctuate the landscape. These hummocks are remnants from a massive landslide on ancestral Mount Shasta that occurred over 300,000 years ago and are typically no more than a few hundred feet in height. One much larger hill, Gregory Mountain (approximately 656 feet in height), is located adjacent to city limits in the southeast.

The Shasta Valley's climate is classified as a steppe, or semi-arid, climate, which is characterized by warm summers, cold winters, and little precipitation. The average high temperature in the Shasta Valley in July is 91.3°F and the average low temperature in January is 24.0°F. Most precipitation in the Shasta Valley falls over a roughly five-month period from late October/early November until late March/early April, with snowfall common between late November and early

March. The Shasta Valley receives 18.52 inches of total annual average precipitation and 18.4 inches of total average snowfall. The least amount of precipitation occurs during the summer months, with July receiving an average of 0.43 inch. When precipitation does fall during the summer, it typically arrives in a thunderstorm. Steppe climates are also known for the grasslands they support, and agricultural uses are widespread in the Shasta Valley, particularly cattle grazing and hay production. Because of this, large areas surrounding the City are irrigated between spring and early fall.

Montague's geographical setting presents several unique public safety concerns:

- The City of Montague is susceptible to impacts resulting from volcanic activity at the Mount Shasta and Medicine Lake volcanoes. The most likely impacts would be from tephra ash, which are fine fragments of volcanic rock formed in an explosive eruption, though a mudflow from Mount Shasta is also possible.
- Persistent drought in the region has the potential to affect the City's water supply.
- Soil types in the City exhibit moderate to high shrink swell potential as well as slow permeability, which can result in displacement of foundations and localized flooding.
- There are approximately 36.3 acres in Montague within Oregon Slu's 100-year floodplain and an additional 48.8 acres in the City within the slough's 500-year floodplain.
- The hummocks in and around the City are debris avalanche deposits from ancestral Mount Shasta. Several are potentially susceptible to deep-seated landslide activity.
- Wildfires are a regular occurrence in the region, most of Montague is considered Wildland Urban Interface, and the California State Fire Marshal has determined that large areas of the City south of Scobie Street and west of Airport Way are in a High Fire Hazard Severity Zone.
- A toxic or hazardous chemical accident on SR 3, the railroad, or elsewhere in the City could have serious and immediate implications in Montague.

7.5.2 Seismic and Geologic Hazards

The Klamath Range, which is located a short distance west of Montague, is noted for its complex geologic history, while the Cascade Range a short distance east of the City is known for its large and recently active volcanos.

7.5.2.1 Volcanic Hazards

The two Cascade Range volcanoes nearest to the City of Montague are the Mount Shasta and Medicine Lake volcanoes. Though Mount Shasta has not been active for more than two centuries and Medicine Lake for almost a millennium, both volcanoes are only dormant and will almost certainly erupt again. Experience with Cascade Range volcanoes, including Mount St. Helens (1980 to present) and Mt. Lassen (1911-1920), demonstrates that eruptive episodes can and do occur in present time involving volcanoes that are generally considered inactive. The Mount Shasta and Medicine Lake volcanoes and the potential hazards associated with them are discussed below.

Mount Shasta

Mount Shasta is a 14,179-foot-high stratovolcano located approximately 27 miles southeast of Montague. The current volcano formed on the remnants of an older volcano that collapsed

sometime roughly 380,000 to 330,000 years ago. The collapse created one of the largest landslides known on Earth, depositing volcanic rock and other materials across approximately 260 square miles of the Shasta Valley. The northern terminus of the landslide deposits is located north of Montague, at a distance of about 30.4 miles from the present summit. Since the collapse, Mount Shasta has had long lulls in eruptive activity punctuated by brief periods of many eruptions. Eruptions around 11,000 years ago built nearby Black Butte and the Shastina dome on the west flank of Mount Shasta. In the last few millennia, there have been eruptions at the volcano's summit and from vents on Mount Shasta's east flank. The most recent well-documented eruption occurred around 3,000 years ago. According to the United States Geological Survey (USGS), small, short-lived blasts of steam and ash may have occurred as recently as 1,800 to 200 years ago, but additional field verification is required.

Research published to date suggest that Mount Shasta may have erupted about once every 800 to 600 years over the last 10,000 years. This corresponds to a 3.5 percent chance of eruption within the next 30 years. USGS seismometers and GPS receivers operated by EarthScope Consortium, formerly UNAVCO, form the monitoring network for Mount Shasta. The volcano has been relatively quiet for at least the past few decades, with only a handful of small-magnitude earthquakes and no demonstrable ground deformation. Although geophysically quiet, periodic geochemical surveys indicate that volcanic gas emanates from a fumarole at the summit of Mount Shasta from a deep-seated reservoir of partly molten rock. According to USGS, Mount Shasta is the most likely Cascade Range volcano to produce an explosive eruption of very large volume. Future eruptions, like those of the last 10,000 years, are likely to produce deposits of ash, lava flows, domes, and pyroclastic flows, and could endanger infrastructure and lives within several miles of the volcano. It is ranked by USGS as the fifth highest threat volcano in the United States.

Medicine Lake

Medicine Lake volcano is a large, shield volcano located roughly 48 miles to the east/southeast of Montague. Located at the volcano's summit (elevation 7,913 feet) is a water-filled caldera formed by withdrawal of magma during eruptions. The caldera is eight miles wide and 14 miles across. The hundreds of mostly nonexplosive eruptions over the last half million years produced expansive lava flows, some covering as much as 100 square miles. The volcano has erupted nine times during the past 5,200 years, and seven of those eruptions began with an explosive phase. The two youngest eruptions produced ash clouds that drifted tens of miles downwind before explosions ceased and thick, glassy lava flows began oozing from the vents forming Little Glass Mountain (1,000 years ago) and Glass Mountain (950 years ago).

Medicine Lake volcano has one of the highest eruptive frequencies among Cascade volcanoes. Overall, the pattern of eruptions over the past 12,500 years suggests the likelihood of a future eruption from Medicine Lake volcano is one in 3,600 annually, which corresponds to about a one percent chance of eruption within the next 30 years. Seismometers and GPS receivers provide a modest volcano monitoring network at Medicine Lake volcano. Volcanic gas emissions suggest that partly molten rock lies beneath the volcano, which provides heat for a robust geothermal system underlying the caldera. Sporadic earthquake swarms are detected by the monitoring network as well as ground subsidence owing to motions on regional faults and "sagging" of rock softened by volcanic heat. The character of a future eruption is most likely to be effusive, with fountains of lava potentially rising hundreds of feet in the air. Over the course of weeks to months, a circular mound of cinder would form around the vent and slow-moving lava flows could impact areas many miles away. It is ranked by USGS as the 45th highest threat volcano in the United States.

Volcanic Activity

Several USGS reports describe the characteristics of volcanic activity likely to affect areas near each volcano, including Volcanic Hazards at Mount Shasta, California (1989), Volcano Hazards Assessment for Medicine Lake Volcano, Northern California (2007) and California's Exposure to Volcanic Hazards (2019). These characteristics are discussed below along with their possible impact to the City of Montague. The hazard areas associated with the two volcanos are shown on USGS's "Mount Shasta, CA Simplified Hazards Map" and USGS's "Medicine Lake, CA Simplified Hazards Map," which have been incorporated into the Safety Element as **Figures 7-4, Mount Shasta Volcanic Hazards** and **7-5, Medicine Lake Volcanic Hazards**. The maps do not show areas potentially affected by volcanic ash, which is often influenced by wind direction and distance from the source. Because the City of Montague is not shown on the USGS maps, the City's location is approximated on the maps included herein.

Pyroclastic Flows: Pyroclastic flows are streams of hot ash and rock fragments, mixed with hot air and other gases, that move rapidly along the ground surface during an eruption. These flows are especially dangerous due to their high temperatures and their high speeds which may exceed 100 miles per hour. Due to the speed of pyroclastic flows, escape is nearly impossible. They are best avoided by evacuation of threatened areas before an eruption. Montague is located outside of the pyroclastic flow zones of both volcanoes.

Lateral Blasts: This type of blast is a sideways-directed volcanic explosion that carries large pieces of rock and ash at a very high speed along and above the ground surface. The rock debris carried by the lateral blast of Mount St. Helens in 1980 had an initial speed of more than 250 miles per hour, and it was still moving about 60 miles per hour near its outer limit about 15 miles from the volcano. Lateral blasts may cause fatalities as the result of impact, burial, or heat. Mount Shasta, like Mount St. Helens, is potentially subject to lateral blasts. Montague is located outside of the area potentially affected by lateral blasts at Mount Shasta.

Lava Flows: Lava flows are rarely life-threatening because they move slowly enough for people to get out of their way and seldom occur at the outset of an eruption. Montague's distance from both volcanoes is sufficient that lava flows are not considered directly life threatening from either volcano; however, lava flows can affect critical transportation corridors, such as Interstate 5 and Highway 97, and ignite wildfires in the region.

Lahars/Volcanic Mudflows: A lahar, or volcanic mudflow, is a mass of water-saturated rock debris that moves downslope generally as a fluid. Lahars can form when lava flows, pyroclastic flows, or hot lateral blasts melt snow on the side of a volcano. Mudflows tend to follow stream valleys and can travel long distances generally at a rate of 10 to 20 miles per hour, but faster on steep slopes. According to the USGS, a lahar resulting from an eruption of Mount Shasta could occur within the Shasta River drainage, which is located approximately 0.5 mile west of Montague.

Landslides: A volcanic explosion, severe earthquake, or heavy rains could start landslides of rock debris from the side of Mount Shasta. A landslide triggered by an earthquake at Mount St. Helens on May 18, 1980, traveled about 14 miles beyond the volcano, and the collapse of ancestral Mount Shasta thousands of years ago filled the Shasta Valley with debris deposits. More recently, Mount Shasta has been subject to smaller but significant mudflows triggered by rain-on-snow events and glacial melt during late summer. According to USGS, there is no known way to predict the location, size, or time of future catastrophic landslides at Mount Shasta, or even if any will occur. The likelihood of a landslide is greatest during a period of eruptive activity, especially if that activity is accompanied by earthquakes.

Volcanic Ash: Ash resulting from an eruption of Mount Shasta could cover a large area and reach a depth of two inches or greater in and around Montague, depending on the amount of ash released into the atmosphere and the direction of wind at the time. Because prevailing winds near Mount Shasta are from the northwest and southwest, ash fall on Montague should be anticipated. Based on recent behavior, however, it is not likely that Mount Shasta will erupt catastrophic volumes of tephra and ash in the near future. Tephra accompanying eruptions of Medicine Lake volcano could also be regionally widespread if the eruption column rises into the air high enough, which is expected. Although the prevailing wind direction at Medicine Lake is from the west, should the wind direction shift, the City of Montague and surrounding communities could be impacted.

7.5.2.2 Surface Rupture

As shown on **Figure 7-6, Fault Activity Map** there are several faults in the region. The closest of these are a series unnamed faults that run through the Kilgore Hills south of Yreka. None of these faults have shown any activity in the last 1.6 million years. The closest mapped potentially active fault is the Yellow Butte fault, located approximately 12.5 miles southeast of Montague near Miller Mountain. Though the fault is potentially active (i.e., it shows evidence of displacement during the past 1.6 million years), the closest active fault, one which has ruptured in the last 11,000 years, is located in the Cedar Mountain fault zone approximately 34.5 miles east of Montague in the Butte Valley. The Cedar Mountain fault zone also includes the Mt. Hebron, Meiss Lake, and Ikes Mountain faults and is characterized by faults that offset older volcanic rocks and younger alluvium soils.

7.5.2.3 Ground Shaking

Regions of California near major active faults experience, on average, stronger earthquake shaking more frequently. According to USGS, the nearest recorded earthquake affecting Montague in the past 125 years was a magnitude 2.6 earthquake that occurred approximately 5.2 miles north of city limits on March 1, 1991. The earthquake, although close, had little impact. The largest recorded earthquake to affect Montague was a doublet earthquake (i.e., an earthquake sequence having two main shocks of similar magnitude) with magnitudes of 6.0 and 5.9 that occurred roughly 32 miles northwest of city limits on September 20, 1993. The earthquakes, known as Klamath Falls earthquakes, resulted in two deaths and millions of dollars in damage, predominantly in the nearby City of Klamath Falls. After the initial shocks, tremors continued to be felt for more than two months. Due to their distance from the City, the larger of the two earthquakes had an observed Modified Mercalli Intensity (MMI) of V at the USGS monitoring station south of Montague, which is classified as moderate.[4] According to the California Geological Survey, there is a 2.0 percent chance of shaking in Montague exceeding a MMI of VIII within the next 50 years (see **Figure 7-7, Earthquake Shaking Potential**). This is considered severe shaking with the potential to damage or destroy walls, monuments, and chimneys.

7.5.2.4 Slope Instability

Slope failure is the movement of soil, rock, or other earth materials downhill in response to gravity. Slope failure includes rockfalls, debris flows, debris avalanches, earthflows, mudflows, landslides, and erosion. While slope failure can result from erosive activity, especially as climate change increases the occurrence of severe weather events, the planning area is relatively flat, such that

[4] The Modified Mercalli Intensity scale describes perceived earthquake shaking and correlates strongly with earthquake-induced damage.

slope instability is not a significant concern throughout most of the City. On Gregory Hill at the southeastern edge of city limits and one hummock at the airport, the potential for slope instability is greater. According to the California Department of Conservation, the nearest reported landslides occurred in February 2025 on State Route 263 approximately five miles northwest of Montague. The landslides were rockfall, a type of slide where rocks, boulders, and other materials become detached from steep slopes or cliffs and tumble downslope. Separation occurs along discontinuities, such as fractures, joints, and different rock layers, and movement occurs by free-fall, bouncing, and rolling. Rock falls are strongly influenced by gravity, the presence of water in rock pores, and weathering processes, such as freeze-thaw, erosion, and chemical breakdown, combined with triggering events such as heavy rainfall, earthquakes, and ground vibrations. Whereas rockfall are abrupt movements of rock and other materials, deep-seated landslides are a type of slower moving landslide where the depth of the plane failure ranges from ten feet to several hundreds of feet below the surface. These types of slides tend to result from changes in the geologic and hydrologic processes in the area of the landslide, such as earthquakes and increased groundwater levels. Once formed, deep-seated landslides can persist for a few years, or even centuries. The relative likelihood of deep-seated landslides based on estimates of rock strength and steepness of slopes in and around the City is shown on **Figure 7-8, Deep Seated Landslide Susceptibility**.

7.5.2.5 Liquefaction

Liquefaction occurs when loose sand and silt that is saturated with water behaves like a liquid when shaken by an earthquake. Liquefaction can result in the following types of seismic-related ground failure:

- Loss of bearing strength – soils liquefy and lose the ability to support structures.
- Lateral spreading – soils slide down gentle slopes or toward stream banks.
- Flow failures – soils move down steep slopes with large displacement.
- Ground oscillation – surface soils, riding on a buried liquefied layer, are moved back and forth by shaking.
- Flotation – floating of light buried structures to the surface.
- Settlement – settling of ground surface as soils reconsolidate.
- Subsidence – compaction of soil and sediment.

Three factors are required for liquefaction to occur: (1) loose, granular sediment; (2) saturation of the sediment by groundwater; and (3) strong shaking. As discussed in the Open Space & Conservation Element, the soils underlying most of the City are moderately deep, well-drained loams. These soils are not prone to liquefaction, and liquefaction has not been reported in the City in the past.

To inform local governments about potential hazards, the California Geological Survey designates areas of the State that are subject to potential liquefaction. The California Geological Survey does not identify Montague as being located in an area of potential liquefaction. The nearest liquefaction zones identified by the California Geological Survey are located approximately 254 miles south of Montague in the San Francisco Bay area.

7.5.2.6 Subsidence

Subsidence is the sinking of the ground due the underground movement of material. It is frequently caused by extracting water, oil, natural gas, and mineral resources by means of

pumping, fracking, and mining activities. However, subsidence can also be caused by natural events, including earthquakes, soil compaction, glacial isostatic adjustment, erosion, sinkhole formation, and adding water to fine soils deposited by wind. It can happen over very large areas, such as a region of the State, or over very small areas, such as within a single parcel. The USGS identifies areas of recorded subsidence, both historical and current, across California. The City is not identified by USGS as being affected by current or historical subsidence. The USGS identifies an area located west of Sacramento as the nearest documented subsidence to Montague.[5]

7.5.3 Wildland and Urban Fire Hazards

Wildfires are a regular feature of the landscape throughout much of California, including in the rugged Klamath National Forest (KNF) located east and west of the Shasta Valley, which typically experiences dozens of new fire starts each year. The fires are primarily the result of the region's warm, dry summer climate and recurrent afternoon and evening thunderstorms that form over the mountains in the unstable air during the heat of summer and early fall. According to the US Forest Service, approximately 80 percent of the wildfires that occur in the KNF each year are sparked by lightning, while the remaining 20 percent are caused by other activities, such as unattended burn piles, improperly extinguished campfires, and mowing. Other potential wildfire ignition sources include downed power lines, vehicle accidents, equipment malfunctions, and arson.

Regardless of how a fire starts, once it has begun, strong winds can carry burning embers several miles from the main fire, allowing them to ignite new fires. This makes embers the primary cause of structural damage and home loss during wildfires, with some estimates suggesting they are responsible for up to 90 percent of homes destroyed. Structures within the wildland urban interface are particularly at risk.

When communities are impacted by wildfire, the destruction can be unimaginable. During the fire, residents may be given only moments to evacuate, and roadways can become blocked by flames and/or fallen debris, making it extremely difficult for residents to safely evacuate and for emergency responders to protect life and property. When residential, commercial, and industrial properties are damaged or destroyed by fire, a mess of dangerous debris and hazardous waste is left behind that must be cleaned up and removed before property owners can rebuild. Electrical transmission lines and communications equipment can be badly damaged or destroyed in a fire, leaving areas without power and/or phone service until facilities and equipment can be replaced and the power safely restored. Even when communities are spared from a fire's destruction and the wildfire is limited to wildlands, the air quality over large areas is badly impaired with the toxic particulate matter found in smoke.

The record of wildfires in the immediate vicinity of the City since 1878 is shown on **Figure 7-9, Historic Fire Perimeters**. As shown on **Figure 7-9**, the largest fire occurred in 1955 and burned 59,640 acres immediately adjacent to and west of Yreka approximately 5.8 miles from Montague city limits; several of the fires have occurred since 2000; and wildfires near Montague have mostly burned in the hills within and surrounding the valley. While it appears wildfire activity in the area of the valley between Montague and Yreka has been less frequent, CAL FIRE cautions that the dataset reflected on **Figure 7-9** is incomplete, and that users should be cautious when drawing conclusions based on the data. Further, not shown on **Figure 7-9** are the many recent large wildfires that have burned in the region beyond the boundaries of the map. These include the

[5] Although not presently shown on the USGS map, subsidence has recently been observed in the Upper Klamath Basin east of the City following years of curtailed water deliveries by the Bureau of Reclamation and increased reliance on groundwater pumping.

60,102-acre McKinney Fire, which burned within ten miles of city limits in 2022, the 26,329-acre Lava Fire, which burned within 14 miles of Montague in 2021, and the 38,009-acre Klamathon Fire, which burned within 12 miles of the City in 2018. Several other recent wildfires in Siskiyou County (2016-2024) are identified in the Siskiyou County Local Hazard Mitigation Plan. Areas outside of the boundaries of the map, including the rest of the State, are shown on CAL FIRE's Fire and Resource Assessment Program (FRAP) website. A link to the FRAP website and the most up-to-date fire perimeters map is included in Section 7.8, Resources

It should be noted that the Local Hazard Mitigation Plan includes additional wildfire information for Montague beyond that provided in the Safety Element, including descriptions of fire behavior by vegetation type; the National Fire Danger Rating System; consequences of fire; collaborative efforts that are underway in Siskiyou County to mitigate future fire risk and severity; and the City of Montague's fire risk, vulnerabilities, expected losses, and risk reduction measures. Information regarding fire risks is summarized herein below.

7.5.3.1 Wildland Urban Interface

The Wildland Urban Interface (WUI) is the zone where houses and other development meet or intermingle with undeveloped wildland vegetation. The two types of WUI, interface and intermix, differ in whether there is a clear demarcation of wildland vegetation and development (interface) or whether the two are intermingled (intermix). Because of the convergence of humans and the environment in the WUI, the WUI is a zone in which fire can move readily between structures and vegetation, potentially resulting in massive fires, or conflagrations, that can lead to widespread evacuations.

In an effort to provide a framework for scientific inquiries into the effects of housing growth on the environment, as well as inform national policymakers and local land managers about the WUI and associated issues, the US Forest Service prepares detailed assessments of WUI across the United States. **Figure 7-10, Wildland Urban Interface** reflects the findings of the Forest Service's 2020 WUI assessment relative to the City of Montague. As shown on **Figure 7-10**, the Forest Service identifies a large area of the City west of 16th Street, east of S 4th Street, and north of the elementary school as intermix, areas south and east of the elementary school as interface, nonresidential areas adjacent to the railroad as non-WUI vegetated, and neighborhoods east of the airport and west of 11th Street as non-vegetated or agriculture.

7.5.3.2 Wildfire Hazard Severity Zones

California law requires the State Fire Marshal to designate areas, or make recommendations for local agency designation of areas, that are at risk from significant fire hazards based on fuels, terrain, weather, and other relevant factors. The State Fire Marshal does so through the publication and regular update of Fire Hazard Severity Zone (FHSZ) maps, which local agencies must adopt in compliance with state law.

According to the Office of the State Fire Marshal, the FHSZ maps are developed using a science-based and field-tested model that assigns a hazard score based on the factors that influence fire likelihood and fire behavior, such as fire history, existing and potential fuel (natural vegetation), predicted flame length, blowing embers, terrain, and typical fire weather for the area. There are three levels of fire hazard assigned: moderate, high, and very high. **Figure 7-11, Fire Hazard Severity Zones** shows the designated fire hazard severity zone ratings within and surrounding the City. The Office of the State Fire Marshal makes these maps publicly available on CAL FIRE's

FRAP website. A link to the FRAP website and the most up-to-date FHSZ maps is included in Section 7.8, Resources. As shown on **Figure 7-11**, much of the City's central core is undesignated, large areas of the City north of SR 3 and west of 14th Street are designated as being in a Moderate Fire Hazard Severity Zone, and roughly 500 acres in the southern and western areas of the City are designated as being in a High Fire Hazard Severity Zone. There are no areas within or adjacent to Montague designated as being in a Very High Fire Hazard Severity Zone.

As previously noted, if an area of Montague were designated as being in a Very High Fire Hazard Severity Zone, the State Minimum Fire Safe Regulations for ingress/egress, signing and building numbering, emergency water standards, building siting, setbacks, and fuel modification would apply to development in that area, as would the defensible space requirements in California Government Code Section 51182. While these regulations do not apply at this time, they serve as valuable guidelines with which to evaluate roadways and other development in the City for purposes of fire safety.

It is important to note that the FHSZ maps evaluate "hazard," not "risk". In doing so, they are like FEMA flood maps where the probability level of a particular area being inundated by floodwaters is shown, not the potential impacts of the flooding. The degree of "hazard" is based on the physical conditions that create a likelihood and expected fire behavior over a 30 to 50-year period without consideration of mitigation measures, such as home hardening, recent wildfires, or fuel reduction efforts. "Risk" is the potential damage a fire can have on an area under existing conditions, accounting for any modifications, such as fuel reduction, defensible space, and use of ignition resistant construction materials and methods.

7.5.3.3 Wildfire Risk

To help communities better understand and reduce their wildfire risk, the USDA Forest Service developed Wildfire Risk to Communities, a publicly accessible online resource of interactive maps, charts, and other information developed using the best available science. Wildfire Risk to Communities allows users to determine how likely wildfire is in their area relative to other communities in California and the nation, areas of their community where homes are most at risk of fire, which actions are most effective to reduce wildfire risk in the community, and where vulnerable populations exist in the community and how they can be reached.

According to the Wildfire Risk to Communities website, the likelihood of wildfire in Montague is higher than 71 percent of communities in California and 94 percent of communities in the United States, and the wildfire risk to homes in the City is higher than 64 percent of communities in California and 91 percent of communities in the United States. In general, areas of Montague with the highest risk and likelihood of wildfire are located in the undeveloped and less densely developed areas of the City. No area of the City is identified as having a concentration of vulnerable residents. Most of the homes in Montague (69%) are identified as being subject to indirect wildfire exposure, or possible ignition by embers or home-to-home ignition, and the other homes (31%) subject to direct exposure, or potential ignition by adjacent vegetation, flying embers, and nearby structures. In both instances, the Forest Service indicates that land use planning and use of wildfire-resistant building materials/landscaping should be employed to reduce fire risk. In areas of possible direct exposure, the Forest Service identifies hazardous fuel management and the ability to respond as also being critically important.

7.5.3.4 Existing and Future Development

When evaluating wildfire hazards relative to existing and future development in Montague, it is important to recognize that roughly 500 acres in the City are designated as being in a High Fire Hazard Severity Zone and much of the City is identified as Wildland Urban Interface. Consequently, existing and future development in these areas is likely to be more vulnerable to wildfire hazards than other areas of the City. The existing and planned locations of residential, mixed-use, commercial, industrial, public agency, and open space development in the City are consistent with the land use classifications shown on the City's General Plan Land Use Map (see Land Use Element **Figure 2-14**). The residential land use designations shown on **Figure 2-14** comprise roughly 56 percent of the City's total land area, while nonresidential land use designations occupy roughly 44 percent. The distribution of existing development in the City is also shown on the County of Siskiyou's "Siskiyou County Map Viewer," an online GIS resource of parcel ownership and other geographically referenced data. A link to the Siskiyou County Map Viewer is included in Section 7.8, Resources.

Because of their importance to the resilience of the community, and to assist in planning for the expansion, hardening, and relocation of essential public facilities, the location of public facilities in the City relative to FEMA flood zones, fire hazard severity zones, and Wildland Urban Interface are shown on **Figure 7-12, Public Facilities and Natural Hazards**.

7.5.3.5 Fire Prevention and Resident Safety

Fire prevention, fire severity reduction, and resident safety are significant concerns for the City and region. Outside city limits, the Forest Service has been actively implementing strategies in the KNF to mitigate fire risks and create more resilient landscapes, such as prescribed fire and thinning. The California Department of Fish and Wildlife has likewise been employing prescribed fire as part of its management efforts in the Shasta Valley Wildlife Area south of Montague. Presently key strategies being employed by the City to reduce fire risk and improve public safety in Montague include:

- Maintaining a well-trained and staffed fire department and working cooperatively with other public agencies with responsibility for public safety.
- Ensuring adequate infrastructure for new development, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.
- Locating, when feasible, new essential public facilities outside of High Fire Hazard Severity Zones and identifying construction methods or other methods to minimize damage to these facilities.
- Working with the County and other agencies to educate property owners about construction materials and methods and landscaping that reduce the potential for ignition.
- Working with the County and other agencies to educate property owners about the benefits of creating and maintaining defensible space around structures to minimize fuels and fire spread.
- Identifying areas where there is a greater fire risk and a history of losses.
- Avoiding or minimizing the wildfire hazards associated with new uses of land.
- Public education.

7.5.4 Flood and Dam Inundation Hazards

Flooding can cause significant harm to buildings, people, and infrastructure. Floodwaters can be deep and fast enough to prevent passage, erode roadways, and carry away people and large objects. Flooding can be caused by heavy rainfall, moderate rainfall over long periods, or even inadequate or clogged storm drains. In rarer instances, a break in a water main or breach of a dam can also cause flooding.

Flood events do occur in Montague, and people, properties, and infrastructure located within the Oregon Slu floodplain are particularly vulnerable to this hazard. Flooding occurred along Oregon Slu in 1955, 1964, and 1974. Residents report that prior to construction of the bridge over Oregon Slu in 1965, the culverts that were in place were inadequate to pass floodwaters. Water would pond upstream until it ran over the road, causing road and embankment erosion. During the 1974 flood, waters reached the level of the old sewage treatment pond.

7.5.4.1 FEMA Flood Hazard Zones

The Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps for Montague and the surrounding area to identify flood prone areas. By showing how likely it is for an area to flood, FEMA's flood maps help mortgage lenders determine insurance requirements and help communities develop strategies for reducing their risk. Any location shown on a flood map with a one percent or higher chance of experiencing a flood each year is considered to have a high risk. Flood hazard areas affecting the planning area are shown in **Figure 7-13, FEMA Flood Hazards** at the end of the Safety Element. The 100-year flood zones shown on **Figure 7-13** represent the areas with one percent chance of flooding in any given year, and the 500-year flood zone is expected to have a 0.2 percent chance of flooding in any given year.

Because areas within the 100-year flood hazard area have at least a one-in-four chance of flooding during a 30-year mortgage, lenders require property owners to carry flood insurance as a condition of their loan. The rates for insurance are dependent on the floodwater depth on the affected parcel. When property owners can document that their property or structure is located outside of the 100-year floodplain, they can request a Letter of Map Amendment from FEMA to revise the effective flood map to remove their property or structure from a special flood hazard area.

To minimize flood damage in the City, new construction and other improvements must comply with the City's Flood Damage Prevention ordinance. The Flood Damage Prevention ordinance minimizes flood damage by:

- Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities.
- Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
- Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters.
- Controlling fill, grading, dredging, and other development which may increase flood damage.

- Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other area.

7.5.4.2 Dam Failure Inundation Hazards

Although dam failures are rare, when they do occur, they can result in significant damage and death since they may fail unexpectedly with little or no warning. To address this hazard, California Government Code Section 8589.5 mandates that owners of state-regulated dams develop and maintain Emergency Action Plans (EAPs). These plans are crucial for minimizing potential loss of life and property damage during dam failures or other emergencies. The EAPs must be based on inundation maps approved by the Department of Water Resources (DWR) and include specific details on notification procedures, response actions, and roles and responsibilities. In accordance with state law, the EAPs and inundation maps must be updated no less frequently than every 10 years, and sooner under conditions that include, but are not limited to: a significant modification to the dam or a critical appurtenant structure as determined by DWR, or a significant change to downstream development that involves people and property.

For a dam to be regulated by the State of California, the dam's height must be more than six feet, and it must impound 50 acre-feet or more of water, or if the dam is 25 feet or higher, it must impound more than 15 acre-feet of water. Dams meeting these criteria are considered to be low, significant, high, and extremely high hazard dams. The nearest dams to the City regulated by DWR are the Trout Lake and Steamboat Lake dams at the California Department of Fish & Wildlife's Shasta Valley Wildlife Area approximately 2.7 miles southeast of Montague. The Trout Lake Dam is a 40-foot tall earthen dam constructed in 1960, and the Steamboat Lake Dam is a 22-foot tall earthen dam constructed in 1968. Though neither dam poses a hazard to the City, both are considered significant hazard dams. Other nearby dams include the Shelley Dam, approximately 5.7 miles east of Montague, and the Ray Soule Reservoir Dam, approximately 7.3 miles east of Montague. Both are privately-owned earthen dams, with heights of 27 feet and 28 feet respectively. The Shelley Dam is identified by DWR as a high hazard dam and Ray Soule Reservoir Dam is a significant hazard dam. Like the Trout Lake and Steamboat Lake dams, neither poses a hazard to Montague.

Additionally, Dwinnell Dam, which impounds Lake Shastina, is located approximately 14.2 miles southeast of Montague on the Shasta River. Dwinnell Dam, or the Shasta River Dam as it is referred to by DWR, is a 96-foot tall dam constructed by the Montague Water Conservation District (MWCD) in 1928 with a storage capacity of approximately 50,000 acre-feet, though it often fills to a smaller volume due to lower watershed yields and seepage losses. Dwinnell Dam is considered by DWR to be a high hazard dam. The dam also lies in the path of potential mudflows from Mount Shasta, should there be that type of volcanic activity, which could result in water breaching the dam or actual dam failure. While failure of the dam does not pose a direct hazard to the City, infrastructure used by the MWCD to deliver water to the City of Montague could be affected. The inundation maps prepared for Dwinnell Dam identifies areas subject to flooding and the approximate time floodwater would reach areas adjacent to and west of Montague. As shown on the inundation maps, the floodwaters would reach Oberlin Road in approximately four hours and have a maximum depth of 30 feet. In approximately 5.3 hours, the floodwaters would reach Montague Road (SR 3) with a maximum depth of 19 feet. Significant damage to bridges, power, and other infrastructure could occur. Areas near the City potentially affected by the failure of Dwinnell Dam are shown in **Figure 7-14, Dam Failure Inundation Area** at the end of the Safety Element.

7.5.4.3 Localized Flooding

Localized flooding can also occur in or around the City's limited stormwater drainage facilities or in low-lying, poorly drained areas during intense rainstorms. The primary cause of localized flooding in Montague is the lack of a true storm drain network. Curb and gutter have yet to be constructed along several city streets and the storm drain system that exists consists of a discontinuous network of natural and man-made drainage features. To address the lack of storm drain improvements, City Code requires that property owners install curb and gutter at the time of construction. While this approach has adequately served the City in the past, increased storm intensities resulting from climate change may eventually require that the City plan for and develop a true storm drain system to accommodate increased stormwater runoff.

7.5.5 Hazardous Materials

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 of the California Code of Regulations (CCR), Title 22, Section 662601.10, as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

Most hazardous material regulation and enforcement in Siskiyou County is managed by the Siskiyou County Community Development Department - Environmental Health Division, which refers large cases of hazardous materials contamination or violations to the North Coast Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substances Control (DTSC). When issues of hazardous materials arise, it is not at all uncommon for other agencies to become involved, such as the Siskiyou County Air Pollution Control District and both the federal and state Occupational Safety and Health Administrations.

7.5.5.1 Hazardous Materials Sites

Pursuant to Government Code Section 65962.5, both DTSC and the State Water Resources Control Board (SWRCB) are required to maintain lists of sites known to have hazardous substances present in the environment. The agencies make these lists available on their websites. According to DTSC Envirostor and SWRCB GeoTracker databases, which were reviewed in May 2025, there are two DTSC cases and three SWRCB cases in the City of Montague. The two DTSC cases were military evaluation sites that were surveyed for evidence of potential Department of Defense use or petroleum, oils, and lubricants (POL) storage. Based on the results of the surveys, it was determined that no further action was required for either case. Of the SWRCB cases, one case involved gasoline spilled from a leaking underground storage tank (i.e., LUST case), one case involved gasoline spilled at a facility used for temporary bulk fuel storage, and the other case was opened by the SWRCB in conjunction with the DTSC military evaluation site survey for POL storage. All three of the SWRCB cases have subsequently been closed. The location of each case and its status in 2025 are shown on **Figure 7-15, Hazardous Materials Cleanup Sites** at the end of the Safety Element.

7.5.5.2 Hazardous Materials Transport

Being located on two transportation routes (i.e., SR 3 and the Central Oregon Pacific Railroad), there is the potential for hazardous materials, including flammable and non-flammable gases, corrosives, oxidizers, and flammable liquids, to occasionally be transported through Montague. Because neither is a major transportation route, however, the risk to the community is limited.

Concerning the transport of materials on SR 3, heavy truck traffic through Montague is intermittent and there have been no reported hazardous materials spills in the City resulting from improper transport or a vehicle accident. Nevertheless, to minimize the hazard, the City should evaluate designating a system of truck routes to direct heavy truck traffic and possible hazardous materials transport away from residential areas and other sensitive land uses. When hazardous material spills occur on state highways, such as SR 3, the California Highway Patrol serves as the statewide information, assistance, and notification coordinator. In most instances, however, the Montague Fire Department and Siskiyou County Sheriff's Office would likely to be the first to respond.

The railroad through Montague follows a linear alignment, train speeds are 25 mph or less, and only a few trains pass through Montague each day. The nearest local hazards safety site (i.e., a length of track with elevated rates of train derailments) is more than four miles north of the City. At-grade crossings on Webb Street, King Street, and Scobie Street in Montague, however, increase the potential for vehicle-train collisions. To alert drivers and other users of the roadway of train hazards, railroads employ active and passive traffic control devices at at-grade crossings. Active traffic control devices provide advance warning of an approaching train at the crossing, typically by means of flashing lights, audible alarms, and the lowering of gates across the roadway. Passive traffic control devices are simply signs and pavement markings that alert drivers and other users of the road that they must look for an approaching train and take appropriate action. For this reason, at-grade crossings with passive traffic control are particularly dangerous and trains are required to issue a warning via the horn as they approach all crossings regardless of traffic control type. The crossing on Webb Street is an active crossing and the crossings on King Street and Scobie Street are passive.

7.5.6 Climate Change

Over the past two hundred years, the Earth's climate has slowly been changing in response to increasing levels of heat trapping gases in the atmosphere. This long-term shift in temperature and weather is now well documented, as is the need to prepare for and adapt to the anticipated effects of climate change. Most people experience climate change as warmer temperatures and extreme weather events. This is true for residents of Montague and elsewhere in Siskiyou County as well, however, climate change has also been intensifying the impacts of other the climate-related hazards in the region, including drought, wildfire, extreme weather, and flooding. Potential impacts to water supply, water quality, public health, infrastructure, wildlife, and critical habitats also exist.

Because the level of impact from climate change-related events varies and is largely beyond the control of the City of Montague, a vulnerability assessment was prepared as part of the Siskiyou County Local Hazard Mitigation Plan for each climate change-related impact. The assessment was completed using data available from California's Fourth Climate Change Assessment, FEMA's National Risk Index, and the California Energy Commission's Cal-Adapt data center. The vulnerability assessment estimates the impact of climate change and the City's capacity to adapt to and moderate the impacts climate change, known as "adaptive capacity." The impacts of

climate change and adaptive capacity are combined to determine climate change vulnerability and prioritize mitigation actions consistent with the California Adaptation Planning Guide. The results of the assessment are summarized below.

7.5.6.1 Extreme Heat

Heat-related illnesses are a concern when it comes to extreme heat forecasts. That's because without the ability to stay cool and adequately hydrated during periods of prolonged heat exposure, health impacts that begin with fatigue and cramping can quickly escalate to heat stroke and death. Exposure to extreme heat can affect everyone, however, health risks are greater for vulnerable members of society, including pregnant women, persons with a pre-existing chronic disease, the elderly and very young, and persons who are economically disadvantaged. Further, because of increased exposure to the environment, persons who work outdoors are also at elevated risk.

Cities with highly modified urban landscapes may also be disproportionately affected during periods of extreme heat. That's because in addition to typically having fewer shade trees and less evapotranspiration than surrounding less developed areas, urban landscapes also tend to have higher concentrations of dark, thermally absorptive surfaces, such as roads, rooftops, parking lots, and buildings. After absorbing the sun's heat throughout the day, the asphalt and concrete used in urban areas continue to radiate heat long after sundown, such that nighttime temperatures are generally warmer in cities. This phenomenon, known as urban heat island effect, can result in temperatures in cities that are as much as 10°F warmer than in surrounding areas.

According to the vulnerability assessment prepared for the Local Hazard Mitigation Plan, the extreme heat risk index for Montague is in the 52.5 percentile relative to the rest of the nation, which is considered relatively moderate. Nevertheless, due to current and projected summer temperatures for the City and region, which could increase by as much as 5.4°F over historic conditions by the middle of the century, both the Circulation Element and Open Space & Conservation Element recommend trees planting, where appropriate, as an effective, low technology means of staying cool during summer, reducing energy demand, and achieving other social, environmental, and economic benefits.

7.5.6.2 Drought

It is the forecast of drought that generates more concern than any other climate change impact. This is because droughts can diminish water levels in lakes, reservoirs, streams, and groundwater basins, and have the potential to rapidly spread fire, create food shortages, hurt economies, and dramatically alter the living environment and people's lives. Further, despite little variability in the frequency of droughts around the world for several decades, this century has already seen record droughts on every continent outside of Antarctica. However, not all droughts are the result of climate change. In many areas of the world, such as California, droughts are a natural part of the climate's inherent variability. In fact, climate scientists believe that the prolonged drought that gripped California between 2011 and 2017 was not due to climate change, but a recurring natural phenomenon that entailed a high-pressure ridge parking over the Pacific similar to historic droughts, albeit for an extended period of time. A study by climate scientists with the University of California Los Angeles and the National Oceanic and Atmospheric Administration, however, found that during California's 2020-2022 drought, "the higher temperatures caused by anthropogenic climate change made an ordinary drought into an exceptional drought."

As temperatures in the region continue to rise throughout the 21st century, they are expected to influence the frequency and severity of droughts in several ways, such as extended dry seasons, decreased snowpack, earlier snowmelt, increased evapotranspiration, greater variability in runoff and recharge, and increased water demand. Although nobody knows for certain how much more often droughts will occur, drought frequency in the region could increase approximately 50 percent by the end of the century. But it isn't simply the incidence of drought-like conditions that matters when it comes to understanding how this could affect Montague and the region. This is because some droughts aren't as severe or long lasting as others, and it is the persistent strain of a drought or sequential droughts on communities, the environment, and agriculture that is so potentially detrimental. According to the vulnerability assessment prepared for the Local Hazard Mitigation Plan, the drought risk index for Montague is in the 99.9 percentile relative to the rest of the nation, which is considered very high.

Due to the City's reliance on surface water supplied by the MWCD for its municipal water supply, with waters principally delivered via a series of open canals and ditches from Dwinnell Reservoir, the 2011-2017 California drought was particularly difficult for Montague. Just two years into the drought, the City faced a potential crisis. It was at risk of running out of water by the end of the summer, a situation it had not faced in more than 80 years. To address the water shortage, the City imposed a monthly limit of 5,000 gallons per household, along with fines for noncompliance, while also working with the MWCD, State, and others on a possible solution to the crisis. With the eventual award of funding by the California Department of Public Health through its Public Water System Drought Emergency Funding Program, the City was able to construct a new diversion point and pump station on the Shasta River near Montague and install a pipeline to convey the water directly to the City's water treatment plant. By late summer, the emergency pipeline was completed, and the crisis was averted. As a result, Montague is now better prepared for future droughts. Nevertheless, because the City remains reliant on surface waters for its municipal water supply, the City should continue to evaluate developing a groundwater supply to better safeguard against future droughts.

7.5.6.3 Wildfire

There are several factors that affect the size and frequency of wildfires. The progressively warmer temperatures and associated drought stress projected for the City and region are expected to contribute to an increase in wildfire size and frequency that climate models predict will worsen over time, with some scientists noting that the probability of fire over a 30-year period is expected to increase across the region on average by 40 percent by the end of the century. Given that 19 of California's 20 largest wildfires on record have occurred since 2000, it is not surprising that climate scientists believe that the combined effects of increased heat and drought are already contributing to larger and more frequent wildfires in California. Nevertheless, a 2012 study of the Klamath, Mendocino, Shasta-Trinity, and Six Rivers National Forests found that despite wildfire size and frequency trending upward, the severity of wildfires has not been. This led the study's authors to conclude that, under appropriate conditions, fire could be more extensively used in the region to achieve management objectives. While the use of prescribed fire may not be appropriate inside city limits due to the proximity of people and structures, it is being successfully used in the Shasta Valley to reduce fuels. According to the Local Hazard Mitigation Plan, the risk index for Montague from wildfire is in the 98.3 percentile for the nation, which is relatively high.

7.5.6.4 Extreme Weather & Flooding

Extreme weather events are often cited as a likely outcome of climate change. This is because for each 1.8°F of warming, the atmosphere can hold approximately seven percent more water

vapor, and with increased warming there is more water evaporating from the Earth's surface for the atmosphere to hold. Because this water vapor contains energy in the form of latent heat, more water in the atmosphere means there is more energy to feed the atmospheric instability that drives large storms. The effect of a warming climate on extreme weather is not consistent around the globe. This is because wetter areas of the planet have more water available to feed storms than drier areas. For this reason, the greatest observed increases in storm severity in the United States have been in the wetter areas of the country.

Extreme winter weather encompasses multiple effects caused by winter storms and conditions, including strong winds, ice storms, heavy or prolonged snow, sleet, and extreme cold. In areas and regions that only see intermittent winter storms, such as Siskiyou County, winter storms may become increasingly hazardous. According to climate models, Montague is likely to experience normal to slightly wetter winters as a result of climate change. While that alone is not expected to result in substantial increases in extreme weather, as the climate warms, more of the precipitation that does fall is expected to fall as rain. Further, climate models project less precipitation for the region during the spring and fall, essentially condensing the period of time that the region receives its annual precipitation. When these predicted shifts in the timing of runoff are combined with atmospheric rivers that already deliver most of the state's annual precipitation during relatively few days each year, increased flooding in the City due to winter storm events becomes more likely. According to the Local Hazard Mitigation Plan, the risk index for Montague from winter weather (e.g., snow, sleet, and freezing rain) is relatively low (53.0 percentile nationwide), while the risk index for the City from riverine flooding is in the 92.5 percentile nationwide, which is relatively high.

7.5.7 Airport-Related Hazards

The Siskiyou County Airport Land Use Compatibility Plan (ALUCP), as it applies to the Montague-Yreka Rohrer Airfield, addresses land use issues surrounding the airport for the purpose of minimizing the public's exposure to excessive noise and safety hazards while also ensuring the continued ability of the airport to operate and expand in the future. With regard to safety, the main objective of the ALUCP is to minimize the risks associated with an off-airport aircraft accident or emergency landing. As part of the ALUCP, the risks to people and property in the vicinity of the airport are considered, and in areas with greater risk, more stringent land use controls are applied. Limiting the number of people on the ground is the principal means by which the ALUCP reduces risks. Additionally, land uses in which the occupants have reduced mobility or an inability to respond to emergency situations are of concern and are prohibited within certain zones. Other risks include the storage of fuel or other hazardous materials. To minimize those risks, bulk storage (greater than 2,000 gallons) of nonaviation flammable materials and above ground storage of fuel or other hazardous materials is prohibited.

Airspace Protection: To minimize the potential for off-airport aircraft accidents, the ALUCP protects airspace by establishing maximum height limits for objects in zones surrounding the airport. For instance, within the approach/departure zone and adjacent to the runway (i.e., Zone B) and Height Review Overlay Zones, proposed objects 35 feet tall or less are permitted, whereas objects taller than 35 feet are subject to discretionary review. Further away from the airport in the common traffic pattern zones (i.e., Zones C1 and C2), the maximum height limit increases to 50 feet. The ALUCP height limits are based on Federal Aviation Regulations (FAR) and the United States Standard for Terminal Instrument Procedures (TERPS).

In addition to the maximum height limits, an avigation easement is required for any property within Zones A or B, or a Height Review Overlay Zone. The avigation easement provides airspace

protection by providing the right of flight in the airspace above the property; allows for the generation of noise and other impacts associated with the aircraft overflight; restricts the height of structures, trees, and other objects; permits access to the property for the removal or aeronautical marking of objects exceeding the established height limit; and prohibits electrical interference, glare, and other potential hazards to flight from being created on the property.

Any use that may result in hazards to flight, including physical, visual, and electronic forms of interference, or uses that may cause the attraction of birds, are expressly prohibited. Characteristics to be avoided include:

- Glare or distracting lights which could be mistaken for airport lights;
- Sources of dust, steam, or smoke which may impair pilot visibility;
- Sources of electrical interference with aircraft communications or navigations; and
- Any use, especially landfills and certain agricultural uses, which may attract large flocks of birds.

Overflights: Concerns related to overflight compatibility generally encompass noise and safety issues. Frequency of overflights, the altitude at which they are taking place, the noise levels of the individual aircraft and the characteristic of the noise (e.g. helicopter vs. fixed wing, with helicopter noise being more intrusive), and perceived necessity of the noise (e.g. fire attack aircraft being considered more acceptable) are the principal determinants where overflights are considered to be a potential concern. Through the recording of the avigation easement, prospective purchasers of properties affected by overflights are notified of the proximity of the airport and the potential for overflight noise and safety concerns.

7.6 CORRELATION WITH OTHER PLANS AND ELEMENTS

Many Safety Element policies are interrelated with topics in the Land Use, Circulation, Housing, and Open Space & Conservation Elements. For example, the Land Use Map seeks to minimize impacts as a result of future development in hazard-prone areas and to separate sensitive land uses, such as residential neighborhoods, from incompatible uses. It is important to remember, however, that policies in the Safety Element are tailored to address health and safety-related issues. The Safety Element is also closely related to the Local Hazard Mitigation Plan, which plans for mitigation of hazards in more detail and is required for access to federal and state financial assistance programs. The LHMP and this element discuss specific hazards with a high likelihood of occurrence or high impact severity that could potentially affect the City of Montague, including seismic and geologic hazards, wildfire, and climate change. For these reasons, the most recent LHMP is incorporated as part of the Safety Element by reference.

7.7 SAFETY ELEMENT GOALS, POLICIES & PROGRAMS

GOAL S-1: A city prepared for necessary action, including evacuation if needed, due to disasters, and primed for recovery following a disaster.

GOAL S-2: A city that has reduced, to the extent feasible, the threat to life and property caused by fire.

GOAL S-3: A city that has minimized, to the extent feasible, potential impacts to people, structures, and the environment resulting from flood.

GOAL S-4: A city that has minimized, to the extent feasible, potential impacts to life and property caused by geologic and seismic hazards.

GOAL S-5: A city that has minimized, to the extent feasible, risks to life and property resulting from hazardous materials spills.

GOAL S-6: A city that has minimized, to the extent feasible, the risks to life and property resulting from climate change.

GOAL S-1: A city prepared for necessary action, including evacuation if needed, due to disasters, and primed for recovery following a disaster.

Policy S-1.1: The City creates and maintains a safe environment for its residents.

Policy S-1.2: The City plans for and strives to provide adequate facilities, equipment, and personnel to respond to emergencies.

Policy S-1.3: The City takes appropriate measures to prepare for natural and human-caused disasters and to protect residents should one occur.

Policy S-1.4: The City endeavors to minimize impacts to life, structures, and the environment should a disaster strike.

Policy S-1.5: The City takes appropriate measures to ensure that critical and essential city facilities remain operational during emergencies.

Policy S-1.6: The City participates in agreements for automatic and mutual aid with other local, state, federal, and nongovernmental emergency service providers to improve protection services and emergency response throughout the county.

Policy S-1.7: The City coordinates with and encourages the use of community-based networks to aid vulnerable populations prepare for emergencies and provide assistance with evacuation and recovery.

Policy S-1.8: The City engages with the community to increase awareness of and preparedness for emergencies and natural disasters.

Policy S-1.9: The City commits to the goals, objectives, and actions in the Local Hazard Mitigation Plan and subsequent amendments thereto.

Policy S-1.10: The City continues to assess and improve evacuation capacity, safety, and viability under a range of emergency evacuation scenarios.

Policy S-1.11: The City requires new development that requires additional levels of law enforcement and fire protection services to participate in offsetting costs for the additional services.

Policy S-1.12: The City strives to maintain adequate emergency response times for all existing and planned development within city limits, and for lands proposed for annexation.

Program S-1A: Coordinate with state, county, and other local agencies to build mutual aid capacity for emergency events, especially through disaster preparedness training. Develop and maintain mutual aid agreements with appropriate agencies.

Program S-1B: Periodically review, and update as necessary, plans that advise city staff, first responders, and residents on actions that should be taken in the event of an emergency. Plans should be distributed to and made readily available to the public.

Program S-1C: Expand emergency training and local expertise for emergency event response and recovery, including through volunteer roles.

Program S-1D: Locate essential public facilities outside of natural hazard areas, such as FEMA flood zones, Wildland Urban Interface, and the High Fire Hazard Severity Zone, when feasible. If it is not possible to locate facilities outside of these natural hazard areas, reduce vulnerabilities to essential public facilities to the maximum extent feasible by identifying and implementing construction methods and/or other methods to protect and minimize damage to these facilities.

Program S-1E: Establish minimum levels of service thresholds for fire protection and law enforcement services and maintain services at or above those thresholds.

Program S-1F: Provide rapid and timely response to all law enforcement, fire, and other emergencies. Work to maintain minimum average response times.

Program S-1G: Work with SCLTC and other partners on the development of the countywide evacuation and preparedness plan and educate the public on related emergency protocols developed in the plan.

Program S-1H: Coordinate with SCLTC, Caltrans, the County Road Department, Siskiyou County Sheriff's Office, Siskiyou OES, CAL FIRE, and other local, state and federal agencies to identify strategies that ensure the maintenance and reliability of evacuation and supply transportation routes potentially compromised during an emergency.

Program S-1I: Provide for adequate evacuation routes in areas of high fire hazard and other natural disasters.

Program S-1J: Identify and publicize emergency shelters and sign and control evacuation routes for use during emergencies, working with Caltrans and the County of Siskiyou, as appropriate, for signs along SR 3 and county roadways.

Program S-1K: Continue to promote and support the use of early warning notification systems (text messages, telephone calls, etc.) to notify residents by wireless emergency alert of the need to evacuate in the event of an emergency and the location of evacuation routes, points, and critical facilities such as schools and day care centers, particularly residents of vulnerable areas and neighborhoods with constrained emergency access.

Program S-1L: Where practical, improve emergency access to dwellings that are isolated due to narrow dead-end roads. Development on vacant lots in such areas should be limited until basic safety standards have been satisfied.

Program S-1M: Ensure that applications for projects that will house infirmed, non-ambulatory persons, seniors, and children in high hazard areas include adequate provisions to mitigate known hazards.

Program S-1N: Work with community groups, faith-based organizations, and other institutions to develop a network of conveniently located community resilience hubs (e.g., public facilities, businesses, and community-oriented facilities) that are centrally located, accessible, and equipped to provide aid to vulnerable populations during emergency events, periods of poor air quality, utility disruptions, and/or climate change-related hazards.

Program S-1O: Coordinate with the Siskiyou County Office of Emergency Services, the County of Siskiyou, and other cities in Siskiyou County to implement and regularly update the LHMP and stay in compliance with relevant FEMA and state requirements.

Program S-1P: Forward all land divisions and development applications that have the potential for public safety impacts to the Sheriff's Office and Montague Fire Department for review.

Program S-1Q: Ensure developed properties are easily identifiable by emergency responders from the street.

Program S-1R: Work with utility companies to determine the feasibility of undergrounding utility lines during construction of new developments and in the most at-risk areas, and to identify funding mechanisms to support undergrounding activities.

Program S-1S: Prioritize the needs of at-risk, vulnerable, and disadvantaged populations during emergency response and disaster recovery efforts, including increasing awareness of the benefits of defensible space and promoting understanding of evacuation routes.

Program S-1T: Consider adopting road standards that meet or exceed Article 2 (Ingress and Egress) of the State Minimum Fire Safe Regulations.

Program S-1U: Continue to coordinate with the Siskiyou County Airport Land Use Commission, as appropriate, on development proposals located at or near the airport.

GOAL S-2: A city that has reduced, to the maximum extent feasible, the threat to life and property caused by fire.

Policy S-2.1: The City endeavors to prevent fires, reduce fire severity, and safeguard residents, in part by:

- Maintaining a well-trained and staffed fire department and working cooperatively with other public agencies with responsibility for public safety.
- Ensuring adequate infrastructure for new development, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.
- Locating, when feasible, new essential public facilities outside of high fire risk areas and identifying construction methods or other methods to minimize damage to these facilities.
- Working with the County and other agencies to educate property owners about construction materials and methods and landscaping that reduce the potential for ignition.
- Working with the County and other agencies to educate property owners about the benefits of creating and maintaining defensible space around structures to minimize fuels and fire spread.
- Identifying areas where there is significant fire risk and a history of losses.
- Avoiding or minimizing the wildfire hazards associated with new uses of land.
- Public education.

Policy S-2.2: The City desires to sustain and grow the ability of the City of Montague Fire Department to respond to fires in and around the City.

Policy S-2.3: The City considers fire-related hazards in the review of discretionary project proposals and ensures that new development in the High Fire Hazard Severity Zone is carefully sited and configured.

Policy S-2.4: The City coordinates with and supports the efforts of Fire Safe Councils throughout the region.

Policy S-2.5: The City supports programs to prevent and prepare for wildfires.

> **Program S-2A:** Take appropriate measures to support a well-trained, equipped, and staffed volunteer fire department
>
> **Program S-2B:** Identify existing roadways in the High Fire Hazard Severity Zone and Wildland Urban Interface that do not meet road standards for evacuation and emergency vehicle access, vegetation clearance, and other fire safety requirements. Evaluate retrofitting city-owned roadways as needed to meet these standards.
>
> **Program S-2C:** Ensure proposed development in the High Fire Hazard Severity Zone provides adequate access for fire and emergency vehicles and equipment, adequate infrastructure, and proper vegetation clearance, as appropriate.

Program S-2D: Reduce the risk of wildfires in the Wildland Urban Interface in and around Montague through cooperative and timely implementation of the Community Wildfire Protection Plan.

Program S-2E: Conduct proactive vegetation management/hazard abatement to reduce fire hazards on existing public properties, along evacuation routes, and other land where applicable.

Program S-2F: Work with private property owners, Siskiyou County, and Caltrans to conduct roadside vegetation clearance along public and private roadways in High Fire Hazard Severity Zones in and around the City. Ensure that fuel reductions provide an appropriate fuel buffer for evacuees should the roadways become congested during an emergency incident.

Program S-2G: Continue to monitor fire flow capabilities throughout the City and make improvements at any locations with flow considered inadequate for fire protection.

Program S-2H: Ensure adequate fire flow is maintained within city limits through ongoing maintenance, capital improvement public infrastructure upgrades, and improvements required in association with development projects and in compliance with applicable regulations.

Program S-2I: Maintain adequate fire flow during scheduled and unscheduled power outages and interruptions through incorporation of power source resiliency and redundancy within the City's water supply, treatment, and distribution infrastructure.

Program S-2J: Analyze known fire hazard information during the review of discretionary development applications and approve those applications only after ensuring there are adequate water storage capacity and fire flow for fire protection.

Program S-2K: Approve discretionary development proposals only when adequate fire suppression services and facilities are available or will be made available concurrent with development, considering the setting, type, intensity, and form of the proposed development.

Program S-2L: Identify streets and neighborhoods that are at increased risk of wildfire and restrict on-street parking, where needed, when fire risks are elevated to ensure full access for fire trucks and emergency vehicles and to increase roadway accessibility during evacuation events. Conduct community outreach to neighborhoods affected by the program and provide detailed information on how and when the parking restrictions will be implemented.

Program S-2M: Continue to inform residents about fire hazards, appropriate responses to fire, evacuation routes, plans to reach at-risk populations, and ways to prevent loss, including defensible space, home hardening, and landscaping improvements that can reduce the impact of fire.

Program S-2N: Identify residential areas that do not have at least two routes for emergency egress, lack adequate emergency water supply, or need vegetative fuel modification to reduce risk. Work with affected residents and the Montague Fire Department to identify potential area-specific solutions to ensure risk reduction.

Program S-2O: Work with the Siskiyou County Department of Public Health and Siskiyou County Air Pollution Control District to ensure residents are educated on wildfire smoke hazards and how to protect themselves and their homes from smoke impacts.

Program S-2P: Ensure that new development projects include adequate measures to minimize fire hazards while remaining in compliance with housing laws regarding objective design standards and discretionary review.

Program S-2Q: Strive to improve the City's current Insurance Service Office (ISO) rating for public safety and associated benefits.

Program S-2R: Following revisions to the fire hazard severity zones maps by the Office of the State Fire Marshal, maintain compliance with Government Code Sections 51179 and 65302(g)(3) by updating fire hazard severity zone designations and the Safety Element, as needed.

GOAL S-3: A city that has minimized, to the extent feasible, potential impacts to people, structures, and the environment resulting from flood.

Policy S-3.1: The City controls development within special flood hazard areas identified by FEMA to reduce potential damage from floods.

Policy S-3.2: The City supports efforts to protect public health and safety from flooding through sustainable and environmentally responsible floodplain management.

Policy S-3.3: The City strives to minimize localized flooding through ongoing improvements to the City's storm drain network.

Program S-3A: Continue to coordinate with local, regional, state, and federal agencies to maintain an adequate flood management information base, prepare risk assessments, and identify strategies to mitigate flooding impacts.

Program S-3B: Support and participate in the preparation of a countywide flood control plan to minimize impacts from existing and future flooding in the region.

Program S-3C: Work with the Siskiyou County Flood Control District, resource conservation districts, watershed councils, and landowners to design or approve flood control measures that avoid, to the extent feasible, the alteration of creeks, wetlands, and riparian buffer areas.

Program S-3D: In designing flood control facilities, ensure the protection of special-status species and downstream ecosystems.

Program S-3E: Continue to participate in the National Flood Insurance Program (NFIP).

Program S-3F: Continue to enforce the City's Flood Damage Prevention Ordinance in FEMA-identified special flood hazard areas.

Program S-3G: Require new lots or subdivisions partially in, and any new development partially or entirely in 100-year flood zones to provide detailed floodplain mapping for 100-year storm events as part of the development approval process.

Program S-3H: Continue to improve and to apply for funding to improve the City's storm drain network.

Program S-3I: Ensure proposed developments will not create or result in unacceptable exposure to flood hazards.

Program S-3J: Encourage residents within the floodplain to take all practical steps to floodproof their dwellings, including the use of low interest loans and grants when available for this purpose.

GOAL S-4: A city that has minimized, to the extent feasible, potential impacts to life and property caused by geologic and seismic hazards.

Policy S-4.1: The City strives to ensure a high level of safety and minimize the loss of life injury, and property damage from earthquake, landslide, volcanic activity, erosion, and other geologic hazards.

Policy S-4.2: The City requires that new development be designed to minimize the risk of damage from seismically induced ground shaking, ground failure, slope instability, and other seismic hazards.

Program S-4A: Identify and prioritize seismic retrofits needed on existing public buildings.

Program S-4B: Encourage upgrading of privately-owned, unreinforced masonry buildings to prevent earthquake damage.

Program S-4C: Continue to enforce regulations and programs to reduce geologic and seismic hazard vulnerability.

Program S-4D: Areas known to be susceptible to landslides should be evaluated, protected, and stabilized as necessary, including through cooperation with regional stakeholders to ensure evacuation routes remain open and safe for passage.

Program S-4E: Limit development in areas subject to landslides or other geologic threat and undertake efforts to limit erosion from new development.

Program S-4F: Coordinate with county, state, and federal agencies monitoring volcanic activity and hazards.

GOAL S-5: A city that has minimized, to the extent feasible, risks to life and property resulting from hazardous materials spills.

Policy S-5.1: The City takes necessary steps to prevent and prepare for hazardous materials spills, as well as protect its residents should one occur.

Policy S-5.2: To diminish the likelihood of hazardous materials spills along SR 3 and the railroad, the City advocates for its concerns regarding highway and rail safety.

Program S-5A: Maintain an open dialogue with Caltrans and the California Highway Patrol to ensure those agencies are aware of and responsive to the City's concerns about vehicle safety and hazardous materials transport along SR 3.

Program S-5B: Ensure that the Central Oregon Pacific Railroad and Federal Railroad Administration are aware of and responsive to the City's concerns about rail safety and hazardous materials transport through the City.

Program S-5C: Establish and enforce designated truck routes for the transportation of hazardous materials through the City and prohibit routes that pass through residential neighborhoods to the maximum extent feasible.

Program S-5D: Identify necessary steps to be taken to protect residents in the case of a hazardous materials spill and be prepared to quickly implement these measures in the event of an accident.

Program S-5E: Maintain an up-to-date list of emergency contacts that are to be notified in the event of a hazardous materials spill, make the list readily available to city staff and first responders to facilitate a rapid response, and work with the Siskiyou County Sheriff's Office and California Highway Patrol to ensure rapid notification of residents in the event of a spill on SR 3.

Program S-5F: Continue to promote the training of, and the provision of appropriate protection equipment for, local first responders who would respond to hazardous material spills in the Montague area.

GOAL S-6: A city that has minimized the risks to life and property resulting from climate change.

Policy S-6.1: The City integrates regional collaboration as a key component of the City's climate adaptation planning strategy, recognizing the regional nature of climate impacts and climate adaptation strategies.

Policy S-6.2: The City incorporates climate change considerations into city processes and planning efforts, utilizing best available data to understand climate predictions and the potential impacts on community resources and facilities.

Program S-6A: Actively participate in regional discussions on infrastructure improvements and adaptation strategies related to climate resiliency and addressing potential community impacts.

Program S-6B: Continue to collaborate with Siskiyou County, other local communities, and community organizations to establish and maintain shelters in Montague and the Shasta Valley to reduce public exposure to extreme heat, cold, and smoke.

Program S-6C: Assess existing public infrastructure systems vulnerable to changes in key climate variables and incorporate upgrades to critical infrastructure in the City's Capital Improvement Program planning process.

Program S-6D: Continue to evaluate developing a groundwater source for the City's water supply to better safeguard against future droughts

Program S-6E: When updating the Capital Improvement Program, engineering specifications and standards, and planning documents, incorporate climate projection data, risk modeling, and adaptive management, as appropriate, to account for future changes in key climate variables (e.g., changes in precipitation and flooding behavior, fire and smoke risk, maximum daily temperatures, etc.).

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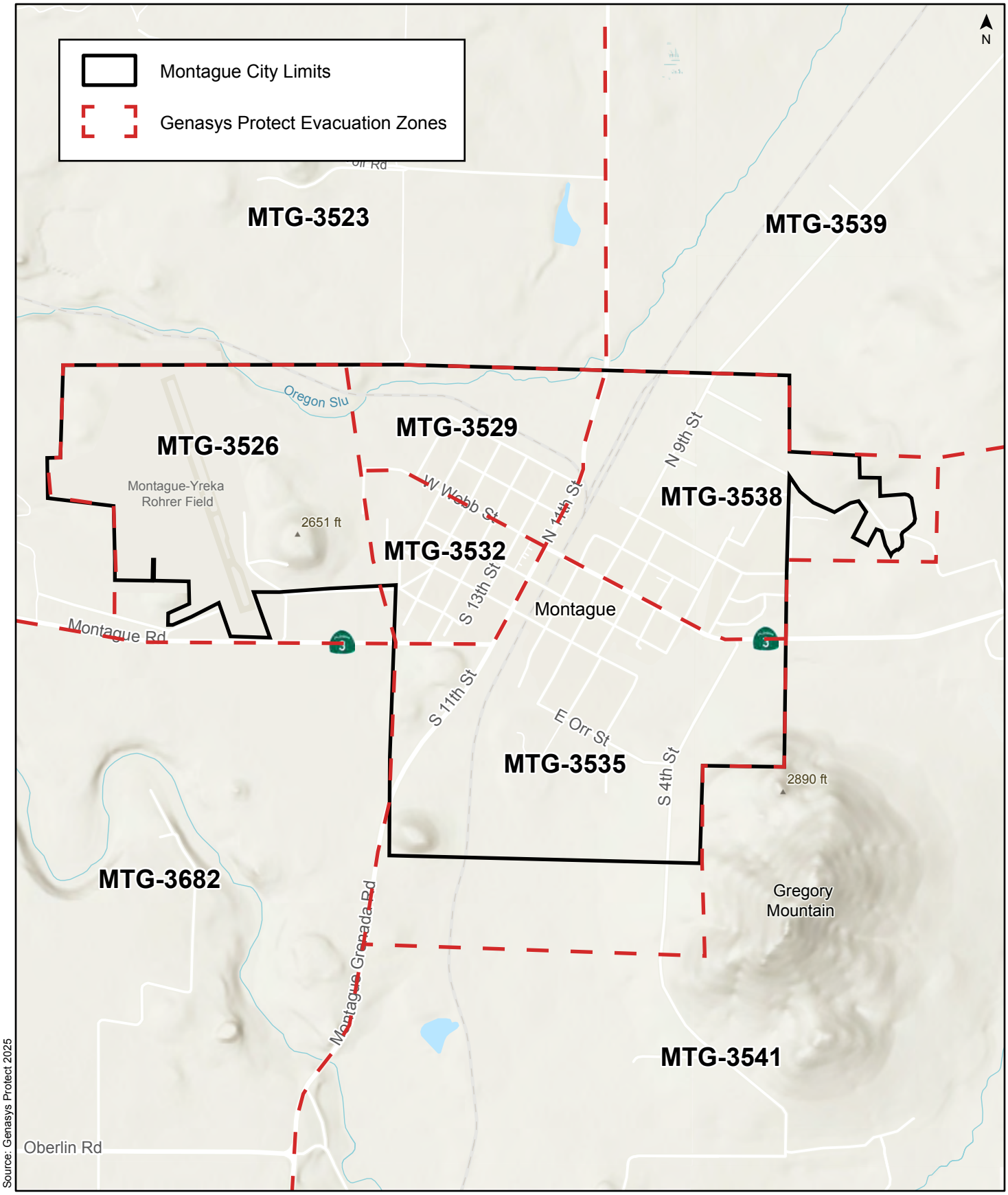


Figure 7-1, Evacuation Zones

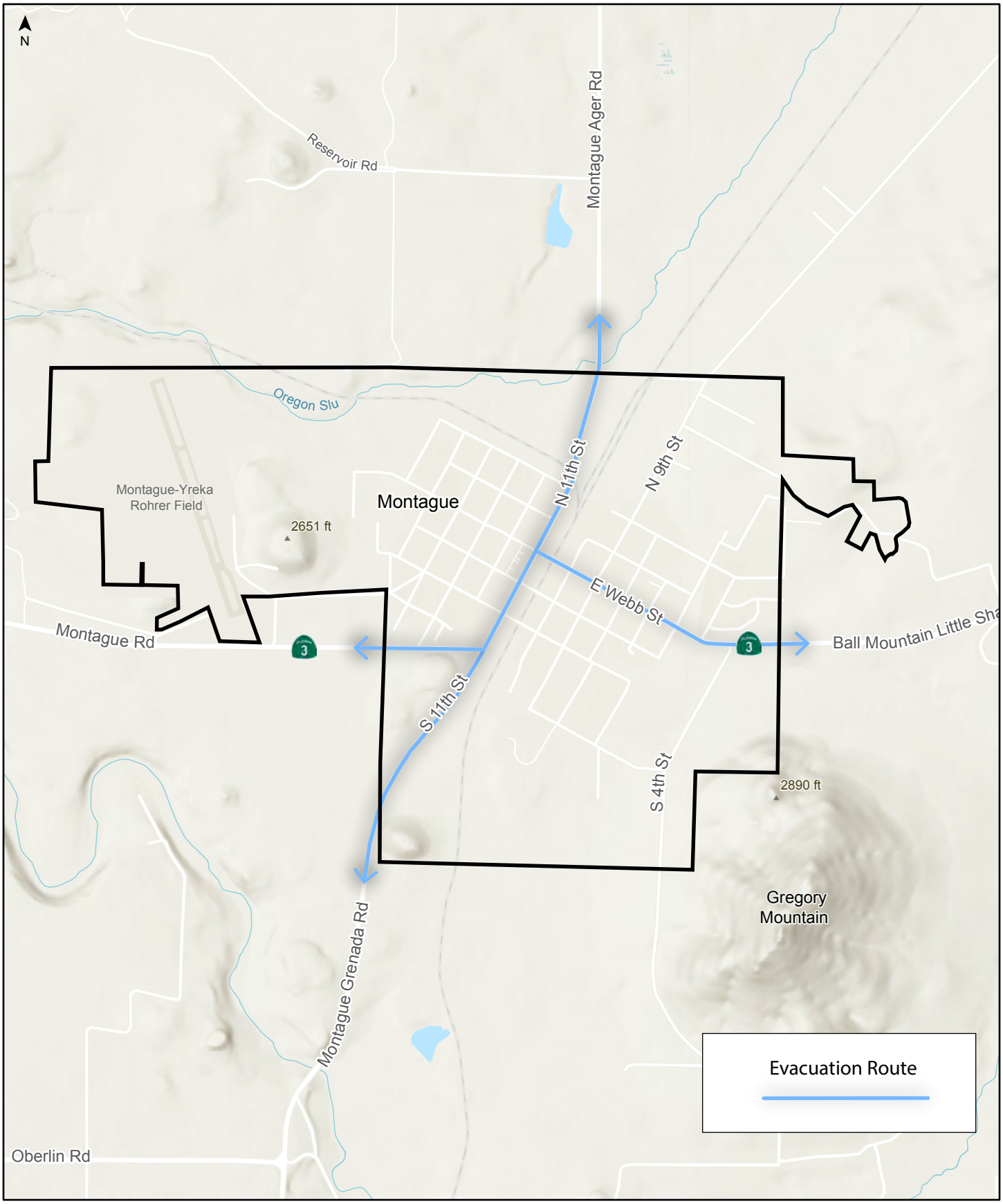
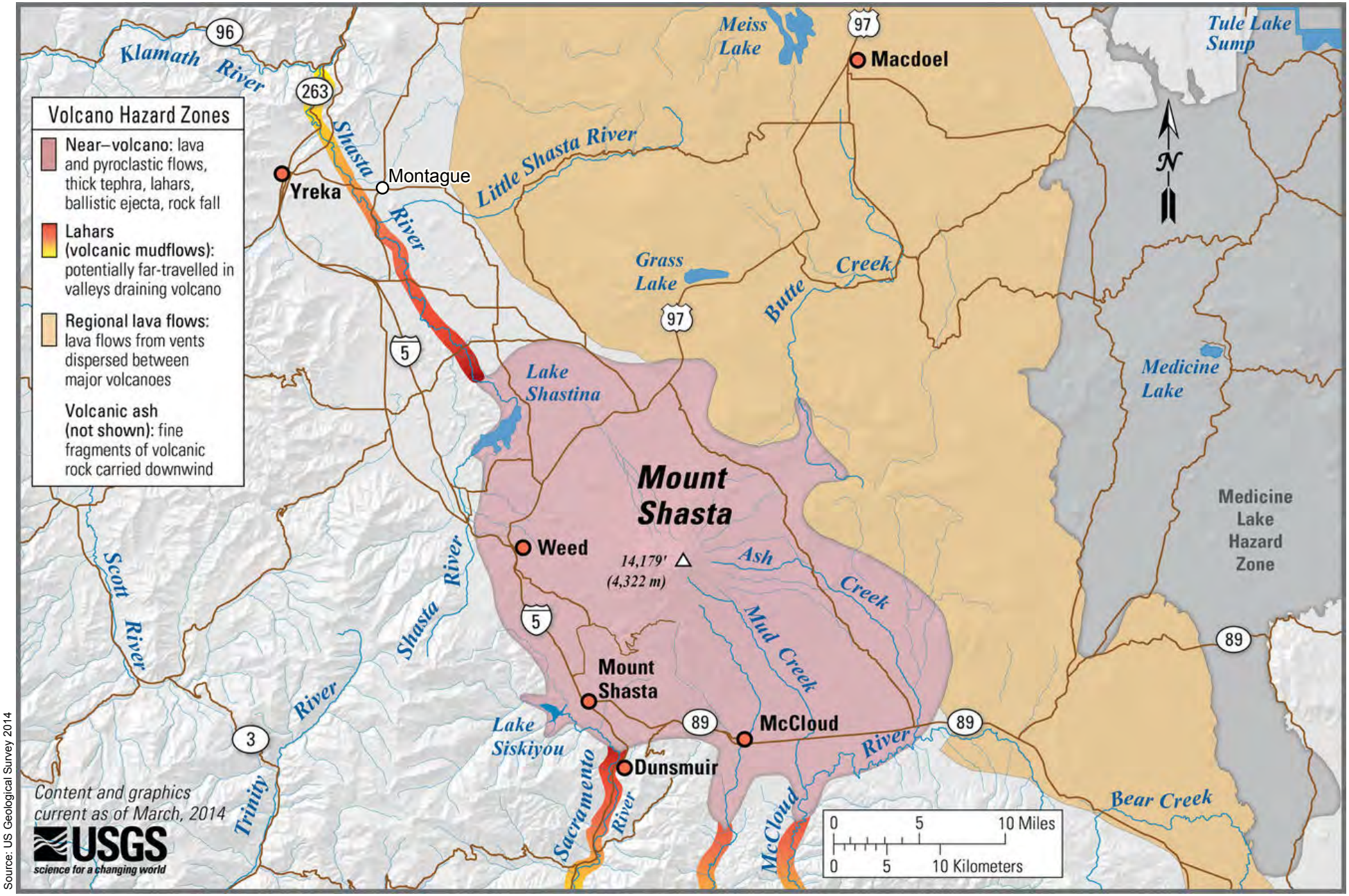


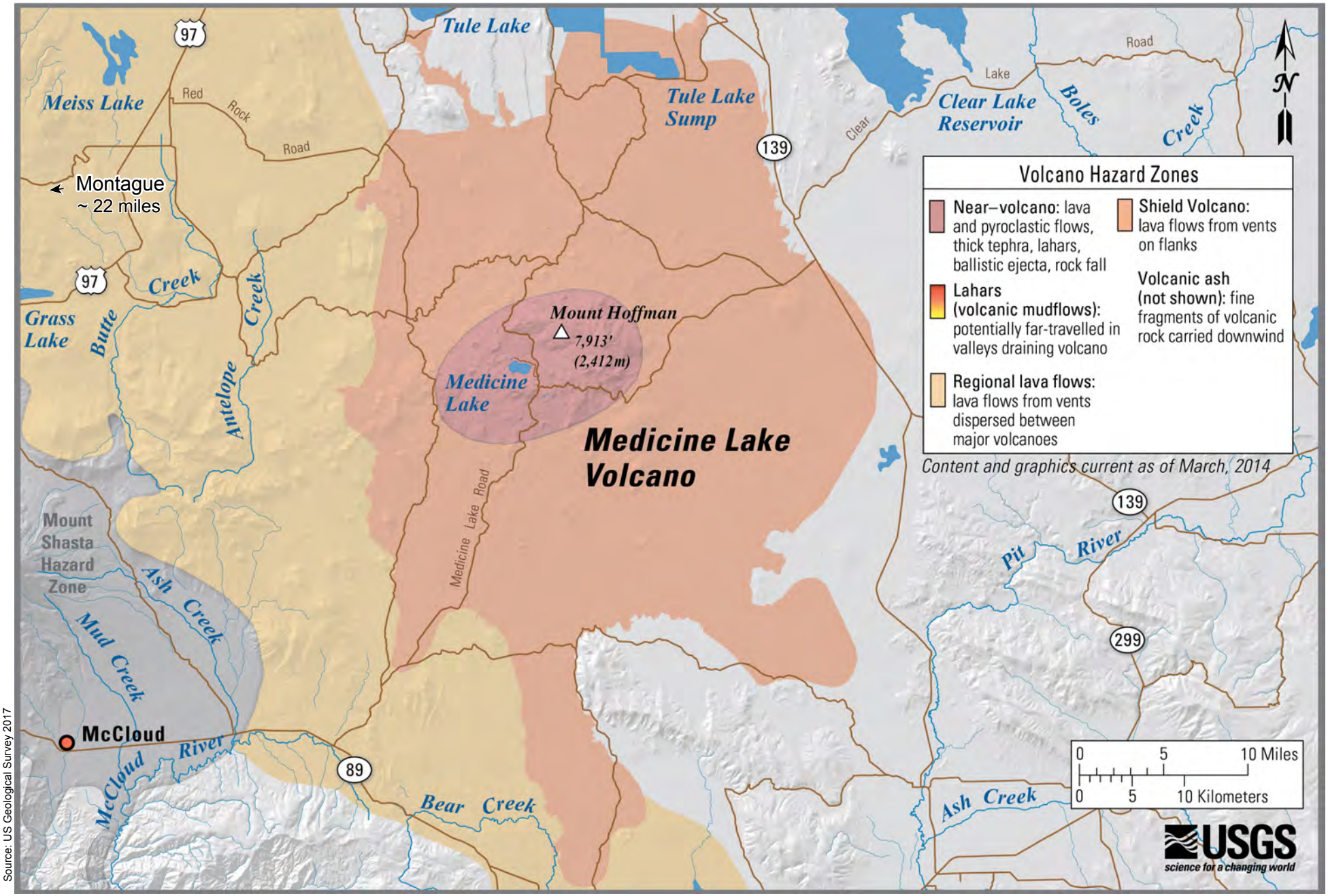
Figure 7-2, Evacuation Routes

Figure 7-3, Single Access Roadways



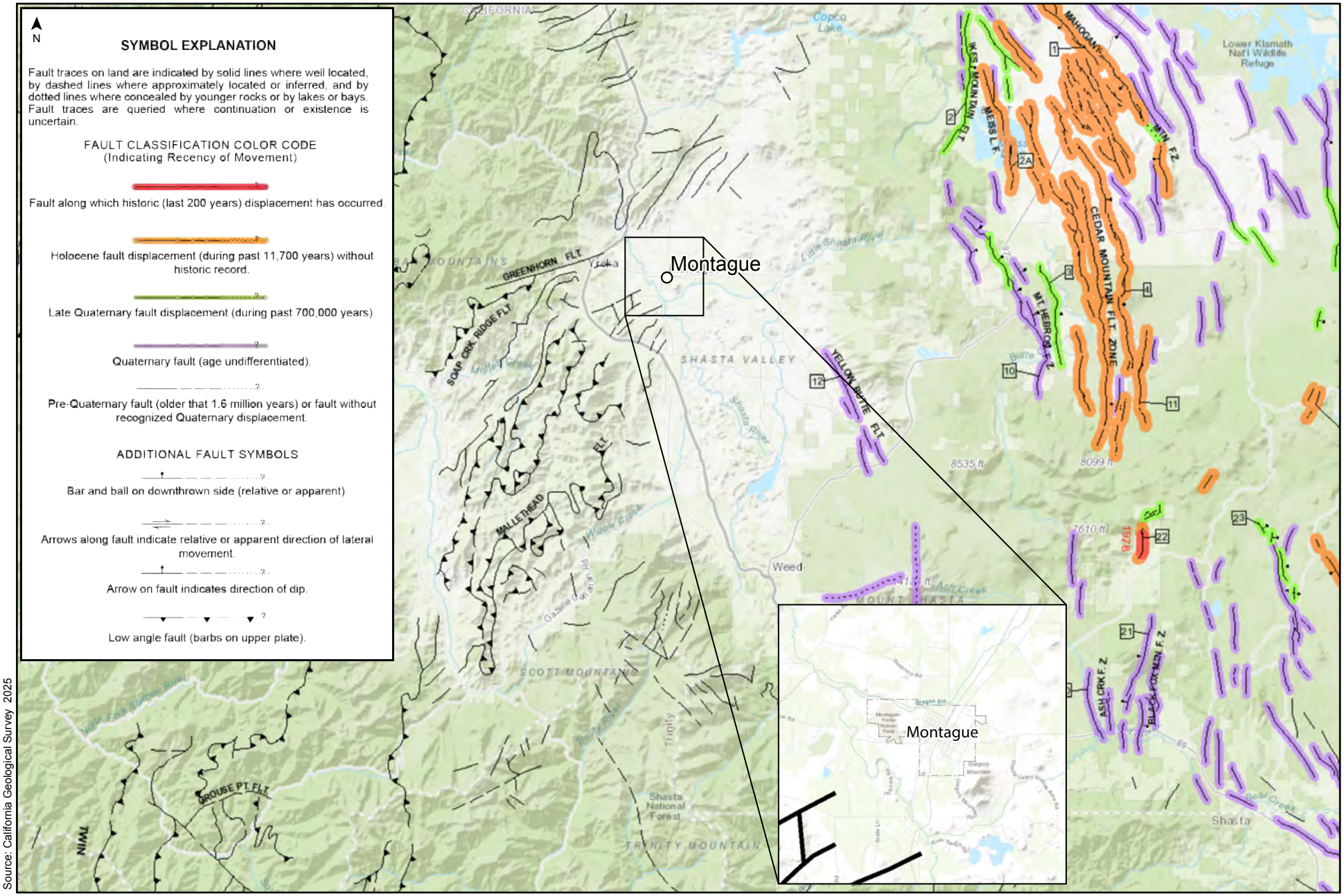
Source: US Geological Survey 2014

Figure 7-4, Mount Shasta Simplified Volcanic Hazards



Source: US Geological Survey 2017

Figure 7-5, Medicine Lake Simplified Volcanic Hazards



Source: California Geological Survey 2025

Figure 7-6, Fault Activity Map

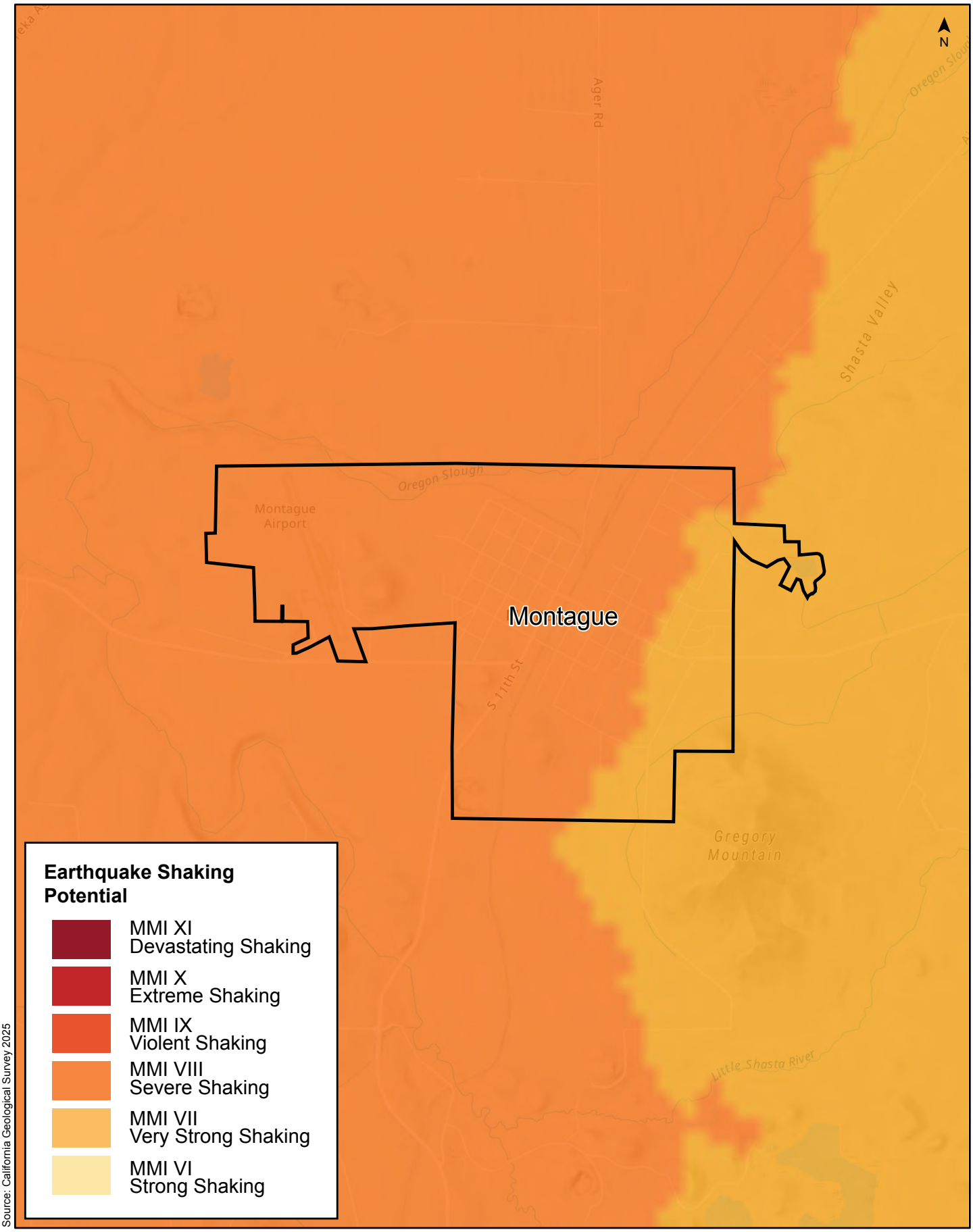


Figure 7-7, Earthquake Shaking Potential

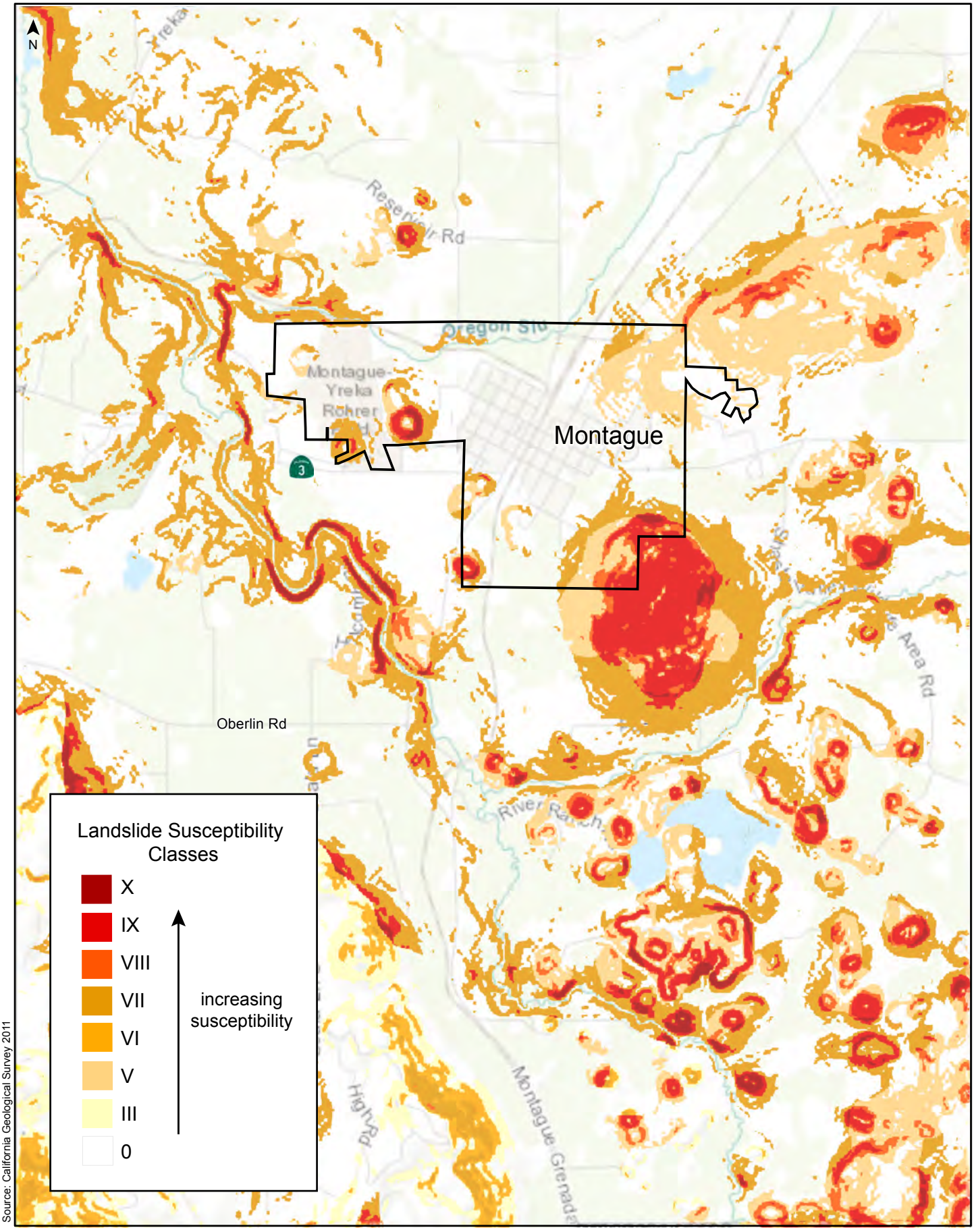
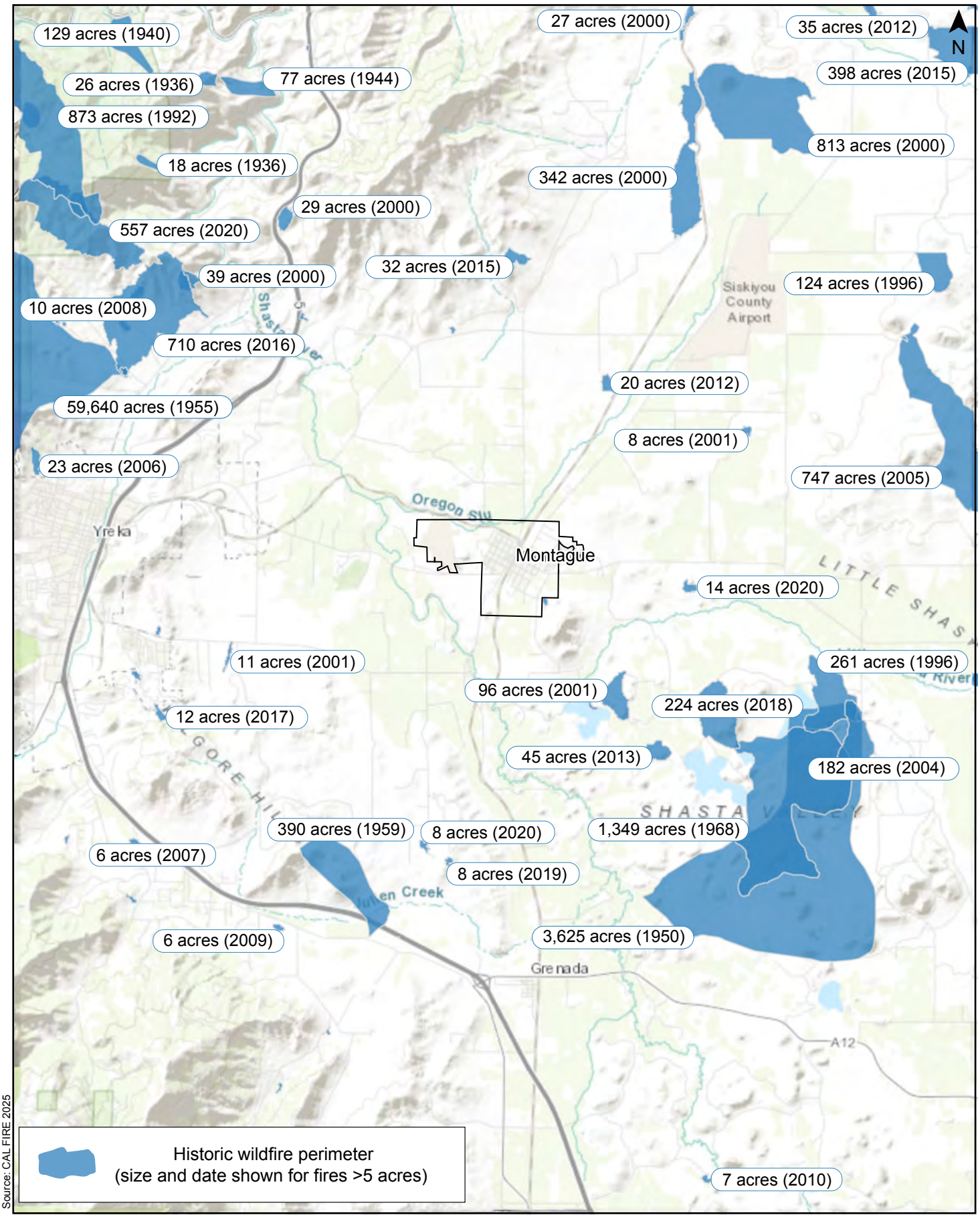


Figure 7-8, Deep-Seated Landslide Susceptibility



Source: CAL FIRE 2025

Figure 7-9, Historic Widfire Perimeters

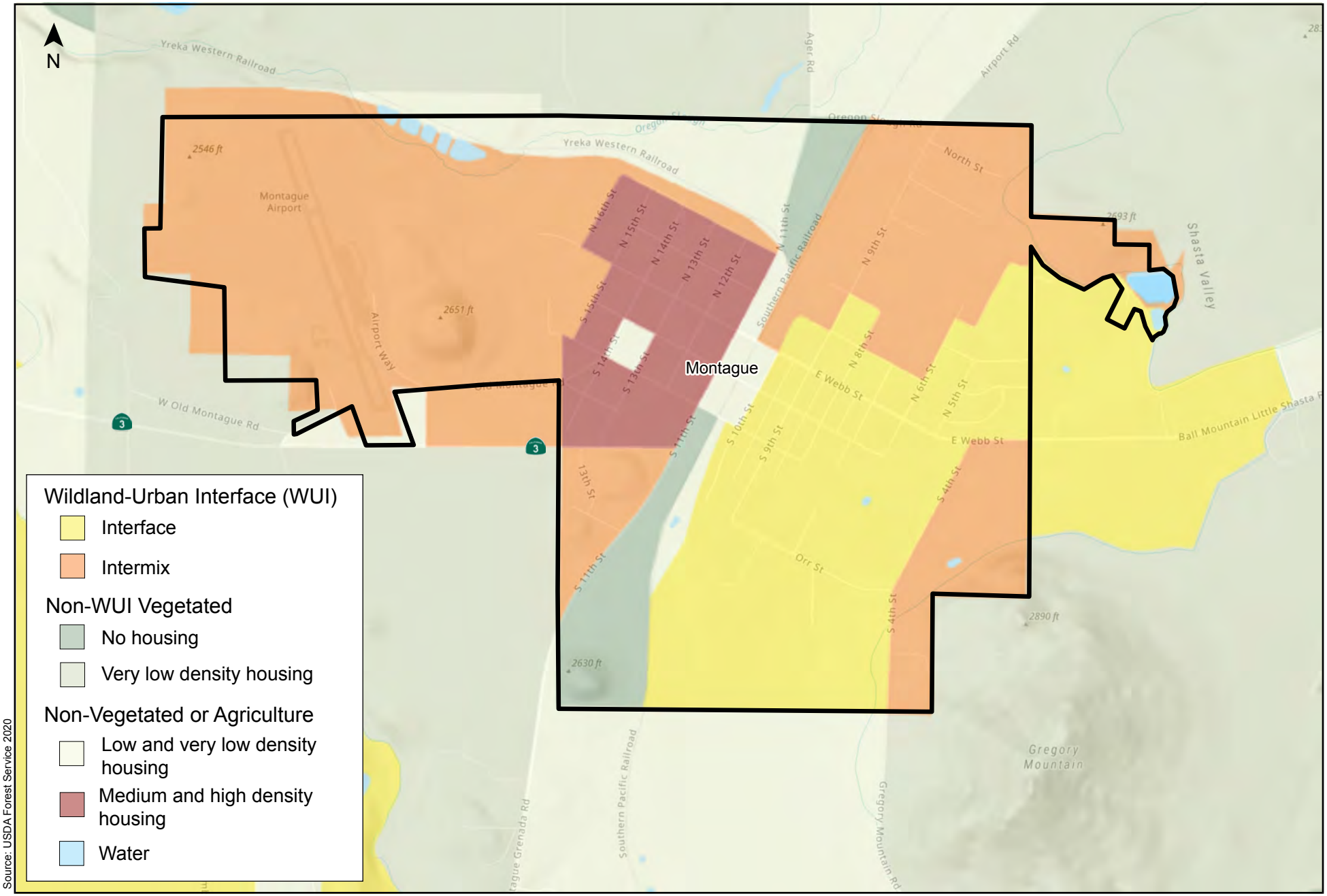


Figure 7-10, Wildland Urban Interface

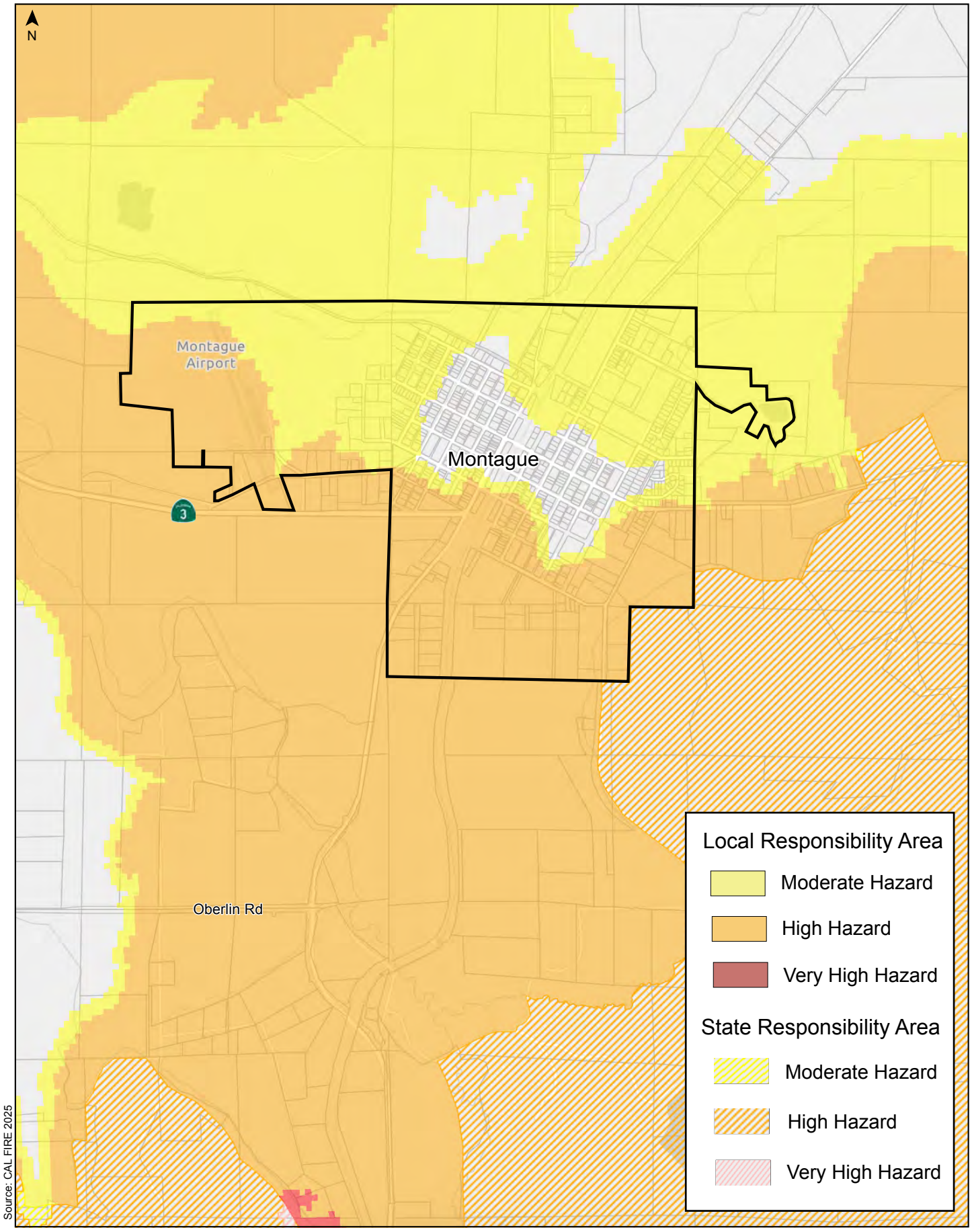
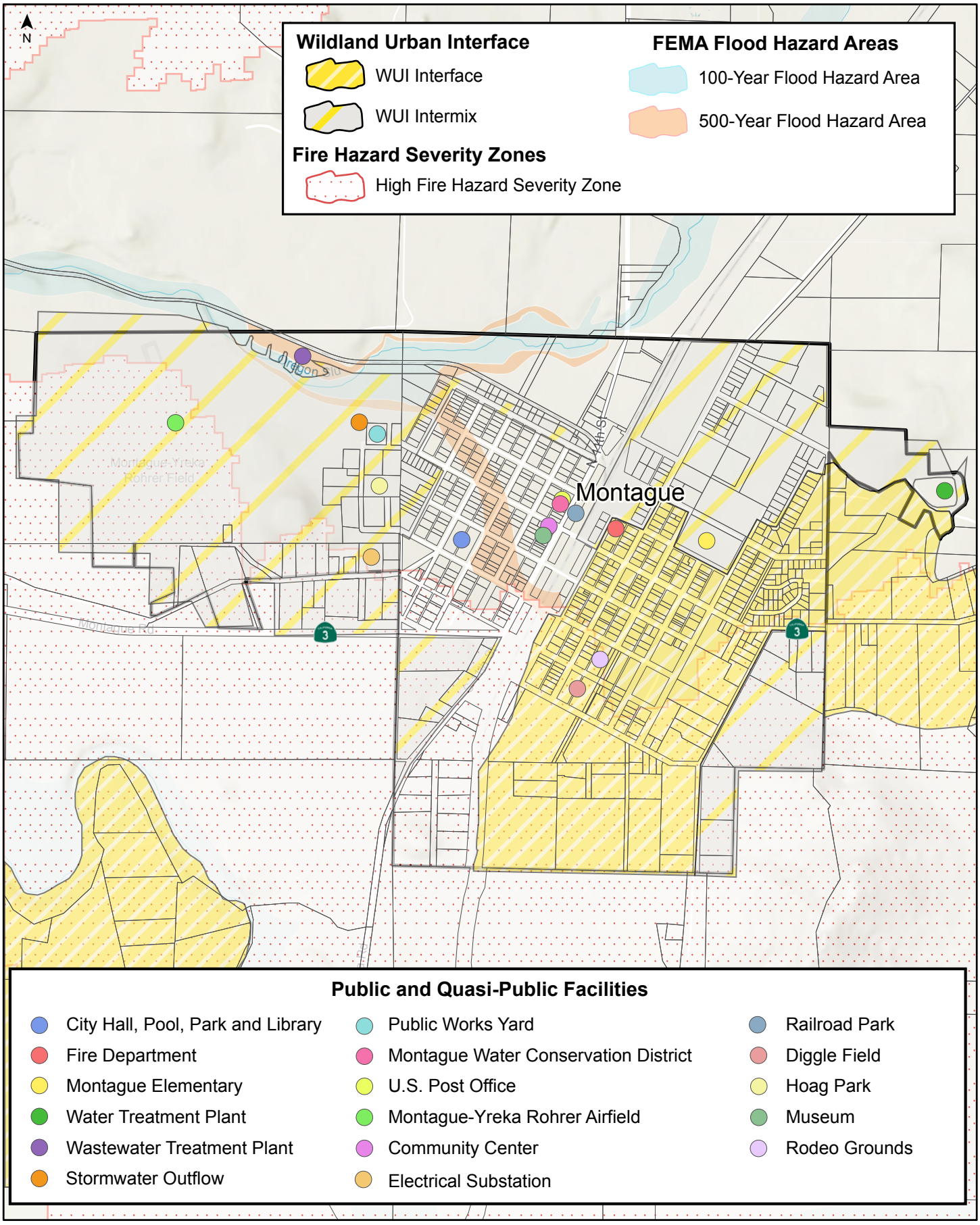
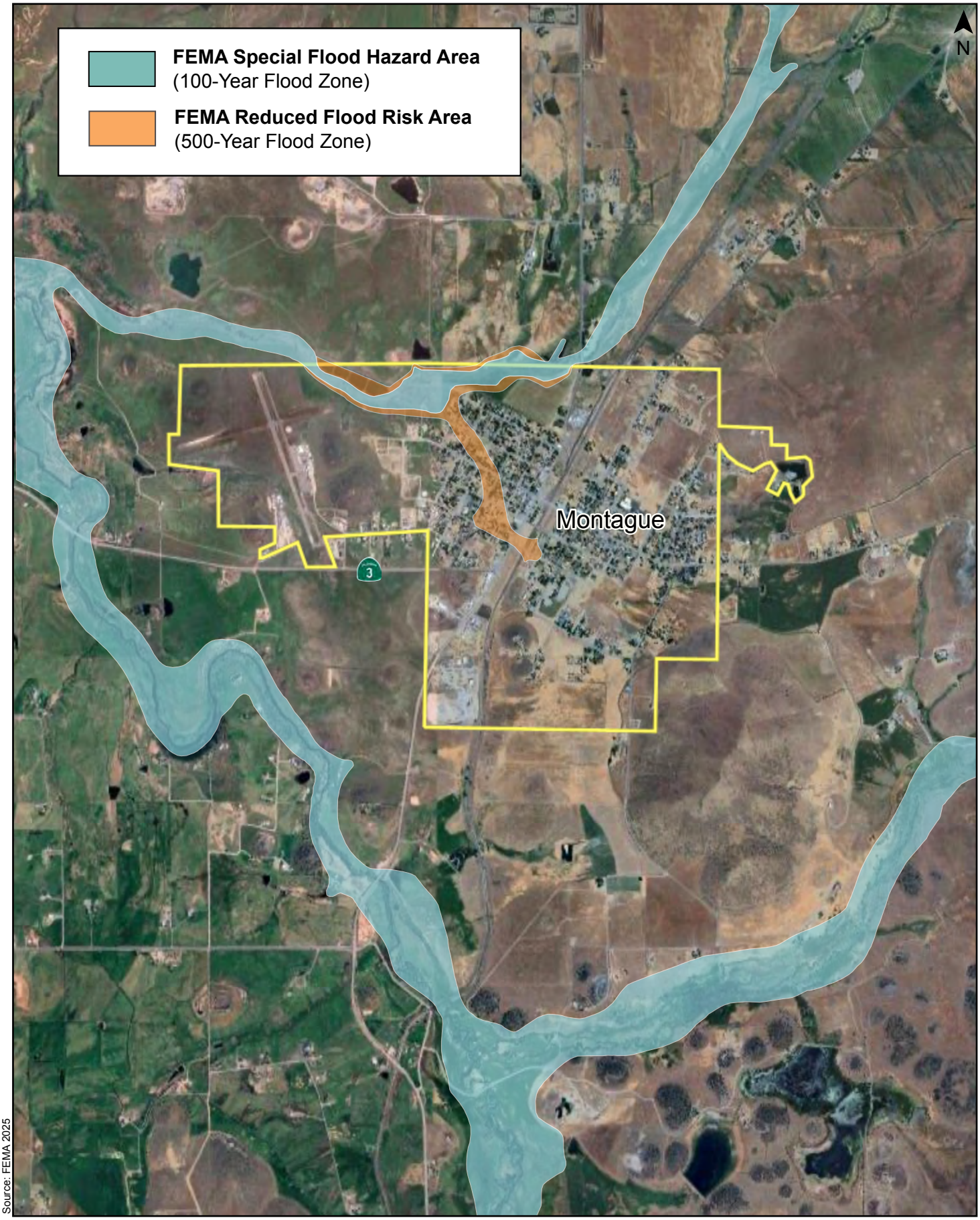


Figure 7-11, Wildfire Hazard Severity Zones



Sources: FEMA 2025, CAL FIRE 2025, USDA Forest Service 2020

Figure 7-12, Public Facilities and Natural Hazards



Source: FEMA 2025

Figure 7-13, FEMA Flood Hazards

Source: California Department of Water Resources 2019

Figure 7-14, Dam Failure Inundation Area

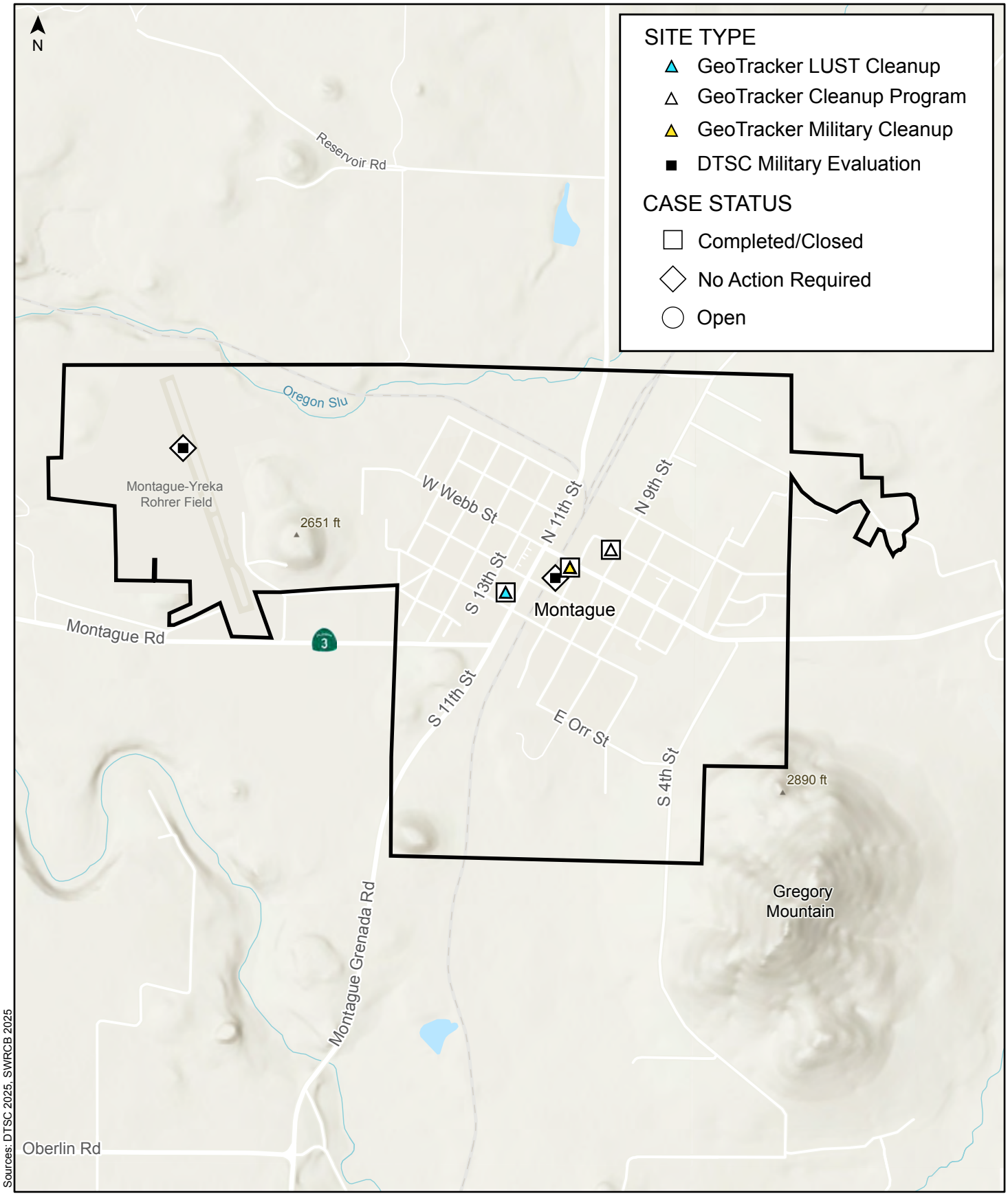


Figure 7-15, Hazardous Materials Cleanup Sites