COUNTY OF SISKIYOU

FLOOD HAZARD

WILDFIRE HAZARD

GEOLOGIC & SEISMIC HAZARDS

HAZARDOUS MATERIALS

EMERGENCY MANAGEMENT

WILDLIFE HAZARDS

EVACUATION PLANNING

ADAPATION & COMMUNITY RESILIENCE

GOALS, POLICIES, & ACTIONS

GENERAL PLAN | 2025 Safety Element

COUNTY OF SISKIYOU
GENERAL PLAN | 2025 SAFETY ELEMENT

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The Safety Element

Siskiyou County's location, geography, and seasonal climate, all contribute to its natural beauty, economy, and quality of life.

To preserve these resources from the increasing risk of wildfire and other hazards, the county prepares for disasters to maintain a safe, enjoyable, and resilient community.

The Safety Element is one of the seven mandatory elements (*Land Use*, *Circulation*, *Housing*, *Conservation*, *Open Space*, *Noise and Safety*) of the General Plan. The principal purpose of the Safety Element is to identify potential risks posed by natural and human made hazards to the people of Siskiyou County.
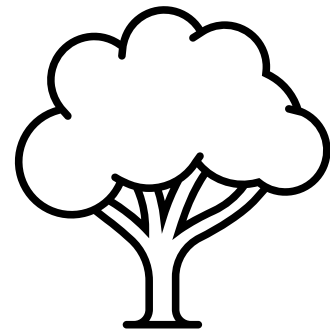
Relationship to Other General Plan Elements
The Safety Element is closely related to the other General Plan elements, particularly the Housing Element. The Housing Element is the county's strategy and commitment for how it intends to meet the community's current and future housing needs. The Housing Element seeks to make quality housing available to residents, workers, and visitors, while addressing systemic housing inequality.

The Safety Element, on the other hand, aims to protect these same residents, workers, and visitors from natural and human made hazards.

Relationship to the Local Hazard Mitigation Plan

Though written as a standalone document, the Safety Element is meant to be utilized in coordination with, and is complementary to, the *Local Hazard Mitigation Plan* (LHMP) and other local area emergency plans. The LHMP is incorporated by reference into the Safety Element. While the Safety Element provides an overview of potential hazards, the LHMP is meant to provide deeper analysis, context, and mitigation strategies for these hazards.

Chapter Summary

Chapter 1, "The Way Things Are," is a discussion of the county's population data and how it impacts evacuation planning and natural hazard mitigation. The County's *FEMA National Risk Index Scores* are also discussed.

Chapter 2, "The Fire Hazard," The *Klamath National Forest*, covering much of the western part of the county, has been the site of some of the largest wildfires in the county's history. The *Butte Valley National Grasslands*, in the eastern part of the county, has also experienced significant wildfire challenges.

Chapter 3, "The Flood Hazard," outlines the flood danger. Some areas of the county, like the community of Callahan, are in the 100-year floodplain, while other communities, like the town of Dorris, have almost zero flood risk. The Box Cayon Dam on Lake Siskiyou is rated Extremely High for downstream hazards.

Chapter 4, "Geologic & Seismic Hazards," examines the dangers of geologic and seismic hazards such as landslides, earthquakes and volcanic activity.

Chapter 5, "Hazardous Materials," discusses how hazardous materials incidents impact local waterways and public health and safety.

Chapter 6, "Wildlife Hazards," summarizes possible wildlife disease transmission and predator hazards.

Chapter 7, "Adaptation & Community Resilience," discusses rising temperatures. It is expected that abnormally dry conditions, increased forest stand density, and excessive fuel load will continue to result in extreme fire events.

Chapter 8, "Emergency Management," includes information about the county's emergency alert programs, agencies, and operations. Lack of reliable cellular telecommunication service is a noted concern.

Chapter 9, "Evacuation Planning," looks at the anticipated evacuation routes that would be utilized during an emergency. Most areas have at least two emergency evacuation routes. It is expected however, that residential developments in remote areas, consisting of a few households, are likely to have only one emergency evacuation route available.

Chapter 10, "Goals, Policies, & Actions," is a list of the county's *Goals*, *Policies*, and *Actions* for mitigating against the potential hazards discussed in the Safety Element.

Appendix Summary

Appendix A, "Past Wildfires in Siskiyou County" is a visual depiction of past wildfires along with fire statistics from 2006 to 2024.

Appendix B, "Fire Hazard Severity Zone Maps" contains fire hazard severity maps for local cities and the unincorporated county.

Appendix C, "Flood Hazard Maps for Local Communities" provides flood mapping and emergency routes for different areas of the county.

Appendix D, "Institutional & Regulatory Framework by Hazard" is a summary of the institutions, laws, and regulations that are relevant to hazard mitigation.

Appendix E, "Local Hazard Mitigation Plan" incorporates the Local Hazard Mitigation Plan into the Safety Element.

Appendix F, "FEMA National Risk Index Methodology" is an overview of how FEMA calculates national risk index scores.

Appendix G, "Evacuation Routes for Selected Communities" provides mapping of evacuation routes for different areas of the county.

Appendix H, "Residential Areas with One Evacuation Route" is a list of residential areas with only one evacuation route. For the most recent list, please email planning@co.siskiyou.ca.us.

Chapter 1,
The Way Things Are

Siskiyou County's population has not grown significantly since the last major Safety Element update.

Population Statistics
Population data in the Safety Element comes from the 2020 U.S. Census. There are approximately 44,076 people living in the county. It is estimated that 81.3% of all households have at least 2 motor vehicles.

Siskiyou County / Population (1975)

34,900 (1975)
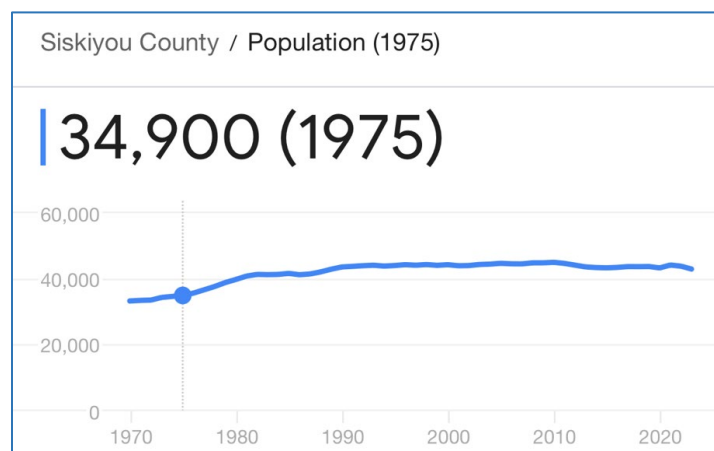
Based on this high ownership percentage, it is expected that the primary mode of transportation during an evacuation will be by private motor vehicle.

Children. Children (*defined as individuals under 18 years of age*) make up 19.7% of the county's population and it is expected that during an evacuation they will be accompanied by an adult caretaker.

An Aging Population. 28.7% of the county population is 65 years or older. Pre-existing medical conditions and potential mobility issues will need to be considered in any evacuation planning.

Individuals with Disabilities. 18.1% of the county population has a medically recognized disability. Individuals with disabilities and

individuals with functional or access needs may require specialized assistance during an evacuation. Given the high percentage of individuals in this category, consideration of this population segment must be included in any emergency planning that occurs.

Limited Income Population. 16.7% of the population is listed as below the federal poverty threshold. Individuals in this population segment may not have access to a reliable motor vehicle during an evacuation.
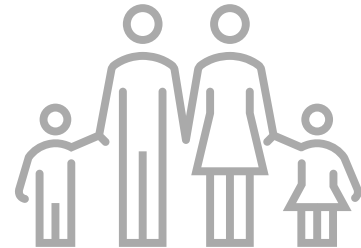
The Unhoused Population. For 2022 and 2023, *Partnership HealthPlan of California* listed 2,204 individuals as lacking adequate shelter in Siskiyou County. The *Point in Time* count conducted by the County for the same period which estimated that there are about 507 individuals in the county lacking adequate shelter. The actual number of unhoused persons in the county is likely to be somewhere between 507 to 2,204 people.

Based on the County's population characteristics, a significant portion of the community may require additional or specialized assistance during a large-scale evacuation. For individuals without access to a private motor vehicle, public buses operated by the *Siskiyou Transit and General Express* (STAGE), and any available school buses could be an option for relocating people to safety.

FEMA National Risk Index
The National Risk Index created by the *Federal Emergency Management Agency* (FEMA) summarizes the risks posed by natural hazards in Siskiyou County. The national index tracks 18 hazard types, 14 of which are relevant to the county. Siskiyou County is most at risk from *Drought, Wildfire, Earthquake, Landslide, Riverine Flooding,* and *Volcanic Activity.*

FEMA National Risk Index

Natural Hazard Categories

Very High	Relatively High	Relatively Moderate	Relatively Low	Low

Siskiyou County Risk Index Scores

Hazard Type	Risk Index Rating	Risk Index Score	National Percentile
Avalanche	Very Low	10.1	100
Cold Wave	Relatively Low	55.2	100
Drought	*Relatively High*	*99.5*	*100*
Earthquake	Relatively Moderate	94.6	100
Hail	Very Low	3.9	100
Heat Wave	Relatively Low	43.5	100
Landslide	Relatively Moderate	92.1	100
Lightning	Relatively Low	31.7	100
Riverine Flooding	Relatively Moderate	88.6	100
Strong Wind	Very Low	4.0	100
Tornado	Very Low	1.9	100
Volcanic Activity	Relatively Moderate	78.7	100
Wildfire	*Relatively High*	*98.1*	*100*
Winter Weather	Relatively Low	35.6	100

The Maximum Risk Index Score is 100. Siskiyou County's *Risk Index Score* is represented by its percentile ranking compared to all other US counties. For example, the county's *Drought* score of 99.5 means that its *Risk Index Score* is greater than 99.5% of all other US counties. Put another way, 99.5% of all US counties have a lower *Risk Index Score* for *Drought* than Siskiyou County.

Expected Annual Loss (EAL)

Very High	Relatively High	Relatively Moderate	Relatively Low	Low

Siskiyou County Expected Annual Loss

Hazard Type	EAL Rating	EAL Value	EAL Score
Avalanche	Very Low	$36,967	12.0
Cold Wave	Relatively Low	$58,958	52.1
Drought	*Relatively High*	*$14,895,728*	*99.5*
Earthquake	Relatively Moderate	$6,190,981	93.4
Hail	Very Low	$1,956	5.6
Heat Wave	Relatively Low	$43,095	43.1
Landslide	Relatively Moderate	$147,424	88.7
Lightning	Relatively Low	$44,473	28.1
Riverine Flooding	Relatively Moderate	$2,677,010	87.7
Strong Wind	Very Low	$9,402	6.1
Tornado	Very Low	$2,181	1.9
Volcanic Activity	Relatively Moderate	$1,146,557	81.1
Wildfire	*Relatively High*	*$8,898,099*	*97.7*
Winter Weather	Relatively Low	$26,663	36.5

The Maximum EAL Score is 100. *Expected Annual Loss* (EAL) represents the average economic loss in dollars resulting from natural hazards each year. *EAL* scores are calculated independently for buildings, population, and agriculture. Building and agriculture values are measured in dollars while population is measured in fatalities and injuries. When population is monetized each fatality or 10 injuries is treated as equivalent to $11.6 million of economic loss. in In Siskiyou County, the highest expected annual losses are from *Drought* and *Wildfire*.

Social Vulnerability

Very High	Relatively High	Relatively Moderate	Relatively Low	Low

Social Vulnerability Score: 74.92

The maximum score is 100. <u>The lower the score the better.</u> A high *Social Vulnerability Score* indicates that a community is more susceptible to the negative impacts posed by natural hazards. With a high score of 74.92, social groups in Siskiyou County have a *Relatively High* susceptibility to the negative impacts of natural hazards compared to other US counties.

- 74.92 National Percentile and 51.70 Percentile in California.

- 75% of US counties and 52% of counties in California have a lower *Social Vulnerability Score* than Siskiyou County.

Community Resilience

Very High	Relatively High	Relatively Moderate	Relatively Low	Low

Community Resilience Score: 40.17

The maximum score is 100. <u>The higher the score the better.</u> A low *Community Resilience Score* indicates that a community is less able to prepare for and recover from the negative impacts posed by natural hazards. Communities in Siskiyou County have a *Relatively Moderate* ability to prepare for and recovery quickly from emergency disasters compared to other US counties.

- 40.17 National Percentile and 39.70 Percentile in California.

- 60% of US counties and 60% of counties in California have a higher Community Resilience Score than Siskiyou County.

Chapter 2,
The Fire Hazard

A wildfire is defined as an uncontrolled fire on undeveloped land requiring fire suppression.
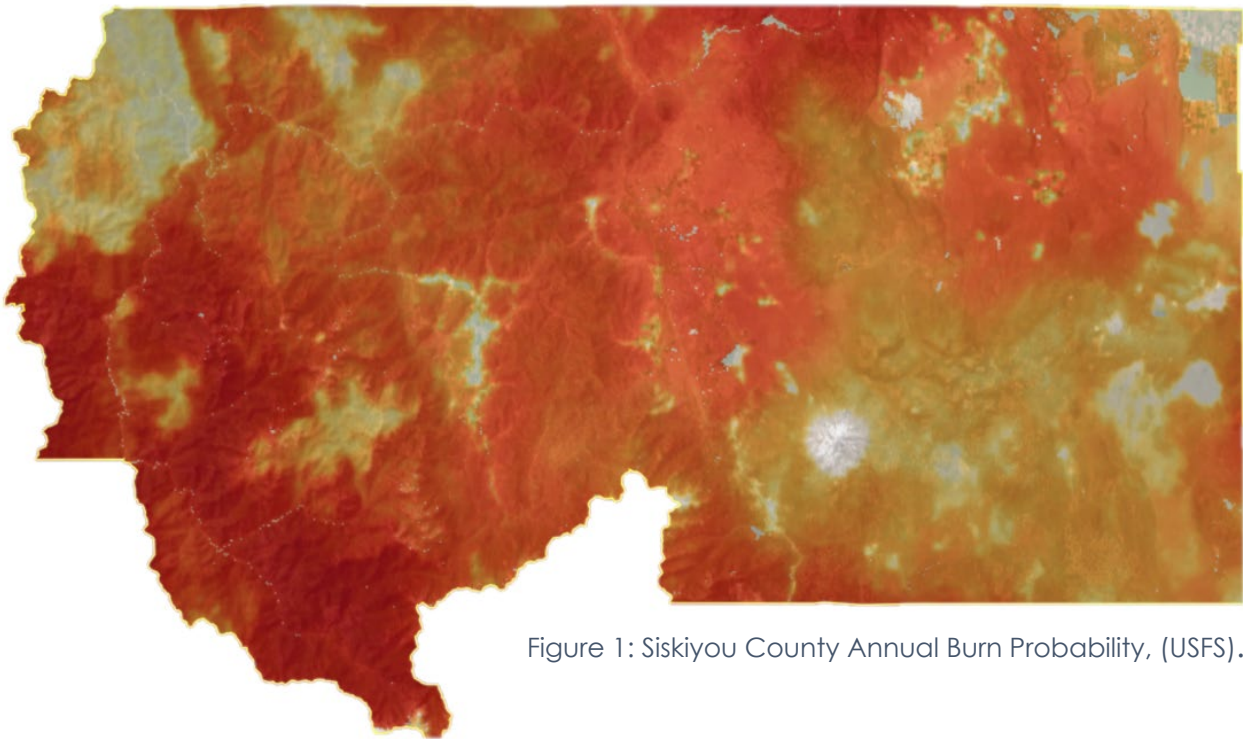
Figure 1: Siskiyou County Annual Burn Probability, (USFS).

Siskiyou County Annual Burn Probability
Figure 1 above depicts the county's annual burn probability, the darker the color, the higher the annual burn probability. The snow on *Mt. Shasta* is colored white, indicating a zero percent burn probability. Most wildfires occur in the western part of the county in or near the *Klamath National Forest*.

Wildfires can be ignited by naturally occurring events like lightning or by human activity such as smoking, campfires, equipment use, or arson. Many of the large fires in the county have been wind driven fires. Lightning, followed by equipment use, downed power lines, and debris burning were the lead ignition sources for these fires.

The county's total land area is approximately 4 million acres. From 2006 to 2024, wildfires burned the equivalent of 49% of the total land area, or approximately 1.9 million acres.

Wildland-Urban Interface

The term *wildland-urban interface* (WUI) refers to the area where human development meets with the natural environment. *Figure 2* below shows Siskiyou County's WUI areas marked in (red).
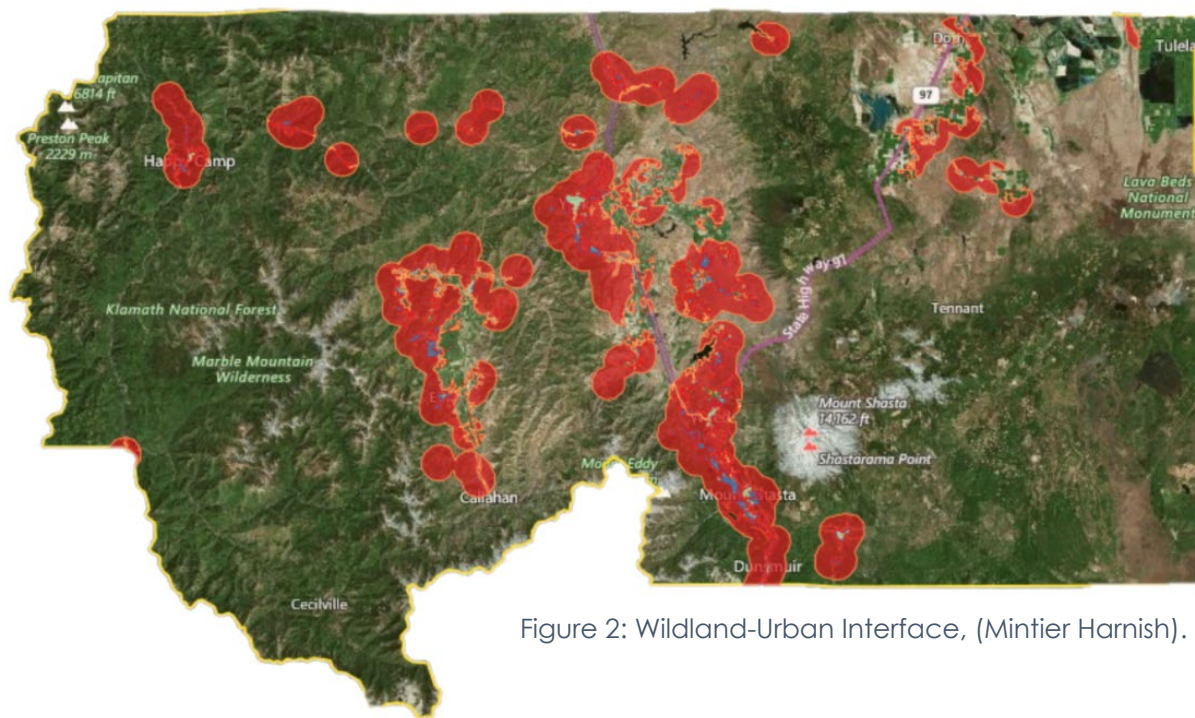
Figure 2: Wildland-Urban Interface, (Mintier Harnish).

Most people in the county live in or near a fire prone area. The location of residential communities in high-risk areas increases the chances of catastrophic wildfire. The *McKinney Fire* (2022) burned 60,138 acres, destroyed 185 structures and had a suppression cost of 75.4 Million dollars. The *Mill Fire* (2022) burned 3,939 acres, destroyed 115 structures and cost 7 Million dollars to suppress.

Ignition Sources. When a fire flares up in the wildland-urban interface, it can spread rapidly, as flames jump to neighboring structures, damaging and destroying businesses and homes. Smoking in bed, ash from woodburning fireplaces, faulty wiring, children playing with matches, and appliance malfunctions are common causes of structure fires.

Figure 3: Fire Protection Responsibility Areas, (CAL FIRE).

Fire Protection Responsibility Area (non-SRA)

Federal Responsibility Area (FRA)

Local Responsibility Area (LRA)

CAL FIRE State Responsibility Area (SRA)
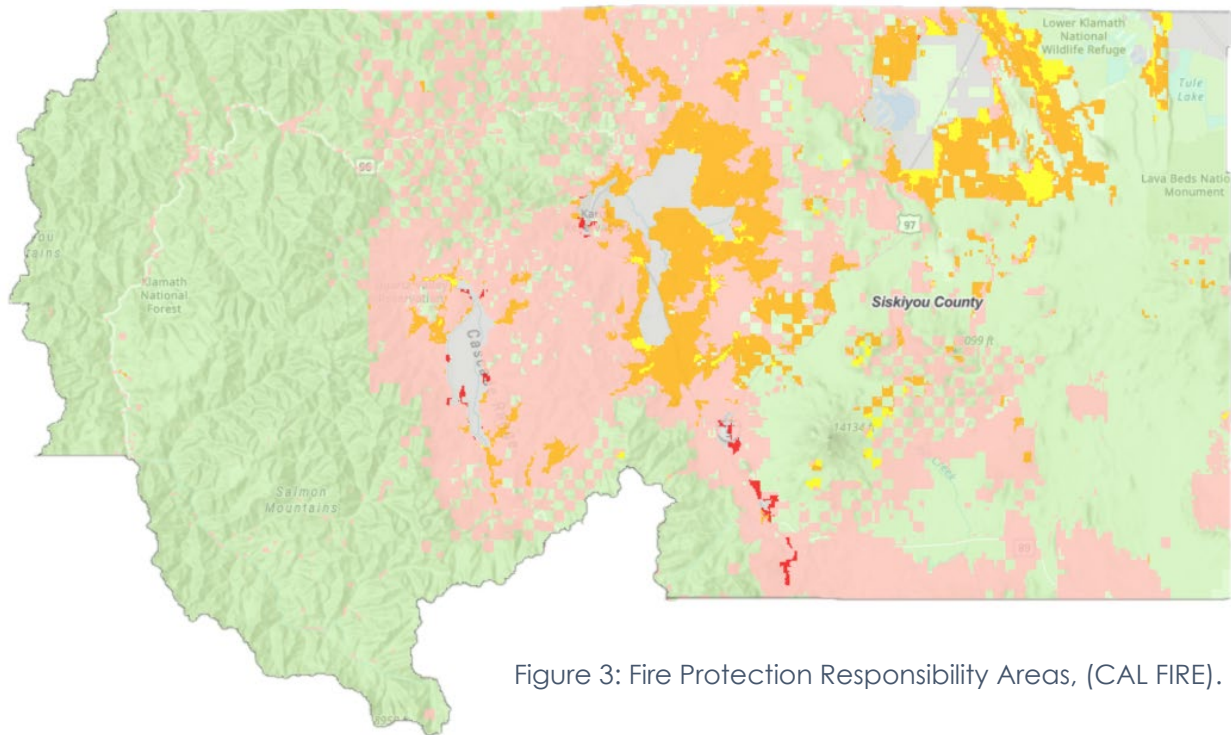
Fire Prevention

Everyone is responsible for helping prevent forest fires. In remote areas, due to the lack of immediate water sources and long emergency response times, measures such as defensible space clearing are extremely important. USFS has primary firefighting responsibility for the *green areas* above. Local fire stations have primary responsibility for the *gray areas*.

CAL FIRE has responsibility for the rest of the county not colored *green* or *gray.*

Who is Responsible?

Fire protection responsibility is shared between *local*, *state*, and *federal agencies*. Emphasizing multi-agency cooperation results in a rapid, effective, and coordinated fire response.

Table 1: Local Fire Protection Agencies.		
Etna town Fire Department	Happy Camp Fire District	Scott Valley Fire Protection District
Hilt Fire Protection District	Fort Jones Fire Department	Gazelle Fire Protection District
Coco Lake Fire District	Hammond Ranch Fire Zone	Grenada Fire Protection District
Hornbrook Fire Protection District	Klamath River Fire Company	Mayten Fire Protection District
Montague Fire Protection District	Mt. Shasta Vista Fire Zone	Salmon River Fire Company
South Yreka Fire Protection District	Yreka town Fire Department	Butte Valley Fire Protection District
Dorris town Fire Department	Seiad Valley Fire Company	Tennant Community Services District
Tulelake Fire Department	Weed town Fire Department	Lake Shastina Comm. Services District
Castella Fire Protection District	Dunsmuir Fire Department	McCloud Community Services District
Pleasant Valley Fire Zone	Mt. Shasta town Fire Department	Mount Shasta Fire Protection District

From 2014 to 2024, seventy six percent of all wildfires in Siskiyou County were the result of lightning strikes.

CAL FIRE and the US Forest Service cooperate in maintaining a series of fire lookouts throughout the county to scout for lightning strikes and other fire ignition sources. With advance warning firefighters have a better chance to prevent small ignitions from becoming catastrophic wildfires.

Fire Hazard Severity Zones (FHSZs)

The *California Department of Forestry and Fire Protection* (CAL FIRE) has created fire maps identifying areas of high fire danger. These *Fire Hazard Severity Zones* (FHSZs) are mapped and identified based on fuel loading, slope, fire history, and other relevant factors, including areas where winds have been identified as a major cause of wildfire spread.
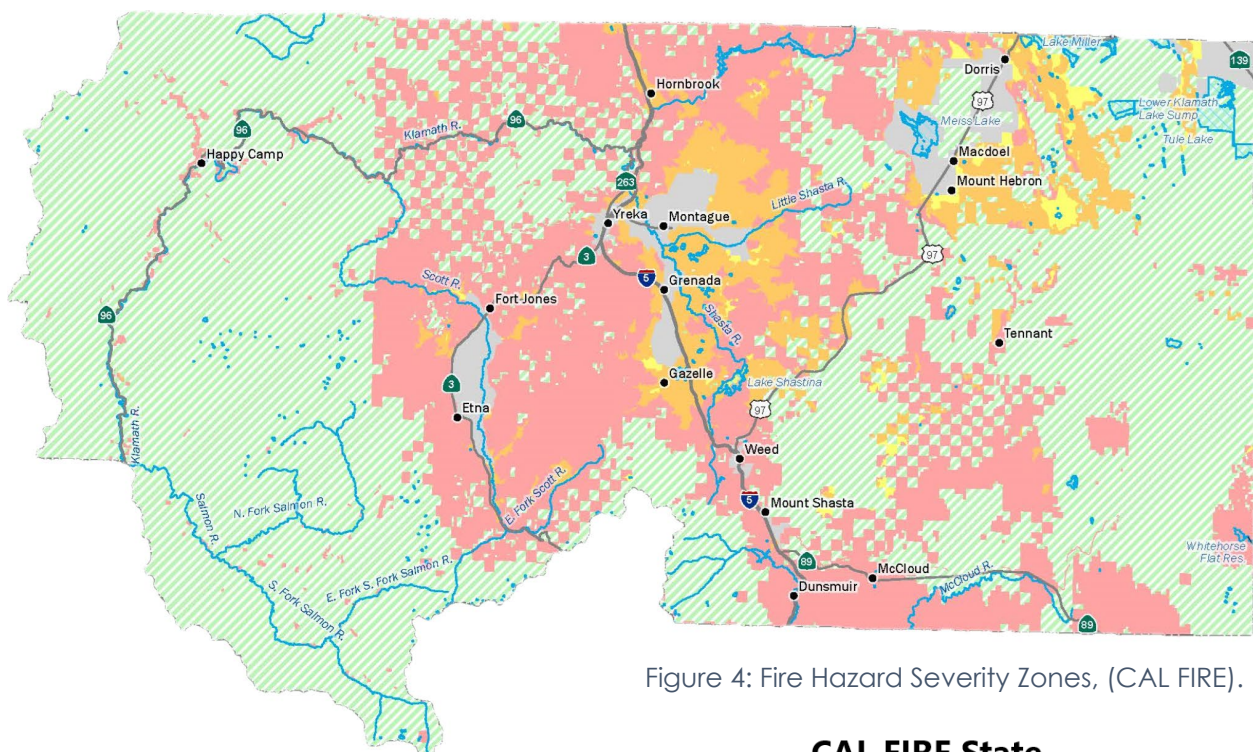
Figure 4: Fire Hazard Severity Zones, (CAL FIRE).

Fire Hazard Severity Zone maps use the following classifications:

(Moderate, High, Very High)

CAL FIRE State Responsibility Area (SRA)

Very High	1,063,355 Acres	
High	282,023 Acres	
Moderate	38,849 Acres	

In Siskiyou County, the state responsibility area covers 1.06 million acres of land classified as *very high* for fire danger. An additional 282,023 acres are classified as *high*, and another 38,849 acres are classified as *moderate*.

Distribution of Land Uses in VHFHSZs and SRAs

The Klamath National Forest is zoned *Rural Residential* (R-R). The *R-R* district is intended to provide an area where rural residential uses can be compatibly mixed with commercial agricultural activities. This zoning often results in people working or living in the middle of the forest. Excluding the *Klamath National Forest* and the *Butte Valley National Grasslands*, the *State Responsibility Area* (SRA) covers large areas of the county where people are likely to live and work.

Timber Production District
Prime Agricultural District
Non-Prime Agricultural District
Rural Residential District
Heavy Industrial District
Open Space District

Fire Protection Responsibility Area (non-SRA)

Federal Responsibility Area (FRA)

Local Responsibility Area (LRA)

CAL FIRE State Responsibility Area (SRA)
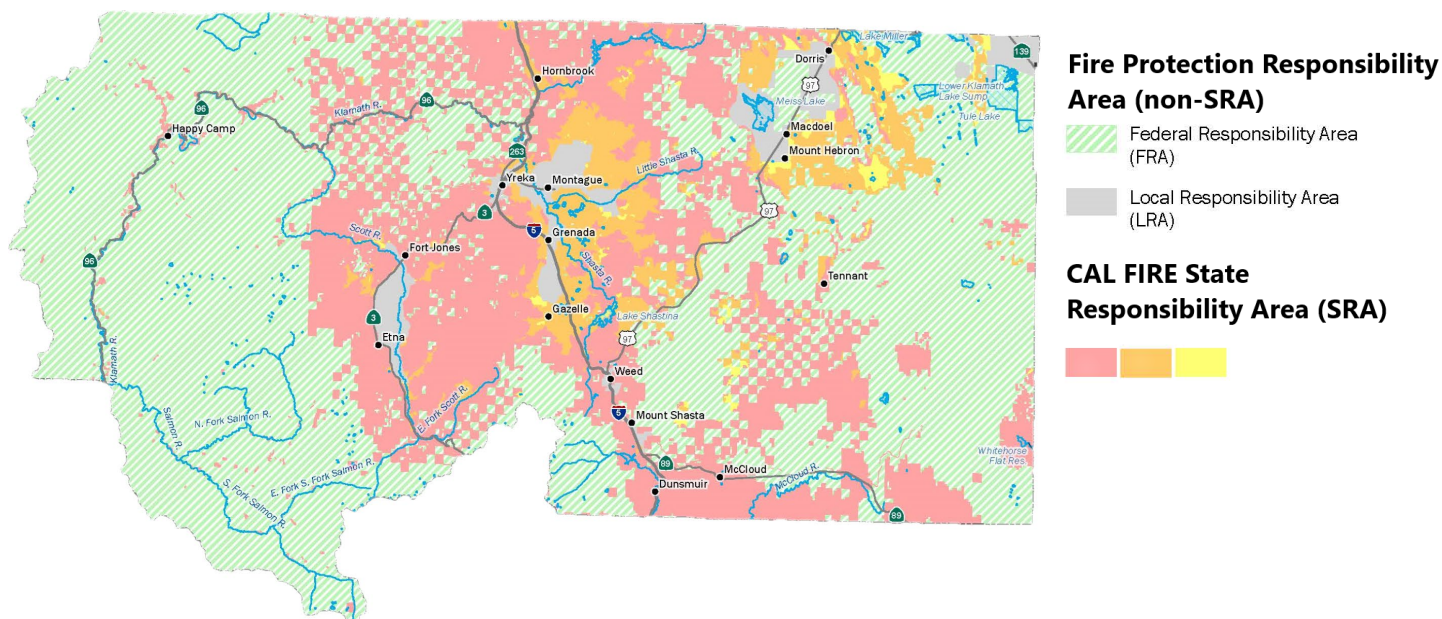
Forest Density Management

Forest density management is a viable fire hazard mitigation tool. It involves thinning overly dense forests to reduce fire susceptibility. Past forest management policies, particularly those emphasizing suppression over prevention, have contributed to a buildup of forest fuels, leading to larger, more destructive wildfires. A legacy of fire suppression, coupled with changes in forest composition due to density and age structure, has created conditions where wildfires are more likely to spread rapidly and with greater intensity.

Prescribed Burning

A prescribed burn (also known as a controlled burn) is the intentional application of fire to a specific area to achieve specific land management objectives. These burns are carefully planned and executed under carefully controlled conditions, with the goal of reducing wildfire risk, improving habitat, or promoting ecological restoration.

Surviving a Wildfire

When an evacuation route is compromised, or becomes impractical, alternative measures may need to be taken. Knowing the location of areas of relative safety can improve survivability. Individuals should become familiar with potential refuge locations such as large water bodies and water ways of a size and depth that will provide protection, large open spaces such as ball fields and parks, irrigated fields, and large parking lots away from trees and flammable materials. These types of refuge locations should only be considered as a last resort.

Fire Hazard Vulnerability Assessment

BACKGROUND

The county has an extensive fire history due to the abundance of fuel sources combined with the county's climate and topography. Wildfires are occurring on a more frequent basis. The county experiences frequent mixed-severity fires approximately every 2 to 3 years. The *Klamath National Forest* has been the site of many large fires over the last 25 years.

FEMA Wildfire Hazard Risk Index. The Risk of *Wildfire* is *Relatively High*. Siskiyou County's Risk Index Score is 98.1 out of a possible 100. The county's wildfire risk is greater than 98.1% of all US counties. FEMA projects estimated *Expected Annual Loss* from Wildfire in the county to be $8,898,099.

POPULATION AT RISK

Even if a wildfire occurs in a remote area, the entire county population can be affected by the resulting smoke and air pollution fallout. Individuals at greater risk of health effects from wildfire smoke include those with cardiovascular or respiratory disease, older adults, children, pregnant women, outdoor workers, and limited income individuals.

An Aging Population. Physical limitations and cognitive decline can make it difficult to maintain adequate defensible space around homes and can slow the ability to evacuate in an emergency. Preexisting medical conditions and potential mobility issues need to be considered when formulating evacuation plans. In the *McKinney Fire* (2022), all four fatalities were over the age of 72.

The Unhoused Population. This population segment generally lacks the resources needed to mitigate against wildfire. Lacking adequate shelter, these individuals are often unable to remain indoors to avoid prolonged exposure to smoke and air pollution.

Individuals with Disabilities. People with disabilities or functional or access needs often require additional assistance during an evacuation. Additional resources may be needed to facilitate safe transport. Third party assistance may be required to create defensible space around structures. Early alert and public warning systems must account for a population that may have visual and/or audio impairments.

Limited Income Population. This population segment will likely lack the financial resources needed to mitigate wildfire. Low-cost housing in fire prone areas can often lack adequate defensible space buffers. During an evacuation limited income individuals may not have access to a motor vehicle in which to evacuate.
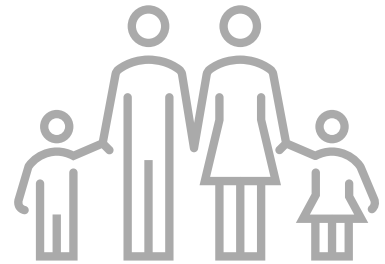
PROPERTY DAMAGE
In Siskiyou County, most private homes and buildings are of wood frame construction. The *McKinney Fire* (2022) destroyed over 185 structures, including much of the Community of Klamath River. The fire burned for a total of 41 days, however much of the structural damage occurred in the first few days.

Critical Facilities and Infrastructure
Significant damage to critical infrastructure is possible. Most roads would be without damage except in the worst scenarios. Power lines, communication lines, and railroads are the most at risk because their supporting structures are made primarily of wood and are susceptible to burning. In recent years, the power company has installed nonwooden fire resistant utility poles in areas of the county. Local water systems throughout the county often include wooden structural components making them highly susceptible to fire damage. Fire can also impact bridges, especially those with wood construction or decking. Bridges in areas of high to moderate fire risk

are important because they often provide the only ingress and egress route into the affected area.

MITIGATION MEASURES

Mitigation measures should be encouraged and implemented to reduce the impact of wildfires.
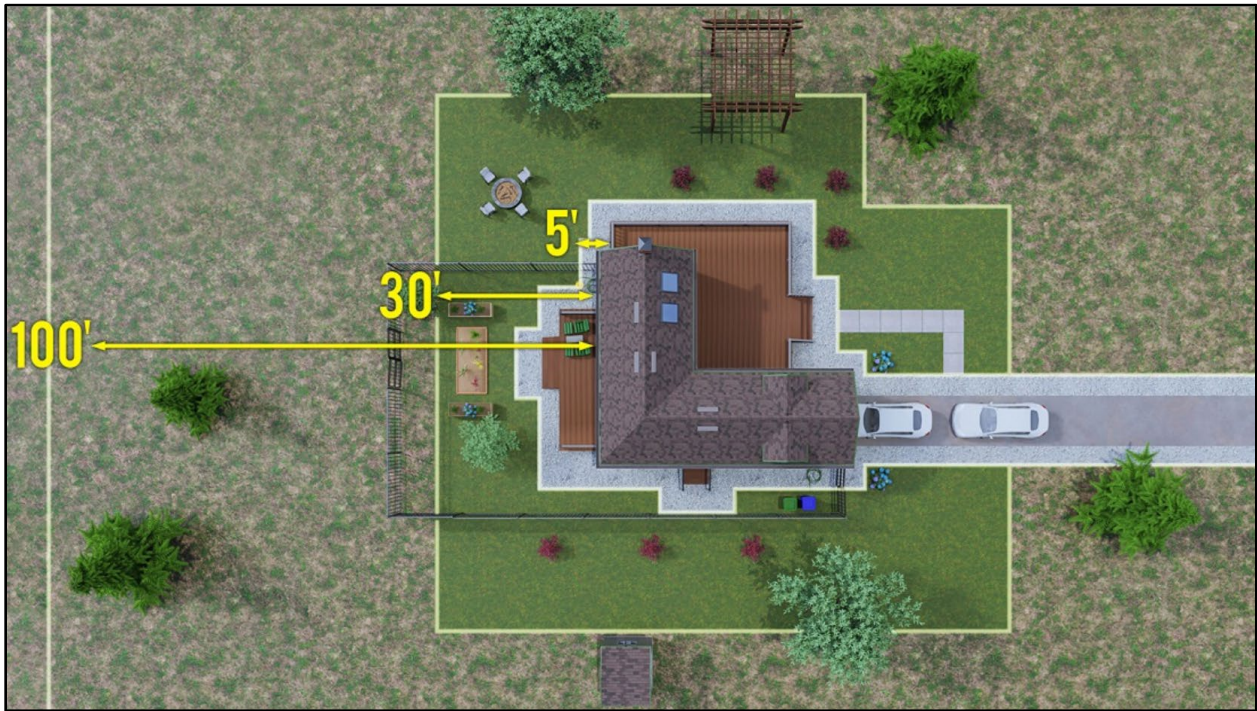
Figure 5: Creating defensible space around a home, (CAL FIRE).

Defensible Space. Creating buffers around structures and using fire resistant building materials are essential requirements in mitigating against wildfire. It is recommended to keep the first 5 feet around a home clear to prevent embers from igniting, this area is called *(Zone 0)*. Keep the area within 30 feet of the home clear of dry vegetation to create a buffer area, *(Zone 1)*. Reduce fuel load within 100 feet of the home, *(Zone 2)*.

To learn more about protecting your home please visit the CAL FIRE website

Fire Hazard Vulnerability Assessment

Fuel Reduction. Reducing forest stand density and removal of dead wood and debris help to reduce fuel load. Controlled burns, firebreaks, and vegetation gaps can help to disrupt a wildfire's progress when it occurs.

ENVIRONMENTAL IMPACTS

The *Klamath National Forest*, covering much of the western portion of the county, is home to a variety of endangered species. This area is highly susceptible to wildfire.

Salmon Habitat. Salmon populations can suffer from increased water temperatures, excessive sedimentation, and changes in water quality. Rainy season landslides and debris flows can create new habitats for salmon by providing shelter and gravel for spawning. However, excessive sedimentation can also smother eggs, bury spawning areas, or spark a microbial bloom, depleting oxygen levels in the water. Flash flooding after the *McKinney Fire* (2022) caused excessive sedimentation in the Klamath River which resulted in a devastating fish kill.

Soil Erosion. After a wildfire, the protective covering provided by foliage and dead organic matter is removed, leaving the soil fully exposed to wind and water erosion. Accelerated soil erosion can result in mudslides which can impact aquatic species and public safety.

Invasive Plant Species. Non-native woody plant species frequently invade burned areas, inhibiting the return of native plants and animals.

Disease and Insect Infestations. Unless diseased or insect-infested trees are quickly removed, infestations and diseases from wildfire areas can spread to healthy forests and private lands.

Fire Hazard Vulnerability Assessment

Additional Information Available

To view fire hazard severity zone maps for local communities and the unincorporated county please visit **Appendix B —— Page 96.**

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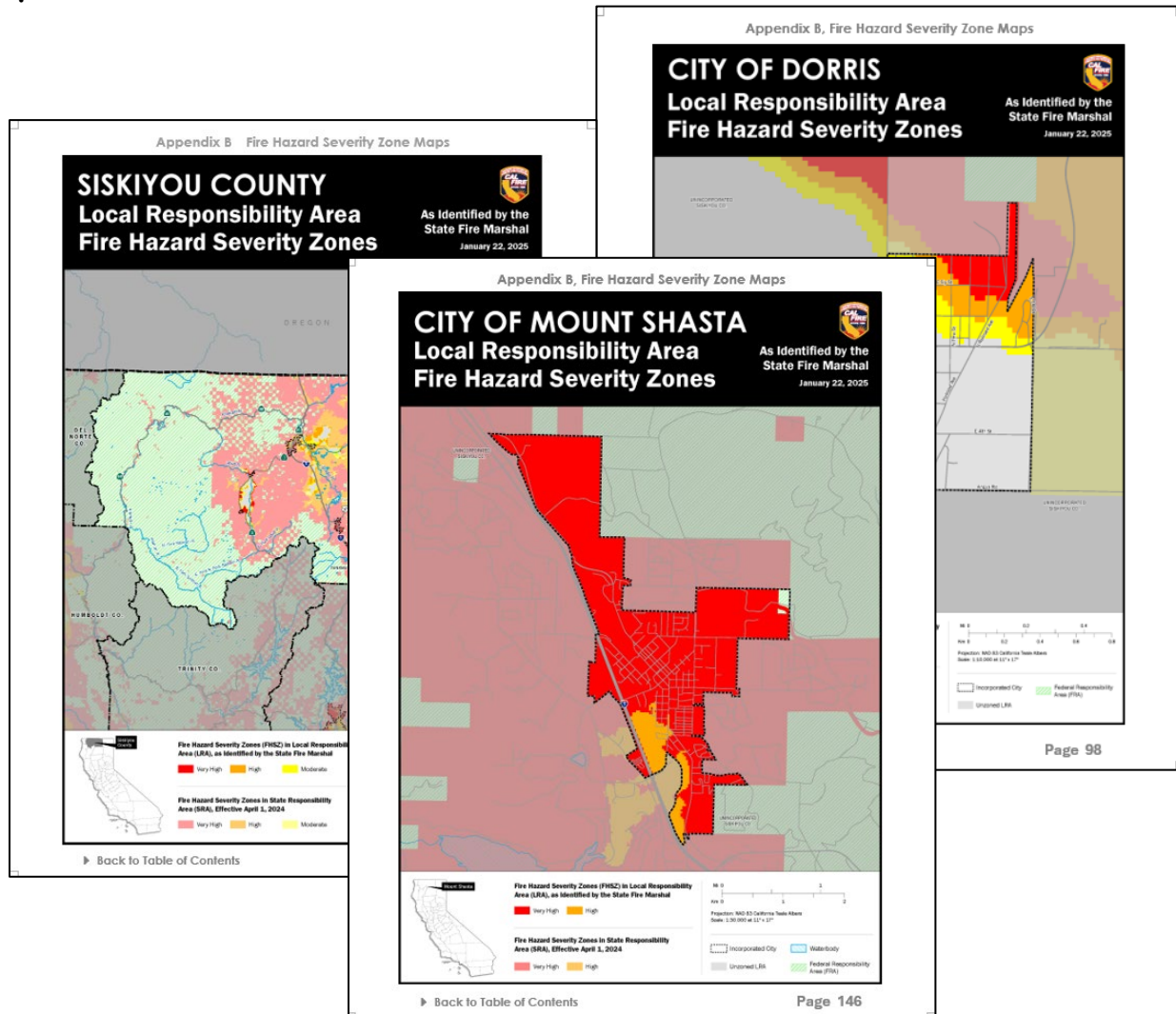
Chapter 3,
The Flood Hazard

Flooding is the overwhelming of dry land due to a rise in the level of surface waters or the rapid accumulation of stormwater runoff.

Flood Types
The two primary types of floods that occur in Siskiyou County are *riverine flooding* and *flash flooding*.

Riverine flooding. This type of flooding occurs when streams and rivers exceed the capacity of their channels to accommodate the flow of water and are overwhelmed. *Riverine flooding* can occur at any time of the year but is most common in the late winter and early spring due to snowmelt and heavy rainfall.

Flash flooding. *Flash flooding* is a rapid and extreme flow of water into a normally dry area, or a rapid rise in a waterway above a predetermined level, beginning within six hours of the causal event. *Flash floods* can move rapidly, end suddenly, and occur in areas not generally associated with flooding. *Flash floods* cannot be predicted accurately and can occur whenever there are heavy storms.
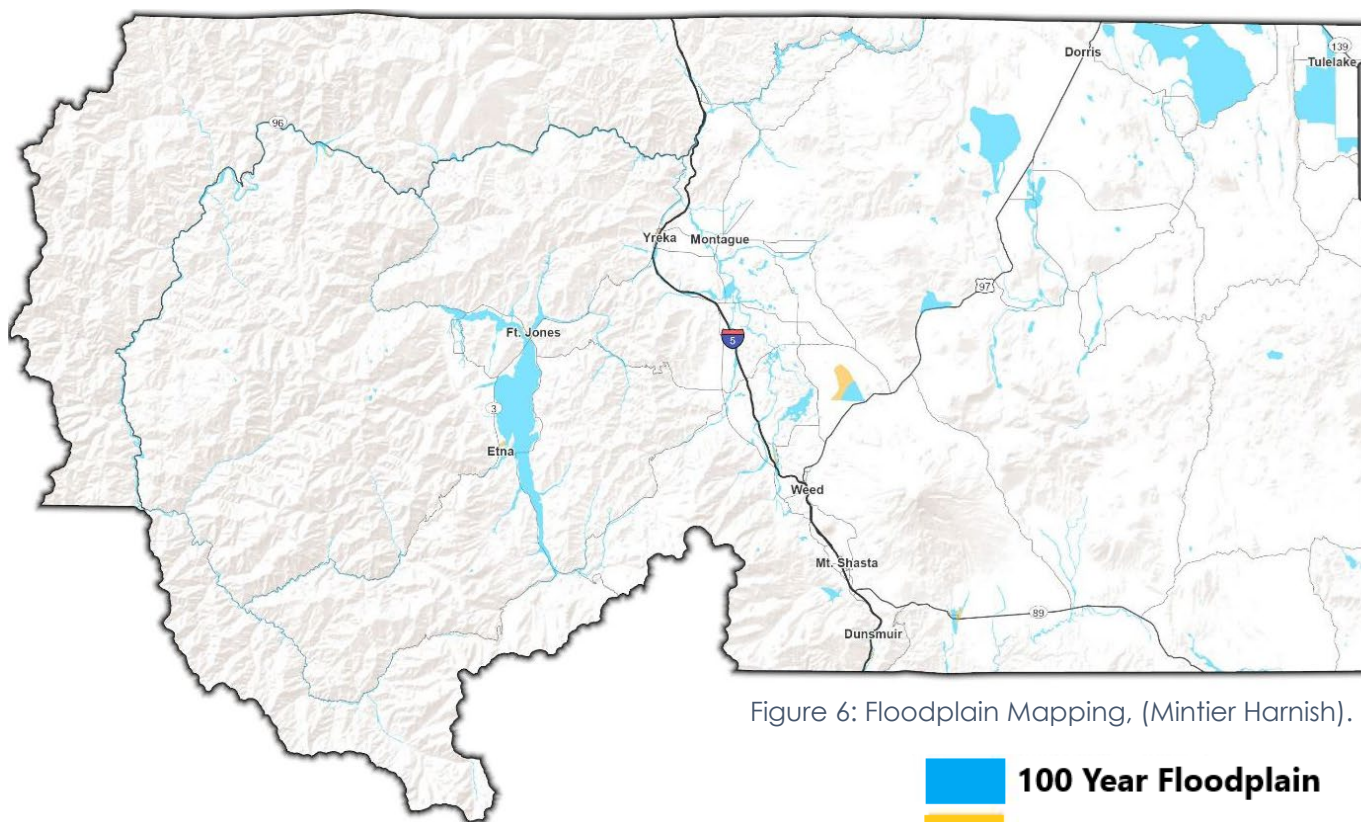
Figure 6: Floodplain Mapping, (Mintier Harnish).

🟦	**100 Year Floodplain**
🟨	**500 Year Floodplain**

Floodplain Areas

A *floodplain* is a low-lying area of land next to a river, lake, or waterway that is prone to flooding. The *100 Year Floodplain* in (blue) includes river areas and other low-lying areas that have a 1 percent or greater chance of flooding each year. The *500 Year Floodplain* in (yellow) is an area of minimal flood danger, having a 0.2 percent or 1 in 500 chance of flooding each year.

Road Closures. Most flood hazards in the county are transportation related. During a storm, railroad, highway, and canal embankments can form temporary barriers, resulting in ponding or diversion of water. In extreme conditions, due to high levels of runoff and erosion from intense precipitation, roads and bridges can become damaged if the road runs parallel to a flooding river.

Table 2: Siskiyou County Dams.		
Name	Acre Feet	Hazard Rating
Barton	160	*Low*
Bass Lake	223	*Low*
Box Canyon	**26,000**	***Extremely High***
Campbell Lake	350	*Low*
Cloak Lake	123	*Low*
Dwight Hammond	348	*Low*
East Boulder	200	*Low*
Fiock #1	223	*Low*
Fiock #2	318	*Low*
Greenhorn	**251**	***High***
Juanita Lake	348	*Low*
Kangaroo Lake	168	*Low*
Montague #2	160	*Low*
Ray Soule Reservoir	132	*Significant*
Shasta River	**50,000**	***High***
Shelley	**364**	***High***
Steamboat Lake	2,700	*Significant*
Lake Suzanne	89	*Low*
Trout Lake	2,108	*Significant*

Dam Failure

Dam failure can be caused by a mechanical failure or structural damage resulting from a major event such as an earthquake. Internal erosion, improper design and maintenance, and negligent operation can also cause dam failure.

There are currently 19 active dams in the county.

Four dams in the county are listed as being *High* or *Extremely High* for downstream hazards, meaning these areas would experience flooding, damage, loss of property, and injury during a dam failure.

Box Canyon Dam (Lake Siskiyou)

The *Box Canyon Dam* is a concrete hydroelectric gravity dam impounding Lake Siskiyou. It was completed in 1969 and holds back approximately 26,000 acre feet of water. The *Box Canyon Dam* has a hazard classification of *Extremely High* for potential damage. The dam is located 8 miles north of the town of Dunsmuir near the start of the Sacramento River. A dam failure could reach Dunsmuir within 15 minutes of collapse.
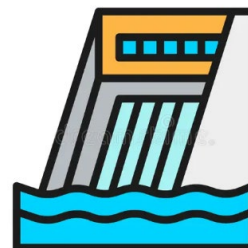
California Dam Hazard Classifications	
Significant	No probable loss of human life but can cause economic loss, environmental damage, impacts to critical facilities, or other significant impacts.
High	Dam failure is expected to cause the loss of at least one human life.
Extremely High	Expected to cause considerable loss of human life or would result in an inundation area with a population of 1,000 or more.

Flood History

Some areas in the county have experienced severe flooding in the past, including the 1964 and 1974 floods in Dunsmuir, which damaged and destroyed homes, washed out bridges, roads and railroad tracks.

> **Mitigation Measures.** Floodplain and wetland restoration help reduce the flood hazard while also providing environmental and economic benefits. Areas of restoration act like sponges that absorb and slowly release excess water while also providing critical habitat for animal species. These areas are particularly useful in countering the water runoff that comes from pavement and buildings.
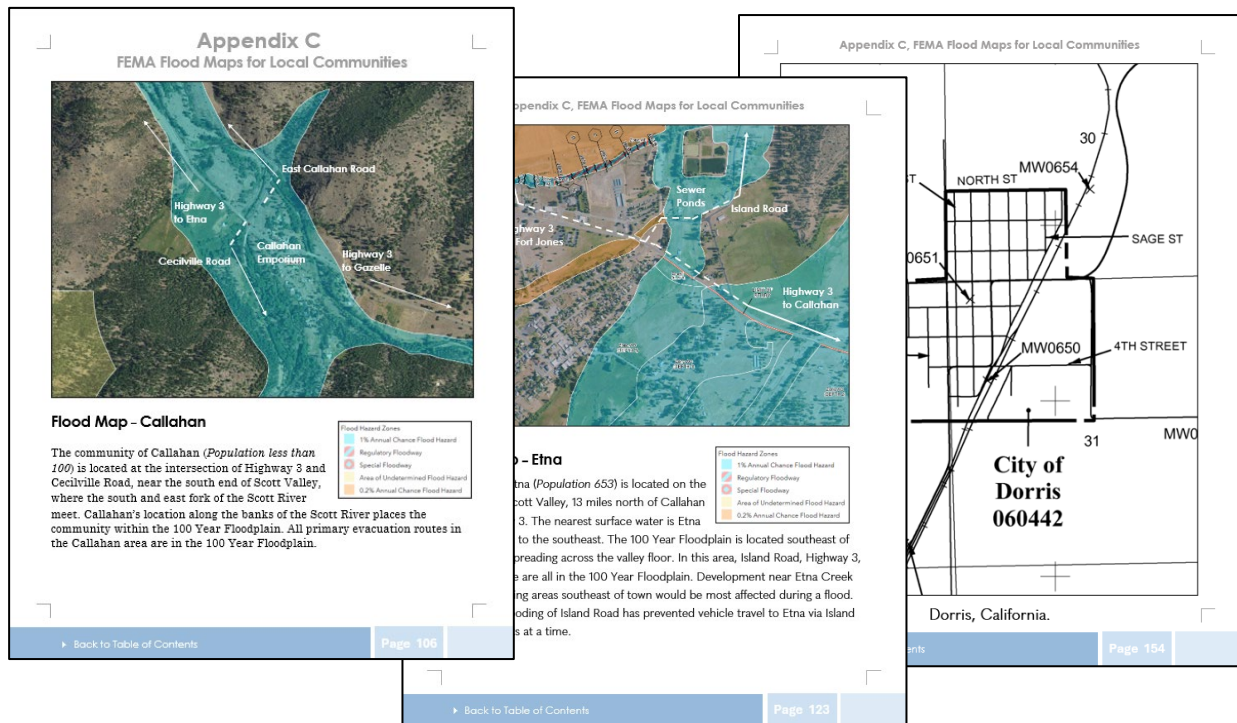
Flood Hazard Vulnerability Assessment

BACKGROUND

Specific areas of the county are more susceptible to the flood hazard than others. In *Scott Valley*, localized flooding is possible in areas adjacent to the Scott River. The town of Dunsmuir has experienced substantial flood damage in the past due to its location along the banks of the Sacramento River. At the same time, other areas of the county have minimal flood risk.

Flood Hazard Mapping. To view flood maps and evacuation routes for the communities below please see

- Callahan
- Dorris
- Dunsmuir
- North Dunsmuir
- Etna
- Fort Jones

- Gazelle
- Greenview
- Grenada
- Happy Camp
- Hilt
- Hornbrook

- Lake Shastina
- Macdoel
- McCloud
- Montague
- Mount Shasta
- Quartz Valley

- Tulelake
- Weed
- South Weed
- Yreka

Appendix C
FEMA Flood Maps for Local Communities

Flood Map – Callahan

The community of Callahan (*Population less than 100*) is located at the intersection of Highway 3 and Cecilville Road, near the south end of Scott Valley, where the south and east fork of the Scott River meet. Callahan's location along the banks of the Scott River places the community within the 100 Year Floodplain. All primary evacuation routes in the Callahan area are in the 100 Year Floodplain.

Appendix C, FEMA Flood Maps for Local Communities

– Etna

...tna (*Population 653*) is located on the ...cott Valley, 13 miles north of Callahan ...3. The nearest surface water is Etna ...to the southeast. The 100 Year Floodplain is located southeast of ...preading across the valley floor. In this area, Island Road, Highway 3, ...e are all in the 100 Year Floodplain. Development near Etna Creek ...ing areas southeast of town would be most affected during a flood. ...ooding of Island Road has prevented vehicle travel to Etna via Island ...s at a time.

Appendix C, FEMA Flood Maps for Local Communities

City of Dorris 060442

Dorris, California.

Chapter 4,
Geologic & Seismic Hazards

Siskiyou County is home to a variety of geologic and seismic hazards, including volcanoes.

Landslide Hazard

Landslides and mudslides, including rockfalls, usually strike without warning. The force of rocks, soil, and other debris moving down a slope can devastate anything in its path. *Figure 7* below depicts areas of the county in (red) with slopes greater than 15 percent that are especially prone to landslide and mudslide events.
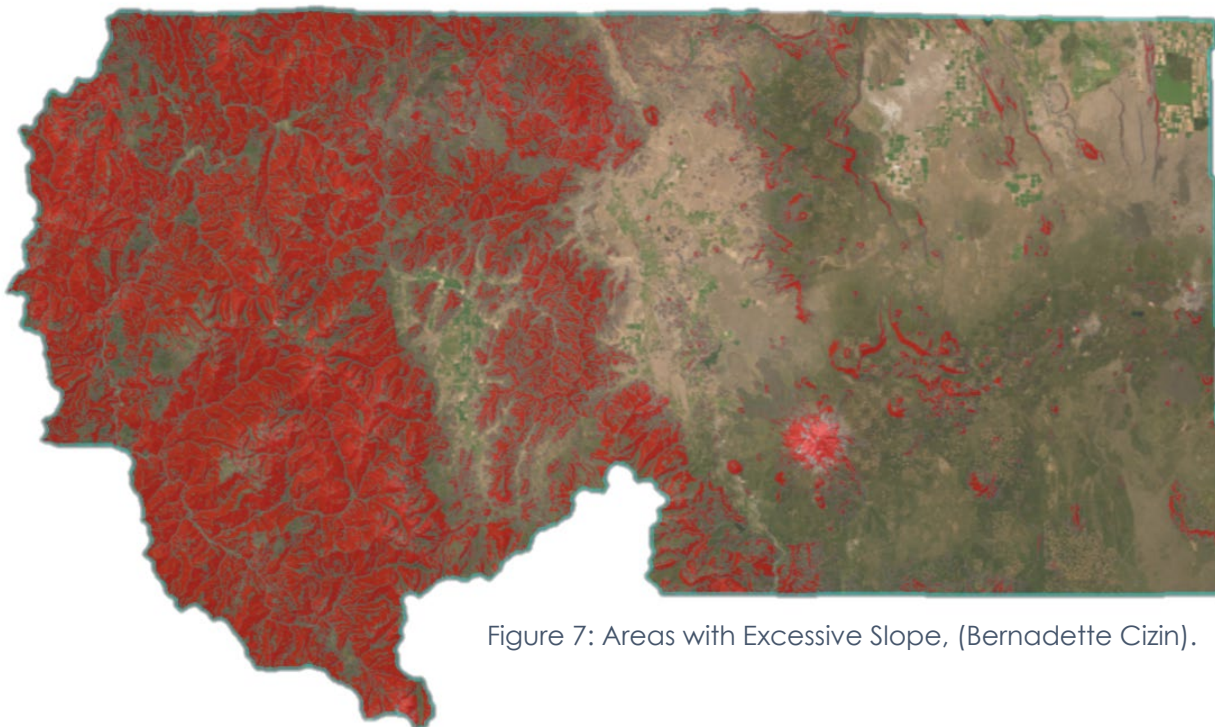

Figure 7: Areas with Excessive Slope, (Bernadette Cizin).

The risk of a landslide is greatest when factors such as excessive slope, weak loose soils, water saturation, prior history of landslides, active earthquake faults, and improper grading are present. Wildfire burn scars are especially susceptible to landslides during subsequent rain events. During the winter months, rockfalls on *Highway 96*, can often result in road closures.

While efforts have been taken by the county through the development process to minimize landslide potential, some hillside development predates the imposition of grading and zoning requirements. For this reason, older homes built on a slope may be more susceptible.

Earthquake Hazard

An earthquake is caused by a sudden slip between tectonic plates. In Siskiyou County few earthquakes will exceed a magnitude of 2.5 (*meaning they are not felt but can be captured by a seismograph*) and even fewer will exceed a magnitude of 4.5 (*meaning they are often felt but only cause minor damage*.)

What Happens During an Earthquake?

Fault creep is the slow, constant slippage that can occur on active faults absent an earthquake. Surface rupture may occur suddenly during an earthquake or slowly in the form of fault creep. This slow surface creep offsets and deforms curbs, streets, buildings, and other structures that lie near the fault.

Surface Rupture occurs when movement on a fault deep within the earth breaks through to the surface. Not all earthquakes result in surface rupture.

Land Subsidence is a gradual settling or sudden sinking of the Earth's surface due to removal or displacement of subsurface earth materials.

Liquefaction takes place when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. Liquefaction beneath buildings and other structures can cause major damage during earthquakes.

Ground shaking describes the vibration of the ground during an earthquake. The extent of ground shaking depends on the *magnitude* and *intensity* of the earthquake and distance from the epicenter.

Tectonic Plates and You

The Pacific and North American Plates
In California there are two tectonic plates, the *Pacific Plate* and the *North American Plate*. The Pacific Plate consists of most of the Pacific Ocean floor and the California Coastline. The North American Plate comprises most of the North American Continent and parts of the Atlantic Ocean floor. The major boundary between these two plates is the 650 mile long San Andreas Fault. Siskiyou County sits on the edge of the North American Plate.

Cascadia Subduction Zone
The *Cascadia Subduction Zone* is an area where the *Explorer*, *Juan de Fuca*, and *Gorda* plates are moving eastward, sliding beneath the much larger *North American Plate*. The *North American Plate* itself is moving slowly in a southwest direction, sliding over these smaller plates as well as the larger oceanic *Pacific Plate*, which moves in a northwest direction.
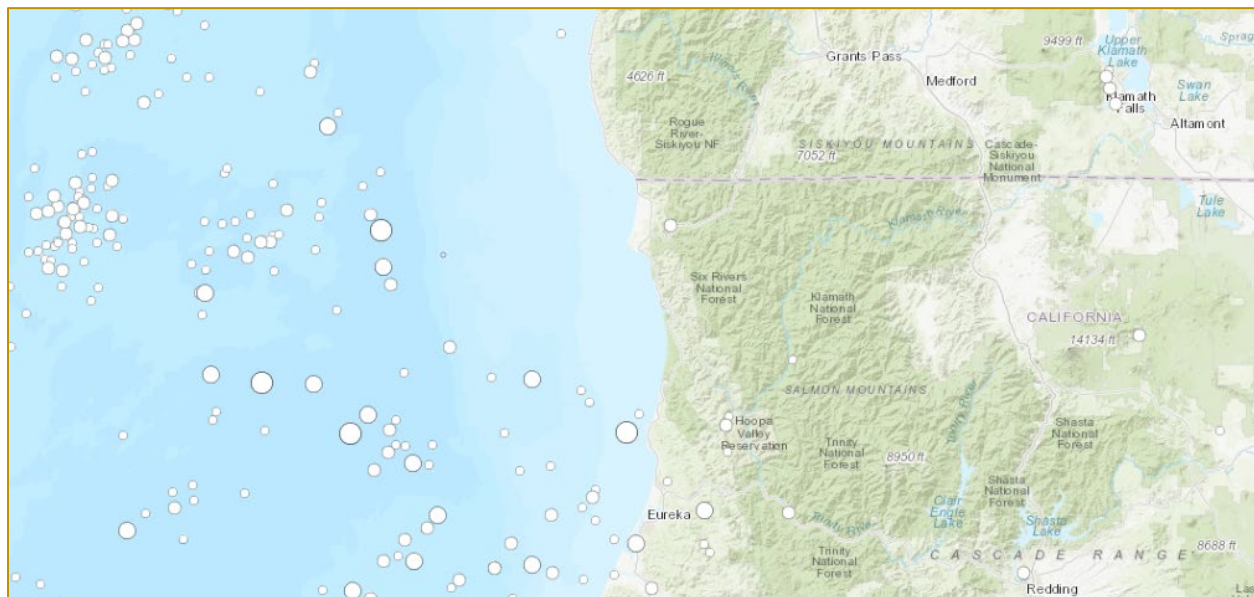
Figure 8: Earthquake Distribution in the Pacific Northwest, (USGS).

Earthquakes in the Pacific Northwest

Most earthquakes in the Pacific Northwest occur in the Pacific Ocean as shown in *Figure* 9 above. Earthquake epicenter locations are marked by a white circle. Size differences between the white circles indicate the magnitude of the earthquake, with larger circles representing larger magnitude (more powerful) earthquakes.

Earthquake Fault Zones in Siskiyou County

The *California Geological Survey* (CGS) has mapped minor earthquake fault zones *(EFZs)* in _Dorris_, _MacDoel_, _Sams Neck_, _Porcupine Butte_, _Indian Spring Mountain_, _East of Pondosa_, _Timbered Crater_, _Rainbow Mountain_, _Tennant_, _Garner Mountain_, _Bray_, _Sharp Mountain_, _Red Rock Lakes_, and _Sheep Mountain_. Even with earthquake fault zones located in the eastern part of the county, there is an extremely low chance of a damaging earthquake occurring.
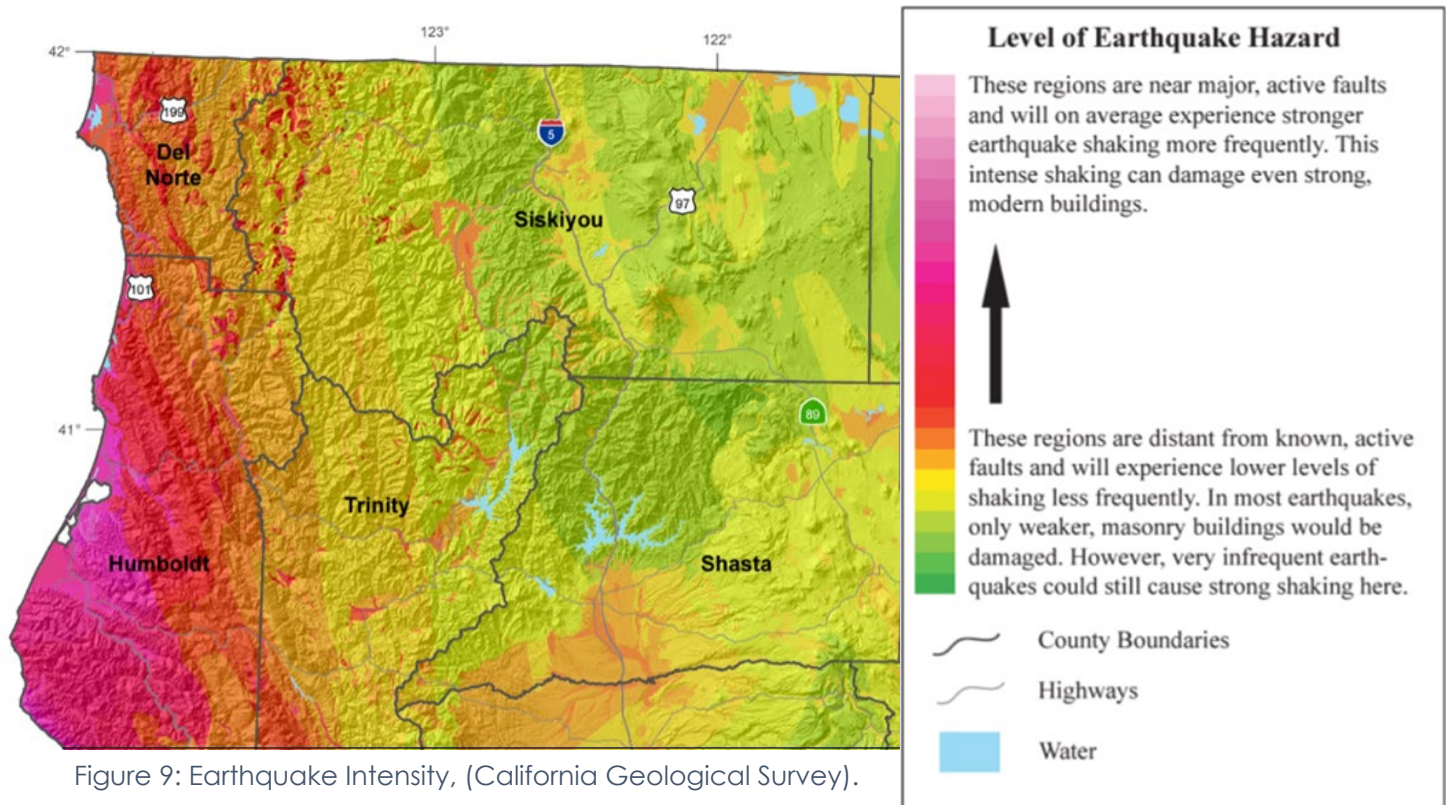
Figure 9: Earthquake Intensity, (California Geological Survey).

Level of Earthquake Hazard

These regions are near major, active faults and will on average experience stronger earthquake shaking more frequently. This intense shaking can damage even strong, modern buildings.

These regions are distant from known, active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking here.

County Boundaries

Highways

Water

Earthquake Zones of Required Investigation

Earthquake Zones of Required Investigation (EZRIs) are specific areas, where potential earthquake hazards, beyond strong ground shaking, warrant detailed geologic and geotechnical investigations before new construction or significant renovations can begin. These zones highlight areas with a higher risk of ground failures like liquefaction, landslides, or fault rupture.

Earthquake Zones of Required Investigation Mapping can be viewed at the California Geological Survey website:

https://maps.conservation.ca.gov/cgs/informationwarehouse/regulatorymaps/

Alquist-Priolo Fault Zones

Alquist-Priolo earthquake fault zones are regulatory zones surrounding the surface traces of active faults in California. A trace is a line on the earth's surface defining a fault. Wherever an active fault exists, if it has the potential for surface rupture, a structure for human occupancy cannot be placed over the fault and must be a minimum distance from the fault (generally 50 feet). An active fault, for the purposes of the *Alquist-Priolo Act,* is one that has ruptured in the last 11,000 years.

Alquist-Priolo Fault Zone Mapping can be viewed here:

https://cadoc.maps.arcgis.com/home/item.html?id=29d2f0e222924896833b69ff1b6d2ca3

Intensity is a subjective measure of the effects of an earthquake as measured by the *Modified Mercalli Intensity Scale* (MMI).

Modified Mercalli Intensity Scale (MMI)

Intensity	Shaking	Description/Damage
I	Not felt	Not felt except by very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Vibrations similar to a passing truck.
VI	Light	Felt indoors by many, outdoors by a few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make crackling sound. Sensation like heavy truck striking building.
V	Moderate	Felt by nearly everyone, many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heaving furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimney stacks, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damaged considerable in specially designed structures; frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wood structures destroyed; most masonry structures destroyed with foundations.

Magnitude is an objective measure of an earthquake's size at its release, as reported by the *Moment Magnitude Scale* (Mw), which looks at the distance a fault moves, and the force required to move it. Most earthquakes in the county are 2.5 or less in magnitude.

Moment Magnitude Scale (Mw)

Magnitude	Earthquake Effects
2.5 or less	Usually not felt but can be recorded by seismograph.
2.5 to 5.4	Often felt and causing only minor damage.
5.5 to 6.0	Slight damage to buildings and other structures.
6.1 to 6.9	May cause a lot of damage in very populated areas.
7.0 to 7.9	Major earthquake. Serious damage.
8.0 or greater	Great earthquake. Can destroy communities near the epicenter.

Volcano Hazard

Home to the *Lava Beds National Monument*, *Mt. Shasta Volcano*, and the *Medicine Lake Volcano*, Siskiyou County has significant volcano hazard exposure.

At the county level, Shasta and Siskiyou counties have the largest daily populations in the volcano hazard zone (approximately 61,425 and 42,163, respectively).

FEMA National Risk Index

Siskiyou County's Volcanic Activity Risk Index Score is *78.7*. According to FEMA, there is a *Relatively Moderate* risk of volcanic activity in the county. Should property damage occur, expected annual loss from volcanic activity is estimated to be approximately 1.1 million dollars.

The *National Volcanic Threat Assessment* provides threat assessment rankings for 161 US volcanoes with the greatest potential for eruptions based on objective measures of volcano hazards and the exposure of people and infrastructure to those hazards.

National Volcanic Threat Assessment

Very High	High	Moderate	Low	Very Low

Rank	Volcano	State	Threat Group	Latitude	Longitude
5	Mt. Shasta	CA	Very High	41.3099° N	122.3106°W
45	Medicine Lake	CA	High	41.6108° N	121.5535°W

Mt. Shasta is ranked No. 5 (*Very High Threat*) on the National Volcanic Threat Assessment list for US volcanoes. *Medicine Lake Volcano* is ranked No. 45 (*High Threat*).

Mt. Shasta Volcano
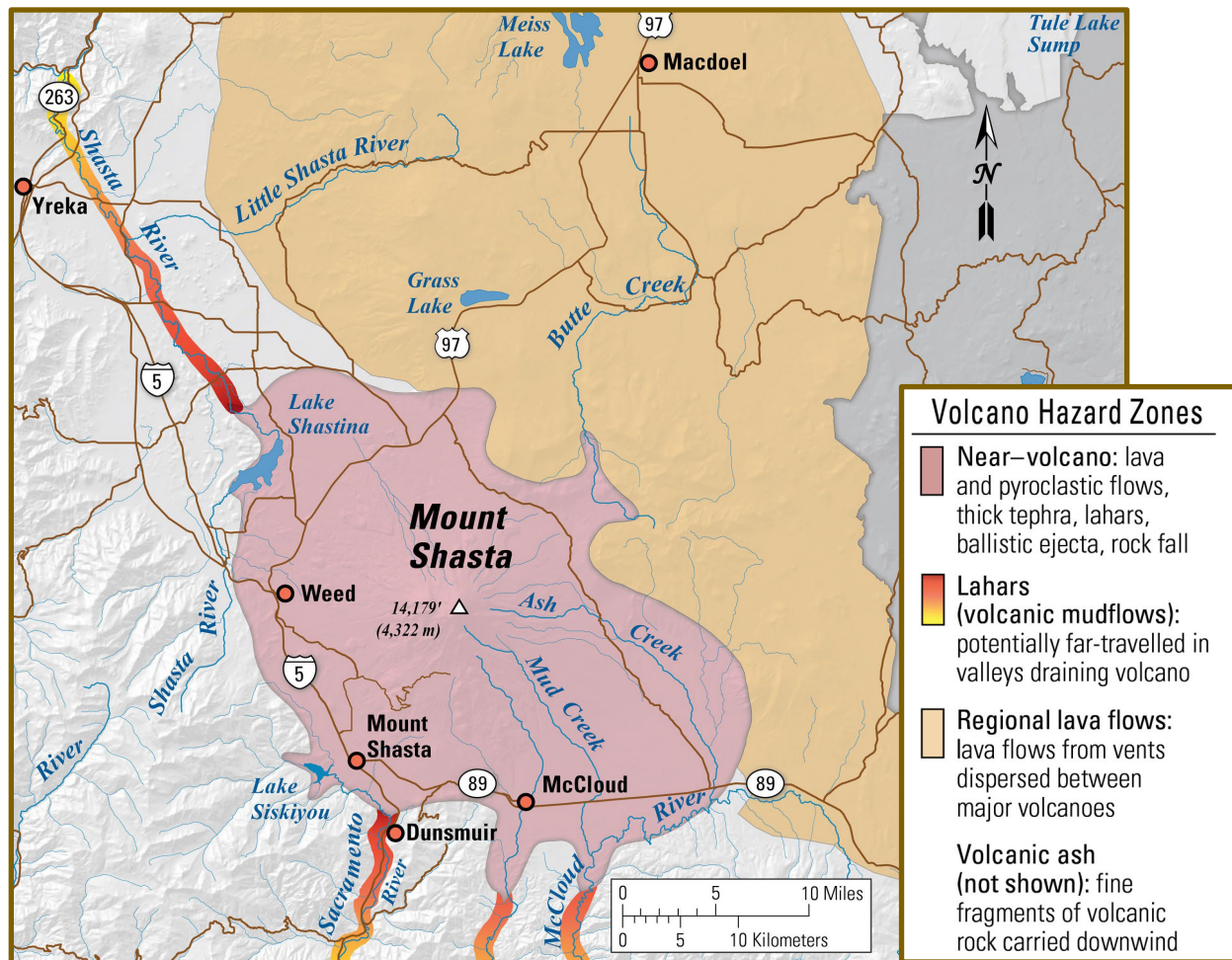
Figure 10: Mount Shasta Eruption Analysis, (USGS).

Mt. Shasta is a steep-sided volcano (**stratovolcano**) located along the Interstate 5 corridor. The towns of Weed, Mount Shasta, and McCloud lie at the base of this 14,162 foot high snow covered volcano. Mt. Shasta began forming on the remnants of an older volcano that collapsed sometime between 500,000 to 300,000 years ago. The collapse created one of the largest landslides known on Earth, covering more than 170 square miles of the Shasta Valley to the northeast.

Eruptions around 11,000 years ago formed Black Butte and the Shastina dome on the west flank of the volcano. In the last few thousand years, eruptions have broken out at the volcano's summit and from vents on its upper east flank.

Medicine Lake Volcano
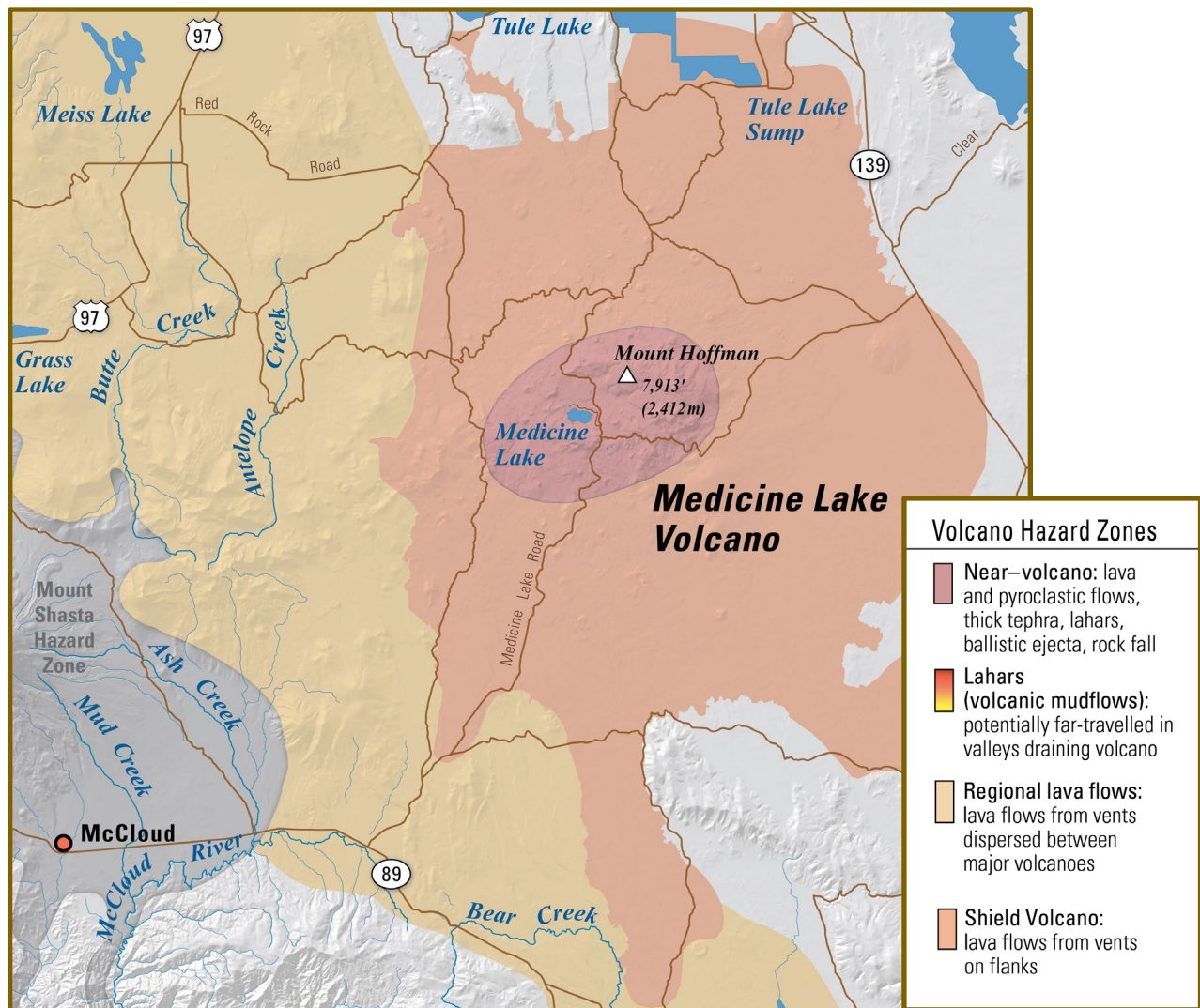
Figure 11: Medicine Lake Eruption Analysis, (USGS).

Medicine Lake Volcano is a large, broad volcano (**shield volcano**) located in eastern Siskiyou County. The *Lava Beds National Monument* lies on the north side of the volcano. Located at the summit of the volcano is a water-filled collapsed basin, or caldera. The caldera is 8 miles wide and 14 miles across.

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 Little Glass Mountain (1,000 years ago) and Glass Mountain (950 years ago).

Geologic & Seismic Hazards
Vulnerability Assessment

Landslides

Much of western Siskiyou County consists of slopes greater than 15 percent. These areas are susceptible to the landslide hazard. Erosion of wildfire burn scars due to wind and heavy rain can result in landslides and debris flows in these areas. Most landslides in the county occur in remote locations so incidents often go unnoticed and unreported. When they impede major travel routes, landslides and rockfalls can isolate local communities from the rest of the county.

Earthquakes

While Siskiyou County is in a seismically active area, the chance of a catastrophic earthquake resulting in substantial damage is low. Earthquake fault zones within the county are in sparsely populated areas. When they do occur, few earthquakes within the county will exceed a magnitude of 2.5, meaning they are not felt but can be captured by scientific instruments.

Volcanic Activity

Mt. Shasta Volcano. The next eruption will likely involve weeks or months of precursory earthquakes and ground deformation followed by a series of steam explosions blasting a deep crater at the summit of the volcano. Such a scenario would provide ample warning for residents to evacuate. Although geophysically quiet, periodic geochemical surveys indicate that volcanic gas emanates from an opening at the summit of Mt. Shasta from a deep-seated reservoir of partly molten rock.

If *Mt. Shasta* erupted, modeling indicates that large volcanic mudflows could engulf the *Shasta*, *Sacramento* and *McCloud Rivers*.

Geologic & Seismic Hazards Vulnerability Assessment

The towns of Weed, Mount Shasta, and McCloud would be subjected to ballistic ejecta and rock fall, while volcanic ash would blanket most of the county.

> Research published by the *US Geological Survey* (USGS) suggests there is a 3.5 percent chance that *Mt. Shasta* erupts in the next 30 years.

Mt. Shasta Glaciers. Mudslides generally occur in areas that are also vulnerable to the landslide hazard after heavy precipitation events. During the summer months, glacier melt from *Mt. Shasta* has the potential to result in large mudslides and debris flows which can impact roads and critical infrastructure. *Highway 89*, east of the town of McCloud is experiencing this phenomenon on an annual basis.

Electrical Grid Vulnerability

With over 1,223 miles of high-voltage transmission lines and 86 substations in the Mt. Shasta Volcano Hazard Area, an eruption of Mt. Shasta has the potential to knock out electrical power for a significant portion of the county.

High-Voltage Transmission Lines in the Volcano Hazard Area.

Volcano	Length, in miles	Number of substations
Mount Shasta	1,223	86
Medicine Lake Volcano	342	7
Lassen Volcanic Center	191	15
Long Valley volcanic region	724	57
Clear Lake volcanic field	23	2
Salton Buttes	58	11

Figure 12: High-voltage transmission in the volcano zone, (USGS).

Geologic & Seismic Hazards Vulnerability Assessment

Medicine Lake Volcano. Similar to Mt. Shasta, the eruption of the *Medicine Lake Volcano* would be preceded by weeks or months of heightened earthquake activity and ground deformation. Given the long advance warning time, loss of life during an eruption event is expected to be minimal. Property loss in affected areas, however, could be significant.

> Research by the *US Geological Survey* (USGS) suggests there is a 1 percent chance that *Medicine Lake Volcano* erupts in the next 30 years.

Due to its nonexplosive nature, an eruption would likely result in lava flows rather than ballistic ejecta and rock fall being scattered across the county. This area is sparsely populated, and property damage is expected to be minimal, although volcanic ash could be a county-wide problem.

Chapter 5, Hazardous Materials

Mishandling of hazardous materials can threaten environmental quality and result in soil and groundwater contamination.

Hazardous materials are defined as those materials that pose a significant present or potential threat to human health and safety or to the environment if released into the workplace or the environment. These materials include chemicals, radioactive waste, explosives, natural gas, petroleum, pesticides, agricultural chemicals, and household cleaning products.

Exposure to hazardous materials can result in lung damage, cancer, cardiovascular disease, low birth weight infants, and other negative health outcomes that reduce life expectancy.

Most fuels, lubricants, solvents, and paints are considered hazardous materials. Businesses and institutions that use substantial quantities of hazardous materials are required to adhere to strict regulations regarding the handling, transport, and storage of such materials.

Hazardous Materials Incidents

Improper handling, storage, and disposal of hazardous materials can have negative effects on people and the environment.

In 2006, a truck overturned on *Highway 96*, dumping its cargo, a toxic petroleum-based asphalt emulsion, into the *Klamath River*, creating an eight-mile plume downriver. Most of the spill did not reach the river due to the quick thinking of a retired US Forest Service employee, *Ed Masonheimer*, who got a shovel from his pickup truck and began building a sand and gravel dam that managed to impede much of the 7,000 gallons of road sealant. While only a small amount of emulsion reached the water's edge, it was enough to cause a significant fish kill.

In 1991, a *Union Pacific Railroad* train derailment occurred below *Box Canyon Dam*, upstream from the town of Dunsmuir. A railroad car fell into the *Sacramento River* spilling 19,000 gallons of the herbicide Metam sodium into the river. Referred to as the *Cantara Loop Spill* this hazardous materials incident killed nearly all aquatic life and affected the entire river ecosystem.

In 2021, a *Union Pacific Railroad* train derailment involving 18 train cars occurred near the site of the *1991 Cantara Loop Spill*. No injuries or hazardous material releases were reported at the time.

In 2022, a *Union Pacific Railroad* train derailment involving 9 train cars occurred near the site of the *1991 Cantara Loop Spill*. No injuries or hazardous material releases were reported at the time.
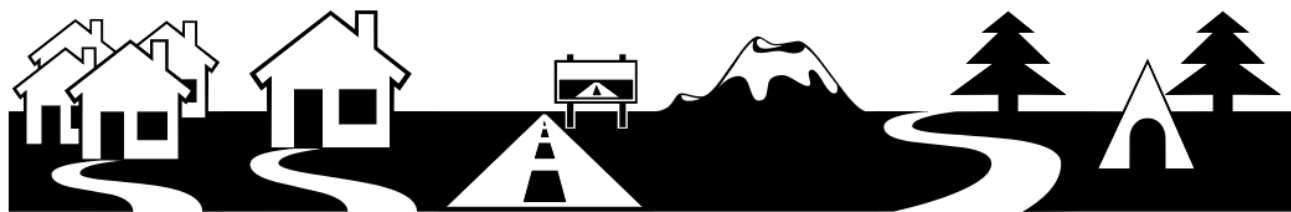
Hazardous Materials Vulnerability Assessment

Motor Vehicle Incidents

Interstate 5 is the main transportation corridor within Siskiyou County. Over 6,000 commercial trucks use the road on a daily basis. All other major routes in the county connect to Interstate 5. Starting at the county's southern border and ending north of *Weed Airport*, Interstate 5 experiences winter weather conditions on an annual basis. Road closures due to snow are not uncommon. The other major traffic routes in the county can also experience icy conditions making travel difficult. Rock falls on *Highway* 96 occur on a regular basis.

Railroad Incidents

Union Pacific Railroad is the primary rail operator in Siskiyou County, transporting a variety of commercial and industrial products. The company's railyard in the town of Dunsmuir, has existed since the early 1900s. Since that time, unknown amounts of fuel has seeped into the soil, groundwater, and the *Upper Sacramento River*. Current efforts to stop contamination from entering the river include excavation of impacted material along the surface of the riverbank and installation of oil barriers in the river. The *Central Valley Regional Water Quality Control Board* has issued a *Cleanup and Abatement Order* for the Dunsmuir site. In addition, the *US Environmental Protection Agency* has issued a *Clean Water Act Order* for the location. Clean up commenced in 2022 and is expected to be completed by the end of 2025.

Chapter 6,
Wildlife Hazards

The proximity of wildlife to people and livestock can lead to a range of issues, including disease transmission, predation, and resource competition.

Siskiyou County is a rural community where land development occurs in wildlife areas. When this happens, human activity can alter normal wildlife behavior, including diet, activity times, and movement patterns. Over time animals start to develop a preference for human provided food and lose their natural fear of people.

Disease Transmission Hazard

Some wildlife species can become ill with zoonotic diseases, or diseases that are transmitted between animals and humans. These diseases are caused by a variety of pathogens (e.g. *bacteria, viruses, fungi*) that can cause fatal infections in people. Examples of zoonotic diseases include **rabies** (*from bites or scratches from an infected animal*), **hantavirus** (*from exposure to rodent urine, droppings, saliva, bites or scratches*), and **tularemia** (*from tick and fly bites or contact with infected animals*).

Chronic Wasting Disease (CWD)

Chronic Wasting Disease is a degenerative prion disease similar to '*Mad Cow Disease*'. While Mad Cow Disease affects cattle, Chronic Wasting Disease affects deer, elk, moose, and other cervids. CWD is

an always fatal disease that affects the brain, spinal cord, and other tissues. The name for CWD comes from its most noticeable symptom, dramatic weight loss. There is no cure or vaccine for Chronic Wasting Disease. The *Centers for Disease Control and Prevention (CDC)* has advised against consuming infected meat due to the potential risk to people. To limit possible exposure, hunters should only harvest and eat healthy looking animals. The brain, eyes, tonsils, spine, spleen, and lymph nodes should always be avoided as these are where the prions accumulate in high density. An infected carcass should be buried at least 4 feet deep or disposed of at an approved landfill to prevent exposure to other cervids.

Studies conducted by the *National Institutes of Health* (NIH), indicated there is a substantial species barrier preventing transmission of CWD from cervids to humans. CWD cannot be transmitted to livestock or humans. While confirmed cases have been detected in central and southern California, there have been no reported cases in Siskiyou County.

Avian Influenza (Bird Flu/H5N1)
Bird Flu is a highly contagious and often fatal disease in birds. The viral spread is passed by migratory wild birds, such as ducks and geese, but many other wild bird species can also be a source of spread. The disease spreads through contact with infected wild and domestic birds or contact with the virus on surfaces such as hands, shoes, clothing, and the fur of other animals, such as pets. *Bird Flu* can be transmitted to dairy cows, so precautions should be taken for farms that have both cows and poultry or are in the vicinity of a dairy cow farm.

As of May 2025, there were 70 confirmed human cases of *Bird Flu* in the US (38 in California), with one fatality. California and Washington state had the most reported cases. Studies show that the virus cannot be passed from person to person. While it has been detected in California there have been no reported cases of *Bird Flu* in Siskiyou County.

West Nile Virus (WNV)

West Nile Virus is a mosquito-borne virus that causes disease in humans, horses, and birds. The virus spreads to people through the bite of an infected mosquito. Since 2003, 8,000 human cases and nearly 400 deaths have been reported in California. WNV cannot be spread through coughing, sneezing, or casual contact, such as touching or kissing a person who has the virus.
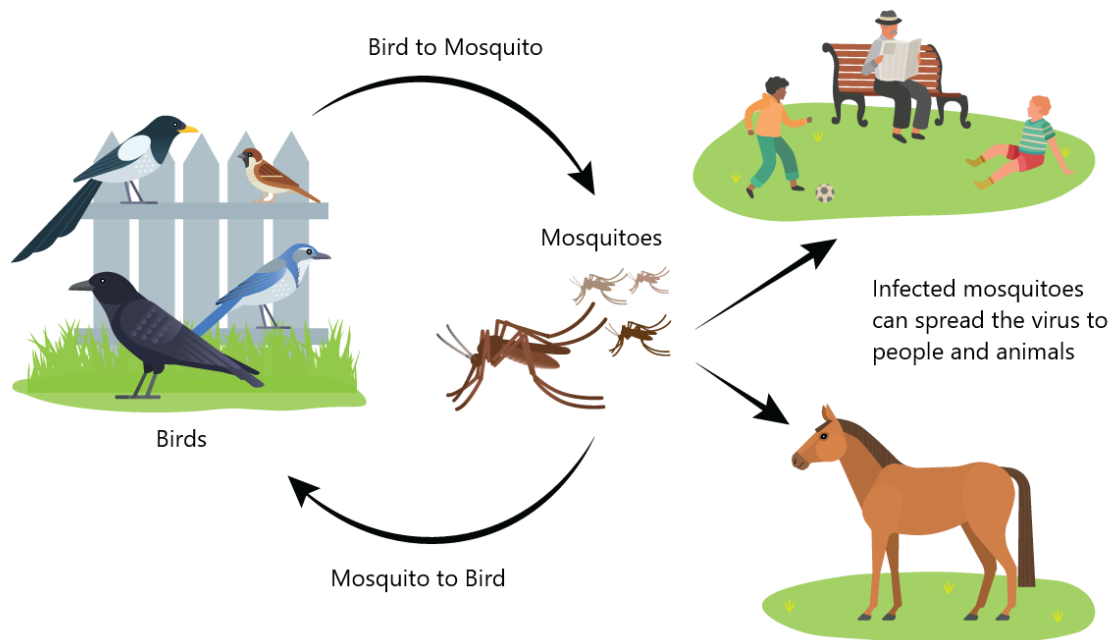
Figure 13: How West Nile Virus is Spread, (westnile.ca.gov).

There is no vaccine. The best way to avoid getting WNV is to prevent mosquito bites. While the virus has been detected in California there have been no reported cases in Siskiyou County.

Predator Hazard

Siskiyou County is home to a variety of animal predators such as fishers, martens, bobcats, coyotes, black bears, mountain lions, and gray wolves. Among these predator species, black bears, mountain lions, and gray wolves pose the most risk to people, domesticated animals, and livestock.

Gray Wolves

The last native gray wolf in California was killed in 1924. After nearly a century with no confirmed wolf sightings, the species has returned to California through dispersal migration of wolves from other states. Dispersal occurs when a wolf leaves its natal pack to form a new pack in a different area. As of May 2025, California has 10 confirmed wolf packs along with an undetermined number of dispersing wolves.

Siskiyou County is currently home to the *Whaleback Wolf Pack*, which was formed when a male wolf identified as *OR-85* dispersed from Oregon's Mount Emily Pack in 2020 and paired with a female wolf, *WHA01F,* from Oregon's Rogue Pack.

Figure 14: Whaleback Pack Alpha, OR-85 (CDFW).

The pair settled in Siskiyou County and produced a litter of 7 pups in 2021 and 8 pups in 2022. In 2023, the pack produced another 8 pups, and in 2024 the pack produced at least 6 pups.

The actual size of the *Whaleback Wolf Pack* is not publicly known, but it is believed to consist of at least 10 wolves.

In March 2023, the breeding male, *OR-85*, was captured and fitted with a satellite tracking collar. In January 2025, the breeding female, *WHA01F*, was captured and fitted with a satellite tracking collar.

The *California Department of Fish and Wildlife* (CDFW) operates a gray wolf tracking map that can be viewed at:

https://wildlife.ca.gov/Conservation/Mammals/Gray-Wolf/Location-Map

As of May 2025, the *Whaleback Wolf Pack* is not displayed on the CDFW wolf tracking map. Lack of activity on the tracking map does not mean that a wolf pack is no longer present in a specific area. Gray wolves have their young and use den sites in early spring. After leaving the den, gray wolves switch to using rendezvous sites, where young are kept until they can safely travel with the pack. While denning and rendezvous site behavior is occurring (*typically April through August*), certain areas in the immediate vicinity will not be activated on the wolf tracking map. However, if a gray wolf, that has been satellite collared, moves outside of the protected area, its collar will again show up on the tracking map.

Livestock predation by gray wolves usually increases during the fall and winter months, at a time when deer fawns are scarce. According to the *Wolf Management Update Report* published by the CDFW, the *Whaleback Wolf Pack* was responsible for the deaths of four calves, one heifer, and one steer in Siskiyou County from October to December 2024. Livestock predation incidents are expected to increase if the *Whaleback Wolf Pack* grows in size and disperses to other areas of Siskiyou County.

Past history indicates that gray wolves generally do not pose a direct threat to human health and safety. However, it must be remembered that gray wolves have been functionally extinct in California for almost 100 years, so that past interactions between gray wolves and people may not accurately reflect the current situation.

Mountain Lions

Mountain lion sightings are an annual, albeit rare, occurrence in Siskiyou County, with confirmed sightings near the towns of Dunsmuir, McCloud, Mount Shasta, and Yreka. In February 2025, the CDFW issued a predation permit for the taking of a mountain lion responsible for the killing of a pet dog in the town of McCloud. Mountain lions have also been observed in the area of Greenhorn Park in the town of Yreka. In 2021, a mountain lion was photographed resting in a patch of manzanita outside a home in the town of Mount Shasta. In 2024, a mountain lion was captured on a doorbell camera standing on a back porch in the town of Dunsmuir.

The *Siskiyou Deer-Mountain Lion Study* (2015-2020), conducted by UC Santa Cruz and the CDFW, involved the capture and electronic collaring of 14 mountain lions, ranging from 2 to 7 years of age. Eight of the 14 collared mountain lions are known to have died during the study period. Three of the mountain lions were illegally killed, 3 were killed by other mountain lions, and 2 were killed due to accidents (one vehicle and one train collision, respectively).

The *Siskiyou Deer-Mountain Lion Study* estimated an overall adult mountain lion density of 0.22 – 0.36 lions per 100 km².

Based on the County's land area (16,260 km²), a very rough estimate indicates there could be at least 36 to 59 adult mountain lions in Siskiyou County.

In the last 100 years, there have been no confirmed mountain lion attacks on humans in Siskiyou County.

Black Bears

Black bears are omnivores, and their teeth are adapted for feeding on both plant and animal matter. They are highly opportunistic and will eat nearly anything edible. The opportunistic foraging behavior of black bears often brings them into conflict with people, as black bears can damage homes and property, including vehicles, while seeking out human food and garbage.

A food-conditioned black bear is one that has become accustomed to human-associated food sources and has learned to associate humans and human developments with food. Food-conditioned black bears may be dangerous to humans and domestic animals. The first ever reported human fatality caused by a black bear in California occurred in 2023 in Downieville, Sierra County.

Black bear interactions with gray wolves can be lethal or kleptoparasitic. A Kleptoparasite is an animal that steals food or prey from another animal (*scavenging or usurping behavior*). Packs of gray wolves are known to displace black bears from carcasses or even prey on black bears themselves.

According to the CDFW, California has the largest black bear population in the United States, with Humboldt, Mendocino, Shasta, Trinity, and Siskiyou Counties, having the highest black bear densities.

The CDFW *Black Bear Conservation and Management Plan* (2025) estimates black bear densities for Siskiyou County at 38 to 96 black bears per 100 km².

Based on the county's land area (16,260 km²), a very rough estimate indicates there could be approximately 6,178 to 15,609 black bears in Siskiyou County.

DISEASE TRANSMISSION HAZARD

Chronic Wasting Disease, *Bird Flu*, and *West Nile Virus* are all present in California, but not in Siskiyou County. There is no vaccine for *West Nile Virus*. The best way to avoid contracting the disease is to not be bitten by an infected mosquito. There is no vaccine for *Chronic Wasting Disease*. However, a strong species barrier prevents transmission of CWD from animals to humans. People are advised not to consume animals that may be infected with CWD. There is currently no *Bird Flu* vaccine for humans. At this time bird flu cases in humans appears to be limited to people who work regularly with poultry or dairy cows. Preventative measures should be taken by individuals who come into regular close contact with poultry or dairy cows.

PREDATOR HAZARD

Never feed wild animals. Don't do it. Wild animals should have a natural fear of humans. To limit negative interactions with wildlife, people should secure their garbage and never try to make a pet out of a wild animal. Deer-proofing property is a good idea to avoid attracting a mountain lion's main food source. Removing dense vegetation around homes helps to reduce possible hiding spaces for predators. Installation of outdoor lighting makes it difficult for predators to approach unseen. If feasible, secure livestock and outdoor pets in sturdy, covered shelters at night. When out in nature, avoid hiking, biking, or jogging alone, or at dawn, dusk, or at night.

If you see a baby wolf, mountain lion, or black bear, do not touch it. It is likely that the mother is nearby and will attack you to protect her young.

Gray Wolves

Gray wolves rarely pose a direct threat to human health and safety and will generally depart the area when people are present. Gray wolves are listed as an endangered species under state and federal law. It is illegal to "take" a gray wolf, which is defined as hunting, pursuing, harassing, catching, capturing, or killing them. If wolves are

present, non-injurious harassment is allowed to protect people and livestock.

In addition, confirmed or probable wolf depredations of livestock may be eligible for compensation through the CDFW *Wolf Livestock Compensation Grant Program*.

Mountain Lions

Mountain lion attacks on humans are rare. Since 1890, there have been less than 50 verified mountain lion attacks on humans in California; of that, only six have been fatal.

Fish and Game Code Section 4807 states that any mountain lion that is encountered while in the act of pursuing, inflicting injury to, or killing livestock, or domestic animals, may be taken immediately by the owner of the property or the owner's employee or agent.

Black Bears

Black bears are highly food-motivated, particularly during hyperphagia, the period prior to hibernation. The best way to prevent conflict is to eliminate what is attracting the bear. If a black bear becomes food conditioned or habituated to humans, it may become increasingly bold or destructive. Cubs that are food conditioned by their mothers will grow up to become conflict adults, continuing the cycle. Relocation is not an option, as a relocated bear can travel hundreds of miles to return "home". Even if the bear does not return "home", it may end up becoming a problem for the community where it was relocated to. Bears who have become habituated to humans will often need to be euthanized.

Fish and Game Code Section 4181.1 states that any bear that is encountered while in the act of inflicting injury to, molesting, or killing, livestock may be taken immediately by the owner of the livestock or the owner's employee.

Proper Handling and Disposal of Carcasses

Proper disposal of dead animals is critical to prevent exposure of other wildlife, livestock, and humans to disease. Three effective methods of carcass dispose are incineration, burying, and rendering. Incineration is the preferred method when the carcass is diseased, however this can be expensive. An acceptable alternative is to bury the carcass. If burying, the carcass should be buried at least 4 feet deep and covered with lime to discourage scavengers.

Food and Agriculture Code Section 19348 states for a routine livestock death the owner can choose to bury the animal on the owner's property if the burial is within 3 miles of where the animal died. However, if it is to be disposed of offsite, the carcass must be transported by a licensed dead animal hauler to a licensed rendering plant.

California Code of Regulations, 14 CCR 17855.2, prohibits the composting of unprocessed mammalian tissue (cattle, goats, sheep). In Siskiyou County, due to the financial cost, dead animals are often disposed of in open bone pits, rather than transported to a rendering plant, which can attract gray wolves and other predators.

Chapter 7,
Adaptation & Community Resilience

While increasing temperatures and extreme weather conditions are happening on a global scale, different areas are affected in different ways.

Increasing Temperatures
Siskiyou County's historical average temperature is 50.3 degrees Fahrenheit (1960 – 2000). By 2099, under a low emissions scenario, which refers to a projected future where action is taken to reduce GHG emissions, the average temperature would still increase by 3.4 degrees to 53.7 ° Fahrenheit. By 2099, under a high emissions scenario, which assumes that GHG levels in the atmosphere continue to increase at current rates *(meaning no action is taken to cut emissions or reduce consumption)*, Siskiyou County's average temperature would increase by 6.0 degrees to 56.3 ° Fahrenheit.

Scenario	Average Temperature	Change
Historical (1960 - 2000)	50.3 °F	+0.0 °F
Low Emissions (2000 - 2099)	53.7 °F	+3.4 °F
High Emissions (2000 - 2099)	56.3 °F	+6.0 °F

According to the *National Aeronautics and Space Administration (NASA)*, July 22, 2024, was the hottest day on record, with an average global temperature of 62.87 ° Fahrenheit. 2024 was the warmest year on record and the ten warmest years on record have all occurred in the last ten years (from 2015 – 2024).

Siskiyou County Drought Conditions (2000 - 2025)
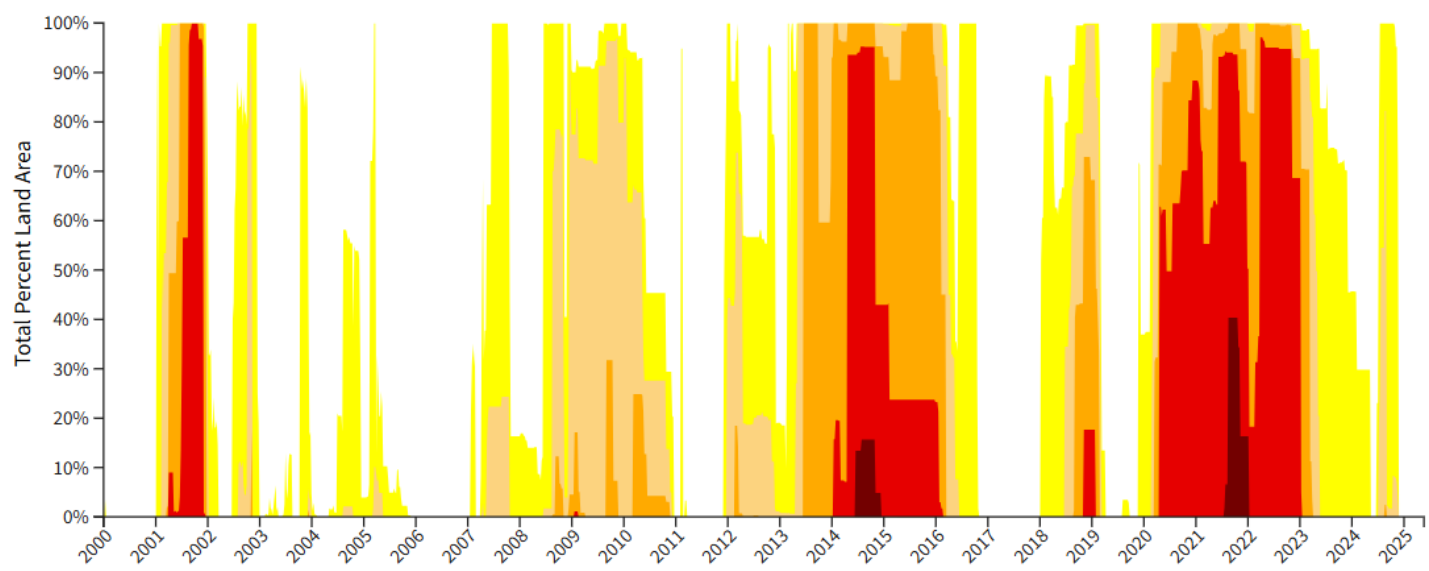
Figure 15: Siskiyou County Drought Mapping, (USDM).

Drought Impacts

In 2024, the county experienced its 28th wettest year to date over the past 130 years. Precipitation was up 4.64 inches from normal. However, this was preceded by years of exceptional drought and water curtailments.

Figure 16 above is a county-wide map of drought conditions from the year 2000 to 2025. The map uses four drought categories, from D1, the least intense to D4, the most intense.

Category	Description
None	Normal or wet conditions
D0	Abnormally Dry
D1	Moderate Drought
D2	Severe Drought
D3	Extreme Drought
D4	Exceptional Drought

Drought conditions can change rapidly from one year to the next. After experiencing extreme drought conditions between 2021 to 2023, as of May 2025, Siskiyou County is no longer experiencing drought.

These oscillating *(on again, off again)* drought conditions are expected to persist and increase in severity, year to year, due to changing weather patterns.

Agricultural production in the county has been impacted by drought. The cover page of the last published *Siskiyou County Annual Crop & Livestock Report* (2022) reads *"Tulelake Dried Up After a Million Years Underwater"*.

According to the report, 24,000 acres of agricultural land in Siskiyou County were fallowed in 2022 as a result of drought, compared to 12,000 acres in 2021. For the Tulelake Irrigation District, 7,100 acres were fallowed as a result of drought for 2022, compared to 2,620 acres in 2021.

Total gross receipts from livestock production also fell in 2022 to $23.7 million, compared to $41.7 million in 2021.

US Drought Monitor Data Sources
The *US Drought Monitor* is a partnership between the *United States Department of Agriculture* (USDA), the *National Oceanic and Atmospheric Administration* (NOAA), and the *National Drought Mitigation Center* (NDMC). Each week, staff from USDA, NOAA, and NDMC generate updated flood mapping based on current data from local observations. Data inputs are obtained at the local level and transmitted to the *US Drought Monitor* for interpretation. Recent precipitation totals across individual regions are compared to their long-term averages. Variables such as temperatures, soil moisture, water levels in streams and lakes, snow cover, meltwater runoff, reported water shortages and business interruptions are all included in the drought condition analysis.

Extended Growing Season
Increasing temperatures have resulted in warmer winters leading to earlier snowmelt and longer frost-free seasons. The last spring frost is occurring earlier in the season and the first fall frost is occurring later in the season which has resulted in a longer overall growing season.

According to federal government statistics, California experienced nearly 50 more growing days in 2020 than in 1895.

Change in length of growing season (days):

-20   -10   0   10   20   30   40   50
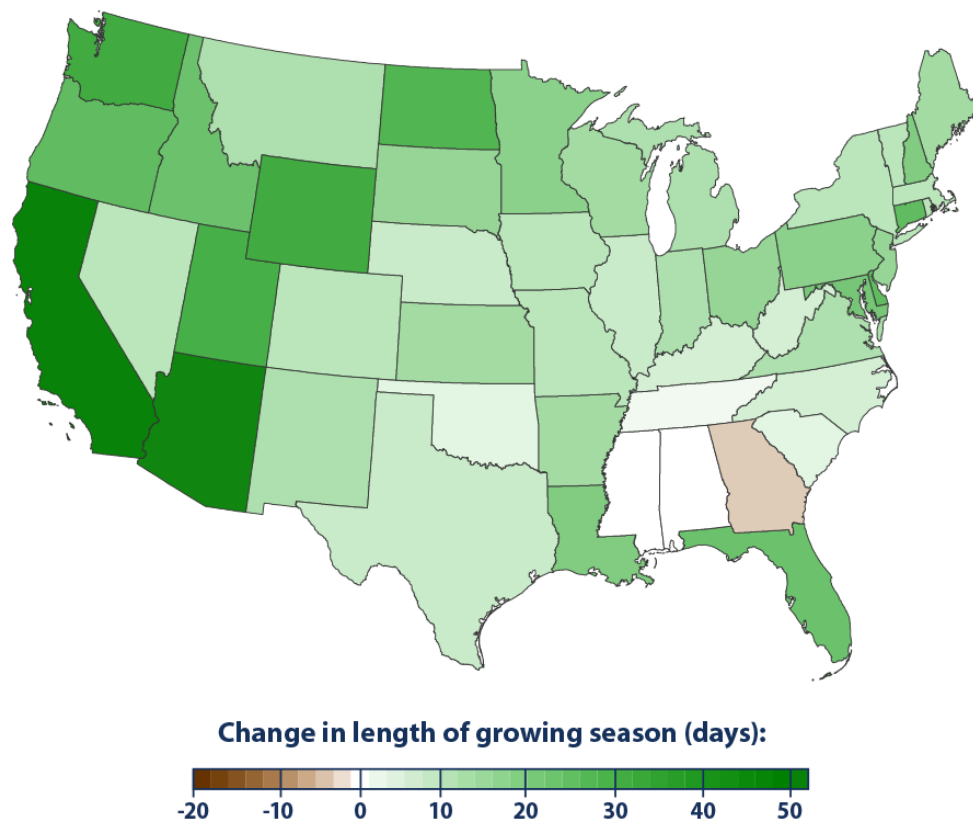
Figure 16: Change in length of growing season in days, (EPA).

Drought Task Force

In recognition of the threat posed by drought conditions to people and the environment the County has created the *Siskiyou County Drought Taskforce*. The taskforce is responsible for developing the *Siskiyou County Drought Resilience Plan* (DRP). The goal of the DRP is to facilitate drought and water shortage preparedness for *state small water systems* (SSWS) and domestic wells in the county's jurisdiction.

SSWS systems are defined as systems that provide water for at least five and up to 14 service connections and provide drinking water to fewer than 25 people on a regular basis.

Reducing GHG Emissions

Fossil fuels – *coal*, *oil* and *gas* – are all associated with increasing temperatures. It is estimated that fossil fuels account for over 75 percent of all GHG emissions and nearly 90 percent of all CO2 emissions. Increasing temperatures are associated with long-term changes in weather patterns which will pose serious risks to human life, property, and the environment.

In Siskiyou County, the main sources of GHG emissions are stationary sources, area-wide sources, and mobile sources. *Stationary sources* include fuel combustion, waste disposal, cleaning and surface coating, petroleum production, and industrial processes. *Area-wide sources* include solvent evaporation from activities such residential fuel combustion, pesticide and fertilizer application, asphalt paving, refrigerants, and waste burning and disposal. *Mobile sources* such as transportation and wildfire smoke are the largest contributors to GHG emissions in the county.

Siskiyou County is dedicated to reducing GHG emissions through sustainable land use and transportation planning. In 2016, Senate Bill 32 was passed, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. The *Siskiyou County Regional Transportation Plan* and the *Siskiyou County General Plan* both include language supporting deceasing GHG emissions by reducing vehicle miles traveled, switching to certified wood stoves, and encouraging alternative forms of transportation.

Adaptation & Community Resilience

Adaptation and *Resilience* are often discussed together, but it is helpful to distinguish between them.

Adaptation is an action or set of actions that reduces physical risk to the community. In the public safety context, adaptation involves taking steps to modify behavior or physical conditions to adjust to a changing environment. For example, creating defensible space around existing structures to mitigate against increased wildfire risk is

a physical adaptation. On the other hand, discouraging future development in very high fire hazard severity zones is a behavioral adaptation.

Community Resilience describes a community's state of readiness to face potential risks. Improving community resilience (*a community's ability to withstand and recovery from disaster*) involves identifying risks to the community.

Risk is a function of two related concepts: threat and vulnerability.

Threats are events that can negatively impact a community, and vulnerability is the degree of potential damage to the community.

Vulnerability is determined by the sensitivity, exposure, and adaptive capacity of the community.

Managing *Risk* requires addressing either the *Threat* or the *Vulnerability*, or both, depending on the situation. The vulnerability assessment on the next few pages is a discussion of the risks and impacts that result from increasing temperatures.
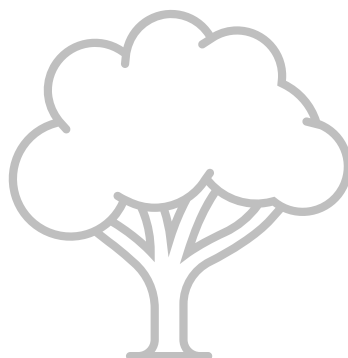
Adaptation & Community Resilience Vulnerability Assessment

BACKGROUND
It is expected that increasing temperatures will exacerbate natural and human made hazards such as wildfire, flooding, and extreme heat. Transmission of vector-borne and waterborne diseases are also expected to pose an increasing risk to public safety.
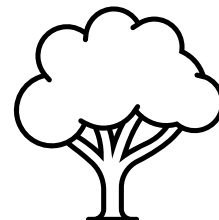
Hazards Related to Rising Average Temperatures
Hazards resulting from long-term changes in weather patterns include:

- Drought
- Extreme cold
- Rainfall flooding
- Severe Storms
- Extreme heat
- High winds

Expected Future Impacts
Impacts of rising average temperatures include:

- Increased wildfire
- Biodiversity loss
- Water insecurity
- Poor air quality
- Infrastructure failure
- Disease outbreak
- Power outages
- Increased erosion
- Invasive species

Other Factors to Consider
Rising average temperatures will result in secondary stresses such as:

- Increased migration
- Displaced populations
- Increased homelessness
- Inadequate health systems
- Food insecurity
- Economic crisis
- Drug/alcohol abuse
- Economic inequality
- Inadequate educational systems
- Inadequate infrastructure

POPULATION AT RISK

Rising average temperatures will affect everyone in the county, regardless of income, with many weather-related impacts projected to worsen. However, not all individuals will experience these effects equally.

The Work Force

Rising average temperatures disproportionately impacts workers because they often work outdoors, in fields such as agriculture, forestry, logging, construction, transportation and emergency response. This makes workers more exposed to temperature and weather extremes, poor air quality, and disease. While inside, workers may often be subjected to hot indoor environments that lack adequate air conditioning, such as manufacturing plants, warehouses, and lumber mills.

An Aging Population

Older adults are more likely to have health conditions that make them more sensitive to hazards such as heat and air pollution, which can often worsen their existing illnesses. Many older adults may also have compromised immune systems, which makes them more prone to severe illness from insect and water related diseases that may become more common with increasing temperatures. Limited mobility also increases risk before, during, and after an extreme weather event.

The Unhoused Population

This population segment lacks the necessary resources to mitigate against the risks posed by increasing temperatures. Without adequate shelter, these individuals are more likely to experience prolonged exposure to extreme weather conditions such as severe heat and winter storms. This population segment is expected to increase as more people are displaced due to natural disasters such as flooding and wildfire.

Individuals with Disabilities

Individuals with disabilities or functional needs will be more vulnerable to the impacts of increasing temperatures. This population segment faces the same challenges experienced by older adults. Increasing temperatures are expected to result in more heat related illnesses and deaths among vulnerable groups, including people with disabilities. This is especially true for individuals with mental health issues, those who depend on others for assistance in daily living, and those with limited mobility or access to transportation.

Limited Income Population

This population segment often lacks the financial resources needed to adequately mitigate against the risks posed by increasing temperatures. These individuals are likely to live in areas that are prone to flooding and extreme weather. They are also less likely to have insurance to compensate for losses in the event of a disaster.

Children are not the primary cause of increasing temperatures however they are the ones who are and will be most affected by it. Children breathe at a faster rate than adults and their bodies are still developing, which can make them more vulnerable to extreme heat and poor air quality. Children also tend to spend more time outdoors than adults, which increases their exposure to heat and cold, rain and snow, outdoor allergens, and vector-borne disease. Displacement and disruptions to home life and schooling are expected due to increasing temperatures.

PROPERTY DAMAGE AND ECONOMIC IMPACT

All property located within the county would be impacted by the secondary effects of rising temperatures (*wildfire, flooding, extreme heat, etc.*).

Adaptation & Community Resilience Vulnerability Assessment

The Local Economy

Increasing temperatures and extreme weather will impact the local economy. For example, the Mount Shasta Ski Park did not open for the 2013-2014 season and had an limited season in 2014-2015 due to a lack of snow in the winter months. The ski park's closure led to a steep decrease in regional tourism.

Wildfires also have a negative impact on tourism as visitors are deterred by the smoke and air quality.

Future projections of severe heat and drought will lead to decreasing crop yields and reduced workforce productivity in outdoor occupations.

Critical Facilities and Infrastructure

Secondary effects of increasing temperatures, such as wildfires, can damage physical infrastructure and disrupt services. A disruption to critical facilities and infrastructure often creates cascading impacts that can heighten the severity of a hazard event.

ENVIRONMENTAL IMPACT

Increasing temperatures will affect the survivability of all species as long-term changes in weather patterns result in reduced habitat and biodiversity.

Future environmental threats resulting from rising temperatures are projected to consist of more rain and less snow, a dwindling snowpack, drought, flooding, melting glaciers, increased erosion, wildfire, warming rivers, pest infestation, invasive species, forest morbidity, reduced crop yields, and keystone species extinction.

Forest management practices that reduce stand density and fuel load will be essential to improving community resilience.

Chapter 8, Emergency Management

Siskiyou County encourages interagency cooperation to better prepare for and respond to public emergencies.

Responsible Agency Listing

The following agencies are responsible for ensuring an effective coordinated response whenever there is a threat to public health or safety.

California Highway Patrol

The *California Highway Patrol* (CHP) enforces traffic laws on state roads and highways in the county. CHP works together with local authorities to ensure that traffic moves quickly and safely out of the hazard area during an emergency.

Siskiyou County Sheriff's Office

The *Siskiyou County Sheriff's Office* (SCSO) is the primary law enforcement agency for the unincorporated county. Agency headquarters are in the town of Yreka, with satellite offices in other towns across the county. The SCSO determines when and where evacuation warnings or orders should be issued. It is also responsible for securing the perimeter of the affected area to prevent looting and unauthorized entry.

Sheriff deputies play a crucial role in communicating information to residents regarding the need to evacuate or shelter in place. Deputies may also be called on to conduct welfare checks to ensure that residents who need assistance are safely evacuated.

Local Police Departments

Local police departments, in coordination with the Sheriff's Office, communicate evacuation warnings and orders to residents in their jurisdictions. Police officers help to ensure an orderly withdrawal along designated evacuation routes and have primary responsibility for conducting welfare checks within their service area.

Local Fire Departments

The primary role of local fire departments is to defend properties and structures. However, if residents do not heed evacuation orders, firefighters will prioritize saving people first and property second. Local fire departments have a better chance of extinguishing fires when residents comply with evacuation orders.

Yreka Interagency Command Center

CAL FIRE operates an emergency command center known as the *Yreka Interagency Command Center* (YICC). The YICC is located at the CAL FIRE Siskiyou Unit headquarters in Yreka and is a collaboration of CAL FIRE, US Forest Service, and county staff. YICC provides dispatching services for CAL FIRE, USFS, local government fire departments, and ambulance companies. YICC is responsible for emergency call taking, dispatching, and tracking of resources on a 24-hour basis.

Siskiyou County Office of Emergency Services

Siskiyou County Office of Emergency Services (OES) coordinates with various local agencies, organizations, and community groups to develop and implement countywide plans for emergency

management. OES also provides public education and training on emergency preparedness.

Siskiyou County Public Health Department
Siskiyou County Public Health Department is responsible for providing support and information to the public during public health emergencies such as wildfire and disease outbreaks. During an ongoing emergency this could include arranging for temporary shelters, cooling centers, and medical or financial assistance to evacuees.

Siskiyou County Agricultural Department
Siskiyou County Agricultural Department is charged with protecting the agricultural industry and the people of Siskiyou County. The department is responsible for enforcing safe and responsible handling of pesticides in the county and may be called upon to provide technical assistance in the event of a hazardous materials incident.

Local Hospitals
In Siskiyou County, emergency medical services are provided by two area hospitals. Hospital trauma centers are classified as Level I, II, III, IV, or V. Level I trauma centers have the most services and are able to handle complex cases and injuries. Level V trauma centers have the least services and are more focused on patient stabilization prior to transfer to a higher-level of care trauma center.

Mercy Medical Center – Level III
Mercy Medical Center, Mount Shasta is the only hospital in south Siskiyou County. It is a 25-bed hospital with a Level III trauma center. Level III facilities do not require in-hospital trauma surgeons or surgical specialists; however, a trauma surgeon and anesthesia and operating room personnel must be available within 30 minutes of being called. Level III facilities focus on stabilization prior to transfer to a higher-level trauma center such as a Level II or Level I.

Fairchild Medical Center – Level IV

Fairchild Medical Center, Yreka is the only hospital in north Siskiyou County. It is a 25-bed hospital with a Level IV trauma center. Level IV facilities are generally located in underserved or sparsely populated areas. Level IV facilities do not have trauma surgeons or surgical specialists. These centers have 24/7 emergency services with a physician or a mid-level provider such as physician assistants (PAs), nurse practitioners (NPs), or advanced practice registered nurses. Level IV facilities focus on patient stabilization prior to transfer to a Level III, II, or I trauma center.

Emergency Alerts & Community Resources

The County emphasizes fast and accurate communication to keep the community informed. Evacuations are most effective when residents are aware of the emergencies that are likely to affect them and have ample time to prepare their own emergency plans. The county has a variety of systems and procedures in place to protect residents and visitors. Emergency alert and assistance systems should include fire and law enforcement vehicle loudspeakers, emergency response phone numbers such as 911, agency websites, and other digital tools.

ReadySiskiyou – Alerts is the county-wide emergency alert system which provides alerts about hazards and emergencies, including severe weather, unexpected road closures, missing people, and evacuations of buildings or neighborhoods. Participants who have opted-in will receive time sensitive messages in their preferred format, such as an email, text message, or telephone phone call to a home, cell, or business number. Registration is voluntary. Community members will not receive an alert unless they sign up for this free service.

The Access and Functional Needs Registry (AFN Registry) is a database designed to identify individuals who may require additional assistance during an emergency evacuation due to their access and functional needs. The registry serves as a tool for emergency management agencies, first responders, and service providers to proactively identify and prioritize resources for those who require specialized assistance. Participation in the AFN Registry is completely voluntary. Information submitted is strictly confidential and is only used in the event of an emergency.

Designated Shelter Sites
The County will set up designated shelter sites as necessary. These community serving facilities will support and coordinate resource distribution and services before, during, or after a hazard event. Designated shelter sites are often utilized during heat waves, wildfire, floods, and earthquakes.

Community Safety Concerns
The following concerns have been raised regarding emergency preparedness and public safety.

Limited Wireless Communication Coverage
Public information messaging systems are most effective when emergency notifications are actually received. However, many rural areas of the county have weak or no cellular service. Such areas should be identified by the County for future improvement of the communication system.

Diversion of Resources
During the winter season, there is an increased safety risk for people in the Scott Valley area as Caltrans diverts equipment and resources to prioritize snow removal on Interstate 5 instead of Highway 3. It is important to ensure that adequate resources remain in the Scott Valley area sufficient to support the needs of the community during winter weather conditions.

Chapter 9, Evacuation Planning

The primary goal of evacuation planning is to maximize preservation of life while reducing the number of people that must evacuate and the distance they must travel to seek refuge.

Evacuation is the process of moving people from a place of immediate danger to a place of safety where appropriate temporary shelter can be provided. When the threat to health and safety is gone evacuees can return to their normal activities or make suitable alternative arrangements.

The most likely evacuation scenario for the county is a forced evacuation due to a natural disaster such as a wildfire, flood, landslide, earthquake, or volcanic activity.

Accounting for Vulnerable Populations

Evacuation planning must account for at-risk or special needs groups, including individuals with physical, cognitive, and emotional disabilities, those without access to transportation, as well as plans for feeding the evacuees.

Accounting for Pets and Service Animals

To comply with the *Americans with Disabilities Act* (1990) and the *Pets Evacuation and Transportation Standards Act* (2006), accommodations need to be made for the evacuation of service animals and household pets, during and following an emergency

event. Ensuring the evacuation, transportation, care, and sheltering of animals is extremely important.

Many people will refuse to evacuate their homes if they cannot take their pets with them. It is estimated that 25 percent of pet owners will refuse to evacuate without their animals.

Furthermore, about 30-50 percent of pet owners will accidentally leave pets behind, and approximately 50-70 percent of individuals who leave animals behind will attempt to re-enter an evacuated area to rescue their animals.

Pets left behind in the evacuation area may pose a danger to first responders. It is essential that evacuation plans address pet evacuation and sheltering procedures to protect both people and animals during an emergency.

Livestock Pass Program
Because of the size of their operations and the fact that many ranches run on a variety of leased and owned land that may or may not be contiguous, evacuating livestock from commercial ranching operations may not be possible during a disaster. Sheltering in place may be the best and safest alternative. Access to disaster areas by ranch personnel is critical to livestock welfare, firefighter safety, and public safety.

In coordination with local agencies, the *Siskiyou County University of California Cooperative Extension* (UCCE) and the *Siskiyou County Agricultural Department* have established a livestock pass program, through the issuance of a *Livestock Access Pass*, which may permit commercial livestock operators to gain entrance to evacuation zones or other restricted areas to care for livestock during a disaster.

The *Livestock Pass* is a permit issued by the *Siskiyou County Agricultural Commissioner* to a Commercial Livestock Operator, upon submission and approval of an application for registration,

which must be presented to law enforcement, fire personnel, or other emergency personnel at the point of entry in order to gain entrance to an evacuation zone, or other restricted area, for the purpose of providing feed, water, medical treatment, and other care to livestock, subject to the discretion of emergency personnel.

Livestock Passes are issued to approved commercial livestock operators before a disaster strikes. The Livestock Pass must be renewed annually. Each year, a Commercial Livestock Operator is required to participate in a 1-hour continuing education class prior to pass renewal.

Conducting Evacuations

With advanced warning, evacuation can be effective in reducing injury and loss of life. Evacuation routes should be developed with the intent of directing traffic toward the nearest highway. Due to vehicle carrying capacity, highways are logical routes by which to move people away from danger. Most evacuees will use their own vehicle. Evacuation assistance should instead focus on individuals with disabilities or access and functional needs, and individuals without a vehicle.

Although most primary roads are of sufficient width to allow for passage of emergency vehicles and evacuating residents, many of the secondary roads within the county are narrow or may have few if any ingress and egress options. This makes it exceedingly difficult for engines, tankers, and other firefighting equipment to enter the hazard area during the time that residents are supposed to be evacuating.

Known or expected evacuation routes should be regularly maintained to ensure availability during an emergency event.

Evacuation Route Analysis

During an evacuation, the routes utilized will depend on the type, location, and extent of the emergency. While it is impossible to identify a set of evacuation routes which will apply to all situations, it is expected that the existing county road system will be the most suitable option for carrying out mass evacuations.

Six major highways run through the county and are the primary evacuation routes for the community.

- Interstate 5
- Highway 3
- Highway 89
- Highway 96
- Highway 97
- Highway 161

Of these six major traffic corridors, *Interstate 5*, *Highway 89*, and *Highway 97* are the only major transportation routes in and out of the county.

Additional Information Available

In compliance with *Govt. Code §65302.15* (Assembly Bill 747), the Safety Element identifies evacuation routes and locations under a range of emergency scenarios. The listed anticipated evacuation routes and designated shelter locations for the communities below are applicable to all emergency scenarios likely to be encountered.

To review anticipated evacuation routes and safe locations for the following communities go to **Appendix G —— Page 161**.

- Callahan
- Dorris
- Dunsmuir
- North Dunsmuir
- Etna
- Fort Jones
- Gazelle
- Greenview
- Grenada
- Happy Camp
- Hilt
- Hornbrook
- Lake Shastina
- Macdoel
- McCloud
- Montague
- Mount Shasta
- Quartz Valley
- Tulelake
- Weed
- South Weed
- Yreka

To review known residential areas with only one evacuation route please visit **Appendix H —— Page 181.**

Chapter 10,
Goals, Policies, and Actions

The Fire Hazard

GOAL #1	PROTECTION FROM THE FIRE HAZARD.

Policy 1.1 **Structure Fires.** Continue, enhance, or implement programs that seek to reduce the risk of structure fires.

Policy 1.2 **Vegetation and Forest Management.**
Continue to recommend that building owners in high-risk areas maintain defensible space and implement fire prevention measures. Build partnerships with and consult indigenous groups on traditional burning and other fire suppression techniques.

Policy 1.3 **Water Infrastructure.**
Work with local agencies to plan for the ongoing maintenance and long-term integrity of planned and existing firefighting water supply infrastructure, including peak load water supply.

Policy 1.4 **New Developments in Fire Hazard Severity Zones.**
Promote development in areas with existing adequate road networks, evacuation routes, and water infrastructure and encourage the following actions, as applicable:

- Assessing site specific characteristics such as topography, slope, vegetation type, and wind patterns, during the development process.

- Determining local fire protection coverage and capacity.

- Locating and designing development to avoid high fire risk areas if feasible.

- Maintaining defensible space around structures as recommended by CAL FIRE.

- Using fire resistant building materials and design features, such as visible signage, consistent with the most recent California Fire Code and Building Code as adopted and amended.

- Using fire resistant native plant species in landscaping.

- Requiring street improvements to comply with minimum fire road access standards.

- Allowing new residential development in areas with only one evacuation route, if a development is able to provide additional connections to mitigate the risk.

Policy 1.5   **Financial Assistance.**
Encourage programs to provide financial assistance for defensible space maintenance, home hardening, and situation specific evacuation training.

Policy 1.6   **Agency Coordination.**
Participate in mutual aid agreements with local jurisdictions and other agencies to respond to wildfires.

Policy 1.7   **Protect Against Wildfire Smoke.**
Improve access to better indoor air quality by identifying additional clean air centers in populated areas.

Policy 1.8   **Location of Essential Public Facilities.**
Require new essential public facilities be located outside high fire risk areas, such as VHFHSZs, when feasible.

The Flood Hazard

GOAL #2	PROTECTION FROM THE FLOOD HAZARD.

Policy 2.1   **Minimize Storm Induced Flooding.**
Continue or develop county programs that seek to minimize storm induced flooding.

Policy 2.2   **Compliance with the National Flood Insurance Program.** Ensure compliance with the National Flood Insurance Program (NFIP).

Geologic & Seismic Hazards

GOAL #3 **PROTECT LIFE AND PROPERTY FROM THE DANGERS OF GEOLOGIC & SEISMIC HAZARDS.**

Policy 3.1 **Seismic Hazards.** Enforce regulations and programs to reduce geologic and seismic hazard vulnerability.

Policy 3.2 **Development in Hazardous Areas.** Minimize risk by limiting development in areas subject to known geologic & seismic hazards.

Hazardous Materials

GOAL #4 **MINIMIZE IMPACTS RELATED TO THE USE, STORAGE, MANUFACTURE, AND TRANSPORT OF HAZARDOUS MATERIALS.**

Policy 4.1 **Hazardous Materials Inspections.** Continue to conduct required inspections of facilities that produce or store hazardous materials, gas, natural gas, or other fuels.

Policy 4.2 **Hazardous Materials Incidents.** Seek to prevent hazardous materials incidents and increase the county's ability to respond to incidents.

Wildlife Hazards

GOAL #5 **MINIMIZE THE RISK POSED BY WILDLIFE HAZARDS.**

Policy 5.1 **Limiting Disease Transmission.** Recommend procedures to limit disease transmission to include containment and proper disposal of dead animals.

Policy 5.2 **Limiting Wildlife Predator Hazards.** Recommend procedures to minimize wildlife predator hazards.

Adaptation & Community Resilience

GOAL #6 **MINIMIZE THE EFFECTS OF INCREASING TEMPERATURES BY IMPLEMENTING ADAPTATION AND RESILIENCY STRATEGIES.**

Policy 6.1 **Adaptation.** Consider implementing county specific adaptation strategies to deal with increasing temperatures.

Policy 6.2 **Community Resilience.** Ensure that the needs of all population segments are considered in the hazard mitigation process.

Emergency Management

GOAL #7 — MAINTAIN AN EMERGENCY PREPAREDNESS AND RESPONSE SYSTEM THAT KEEPS EVERYONE INFORMED, CONNECTED, AND SAFE, BEFORE, DURING, AND AFTER AN EMERGENCY.

Policy 7.1 **Interagency Coordination.** Continue to encourage and support interagency coordination.

Policy 7.2 **Designated Shelter Sites.** Identify public facilities such as libraries, senior centers, fairgrounds, and other locations for possible use as designated shelter sites.

Policy 7.3 **Local Hazard Mitigation Plan (LHMP).**
Update the LHMP prior to the 5 year expiration period. Incorporate the LHMP into the Safety Element.

Evacuation Planning

GOAL #8 — IDENTIFY RESIDENTIAL AREAS WITH ONLY ONE EVACUATION ROUTE.

Policy 8.1 **Evacuation Routes.** Identity residential areas with only one evacuation route for possible future improvement.

COUNTY OF SISKIYOU
General Plan | 2025 Safety Element

Siskiyou County Planning Department
James Phelps, Bernadette Cizin, Hailey Lang, Rick Dean

Siskiyou County Board of Supervisors
Siskiyou County Planning Commission
Department of Conservation, California Geological Survey
California State Board of Forestry and Fire Protection (CAL FIRE)

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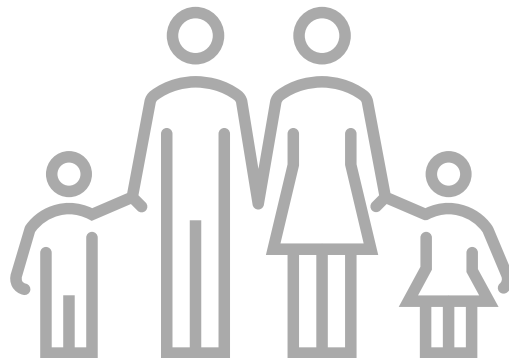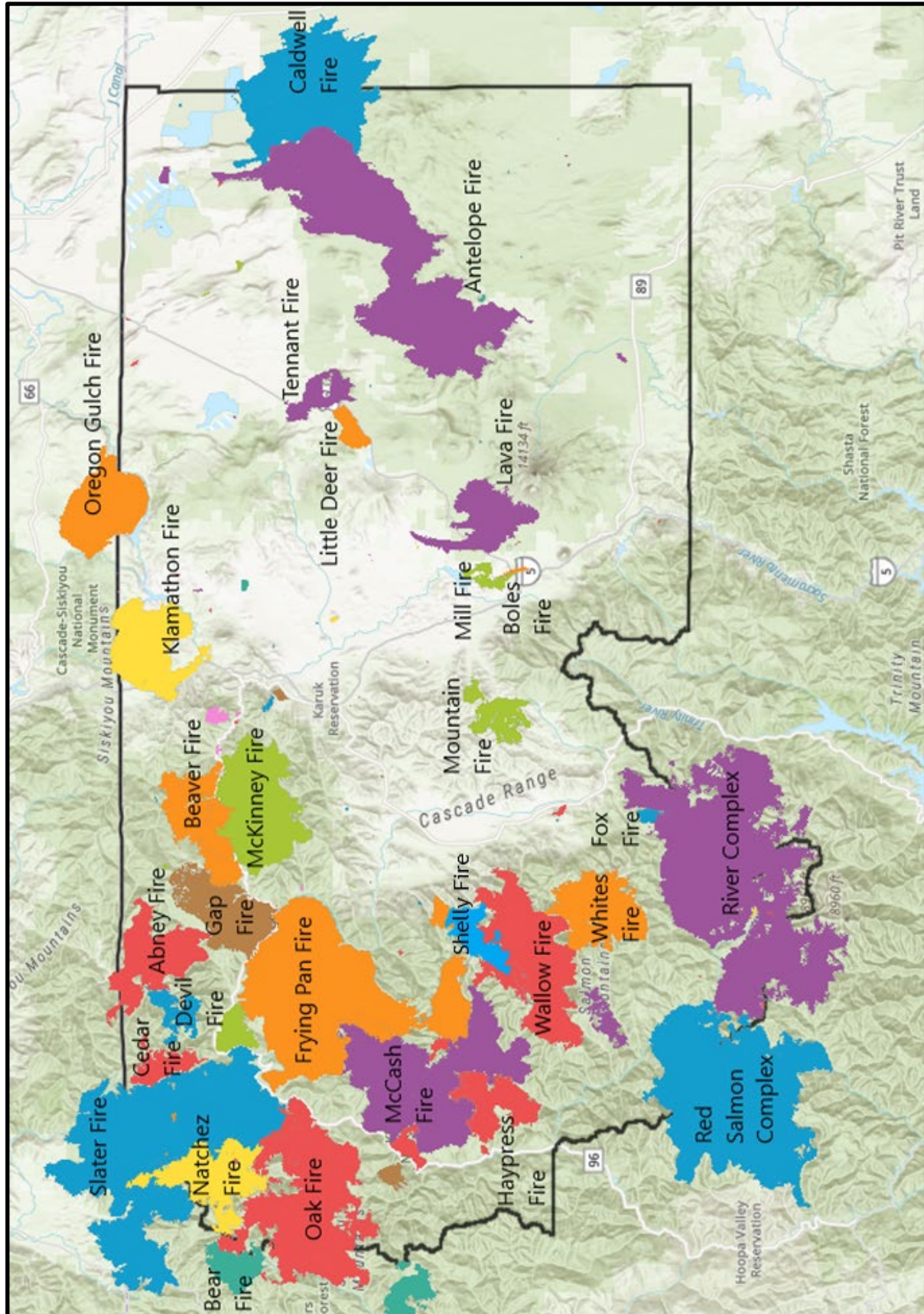
Largest Wildfires in Siskiyou County from 2006 – 2024

Year	Name	Start Date	Acreage
2022	McKinney Fire	July 29	60,138
2021	*River Complex*	*July 30*	*199,359*
2021	Antelope Fire	August 1	145,632
2021	McCash Fire	August 18	94,962
2020	Slater Fire	September 8	157,429
2020	Red Salmon Complex	July 27	143,835
2020	Caldwell Fire	July 24	83,261
2017	Klamath River Complex	August 10	91,125
2017	Salmon-August Complex	August 11	63,785
2017	Eclipse Complex	August 15	78,698
2014	Happy Camp Complex	August 11	134,056
2008	Klamath River Complex	June 21	192,038

2024 Wildfires in Siskiyou County – 16,240 Acres

Fire Name	Cause	Acres	Date
Hambone	Unknown	15	10/6/2024
Harry	Unknown	10	7/23/2024
Donomore	Unknown	35	7/16/2024
Paradise	Unknown	101	7/15/2024
Dewey	Unknown	109	7/14/2024
Bogus	Unknown	411	7/8/2024
Shelly	*Unknown*	*15,520*	*7/3/2024*
Cod	Unknown	28	6/10/2024
Springs	Unknown	11	6/7/2024

2023 Wildfires in Siskiyou County – 22,563 Acres

Fire Name	Cause	Acres	Date
Happy Camp Complex	*Unknown*	*21,725*	*8/16/2023*
August Complex	Unknown	838	8/15/2023

2022 Wildfires in Siskiyou County – 86,110 Acres

Fire Name	Cause	Acres	Date
97	Unknown	30	8/27/2022
Eliza	Unknown	20	9/8/2022
Coyote	Unknown	297	9/7/2022
Mountain	Unknown	13,440	9/2/2022
Mill	Mill Operations	3,939	9/2/2022
Smokey	Unknown	34	8/4/2022
Meamber	Unknown	63	7/31/2022
Kelsey	Unknown	85	7/30/2022
Shackleford	Unknown	31	7/30/2022
Yeti	Lightning	7,886	7/29/2022
McKinney	*Power Line*	*60,138*	*7/29/2022*
Ridge	Unknown	12	6/26/2022
Whitlow	Unknown	10	3/25/2022
Gulch	Unknown	113	3/12/2022
Evergreen	Unknown	12	3/12/2022

2021 Wildfires in Siskiyou County – 478,345 Acres

Fire Name	Cause	Acres	Date
McCash	Lightning	94,962	8/18/2021
Hambone	Unknown	55	8/6/2021
Antelope	Lightning	145,632	8/1/2021
River Complex	*Lightning*	*199,359*	*7/30/2021*
Bradley	Unknown	357	7/11/2021
Tennant	Unknown	10,580	6/28/2021
Beswick	Unknown	118	6/28/2021
Lava	Lightning	26,409	6/24/2021
Refuge	Unknown	873	3/27/2021

2020 Wildfires in Siskiyou County – 396,237 Acres

Fire Name	Cause	Acres	Date
Fox	Campfire	2,188	9/16/2020
Shackleford	Unknown	50	9/11/2020
Schoolhouse	Unknown	45	9/9/2020
Slater	*Power Line*	*157,429*	*9/8/2020*
Devil	Unknown	8,871	9/8/2020

Fire Name	Cause	Acres	Date
Red Salmon Complex	Lightning	143,835	7/27/2020
Caldwell	Lightning	83,261	7/24/2020
Badger	Unknown	557	7/18/2020

2019 Wildfires in Siskiyou County – 2,557 Acres

Fire Name	Cause	Acres	Date
Bar	Unknown	91	9/15/2019
Lime	*Unknown*	*1,872*	*9/7/2019*
Kidder 2	Unknown	227	9/7/2019
Duzel	Unknown	15	9/7/2019
Tree	Unknown	83	7/27/2019
Community	Unknown	35	7/27/2019
Lumgrey	Unknown	207	6/17/2019
Iron Gate	Unknown	10	6/16/2019
Rocky	Unknown	17	6/14/2019

2018 Wildfires in Siskiyou County – 76,862 Acres

Fire Name	Cause	Acres	Date
Iron Gate	Unknown	15	10/10/2018
Natchez	*Lightning*	*38,134*	*7/15/2018*
Steamboat	Unknown	224	7/15/2018
Klamathon	Debris Burning	38,008	7/5/2018
Petersburg	Unknown	215	7/1/2018
Cherry	Unknown	63	6/27/2018
Meamber	Unknown	12	6/4/2018
Martin	Unknown	37	6/3/2018
Ager	Unknown	27	5/19/2018
Shastina	Unknown	127	5/9/2018

2017 Wildfires in Siskiyou County – 301,521 Acres

Fire Name	Cause	Acres	Date
Owens	Unknown	55	8/29/2017
Bradley	Unknown	54	8/28/2017
Eclipse Complex *	Lightning	78,698	8/15/2017
Miller Complex *	Lightning	39,715	8/14/2017
Ward	Unknown	41	8/13/2017

Fire Name	Cause	Acres	Date
Salmon-August Complex *	Lightning	63,785	8/11/2017
*Klamath River Complex ***	*Lightning*	*91,125*	*8/10/2017*
Hill	Unknown	155	7/29/2017
Orleans	Lightning	27,276	7/26/2017
Fay	Unknown	496	7/5/2017
King	Unknown	19	6/26/2017
Bogus	Unknown	56	6/18/2017
Whitepine	Unknown	46	6/6/2017

- The Eclipse Complex includes the Young, Clear, and Cedar fires.
- The Miller Complex includes the Abney, Knox, and Burnt Peak fires.
- The Salmon-August Complex includes the Wallow fire.
- The Klamath River Complex includes the Oak Fire.

2016 Wildfires in Siskiyou County – 37,574 Acres

Fire Name	Cause	Acres	Date
Moffett	Unknown	32	9/12/2016
Gap	*Arson*	*33,867*	*8/26/2016*
Grade	Unknown	710	8/24/2016
Table/Bailey	Unknown	49	7/19/2016
Pony	Unknown	2,860	6/7/2016
Mill	Unknown	56	5/19/2016

2015 Wildfires in Siskiyou County – 12,148 Acres

Fire Name	Cause	Acres	Date
Military	Unknown	58	10/10/2015
Prairie	Unknown	69	8/20/2015
Bear	*Lightning*	*11,616*	*7/30/2015*
Dorris	Unknown	24	7/21/2015
Cooley	Unknown	181	7/13/2015
Stephens	Unknown	200	2/24/2015

2014 Wildfires in Siskiyou County – 257,915 Acres

Fire Name	Cause	Acres	Date
Boles	Arson	516	9/14/2014
Oregon Gulch	Lightning	35,302	8/12/2014
Happy Camp Complex *	*Lightning*	*134,056*	*8/11/2014*
Little Deer	Lightning	5,503	8/11/2014
July Complex *	Lightning	50,042	8/2/2014
Beaver	Lightning	32,496	7/30/2014

- The Happy Camp Complex includes the Frying Pan fire.
- The July Complex includes the Whites fire.

2013 Wildfires in Siskiyou County – 14,844 Acres

Fire Name	Cause	Acres	Date
Cottonwood	Unknown	50	8/15/2013
Salmon River Complex *	*Unknown*	*14,754*	*7/31/2013*
Trout	Unknown	40	7/13/2013

- The Salmon River Complex includes the Butler, Boulder, and Shelly fires.

2012 Wildfires in Siskiyou County – 24,163 Acres

Fire Name	Cause	Acres	Date
Fort Complex *	Unknown	23,653	8/5/2012
Dillon	Unknown	318	8/3/2012
Oak	Unknown	192	6/28/2012

- The Fort Complex includes Goff, Lick and Hello fires.

2011 Wildfires in Siskiyou County – 120 Acres

Fire Name	Cause	Acres	Date
Hawkinsville	*Unknown*	*120*	*9/11/2011*

2010 Wildfires in Siskiyou County – 371 Acres

Fire Name	Cause	Acres	Date
Dutch	*Unknown*	*371*	*7/31/2011*

2009 Wildfires in Siskiyou County – 4,589 Acres

Fire Name	Cause	Acres	Date
Black	Unknown	103	9/2/2009
Red Rock	Unknown	1,364	8/21/2009
Tennant	*Unknown*	*3,225*	*7/19/2009*

2008 Wildfires in Siskiyou County – 192,038 Acres

Fire Name	Cause	Acres	Date
*Klamath River Complex ***	*Lightning*	*192,038*	*6/21/2008*

- The Klamath River Complex includes the Blue 2, Bear Wallow, Panther, and Siskiyou Complex fires.

2007 Wildfires in Siskiyou County – 20,685 Acres

Fire Name	Cause	Acres	Date
Cherry	Unknown	95	8/29/2007
Elk Complex	*Unknown*	*17,684*	*7/10/2007*
China & Back Complex	Unknown	2,906	7/10/2007

2006 Wildfires in Siskiyou County – 38,321 Acres

Fire Name	Cause	Acres	Date
Lakin	Unknown	450	7/25/2006
Hoy	Unknown	1,283	7/26/2026
*Uncles Complex ***	*Lightning*	*36,588*	*7/23/2006*

- The Uncles Complex includes the Titus and Happy Camp fires.

SISKIYOU COUNTY
Local Responsibility Area
Fire Hazard Severity Zones

As Identified by the State Fire Marshal

January 22, 2025
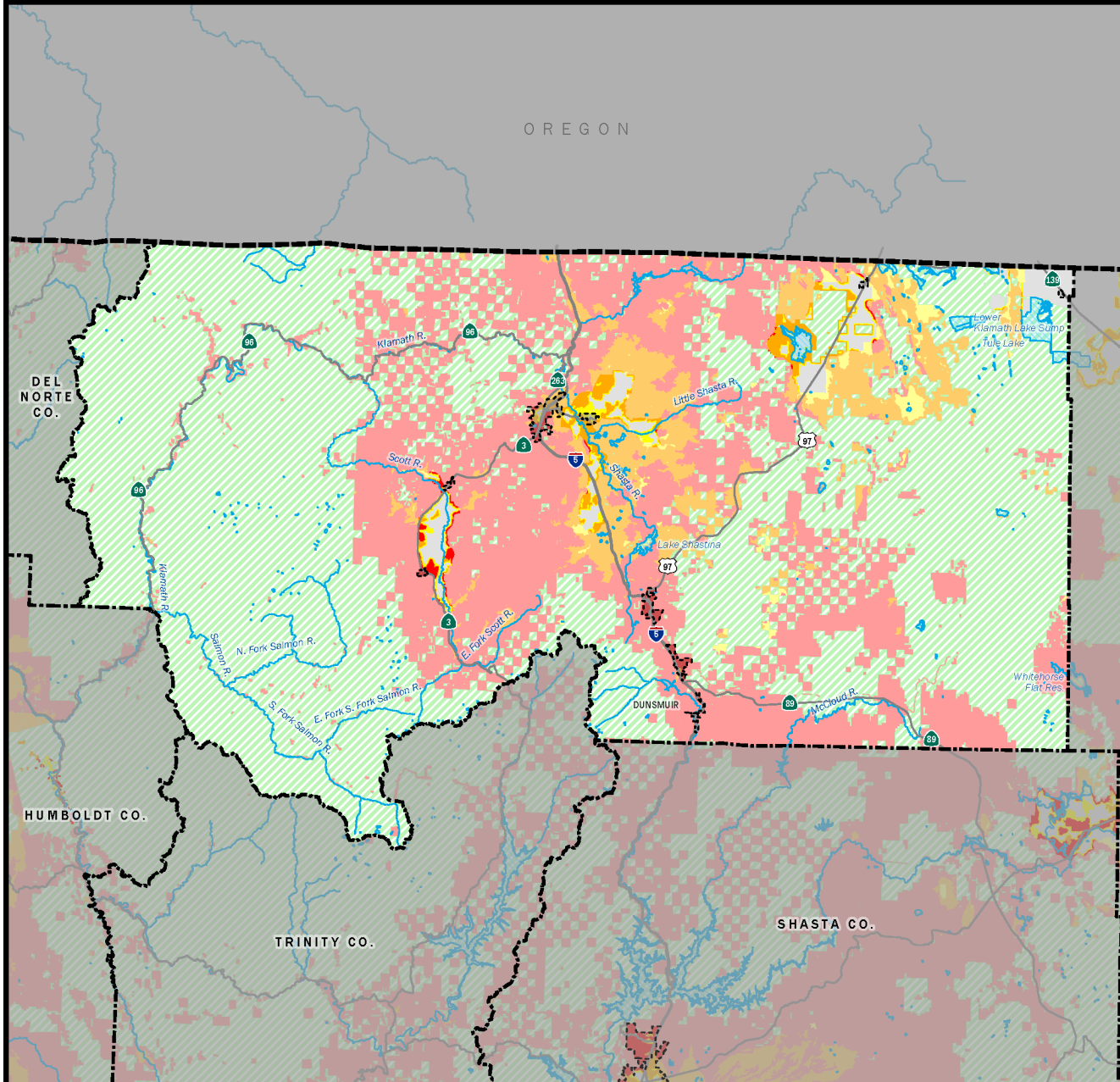
Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

- Very High
- High
- Moderate

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

- Very High
- High
- Moderate

Mi 0   10   20   30   40
Km 0 10 20 30 40 50 60

Projection: NAD 83 California Teale Albers
Scale: 1:797,000 at 11" x 17"

- Incorporated City
- Unzoned LRA
- Waterbody
- Federal Responsibility Area (FRA)

CITY OF DORRIS
Local Responsibility Area
Fire Hazard Severity Zones

As Identified by the State Fire Marshal

January 22, 2025

UNINCORPORATED SISKIYOU CO.

E Sly St

N Oregon St
N California St
N Main St
N Pine St
N Railroad Ave
E 1st St

W 2nd St
97
S Butte St
W 3rd St
S Oregon St
S California St
Railroad Ave
Seattle
E 4th St
5th St
Angus Rd

UNINCORPORATED SISKIYOU CO.

Dorris
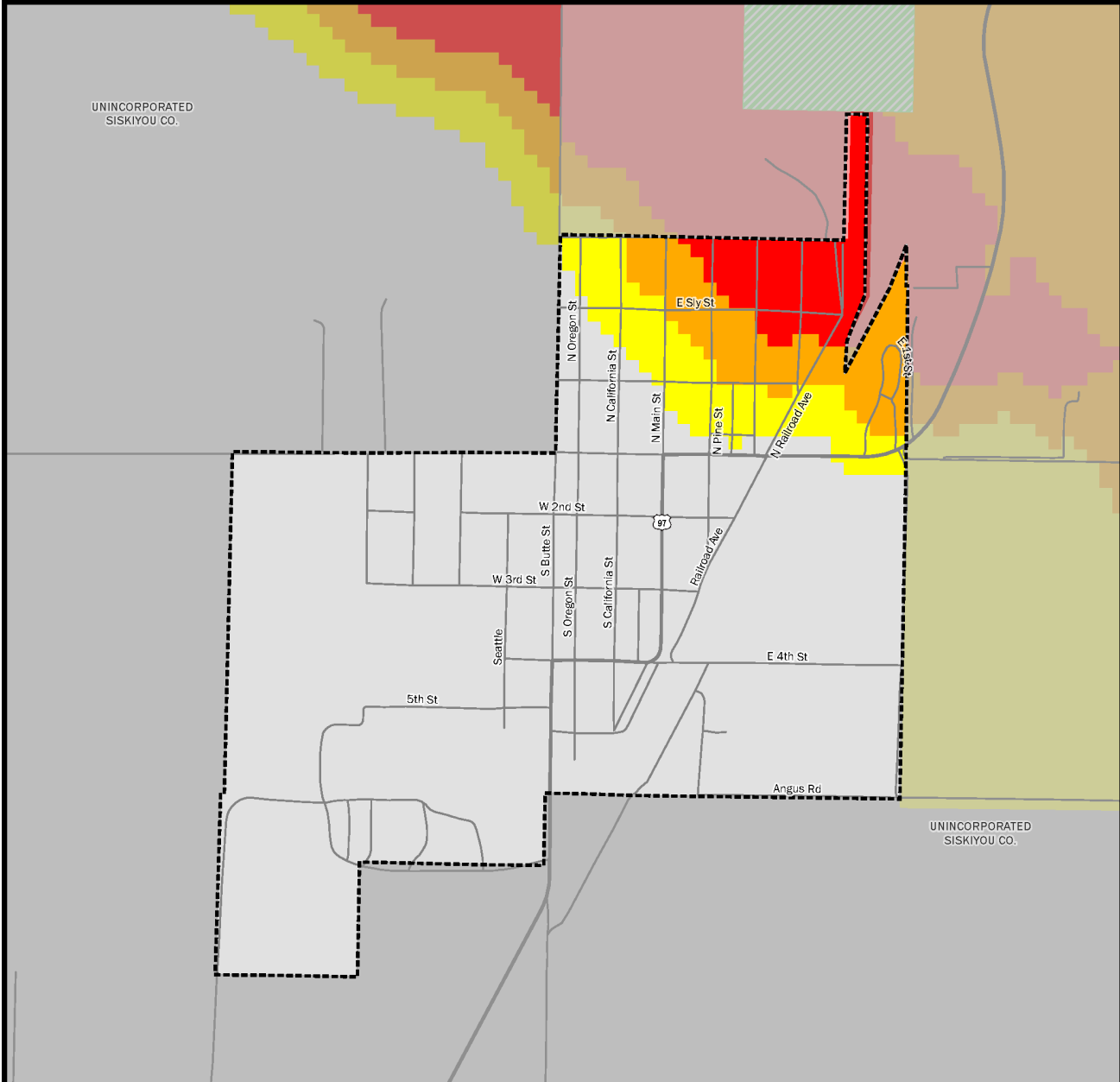
Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

- Very High
- High
- Moderate

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

- Very High
- High
- Moderate

Mi 0   0.2   0.4

Km 0   0.2   0.4   0.6   0.8

Projection: NAD 83 California Teale Albers
Scale: 1:10,000 at 11" x 17"

- Incorporated City
- Federal Responsibility Area (FRA)
- Unzoned LRA

CITY OF DUNSMUIR
Local Responsibility Area
Fire Hazard Severity Zones

As Identified by the
State Fire Marshal

January 22, 2025

UNINCORPORATED
SISKIYOU CO.

UNINCORPORATED
SISKIYOU CO.

Dunsmuir
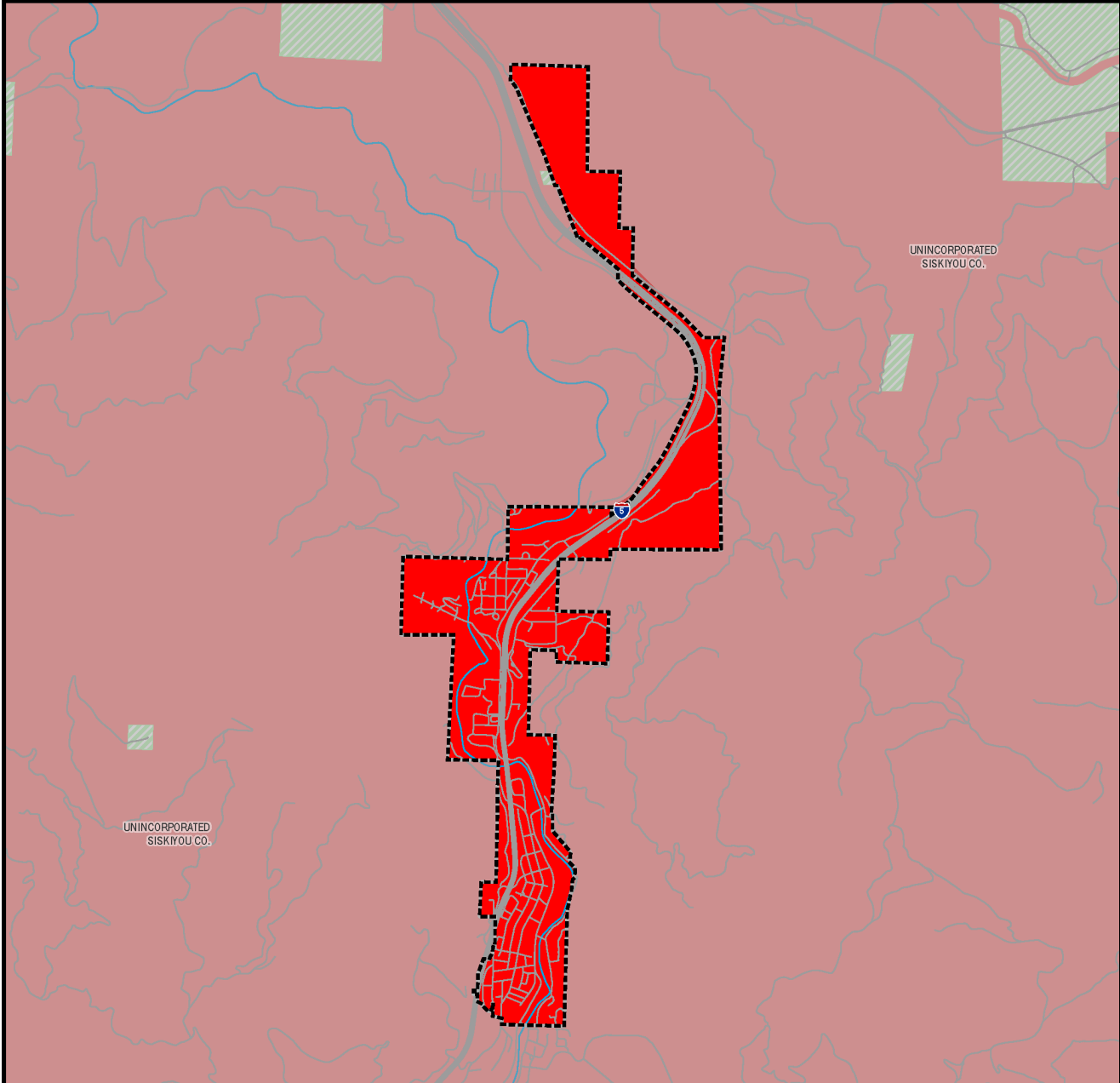
Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

Very High

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

Very High

Mi 0   1

Km 0   1   2

Projection: NAD 83 California Teale Albers
Scale: 1:33,000 at 11" x 17"

Incorporated City

Unzoned LRA

Federal Responsibility
Area (FRA)

CITY OF ETNA
Local Responsibility Area
Fire Hazard Severity Zones

As Identified by the State Fire Marshal

January 22, 2025

UNINCORPORATED SISKIYOU CO.

Commercial St

Howell Ave

Scott St

Collier Way

Diggles St

College St

Bryant St

UNINCORPORATED SISKIYOU CO.

Callahan Way

Wagner Way

Main St

Callahan St

Church St

Cleveland St

Woodland St

Etna
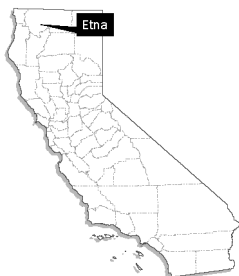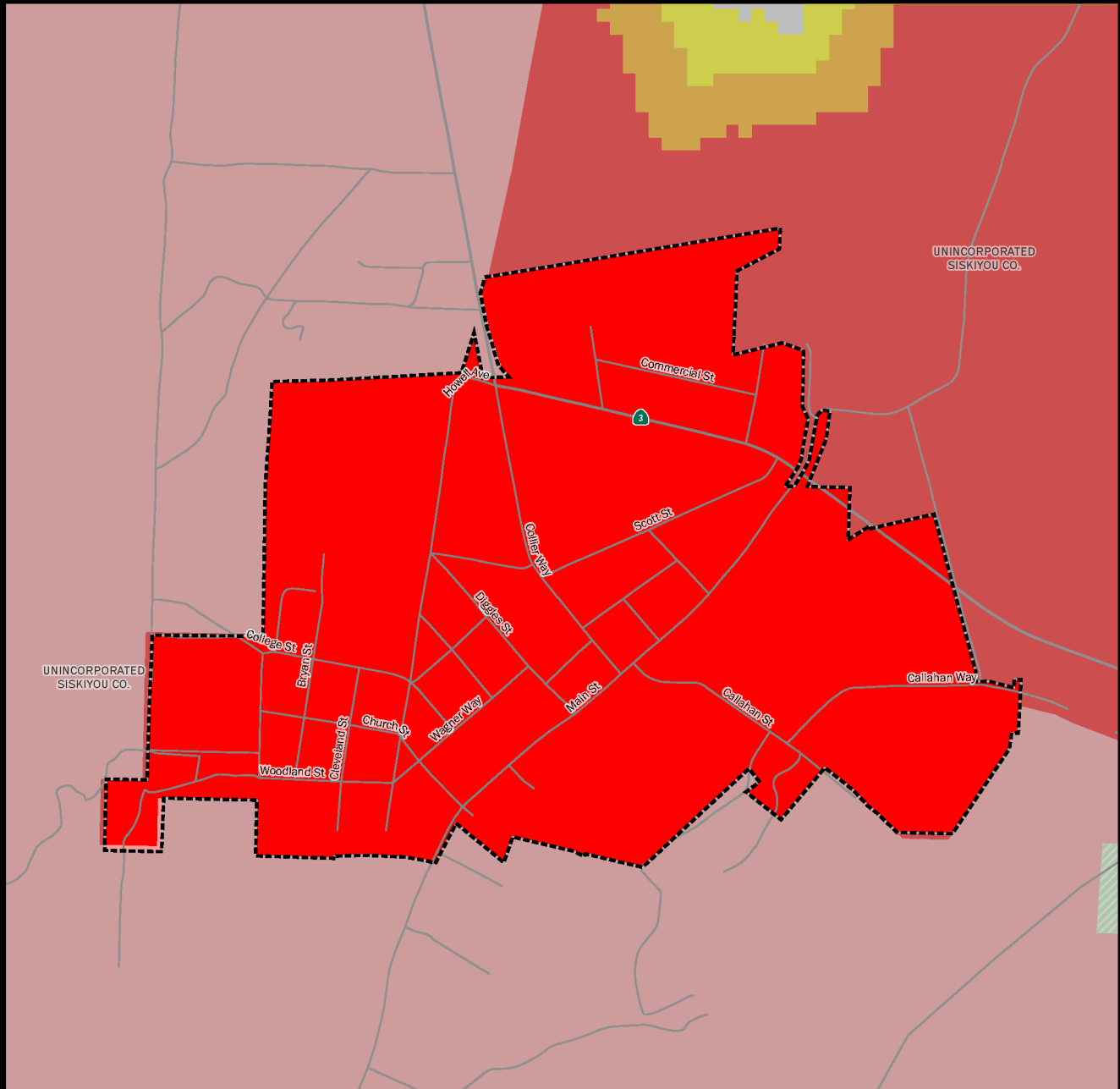
Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

- Very High
- High
- Moderate

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

- Very High

Mi 0   0.2   0.4

Km 0   0.2   0.4   0.6   0.8

Projection: NAD 83 California Teale Albers
Scale: 1:10,000 at 11" x 17"

- Incorporated City
- Federal Responsibility Area (FRA)
- Unzoned LRA

CITY OF FORT JONES
Local Responsibility Area
Fire Hazard Severity Zones

As Identified by the State Fire Marshal

January 22, 2025

UNINCORPORATED SISKIYOU CO.

Marble View Ave

Newton St

Matthews St

Scott River Rd

UNINCORPORATED SISKIYOU CO.

Fort Jones
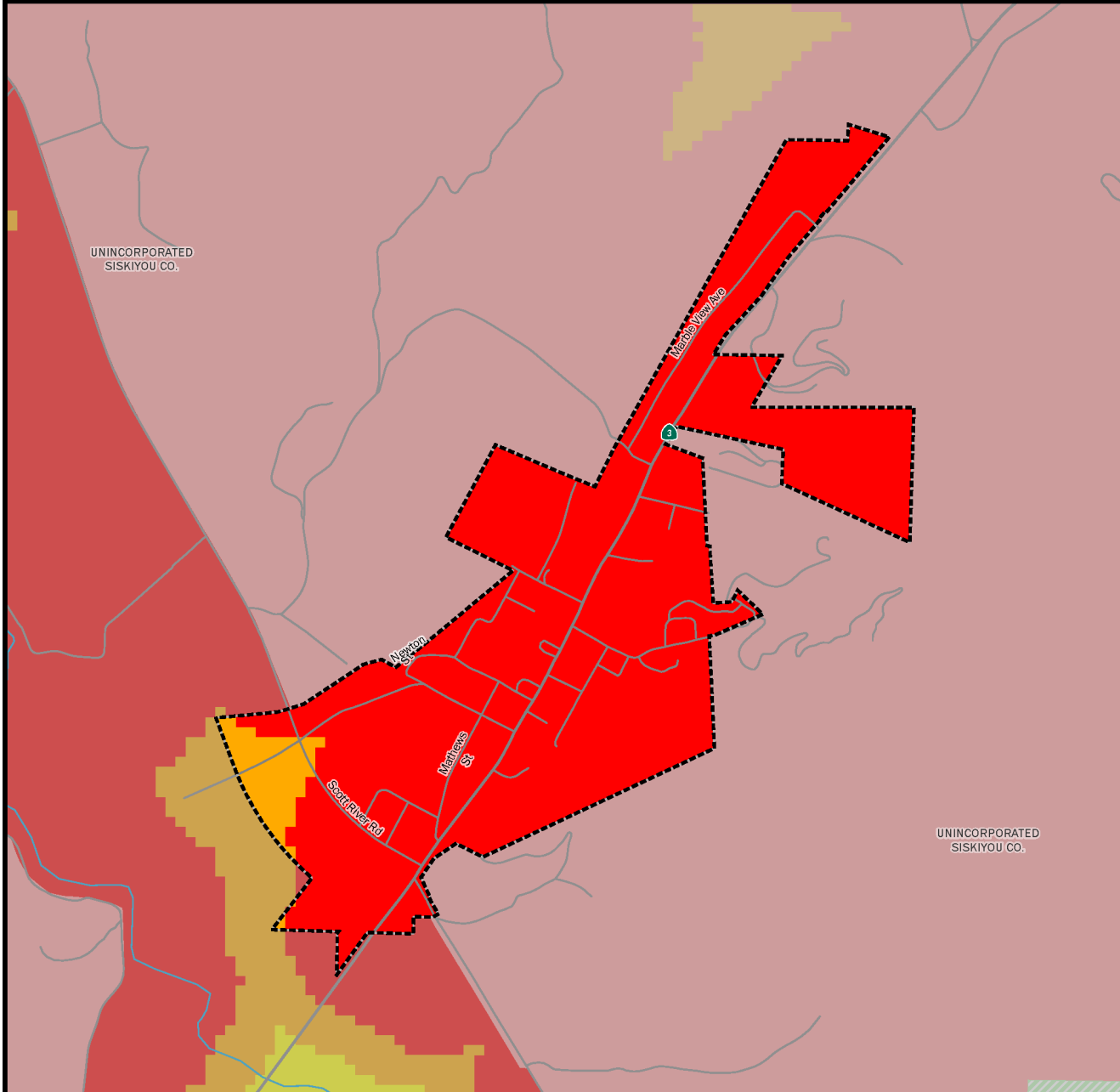
Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

Very High	High	Moderate

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

Very High	High

Mi 0   0.2   0.4   0.6
Km 0   0.2   0.4   0.6   0.8   1

Projection: NAD 83 California Teale Albers
Scale: 1:13,000 at 11" x 17"

Incorporated City   Federal Responsibility Area (FRA)

Unzoned LRA

CITY OF MONTAGUE
Local Responsibility Area
Fire Hazard Severity Zones

As Identified by the State Fire Marshal

January 22, 2025

UNINCORPORATED
SISKIYOU CO.

N 11th St

10th St

N 9th St

Montague Grenada Rd

UNINCORPORATED
SISKIYOU CO.

Montague
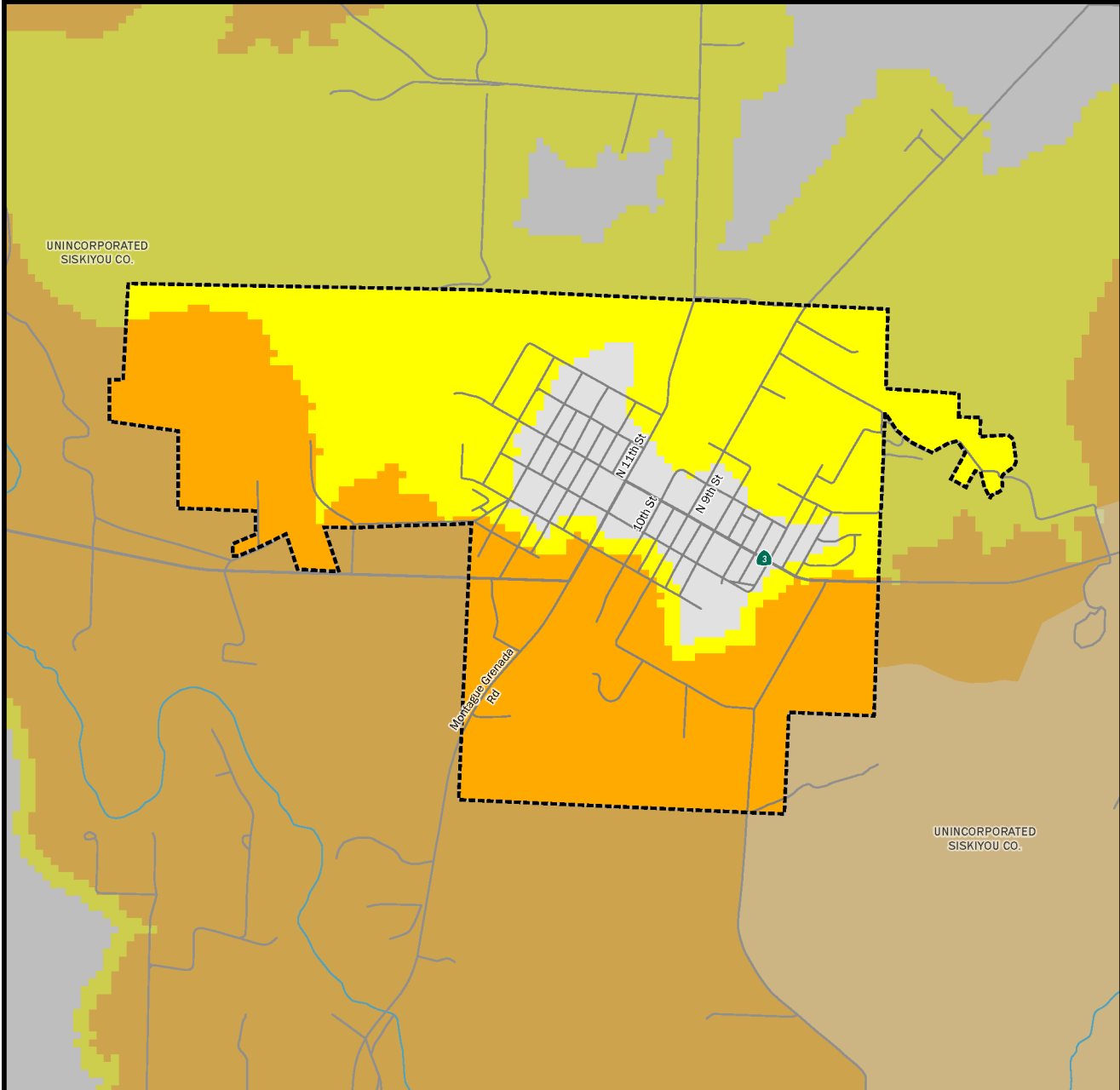
Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

High   Moderate

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

High   Moderate

Mi 0   0.2   0.4   0.6   0.8
Km 0   0.2   0.4   0.6   0.8   1   1.2
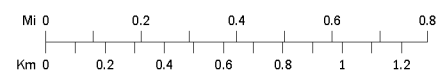
Projection: NAD 83 California Teale Albers
Scale: 1:17,000 at 11" x 17"

Incorporated City

Unzoned LRA

Page 101

CITY OF MOUNT SHASTA
Local Responsibility Area
Fire Hazard Severity Zones

As Identified by the State Fire Marshal

January 22, 2025

UNINCORPORATED SISKIYOU CO.

UNINCORPORATED SISKIYOU CO.

Mount Shasta
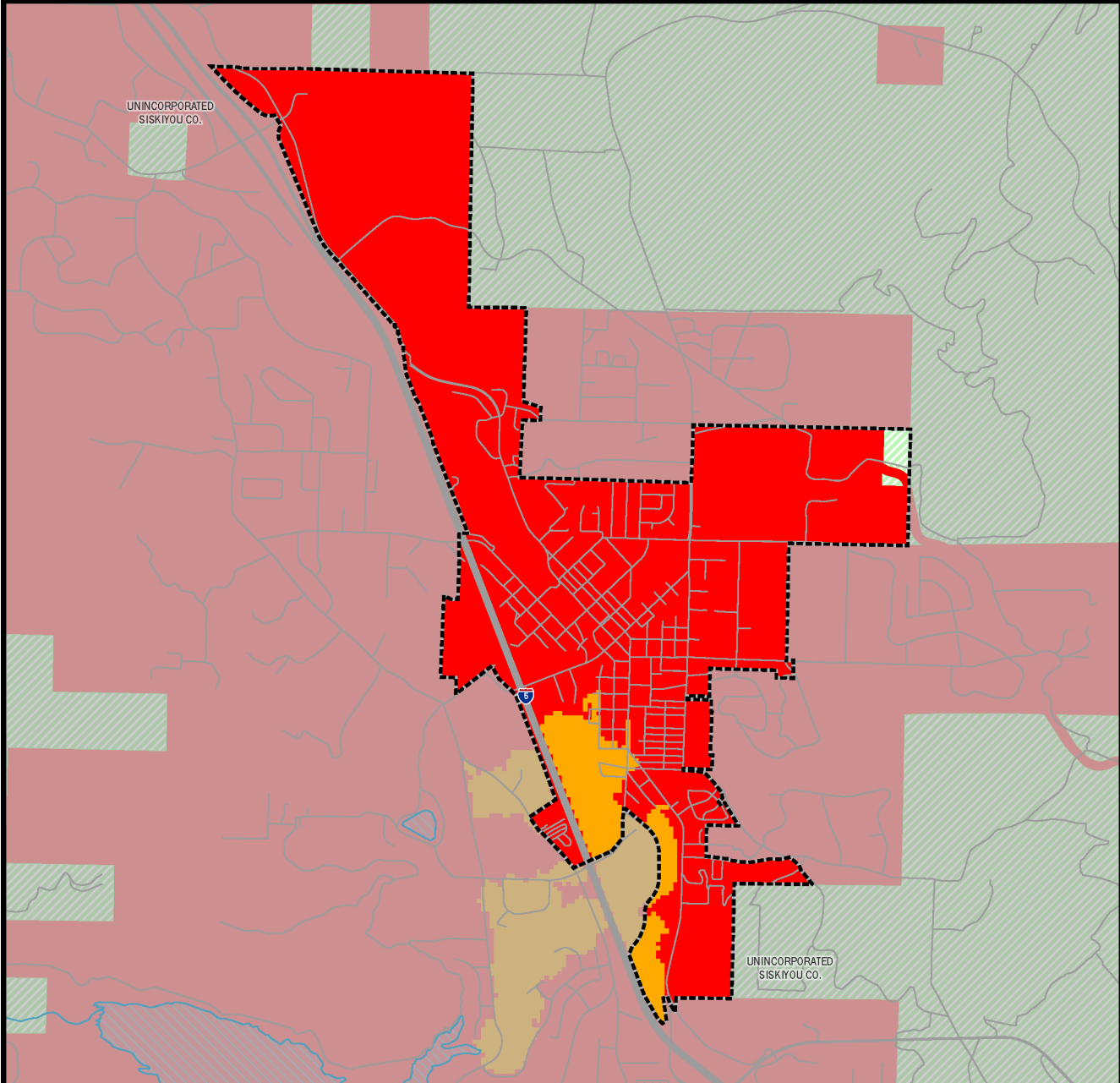
Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

Very High   High

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

Very High   High

Mi 0   1
Km 0   1   2

Projection: NAD 83 California Teale Albers
Scale: 1:30,000 at 11" x 17"

Incorporated City   Waterbody

Unzoned LRA   Federal Responsibility Area (FRA)

CITY OF WEED
Local Responsibility Area Fire Hazard Severity Zones

As Identified by the State Fire Marshal

January 22, 2025

UNINCORPORATED SISKIYOU CO.

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Weed

Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

Very High

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

Very High   High

Mi 0   1

Km 0   1   2

Projection: NAD 83 California Teale Albers
Scale: 1:30,000 at 11" x 17"

Incorporated City   Waterbody
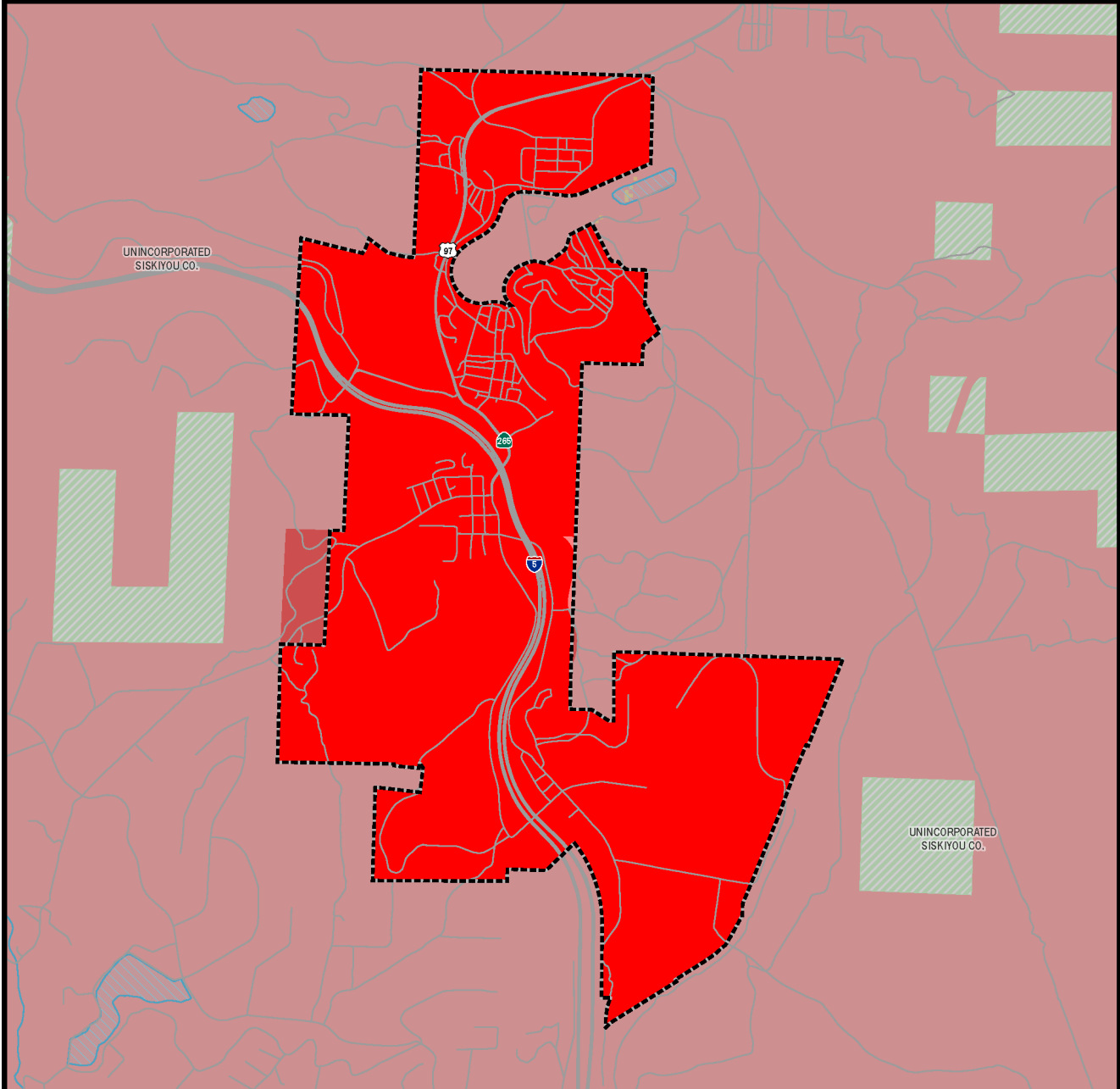
Unzoned LRA   Federal Responsibility Area (FRA)

CITY OF YREKA
Local Responsibility Area
Fire Hazard Severity Zones

As Identified by the State Fire Marshal

January 22, 2025

UNINCORPORATED
SISKIYOU CO.

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SISKIYOU CO.

Yreka

Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

- Very High
- High
- Moderate

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

- Very High
- High
- Moderate

Mi 0   1   2
Km 0   1   2   3
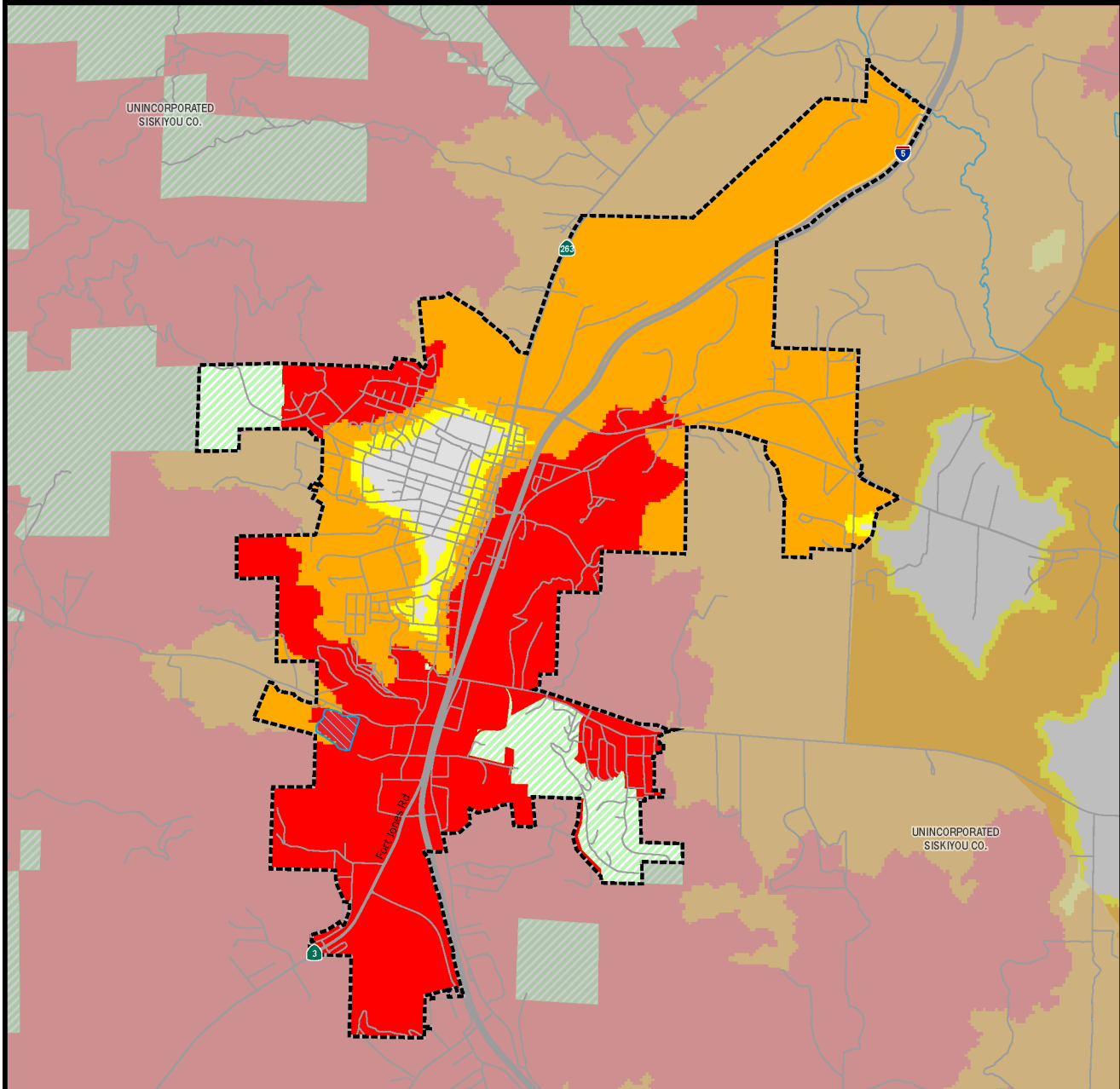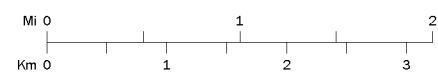
Projection: NAD 83 California Teale Albers
Scale: 1:42,000 at 11" x 17"

- Incorporated City
- Waterbody
- Unzoned LRA
- Federal Responsibility Area (FRA)

Appendix C
Flood Hazard Maps for Local Communities
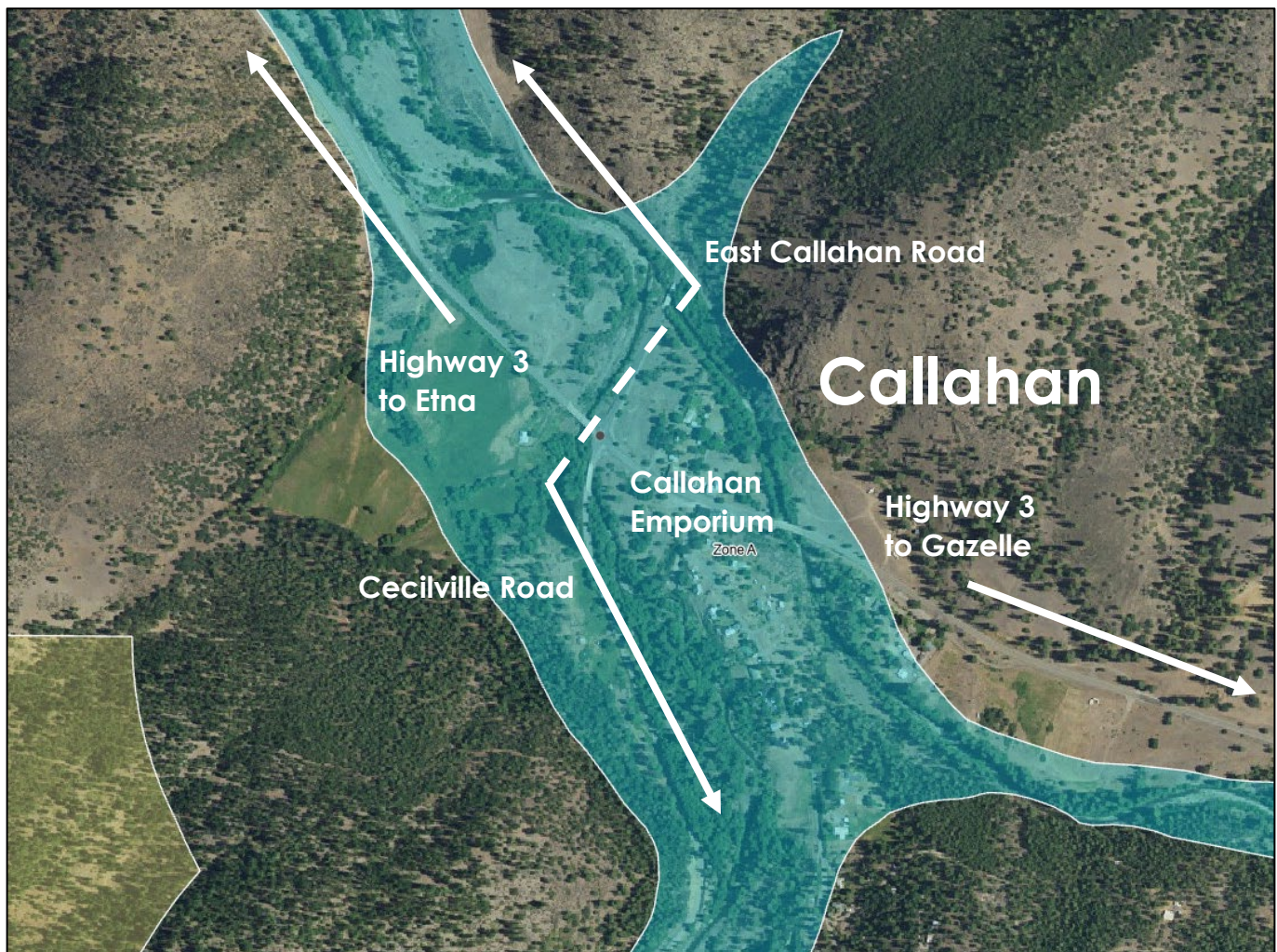
Flood Map – Callahan

The community of Callahan (*Population less than 100*) is located at the intersection of Highway 3 and Cecilville Road, near the south end of Scott Valley, where the south and east fork of the Scott River meet. Callahan's location along the banks of the Scott River places the community within the 100 Year Floodplain. All primary evacuation routes in the Callahan area are in the 100 Year Floodplain.

Flood Hazard Zones

▨	1% Annual Chance Flood Hazard
▨	Regulatory Floodway
◈	Special Floodway
▨	Area of Undetermined Flood Hazard
▨	0.2% Annual Chance Flood Hazard
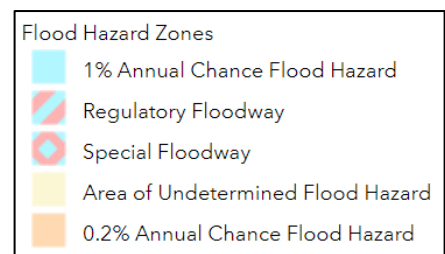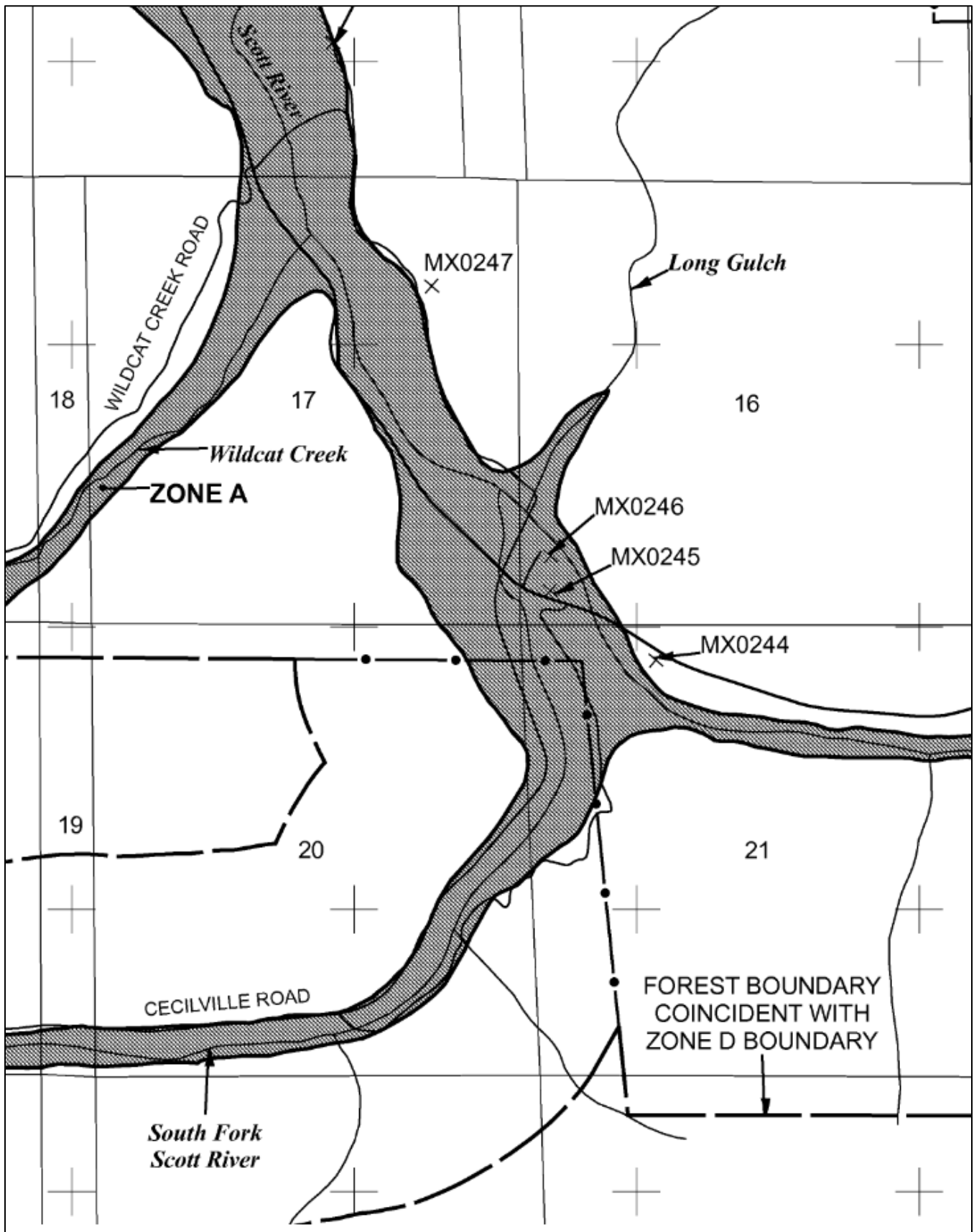
Callahan, California.
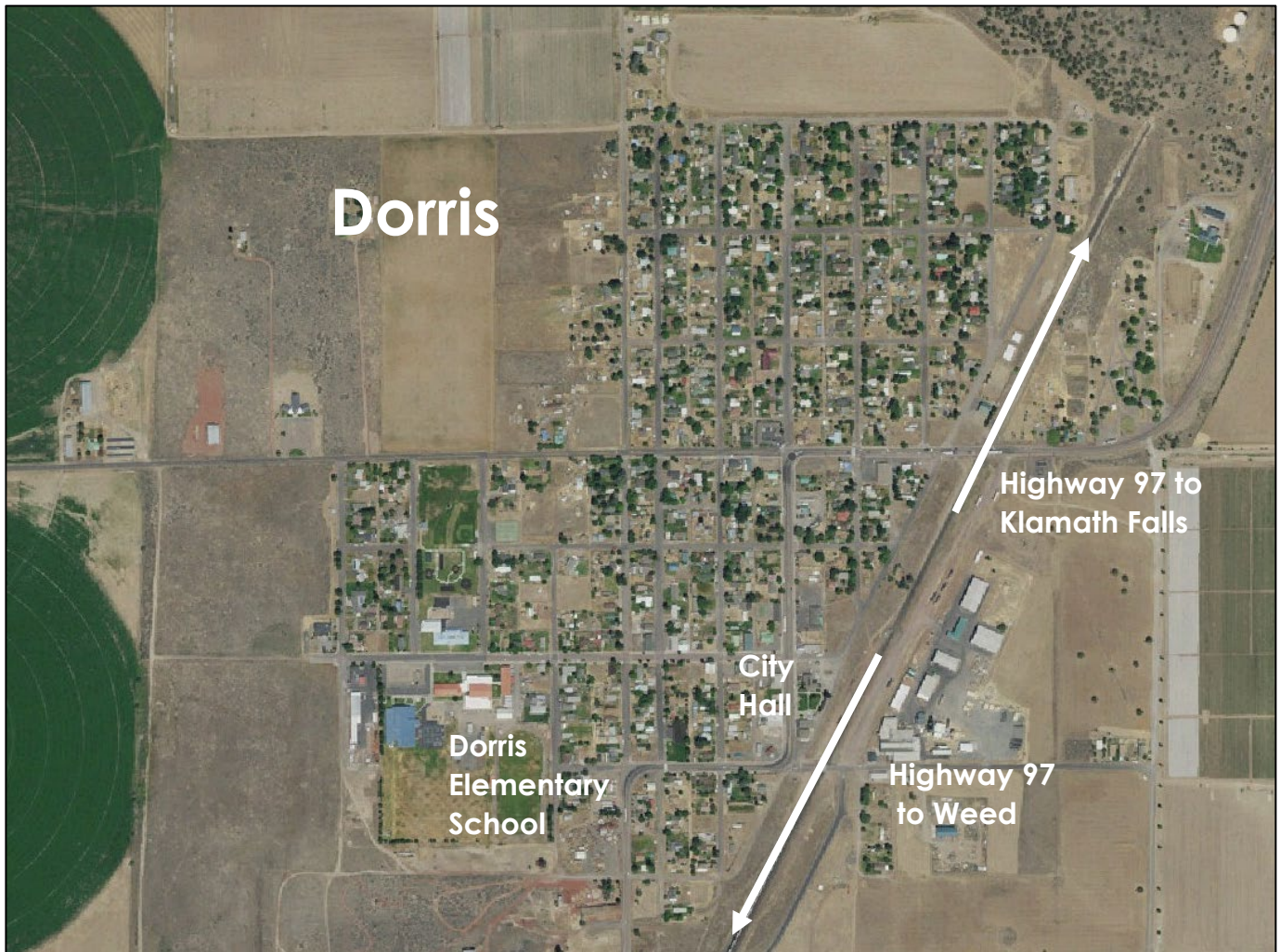
Flood Map – Dorris

The town of Dorris (*Population 822*) is in the northeastern portion of Butte Valley, slightly south of the Oregon border, along Highway 97. The nearest surface water is approximately 2 miles away. No portion of the town is within the 100 Year Floodplain. Minor localized flooding is possible due to ponding or diversion of water onto town streets during a storm event. Dorris has very little flood risk.

Flood Hazard Zones

1% Annual Chance Flood Hazard

Regulatory Floodway

Special Floodway

Area of Undetermined Flood Hazard

0.2% Annual Chance Flood Hazard
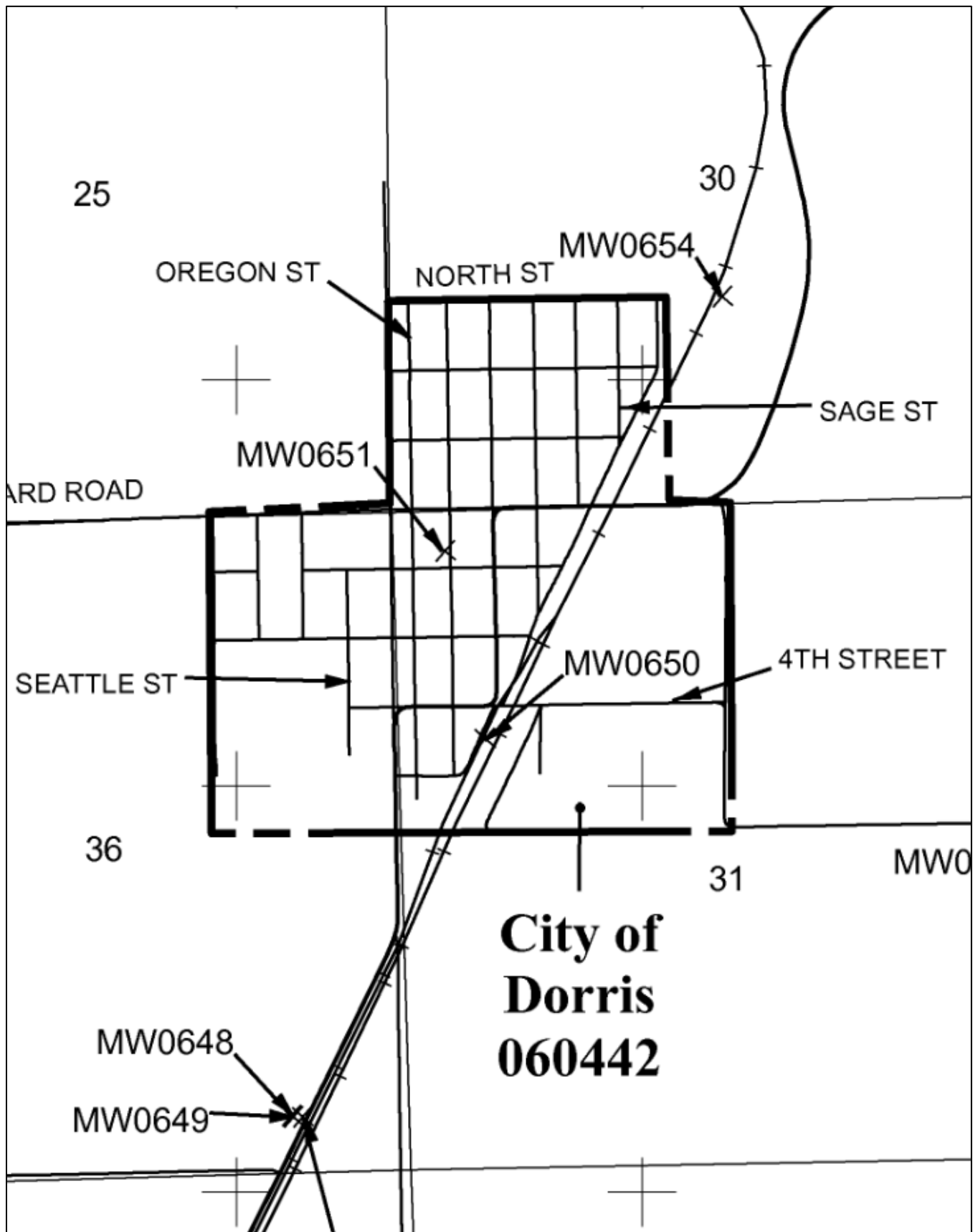
Dorris, California.
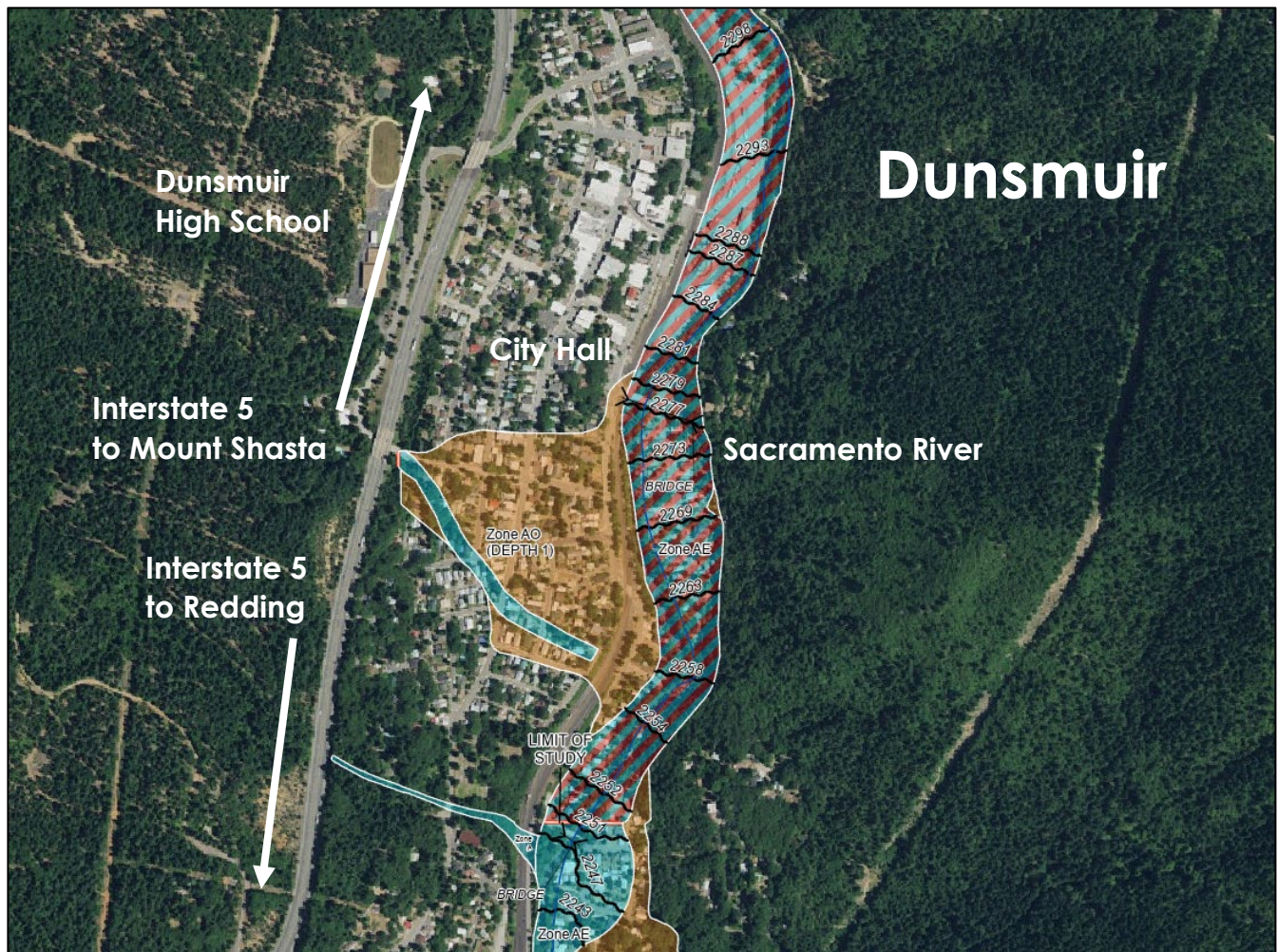
Flood Map – Dunsmuir

The town of Dunsmuir (*Population 1,642*) is located along Interstate 5, near the county's southern border. There is a significant history of flooding in this area. The Sacramento River runs through the middle of town with development on both sides of the river. Several creeks and temporary channels flow through town and feed into the Sacramento River. Large portions of the town are within the 100 Year and 500 Year Floodplain. The town is located downstream from the Box Canyon dam, which is classified as *Extremely High* for downstream hazards. Major flood events in the past resulted in extensive damage to structures located along the Sacramento River.

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
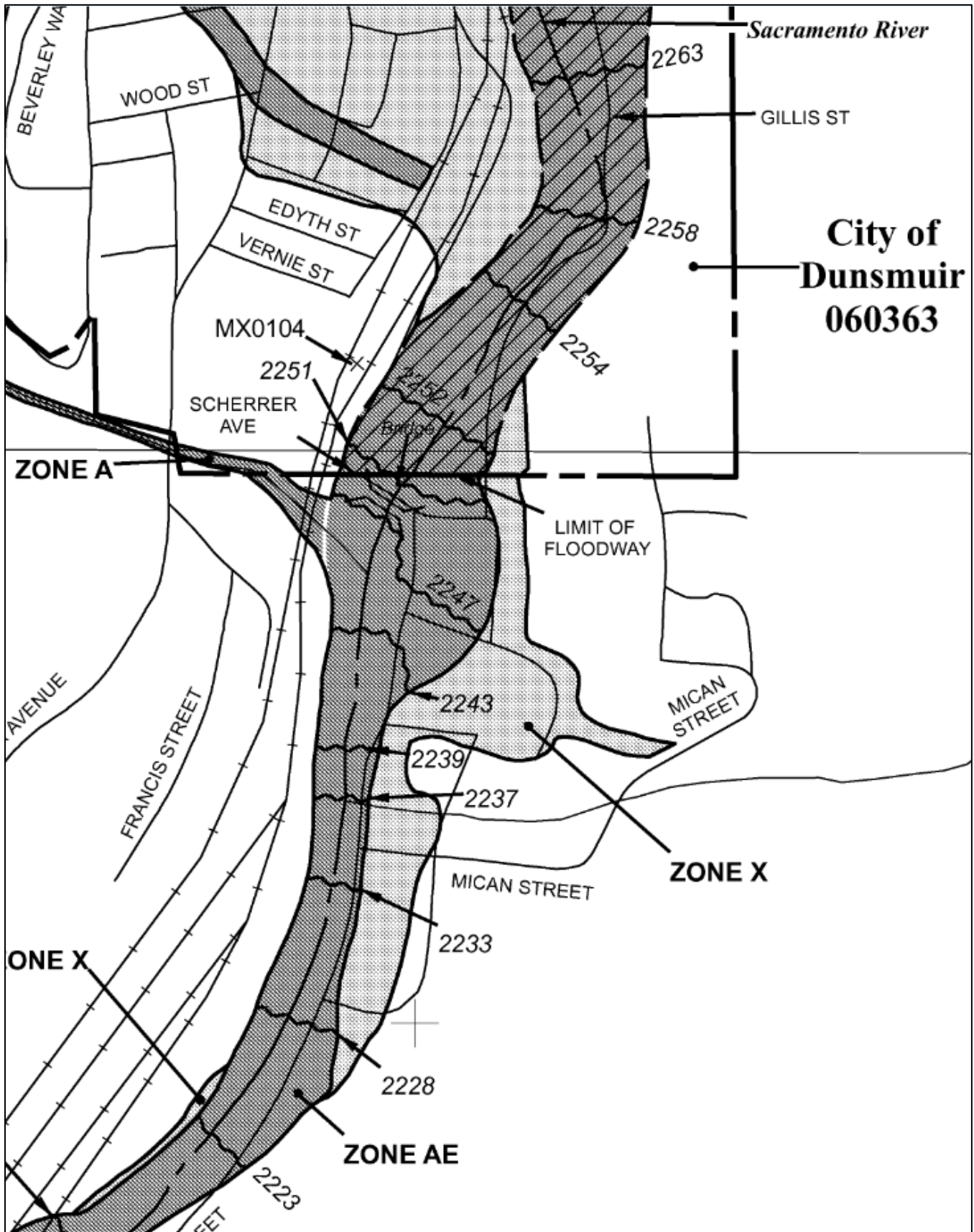
Dunsmuir, California.
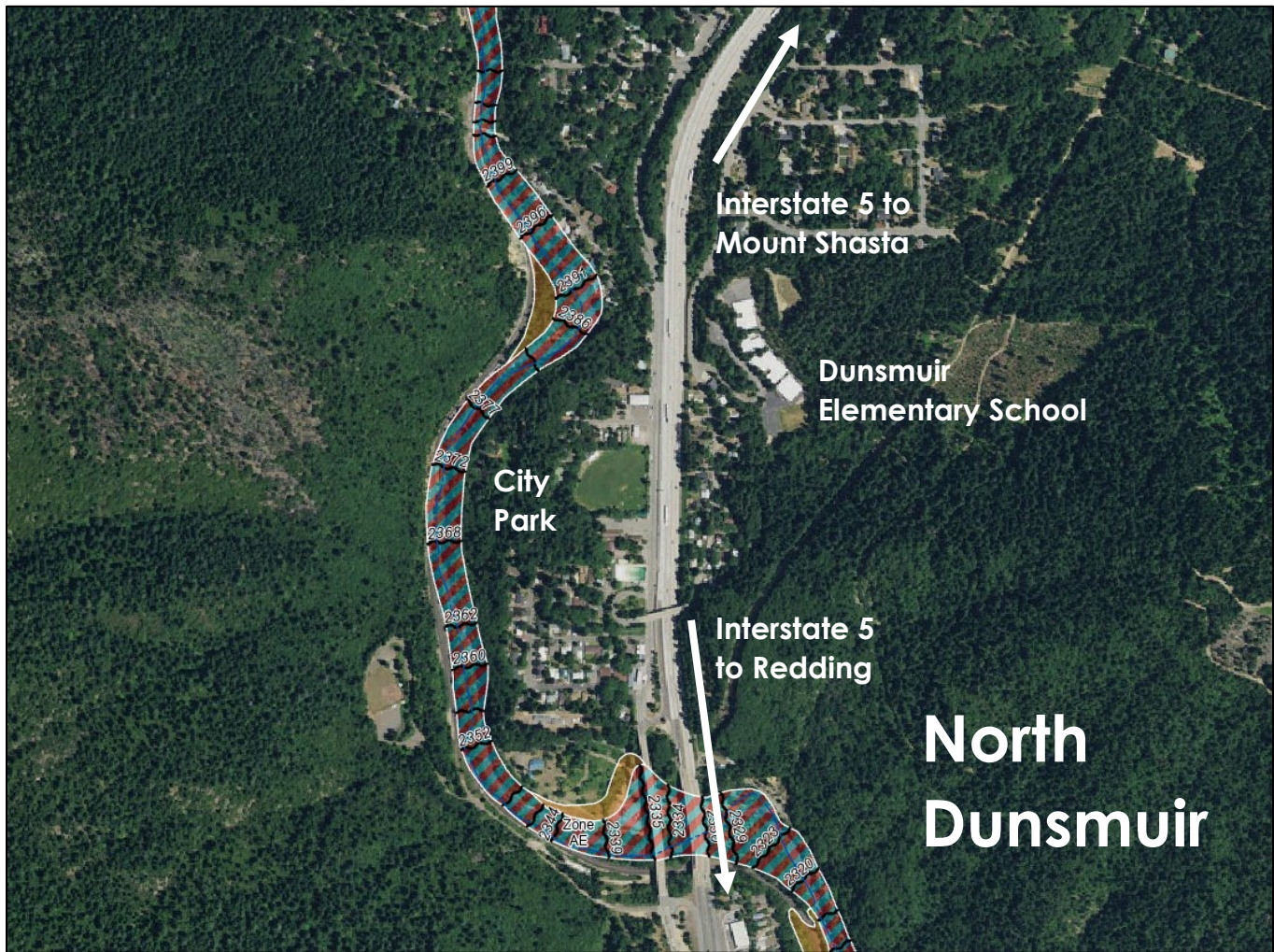
Flood Map – North Dunsmuir

There is significant development adjacent to the Sacramento River. The Southern Pacific Railroad line runs parallel to the river as it passes through the river canyon. Flooding of Hedge Creek or the Sacramento River would have adverse impacts on all development along the Sacramento River, including the railroad. In 1964 and 1974, flooding in Dunsmuir resulted in steel bridges and large sections of rail line being washed downstream.
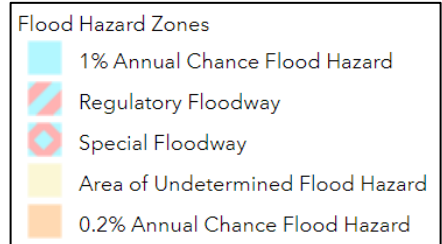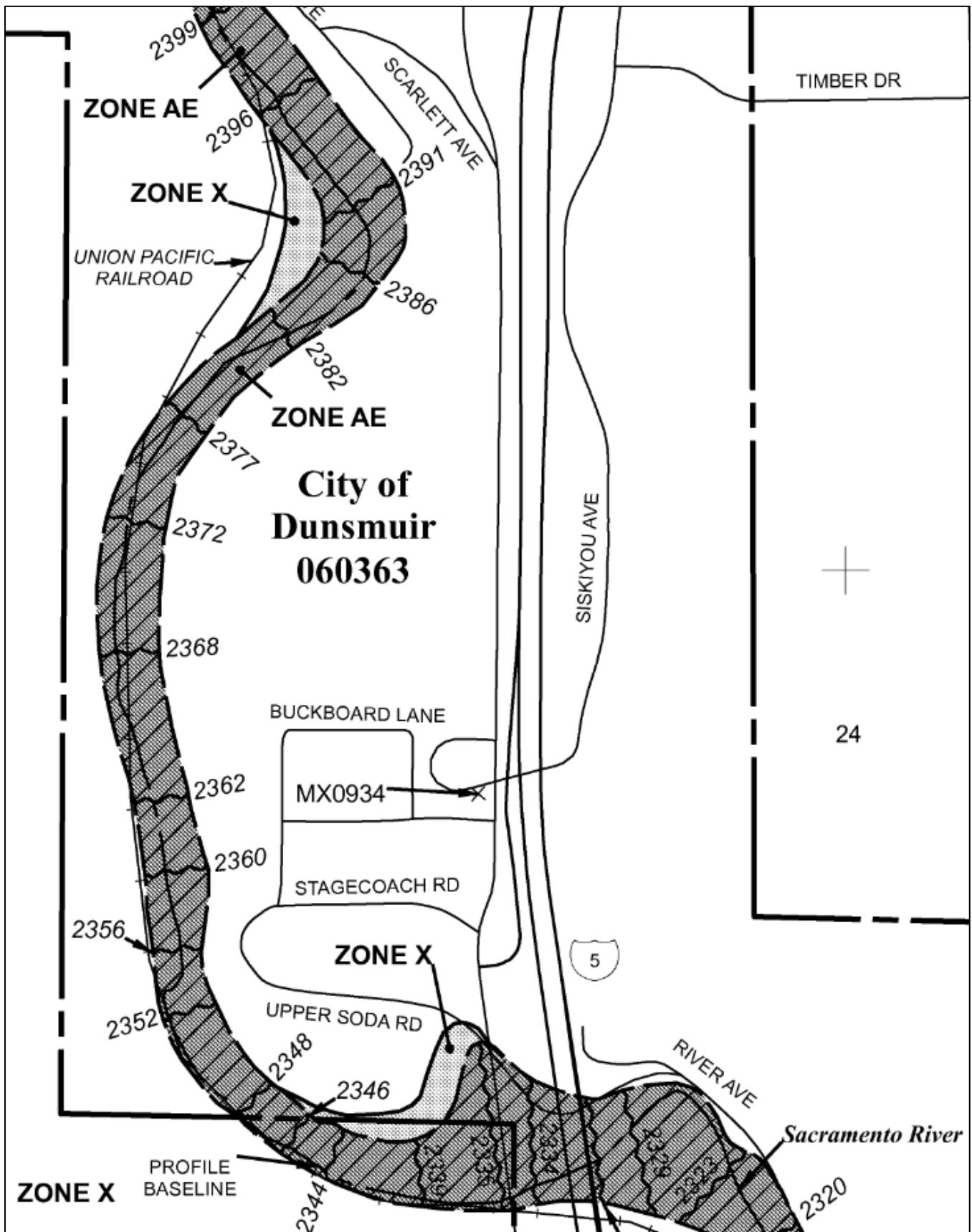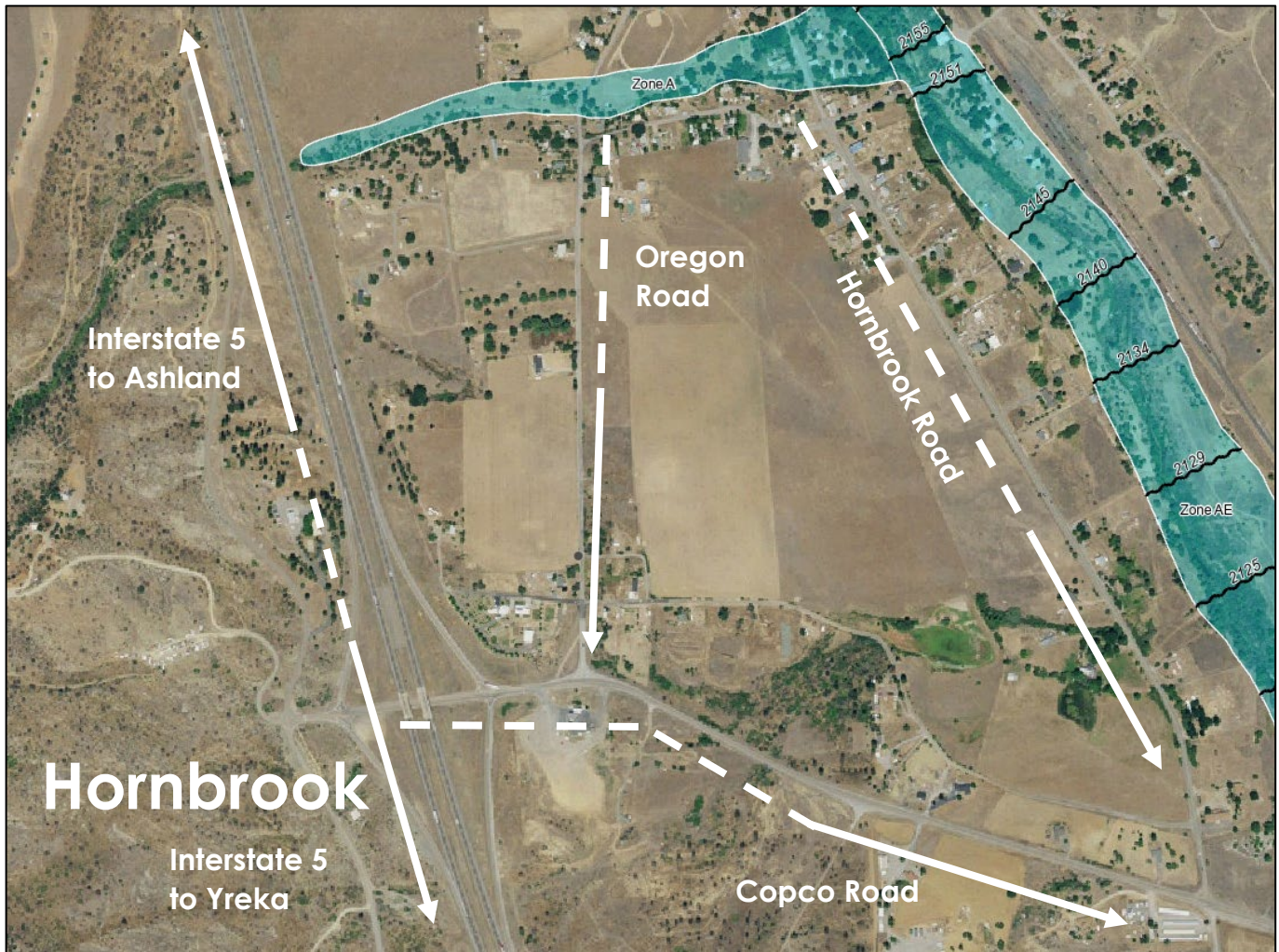
Flood Hazard Zones

1% Annual Chance Flood Hazard

Regulatory Floodway

Special Floodway

Area of Undetermined Flood Hazard

0.2% Annual Chance Flood Hazard

North Dunsmuir, California.
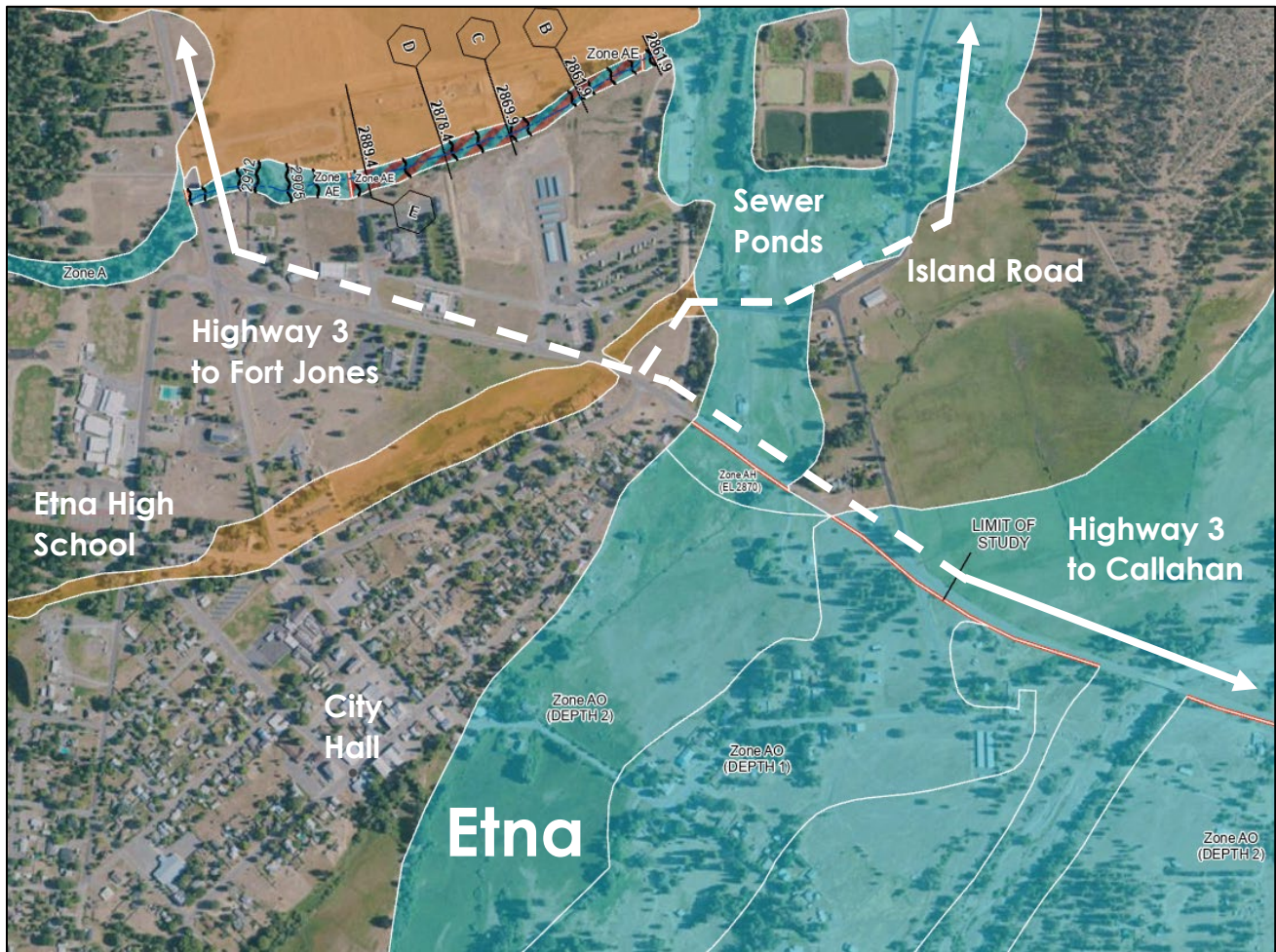
Flood Map – Etna

The town of Etna (*Population 653*) is located on the west side of Scott Valley, 13 miles north of Callahan along Highway 3. The nearest surface water is Etna Creek located to the southeast. The 100 Year Floodplain is located southeast of Main Street, spreading across the valley floor. In this area, Island Road, Highway 3, and Horn Lane are all in the 100 Year Floodplain. Development near Etna Creek and the low-lying areas southeast of town would be most affected during a flood. In the past, flooding of Island Road has prevented vehicle travel to Etna via Island Road for weeks at a time.
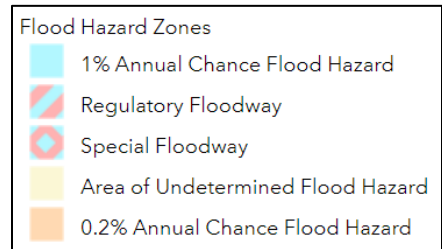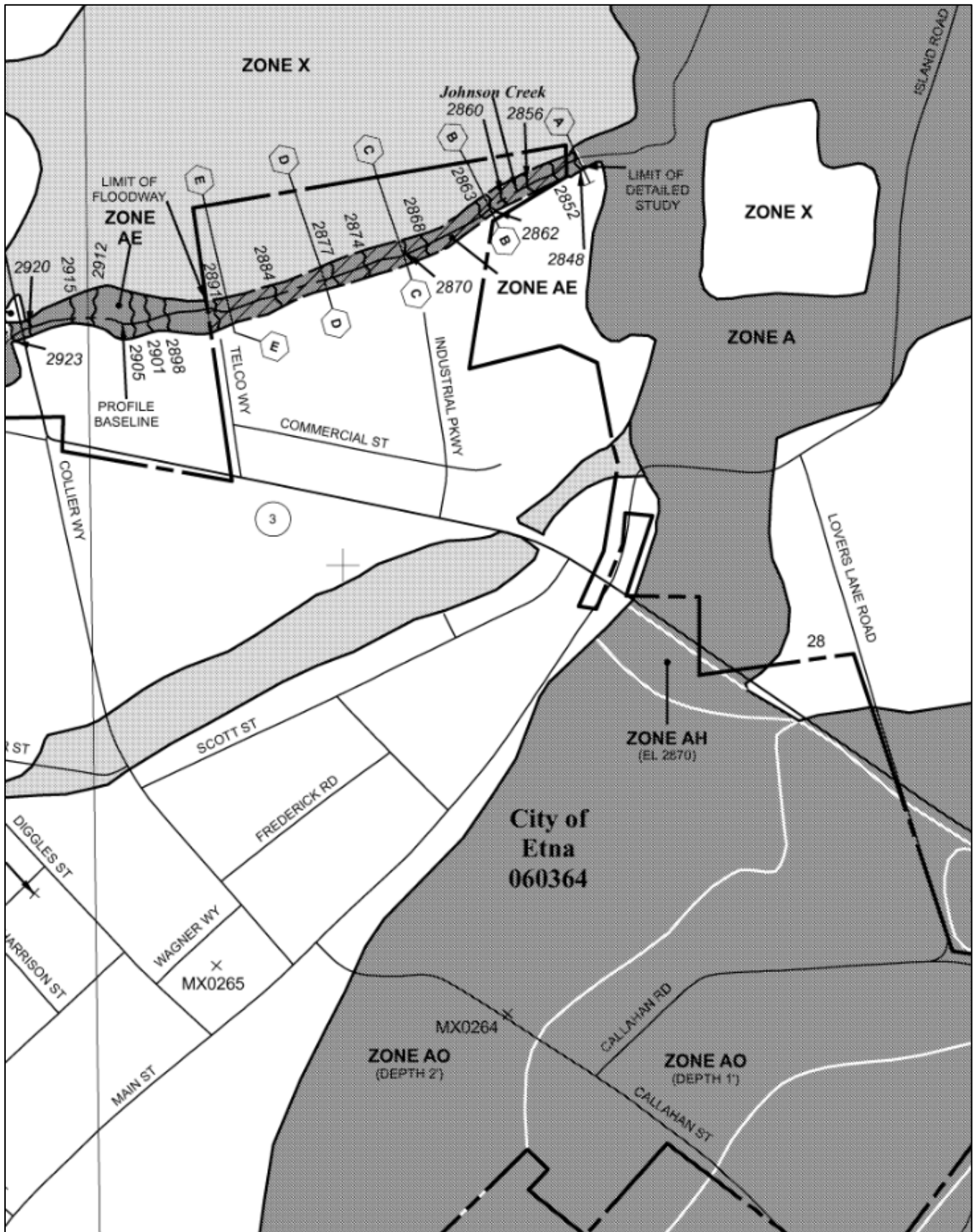
Etna, California.
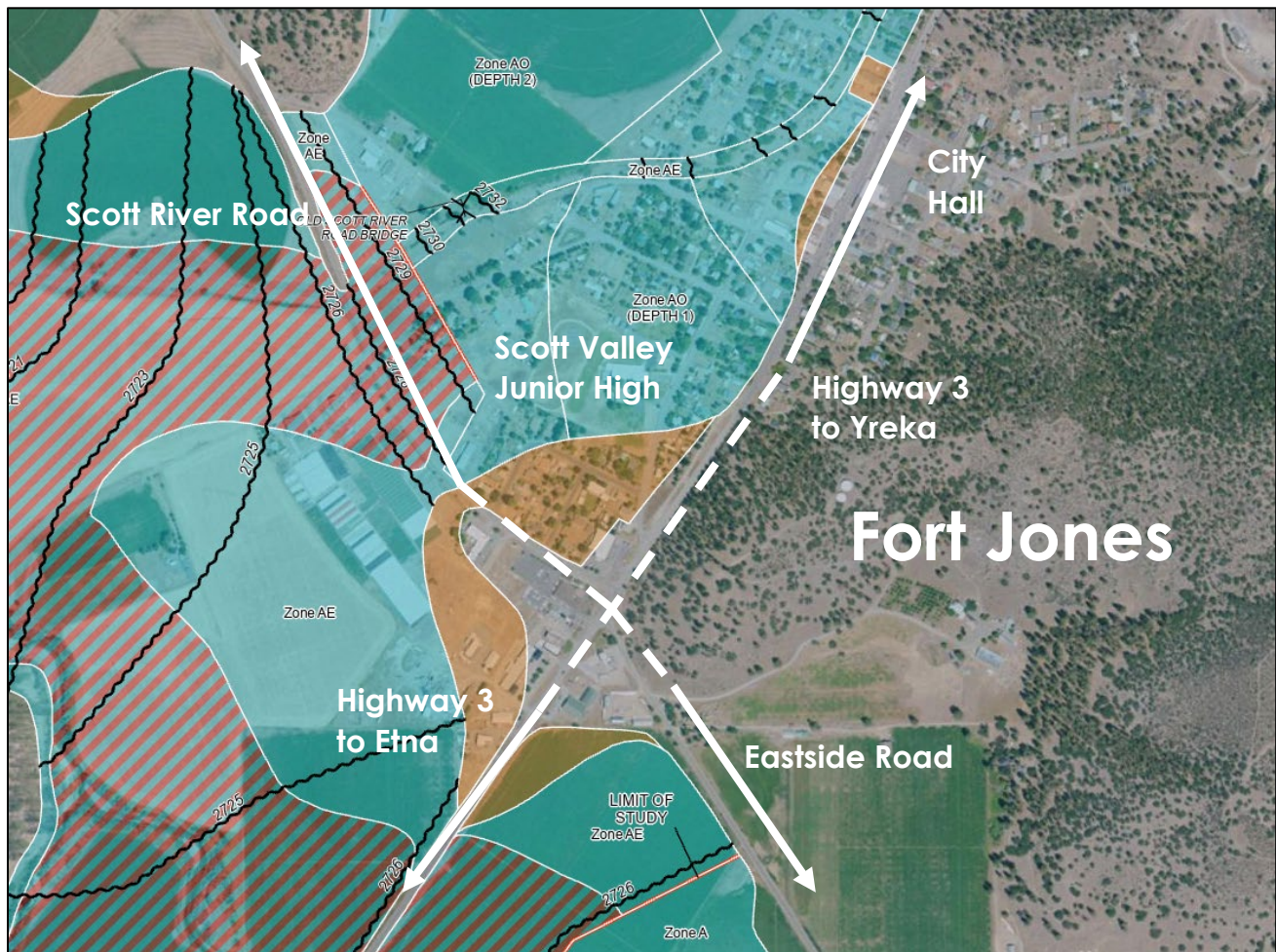
Flood Map – Fort Jones

The town of Fort Jones (*Population 673*) is in Scott Valley, 12 miles north of Etna along Highway 3. The nearest surface water is the Scott River located to the southwest. The 100 Year Floodplain is located west of Main Street, spreading west, north, and south, across the valley floor. Scott River Road and Highway 3 are both in the 100 Year Floodplain. Eastside Road sits above the floodplain, heading east towards Etna.

Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard

Fort Jones, California.
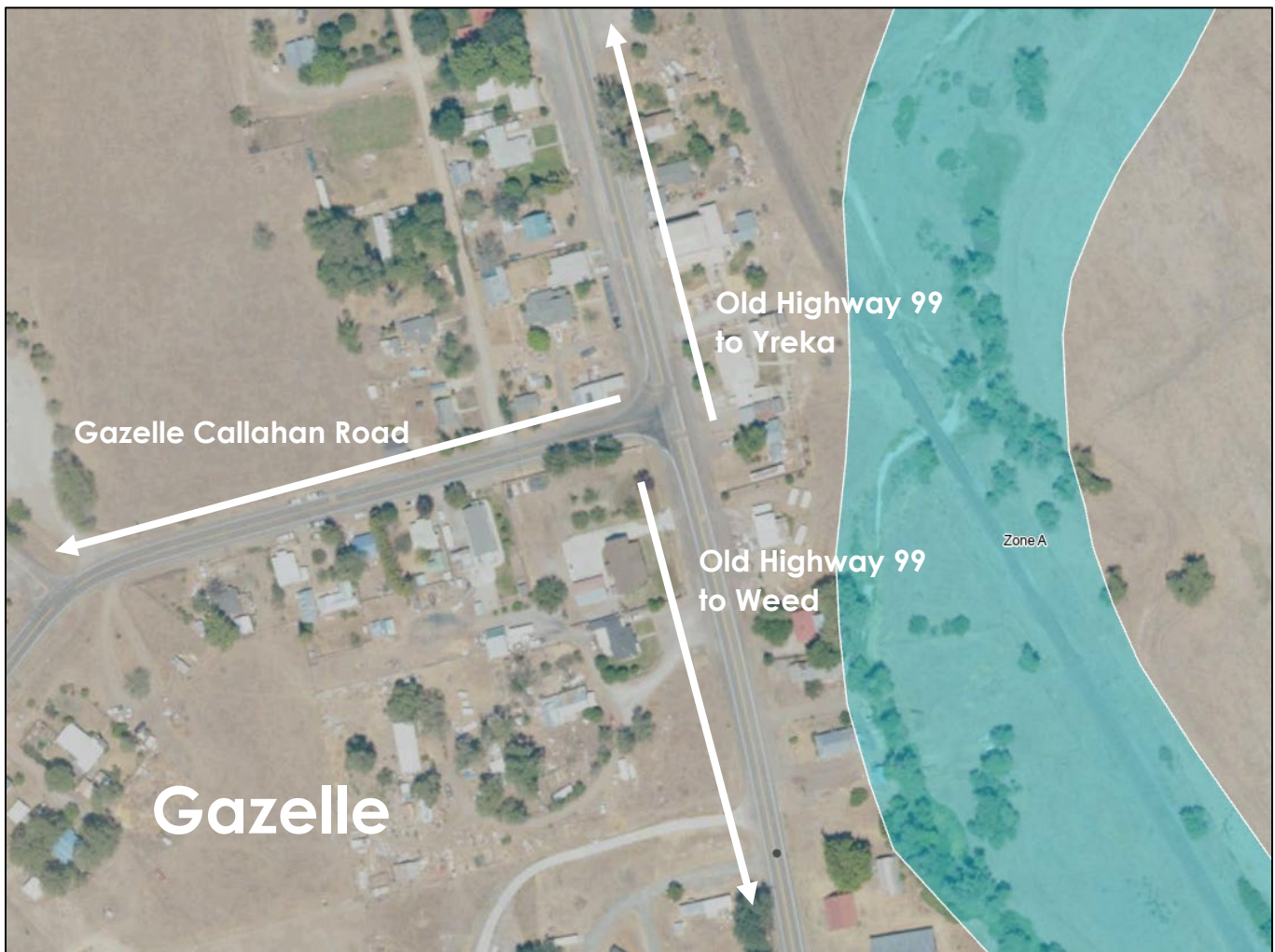
Flood Map – Gazelle

The community of Gazelle (*Population 120*) is located west of Interstate 5 along Old Highway 99 South, between Yreka and Weed. The nearest surface water is Willow Creek. The 100 Year Floodplain is south of town, along Willow Creek and extending northeast up to West Louie Road.
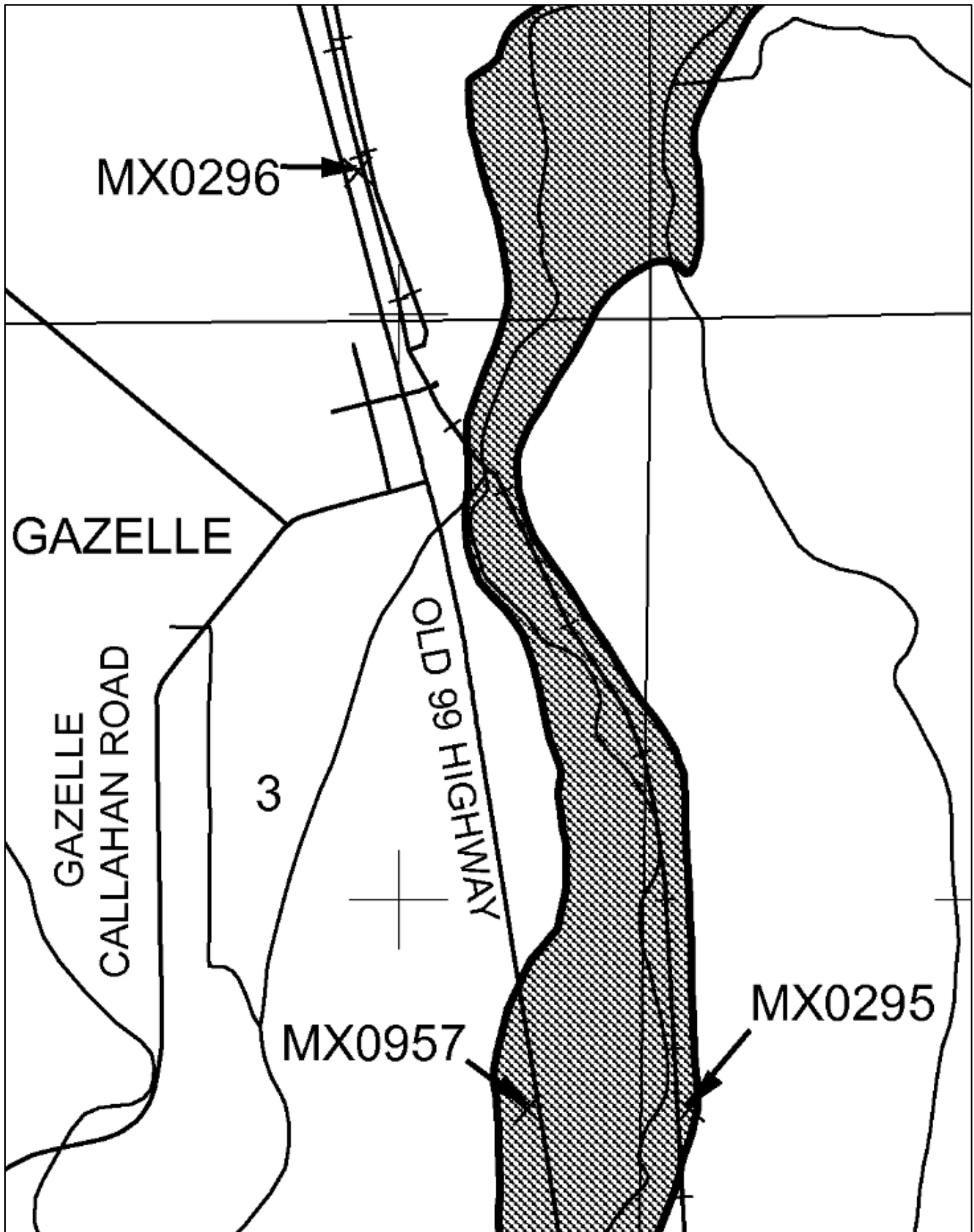
Gazelle, California.
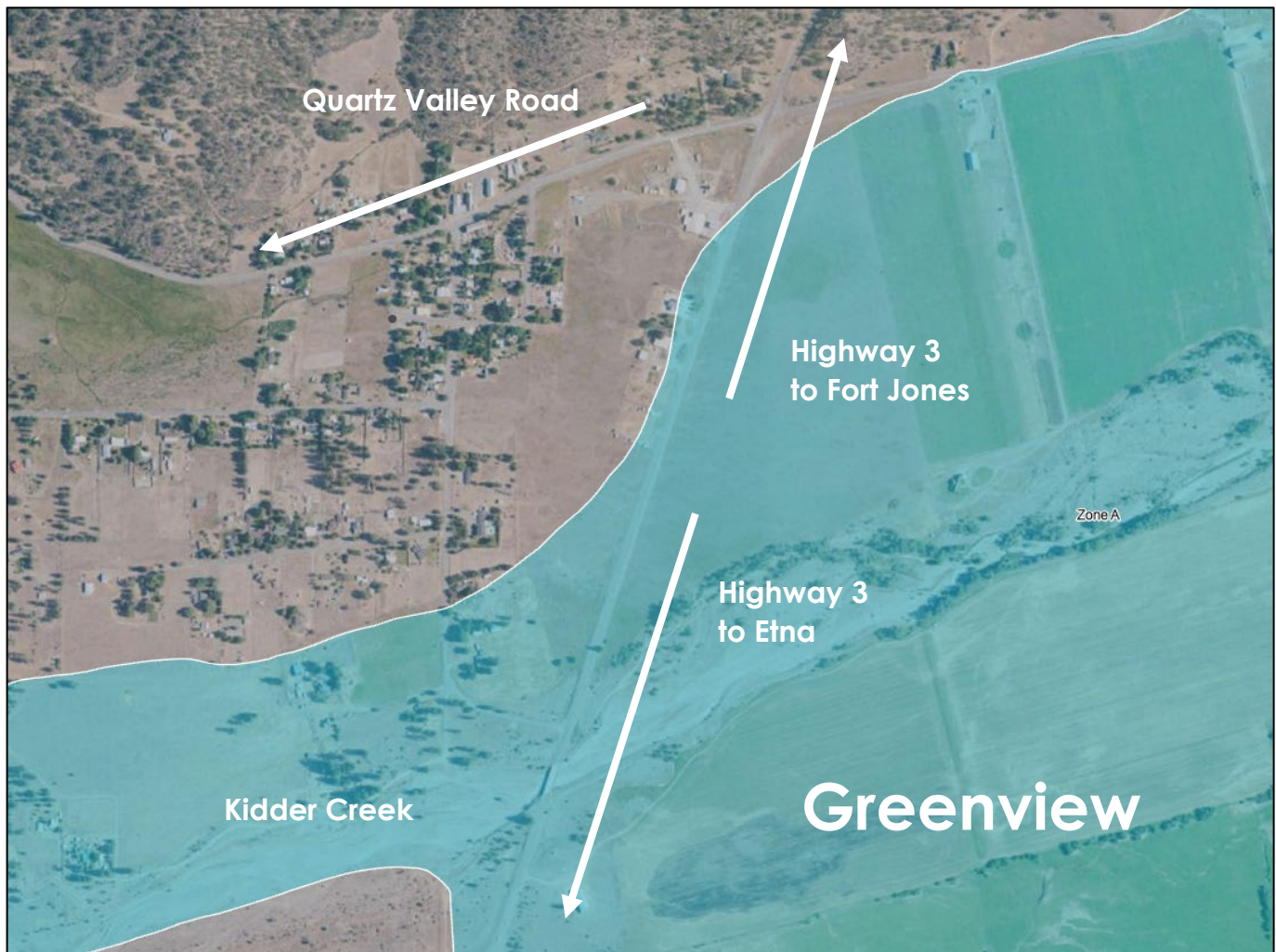
Flood Map – Greenview

The community of Greenview (*Population 208*) is in Scott Valley, midway between Fort Jones and Etna on Highway 3. The nearest surface water is Kidder Creek located south of town. The 100 Year Floodplain covers the southern part of town and Highway 3 between South Kidder Creek Loop continuing up to Glendenning Road. Flooding is likely to restrict vehicle travel between Greenview and Etna along Highway 3.

Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
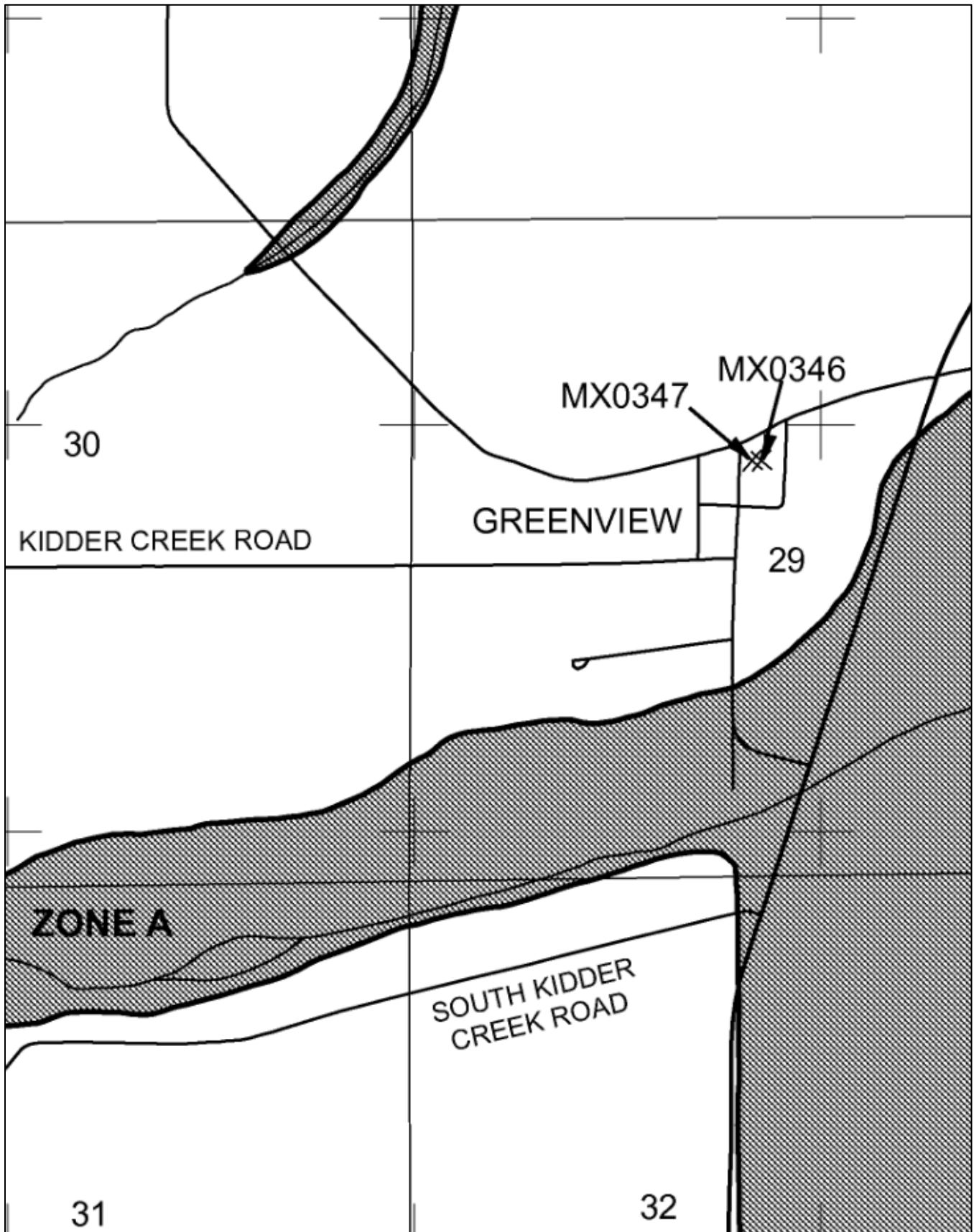
Greenview, California.

Flood Map – Grenada

The community of Grenada (*Population 314*) is located along Interstate 5 and covers the land area between County Road A12, Montague Grenada Road, and Interstate 5. The nearest surface water is Willow Creek east of Grenada.

The community is not in the 100 Year Floodplain and flood risk is minimal.

Flood Hazard Zones	
🟦	1% Annual Chance Flood Hazard
🟥	Regulatory Floodway
🟧	Special Floodway
🟨	Area of Undetermined Flood Hazard
🟧	0.2% Annual Chance Flood Hazard
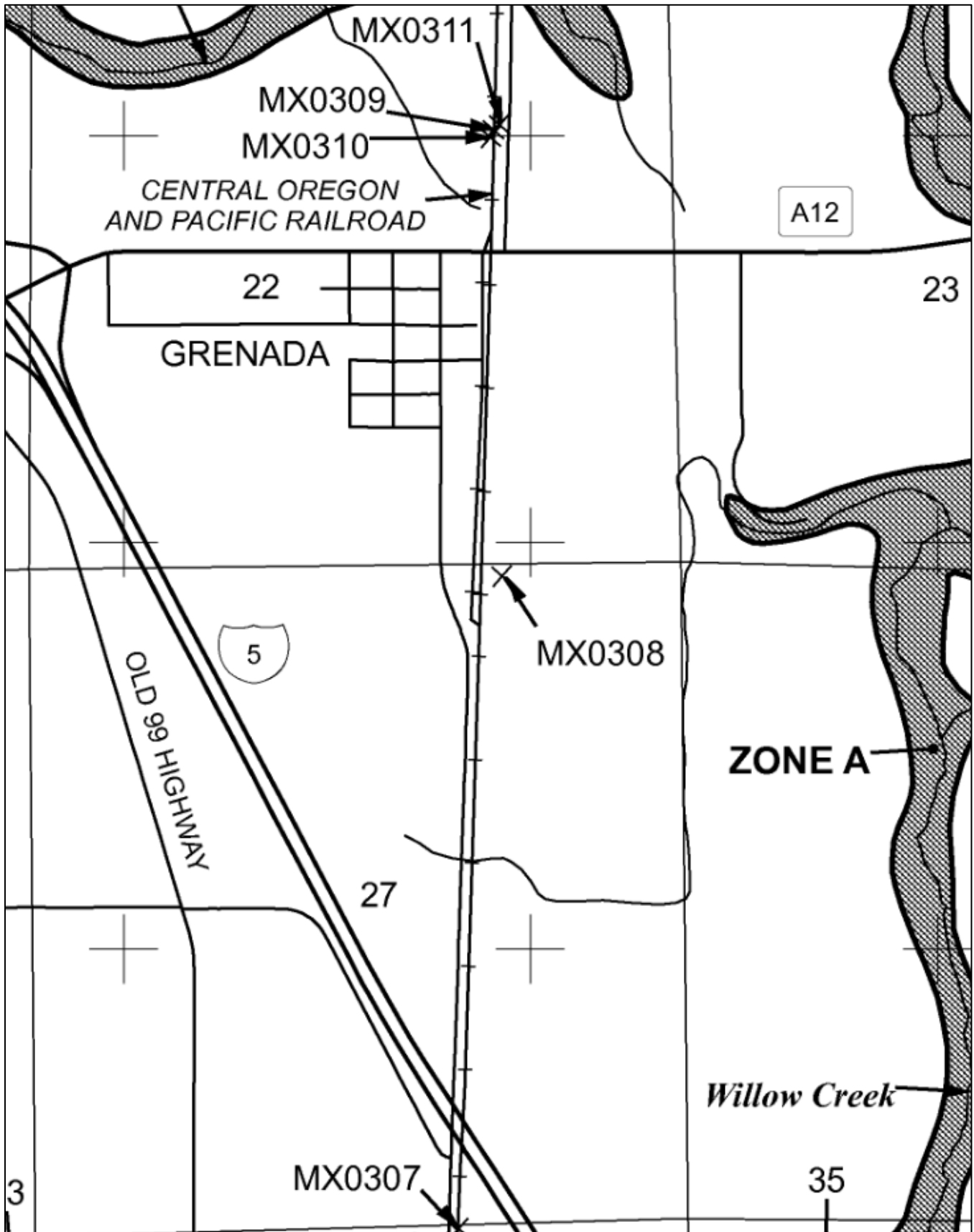
Grenada, California.
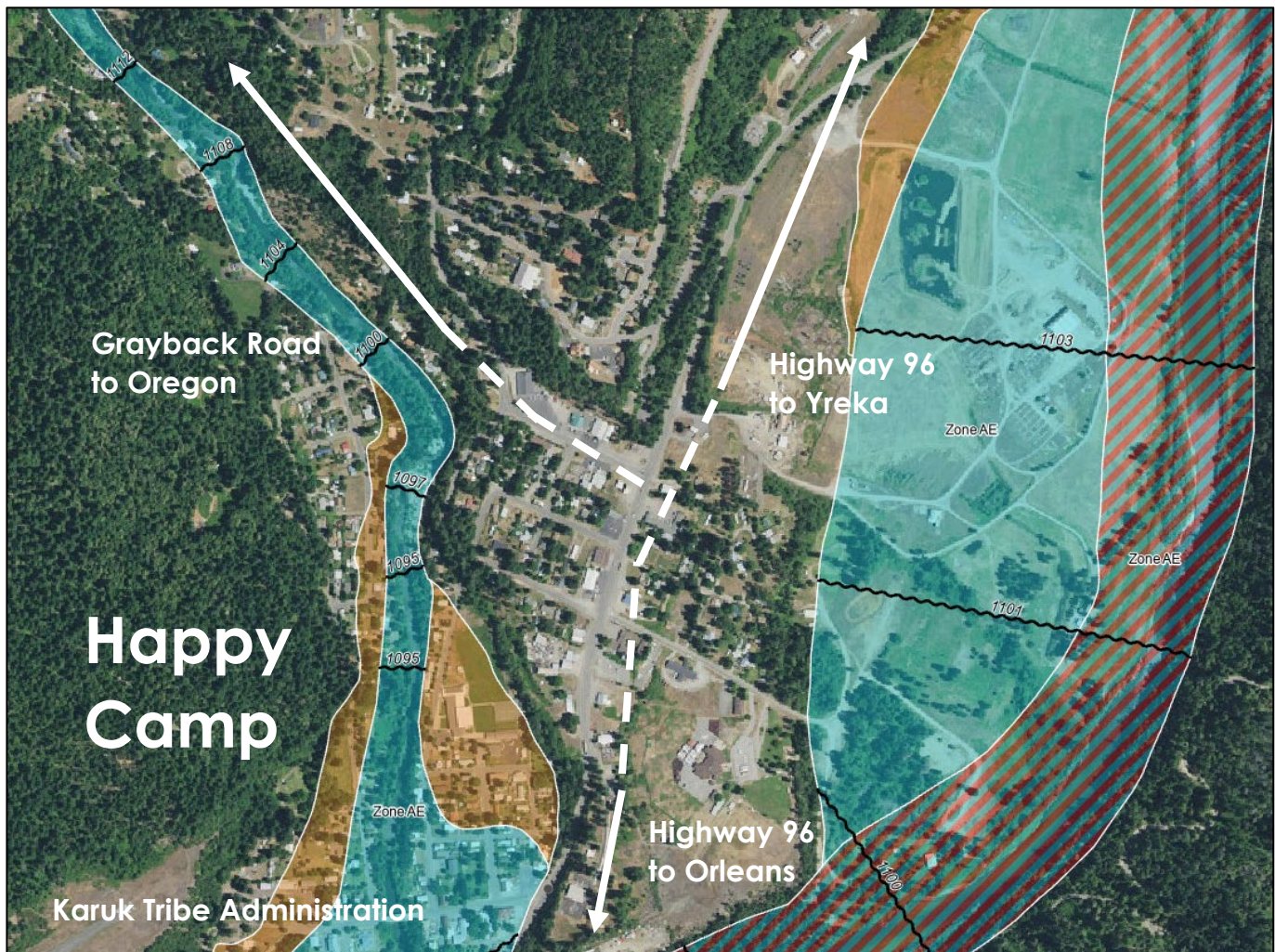
Flood Map – Happy Camp

The community of Happy Camp (*Population 907*) is located on Highway 96, approximately 70 miles west of Interstate 5. The 100 Year Floodplain covers large areas of the town and parts of Highway 96. Happy Camp is home to one of three Karuk Tribe administrative centers. The Tribe has invested heavily into Happy Camp and a flood event is likely to cause extensive damage to tribal property.

Flood Hazard Zones

	1% Annual Chance Flood Hazard
	Regulatory Floodway
	Special Floodway
	Area of Undetermined Flood Hazard
	0.2% Annual Chance Flood Hazard
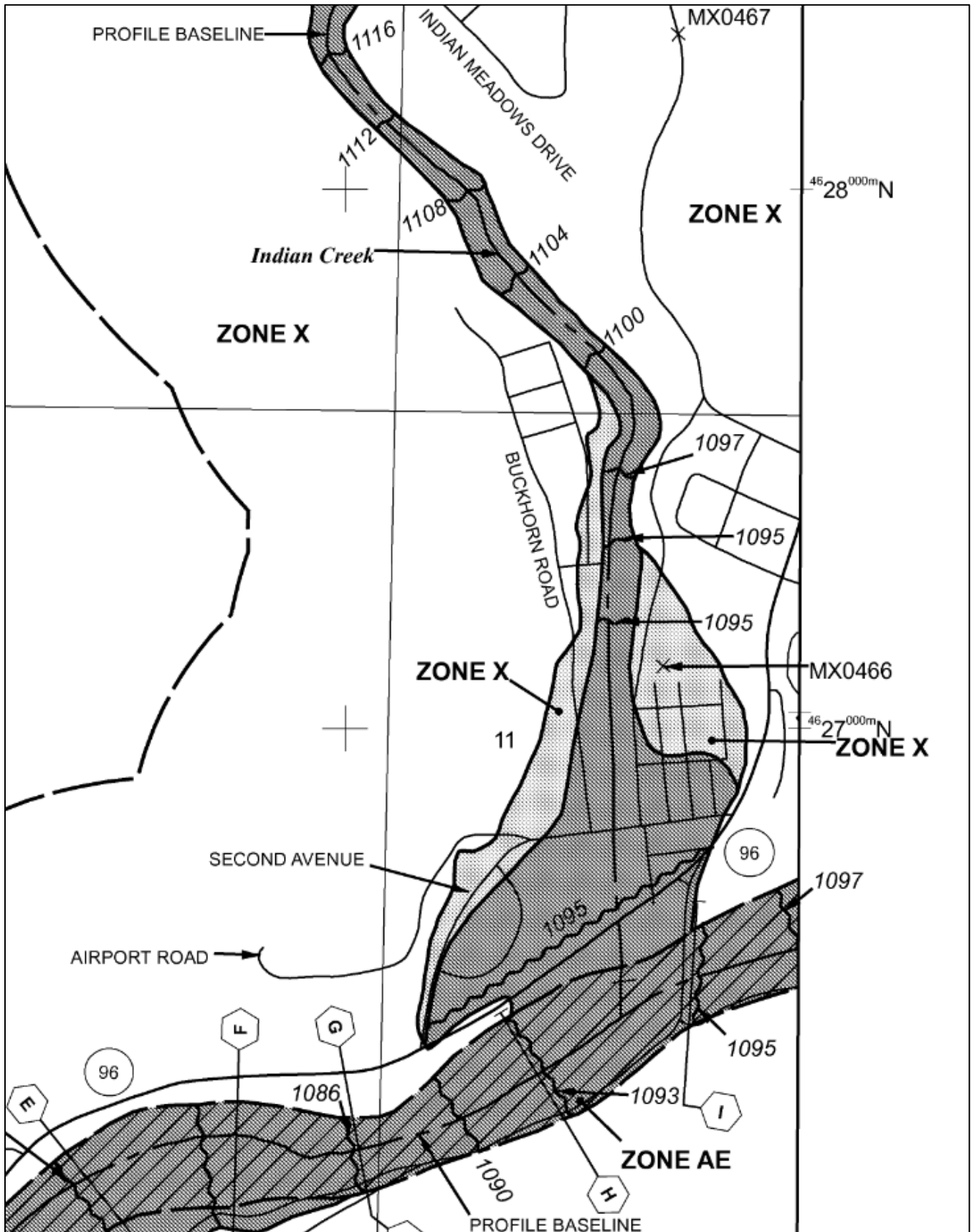
Happy Camp, California.
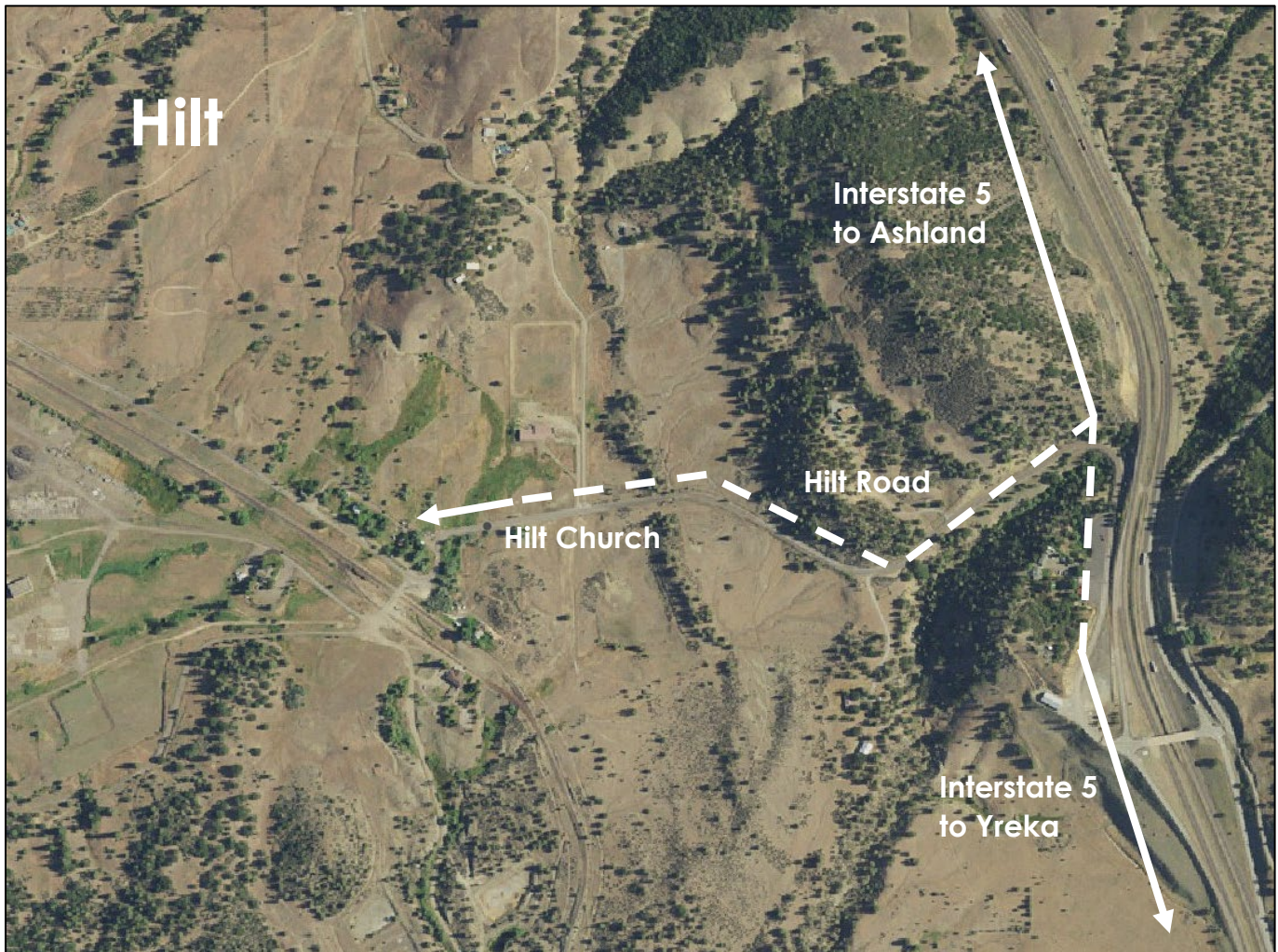
Flood Map – Hilt

The community of Hilt (*Population 9*) is located west of Interstate 5, near the Oregon border. The nearest surface water is Cottonwood Creek located west of town. The 100 Year Floodplain is located far from any development and there is minimal flood risk.

Flood Hazard Zones

▢	1% Annual Chance Flood Hazard
▨	Regulatory Floodway
⬡	Special Floodway
▢	Area of Undetermined Flood Hazard
▢	0.2% Annual Chance Flood Hazard
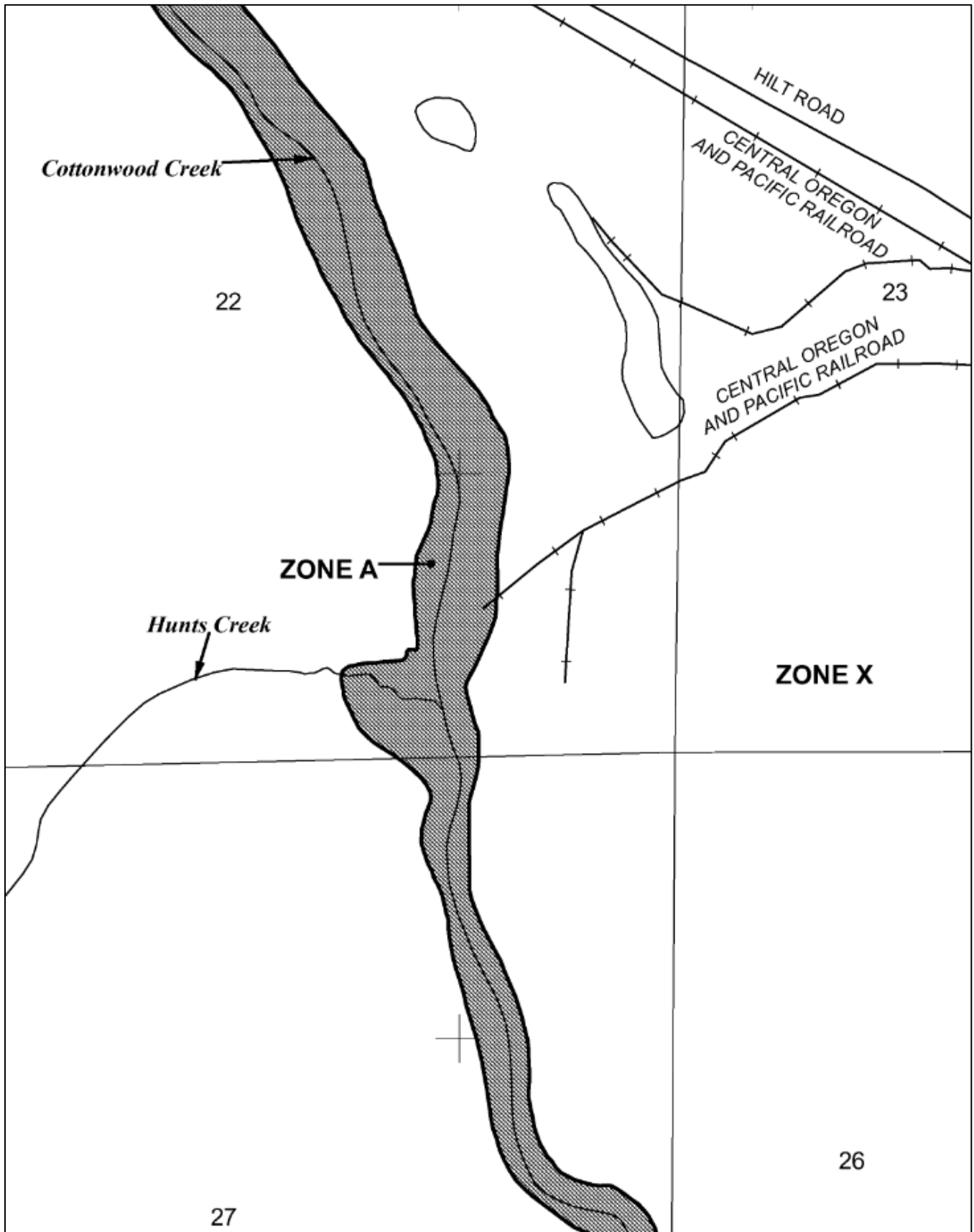
Hilt, California.

Flood Map – Hornbrook

The community of Hornbrook (*Population 381*) is located east of Interstate 5, approximately 15 miles north of Yreka. The nearest surface water feature is Cottonwood Creek. The 100 Year Floodplain is located near developments and there is moderate flood risk.

Flood Hazard Zones

■ 1% Annual Chance Flood Hazard
▨ Regulatory Floodway
◎ Special Floodway
□ Area of Undetermined Flood Hazard
□ 0.2% Annual Chance Flood Hazard
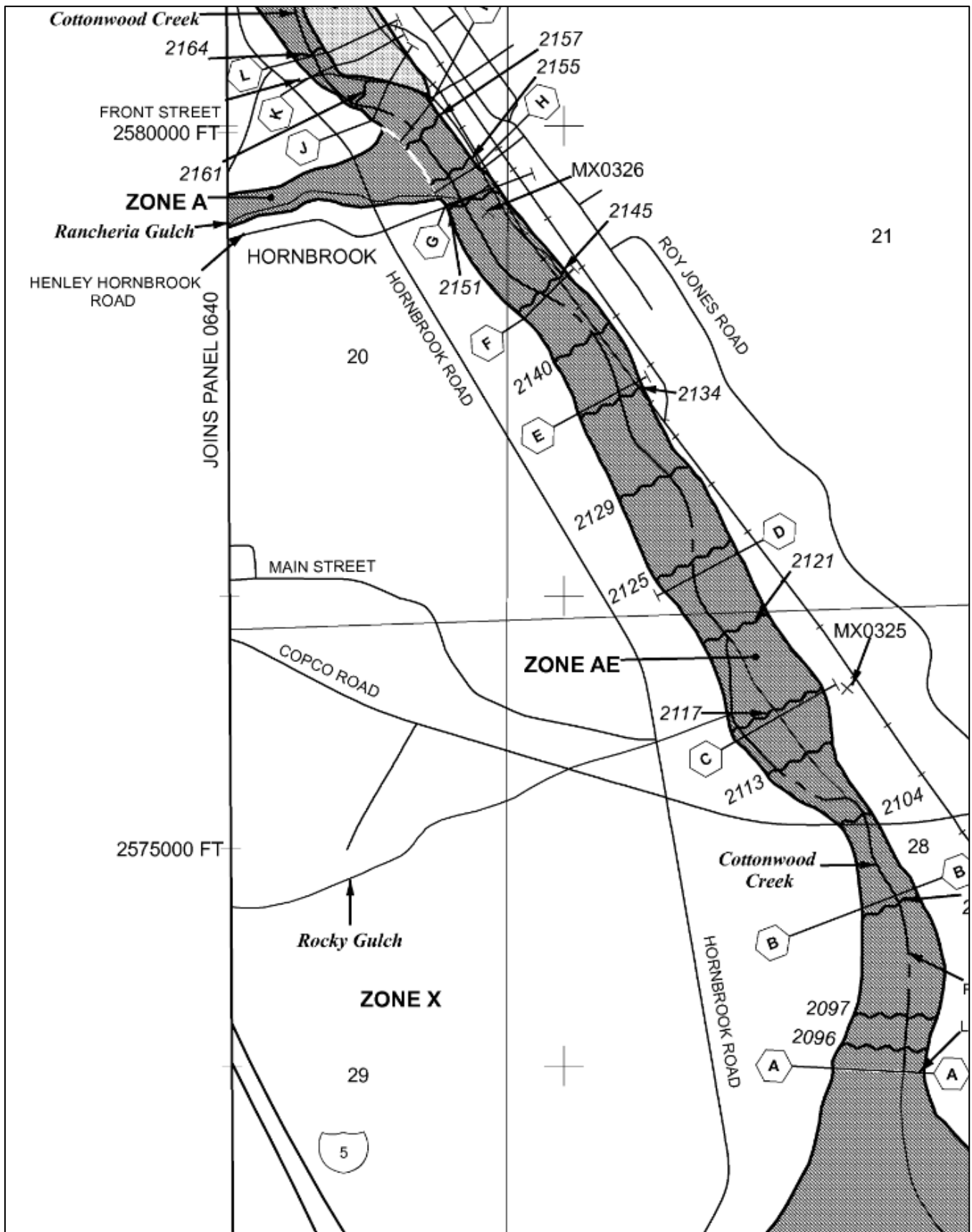
Hornbrook, California.

Flood Map – Lake Shastina

The community of Lake Shastina (*Population 3,008*) is located north of Weed along Highway 97. The nearest surface water features are Lake Shastina and the Shasta River. The 100 Year Floodplain is located far from most development.

Low lying areas near the lake are most at risk. Parts of Dwinnell Way, Dwinnell Road, and Spear Point Road are in the 100 Year Floodplain.

Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
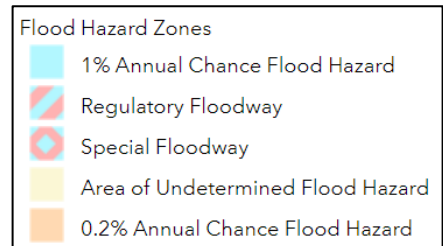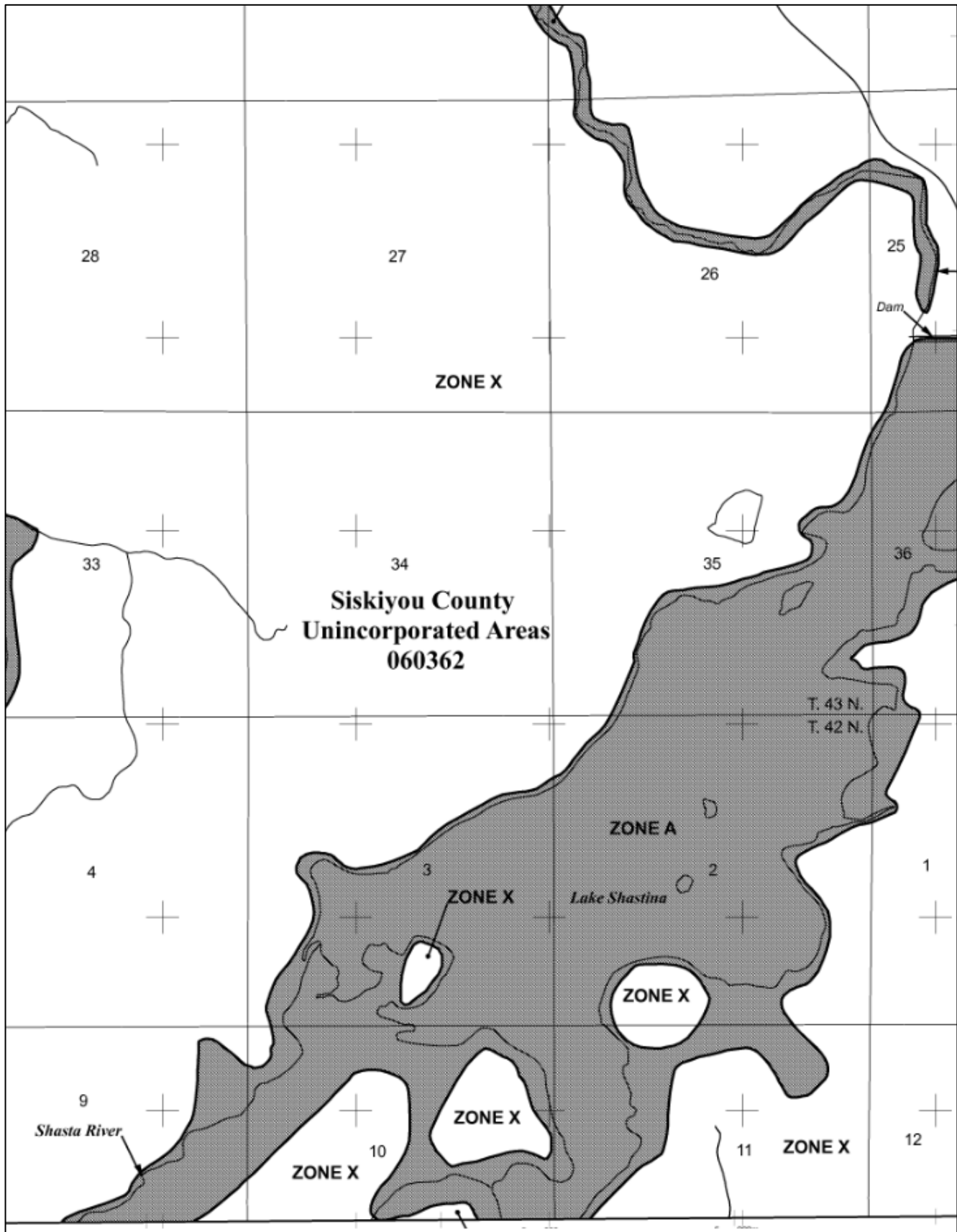
Lake Shastina, California.
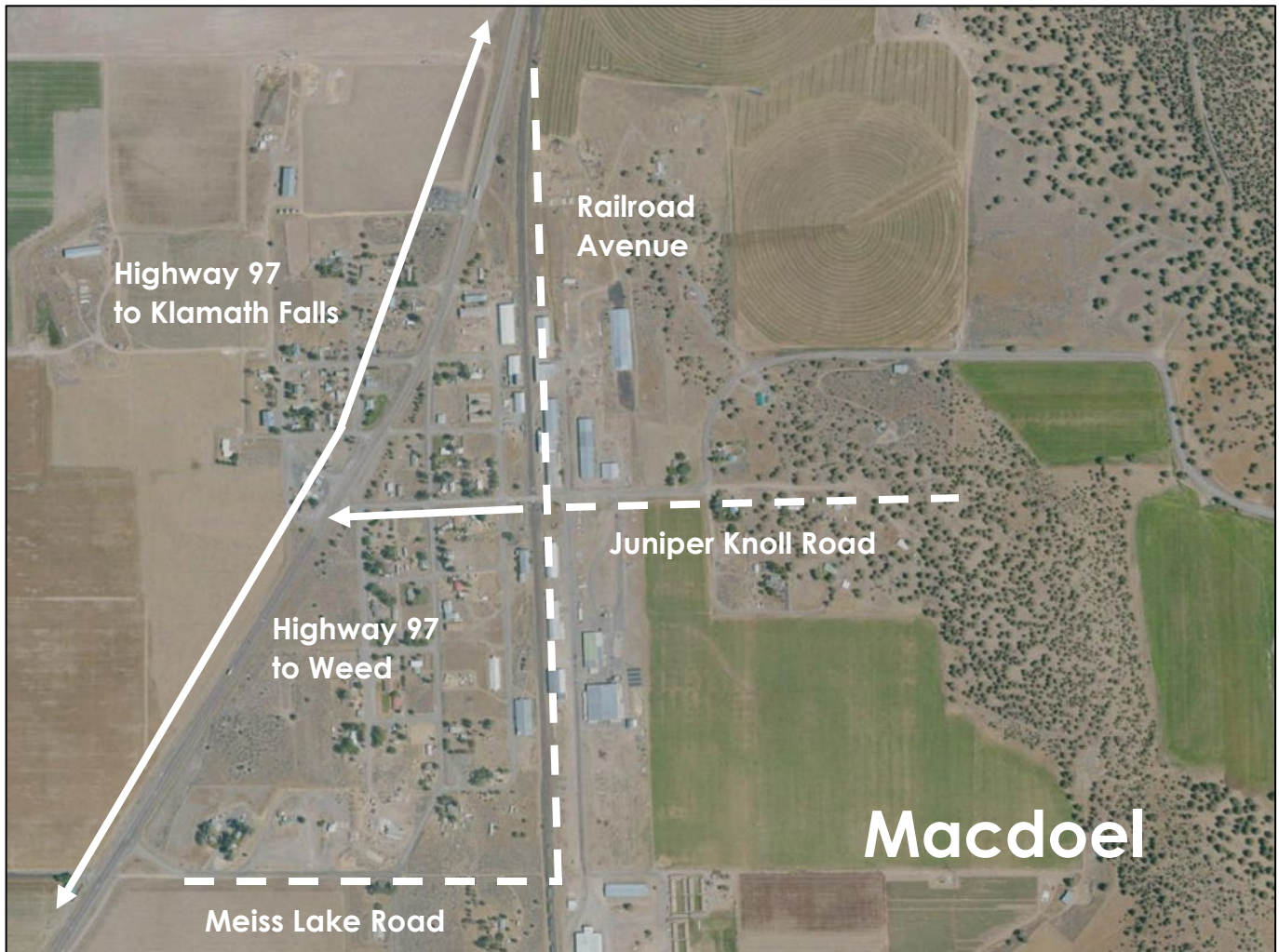
Flood Map – Macdoel

The community of Macdoel (*Population 143*) is located on Highway 97, approximately 40 miles north of Weed, CA. The nearest surface water is Meiss Lake to the northwest. The 100 Year Floodplain is approximately half a mile to the southeast of most development and there is minimal risk of flooding.

Flood Hazard Zones

1% Annual Chance Flood Hazard
Regulatory Floodway
Special Floodway
Area of Undetermined Flood Hazard
0.2% Annual Chance Flood Hazard
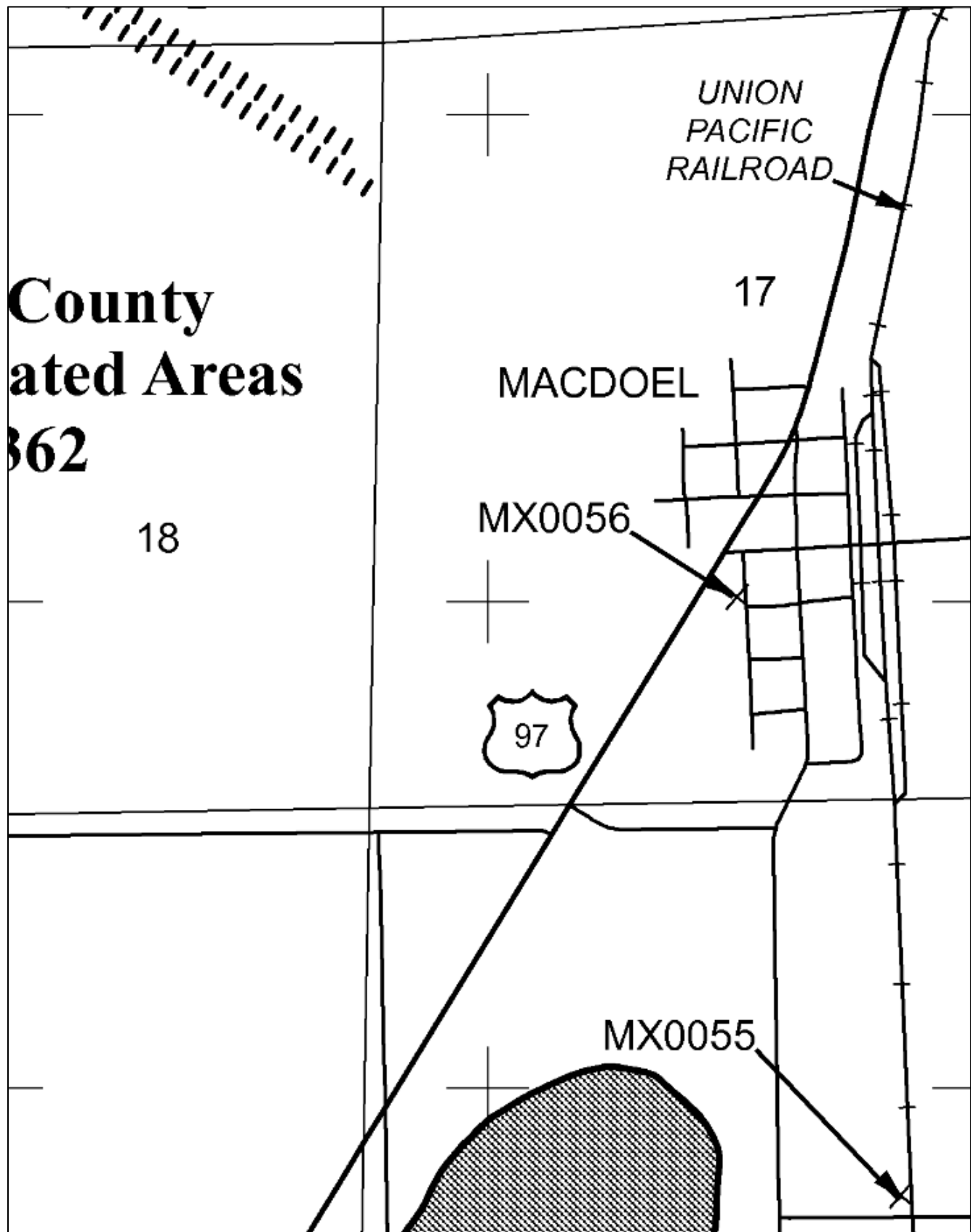
Macdoel, California.
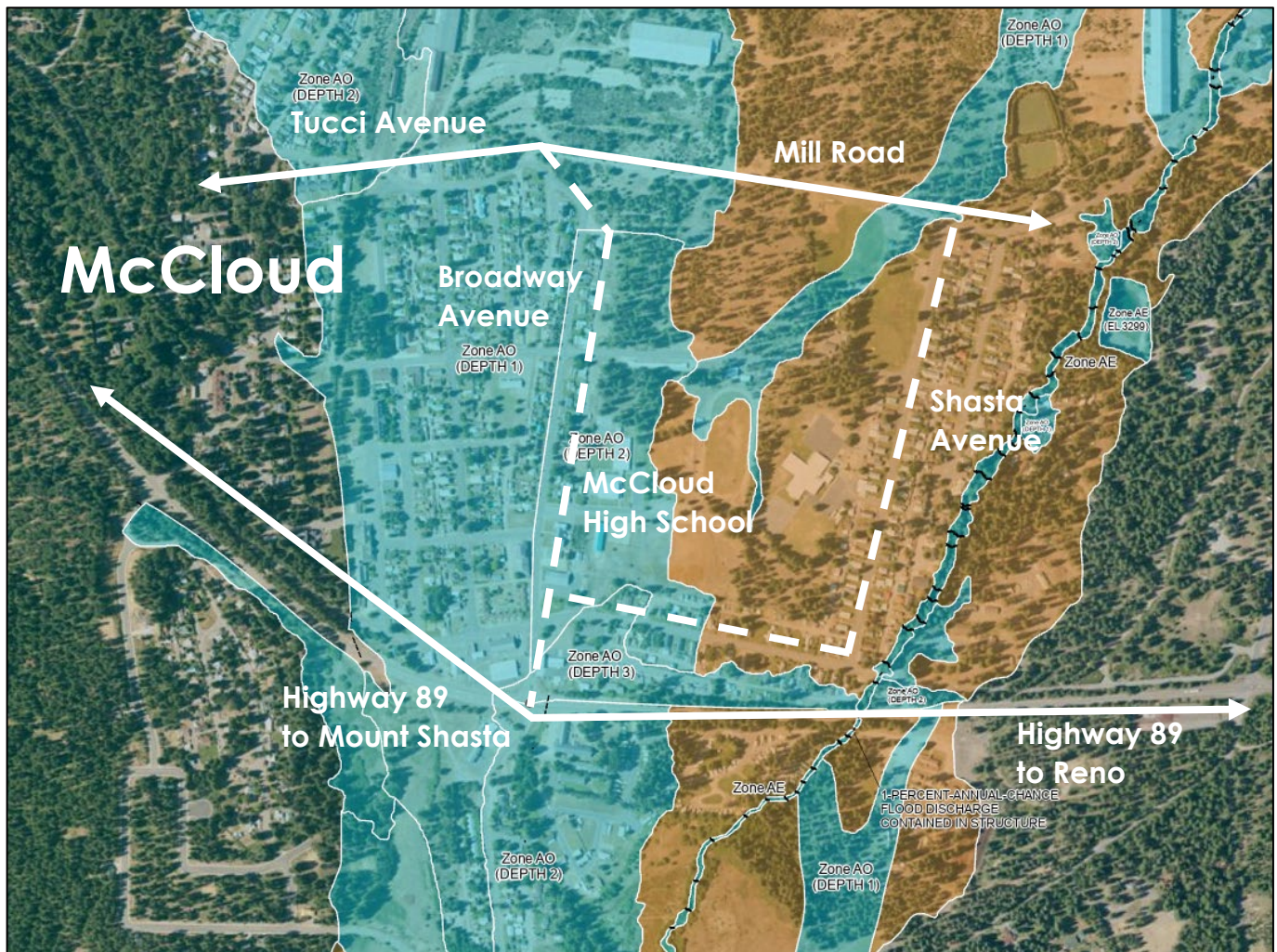
Flood Map – McCloud

The community of McCloud (*Population* 959) is located east of Interstate 5, on Highway 89, 13 miles east of Mount Shasta. The nearest surface water is Panther Creek located to the northwest and Yét Atwam Creek, on the east side of town.

Large parts of the community are in the 100 Year and 500 Year Floodplain. Annual flooding of Mud Creek, due to glacier melt from Mt. Shasta, often results in the closure of Highway 89 east of McCloud.

Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
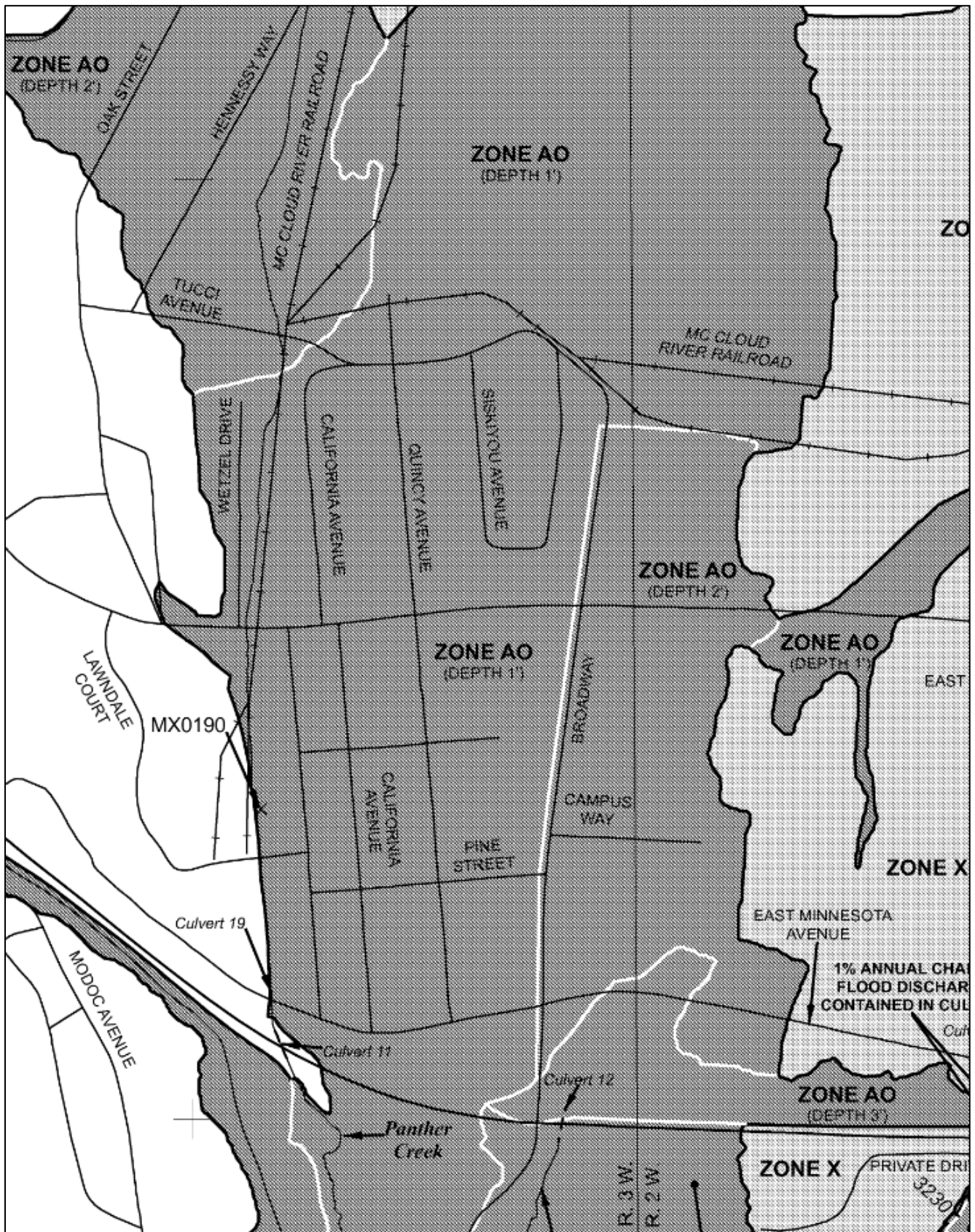
McCloud, California.
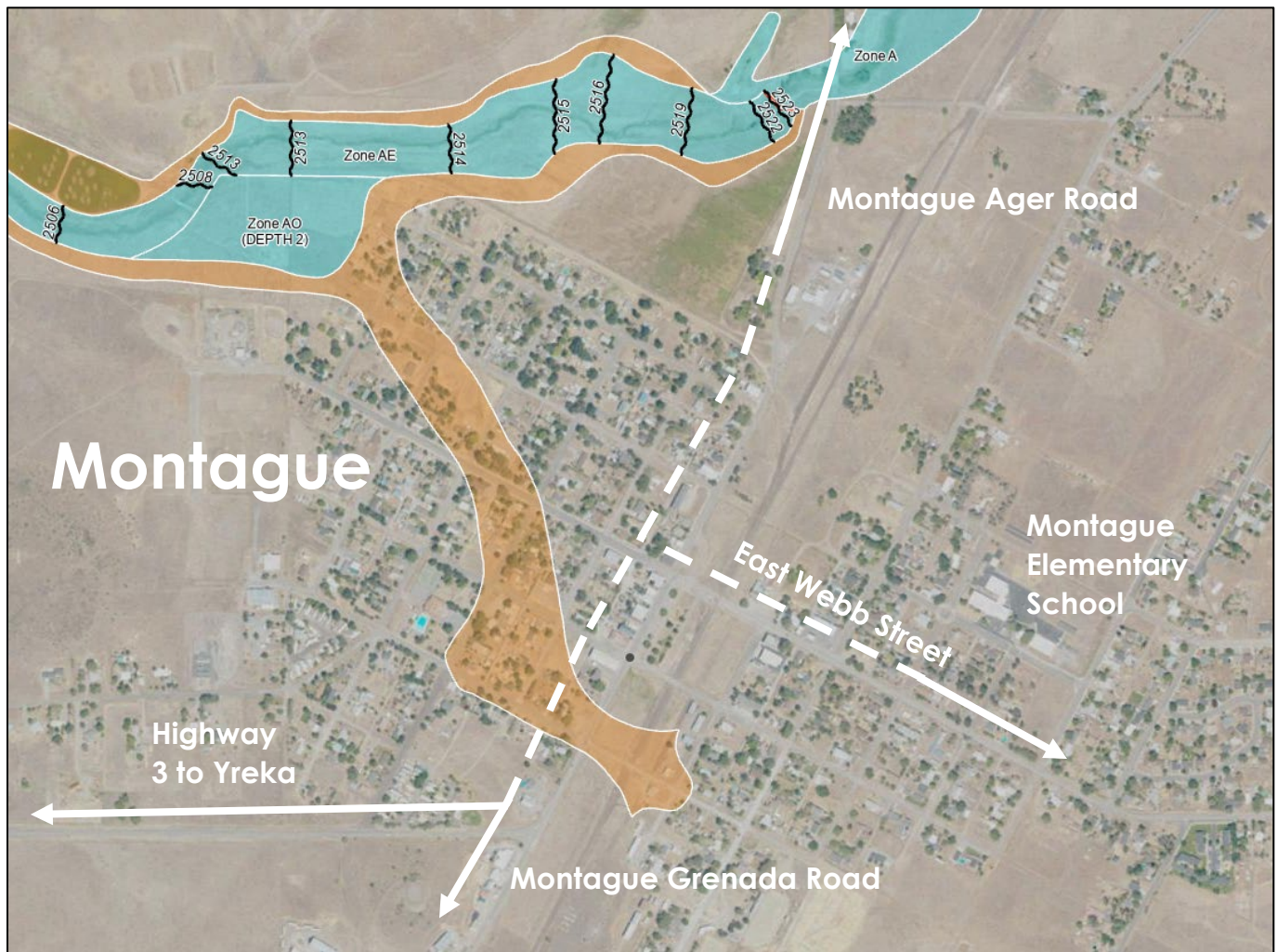
Flood Map – Montague

The town of Montague (*Population 1,182*) is located east of Interstate 5, six miles east of Yreka on Montague Road. The nearest surface water is the Shasta River located west of town, past the airport, and the Oregon Slough, to the north. The 100 Year Floodplain is located far from town along the banks of the Shasta River. While parts of Montague are in the 500 Year Floodplain there is minimal risk of flooding.

Montague, California.

Flood Map – Mount Shasta

The town of Mount Shasta (*Population 3,179*) is located 8 miles north of Dunsmuir on Interstate 5. The nearest surface water is Lake Siskiyou, located to the west. Also present are Wagon Creek, Big Springs Creek, and Cold Creek. The 100 Year Floodplain is located along the shores of Lake Siskiyou. Box Canyon Dam is a concrete gravity dam impounding Lake Siskiyou. The Upper Sacramento River flows from Lake Siskiyou, starting at the foot of the Box Canyon Dam. Low lying areas nearest to the lake are most at risk. Parts of WA Barr Road are in the 100 Year Floodplain and are susceptible to flooding.

Flood Hazard Zones
1% Annual Chance Flood Hazard
Regulatory Floodway
Special Floodway
Area of Undetermined Flood Hazard
0.2% Annual Chance Flood Hazard
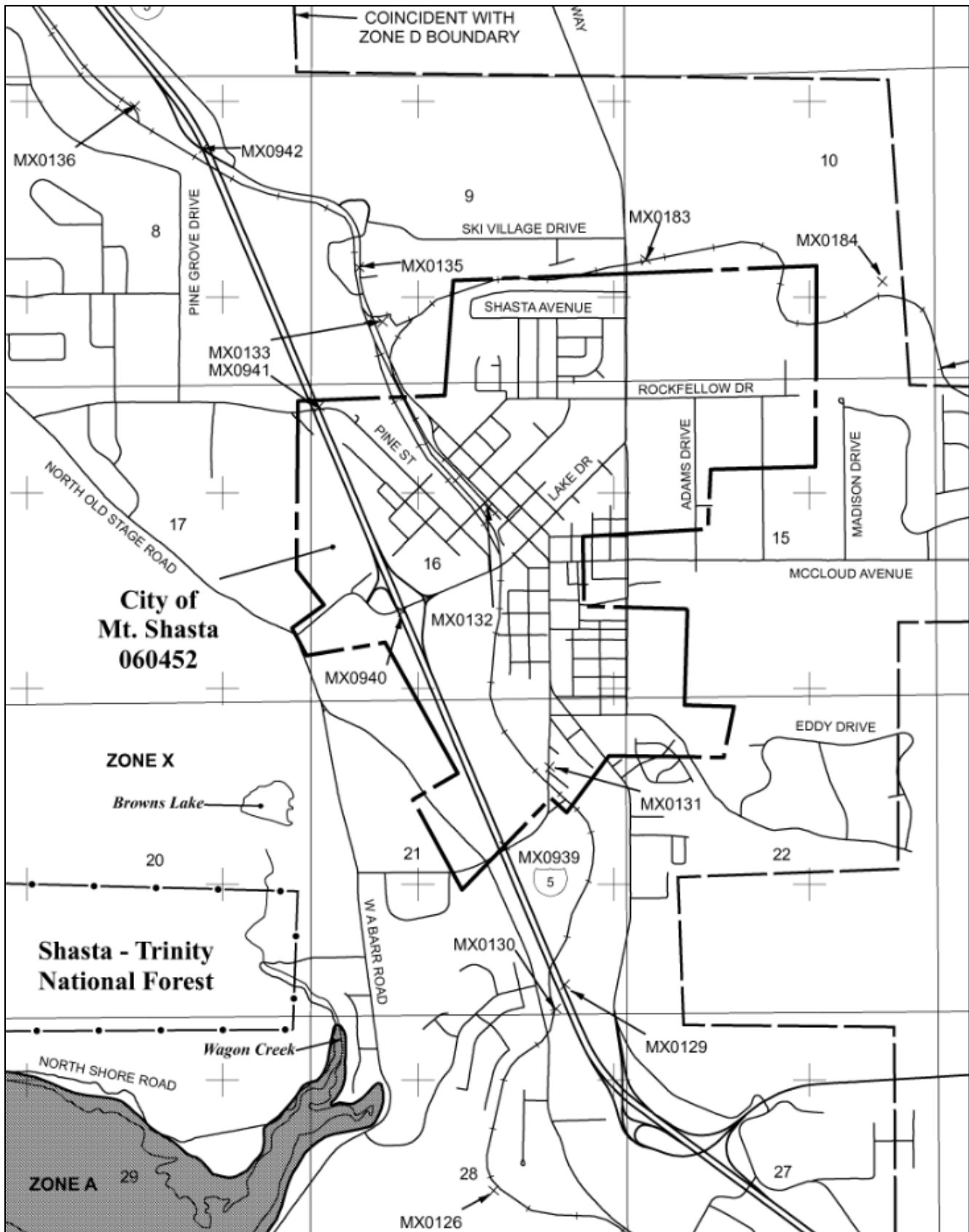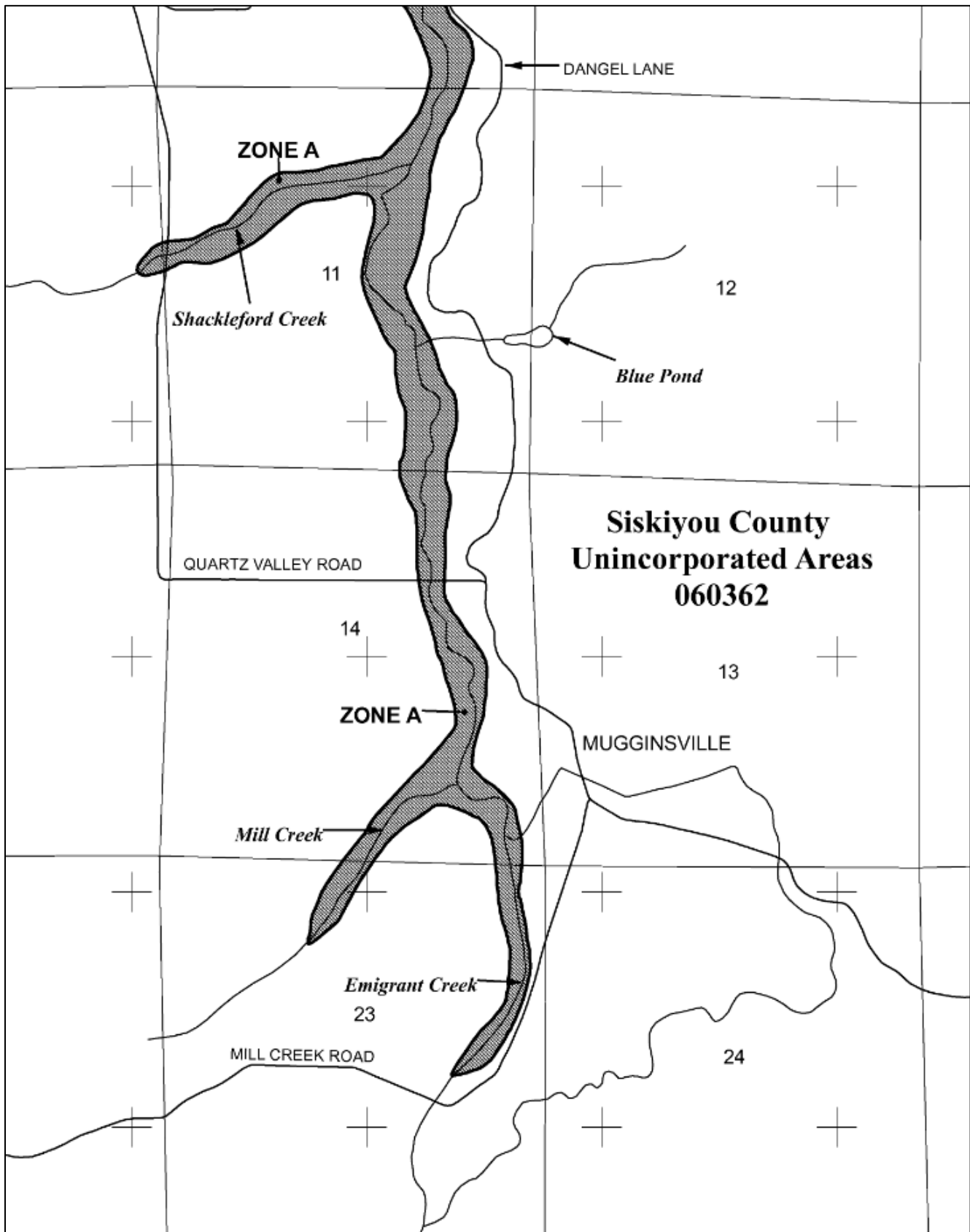
Mount Shasta, California.

Flood Map – Quartz Valley

The community of Quartz Valley (*Population 202*) is located west of Greenview and Highway 3 on Quartz Valley Road. The nearest surface water feature is Scott River to the north, Sniktaw Creek to the west and Shackleford Creek to the south. The 100 Year Floodplain spans the area between Scott River Road and Quartz Valley Road. Emergency evacuation during a flood event may be impacted as large sections of Scott River Road and Quartz Valley Road are in the 100 Year Floodplain.
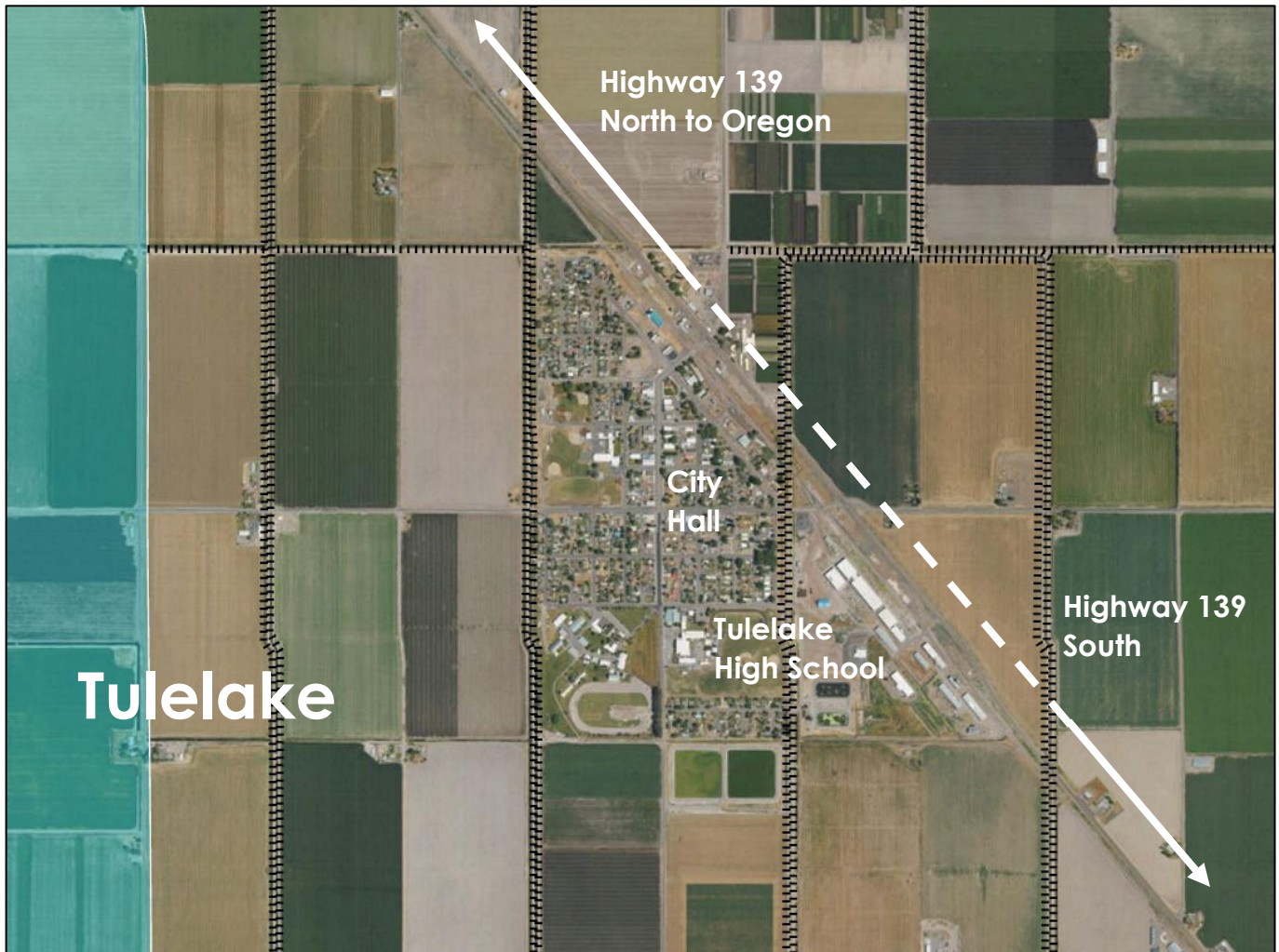
Flood Hazard Zones
1% Annual Chance Flood Hazard
Regulatory Floodway
Special Floodway
Area of Undetermined Flood Hazard
0.2% Annual Chance Flood Hazard

DANGEL LANE

ZONE A

11

Shackleford Creek

12

Blue Pond

Siskiyou County
Unincorporated Areas
060362

QUARTZ VALLEY ROAD

14

13

ZONE A

MUGGINSVILLE

Mill Creek

Emigrant Creek

23

MILL CREEK ROAD

24

Quartz Valley, California.

Flood Map – Tulelake

The town of Tulelake (*Population 867*) is in the northeast corner of the county on Highway 139, near the Oregon border. The nearest surface water is Tule Lake located southwest of town. The 100 Year Floodplain is located far from town and there is minimal flood risk. In addition, there are a series of levees that surround the town.

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
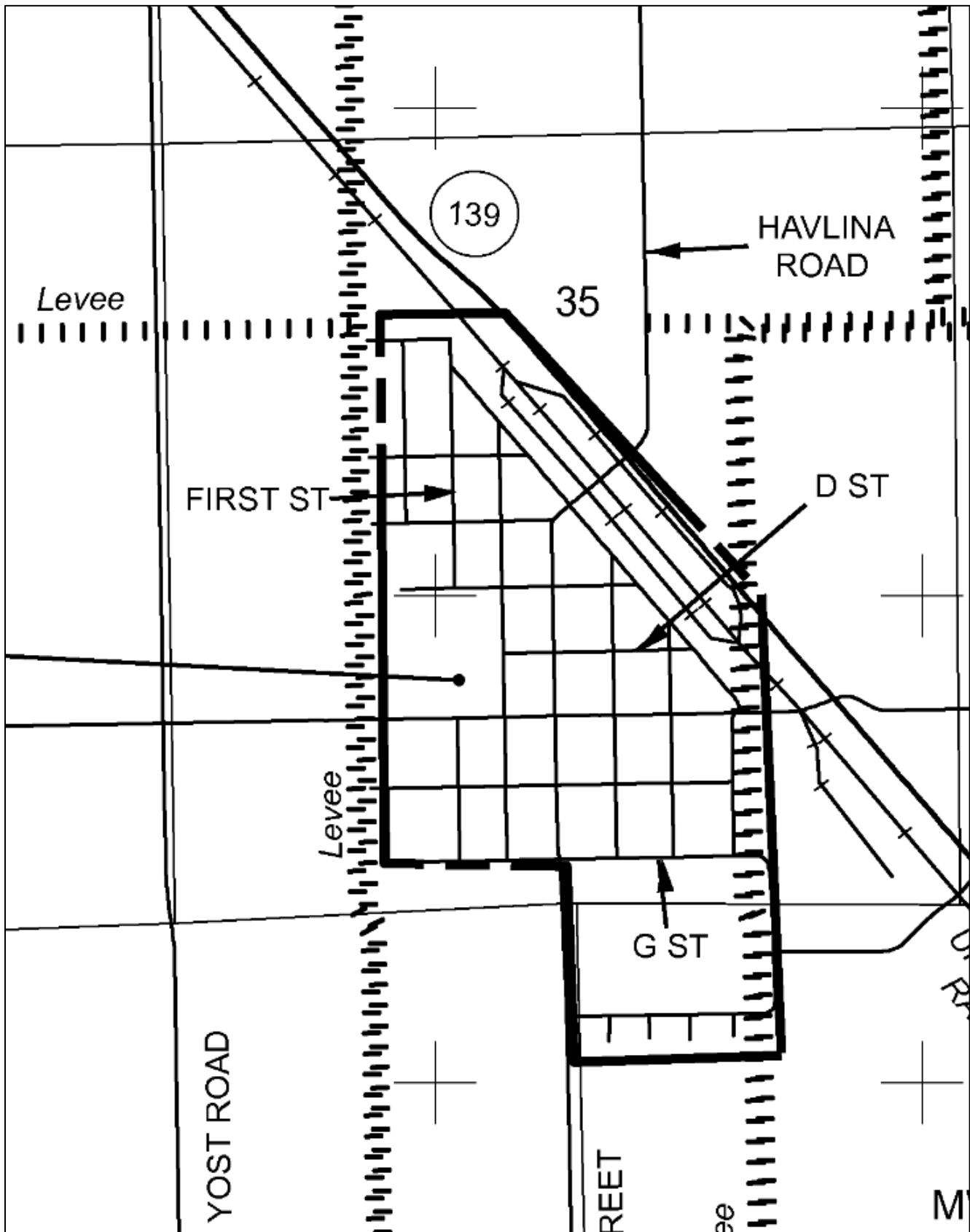
Tulelake, California.

Flood Map – Weed

The town of Weed (*Population 2,574*) is located at the interchange of Interstate 5 and Highway 97, 10 miles north of Mount Shasta. The nearest surface water is Boles Creek, flowing east to west through town. Developments near the intersection of Weed Boulevard and Highway 97 are in the 100 Year Floodplain.

Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
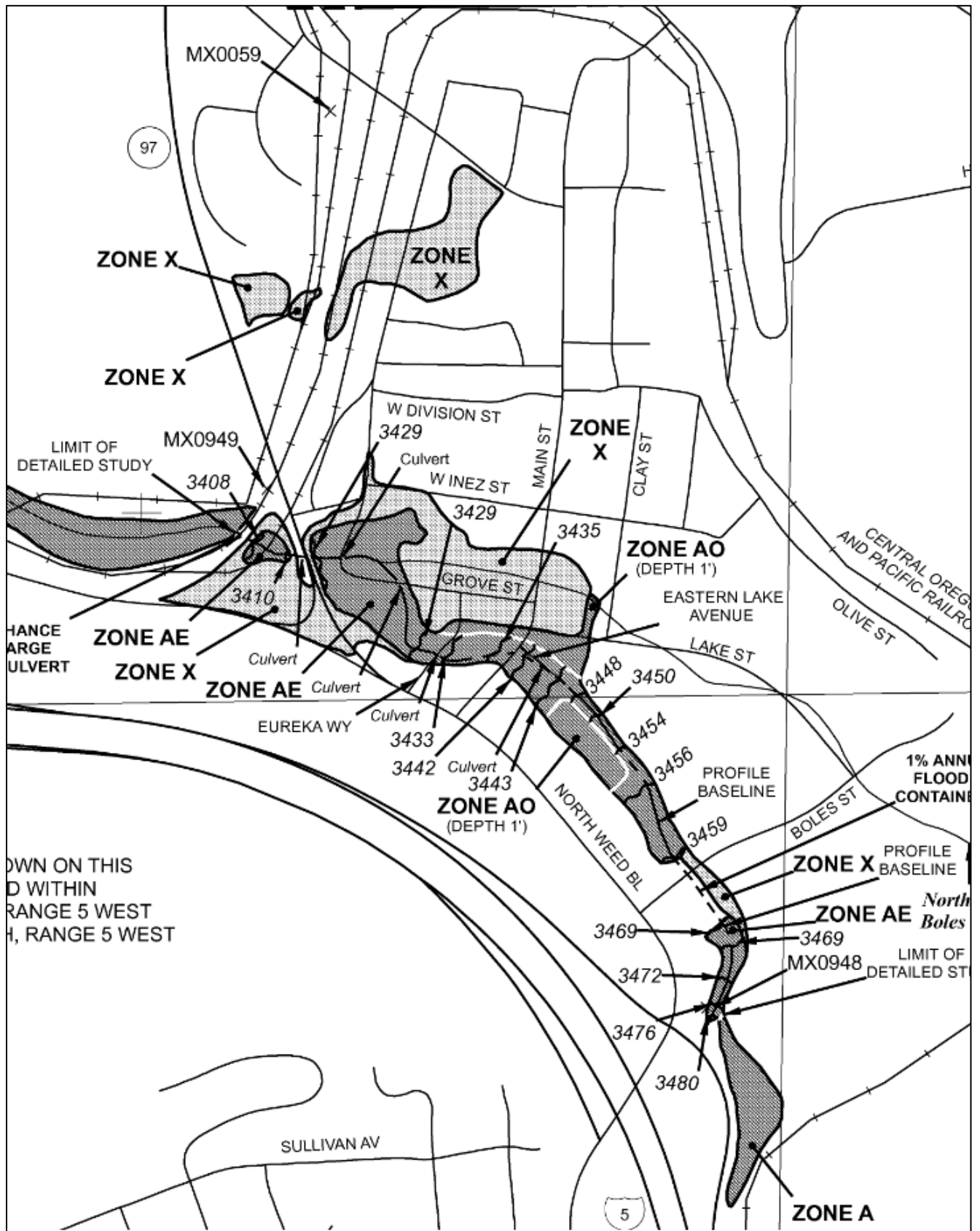
Weed, California.

Flood Map – South Weed

South Weed has minimal flood risk. The only areas in the 100 Year Floodplain are located along Interstate 5 towards the College of Siskiyous.

Flood Hazard Zones

1% Annual Chance Flood Hazard
Regulatory Floodway
Special Floodway
Area of Undetermined Flood Hazard
0.2% Annual Chance Flood Hazard

South Weed, California.

Flood Map – Yreka

The town of Yreka (*Population 7,808*) is located on Interstate 5, approximately 22 miles south of the Oregon Border. The nearest surface water feature is the Greenhorn Reservoir at the south end of town and Yreka Creek, which runs parallel to Interstate 5, the length of the town. The 100 Year Floodplain covers large areas of the town along the I-5 corridor. The 500 Year Floodplain covers the area between South West Street and Interstate 5.

Flood Hazard Zones

1% Annual Chance Flood Hazard
Regulatory Floodway
Special Floodway
Area of Undetermined Flood Hazard
0.2% Annual Chance Flood Hazard
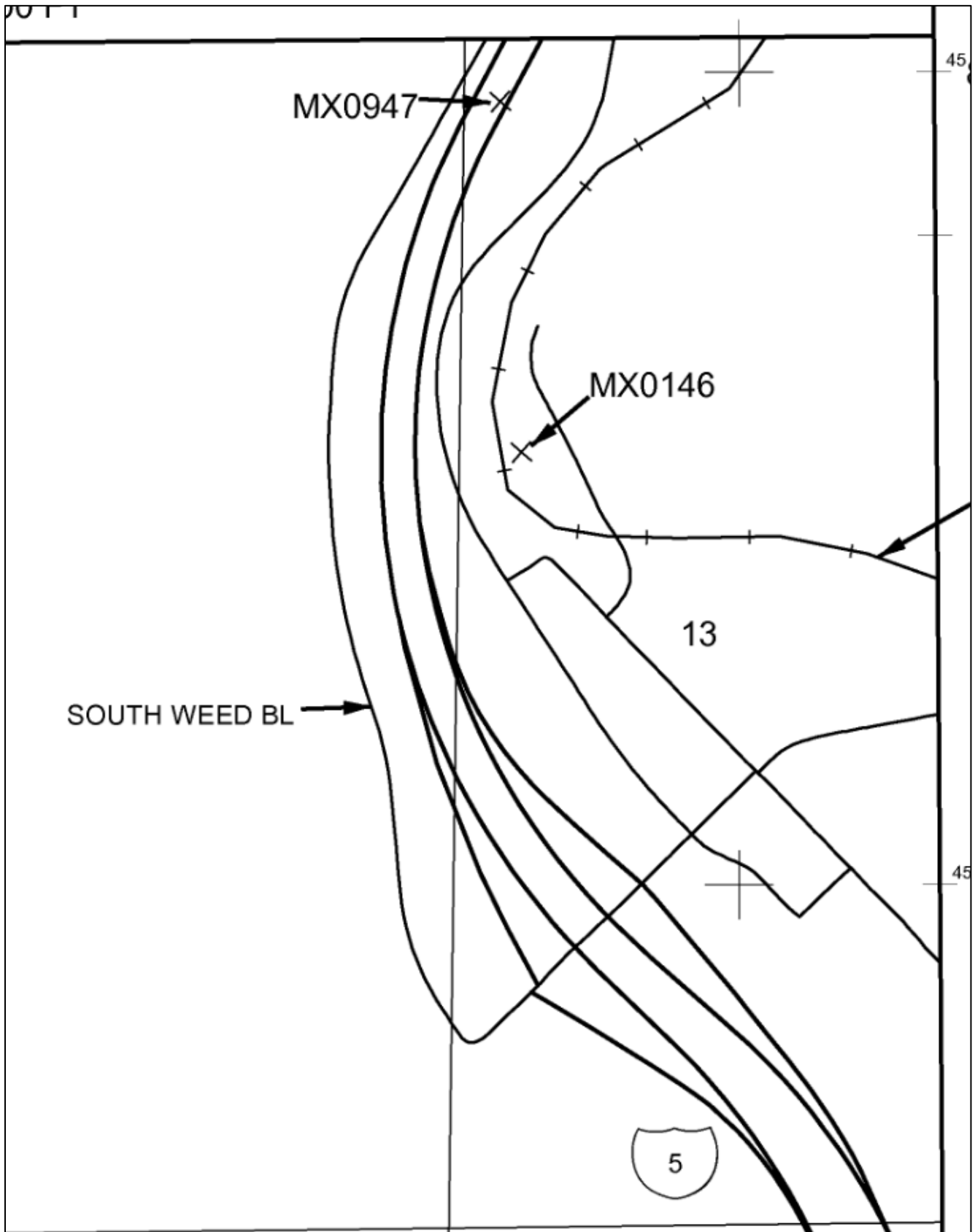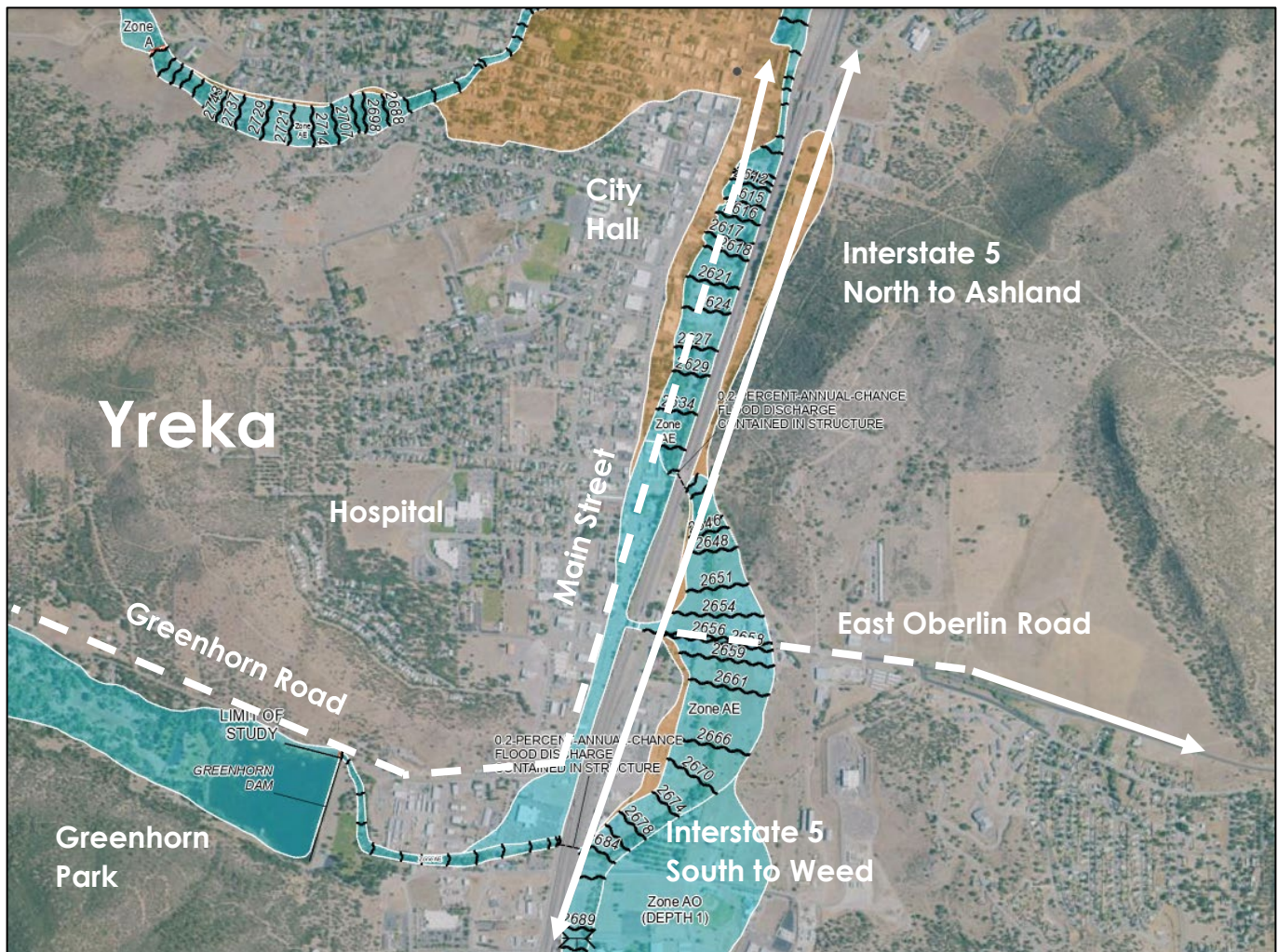
Yreka, California.

Appendix D
Institutional & Regulatory Framework by Hazard

Fire Hazard Institutional Framework

The U.S. Geological Survey has additional information about wildfire hazard areas in Siskiyou County on the agency's website at

https://www.usgs.gov/fire-danger-forecast

The Department of Forestry and Fire Protection (CAL FIRE) is the primary agency responsible for fighting wildfires within the state responsibility area. The department oversees enforcement of state forest protection regulations, implements fuel management projects, and participates in forest conservation and management.

Fire Safe Council of Siskiyou County is a coalition of community groups organized around wildfire prevention and mitigation to protect communities.

Siskiyou Prescribed Burn Association (SPBA) includes landowners, tribes, and local organizations and agencies that work together to safely conduct prescribed burns as a fire hazard mitigation tool.

Fire Hazard Regulatory Framework

Public Resources Code 4290 includes minimum standards for development in the State Responsibility Area. The law addresses emergency access, signage and building numbering, private water supply reserves for emergency fire use, and vegetation modification.

Public Resources Code 4291 requires property owners in mountainous areas, forest covered lands, or any land that is covered with flammable material to create at a minimum a 100-foot defensible space (or to the property line) around their homes and other structures.

The California State Building Code requires minimum standards for new buildings in fire hazard severity zones. Most housing in the county was built prior to this code requirement (Pre 1991). Any new development in the *VHFHSZ* must comply with state and county requirements for building standards, vegetation management, points of egress, and other measures.

The California Fire Code establishes regulations regarding fire safety and fire prevention in buildings and structures throughout the state. Under the Fire Code, all portions of a building shall be within 150 feet of a serviceable fire access road. Fire apparatus access roads shall be all weather roads with a minimum width of 20 feet.

Flood Hazard Institutional Framework

California Department of Water Resources developed the Flood Emergency Response Information Exchange to improve flood emergency preparedness, response, and recovery. The Department also implements the Sustainable Groundwater Management Act and administers the California Statewide Groundwater Elevation Monitoring Program.

Division of Safety of Dams, a part of the California Department of Water Resources, provides oversight of the design, construction, and maintenance of over 1,200 dams in California.

North Coast Regional Water Quality Control Board (RWQCB) enforces waterway protection and pollution control regulations for most of the county. The North Coast RWQCB contains the majority of county's watersheds under its jurisdiction, except for the Sacramento River headwaters.

Central Valley Regional Water Quality Control Board (RWQCB) enforces waterway protection and pollution control regulations in the southeastern portion of the county. The Central Valley RWQCB has authority over waters used for irrigating the Central Valley, including much of the Sacramento River.

Geologic & Seismic Hazards Institutional Framework

The US Geological Survey conducts studies and provides information on geological and seismic hazards in the county, including volcanic activity.

The California Geological Survey provides scientific products and services about the state's geology, seismicity, forests and watersheds, and mineral resources.

Geologic & Seismic Hazards Regulatory Framework

The Alquist-Priolo Act was passed following the San Fernando earthquake in 1971 (*Magnitude* 6.6). This act established regulatory zones surrounding the surface traces of active faults so that a structure for human occupancy cannot be placed or built on active faults with potential for surface rupture and must be sited at a minimum distance from the fault.

The Seismic Hazards Mapping Act (SHMA) directs the California Geological Survey to identify and map areas prone to earthquake hazards.

Hazardous Materials Institutional Framework

Siskiyou County Agriculture Department is the local enforcement agency for state pesticide regulations. The Department protects people and the environment through environmental and natural resource protection, consumer and industry protection and animal control programs.

The U.S. Environmental Protection Agency (EPA) tracks six common air pollutants, called "*criteria air pollutants*" that are found all over the U.S. and have been shown to harm human and environmental health as well as cause property damage. These include ground-level ozone, particulate matter, carbon monoxide (CO), lead, sulfur dioxide (SO2), and nitrogen dioxide (NO2).

California Air Resources Board (CARB) is a state agency that establishes emission standards for mobile air pollution sources in conjunction with federal agencies. CARB has developed programs to encourage cleaner cars and cleaner fuels such as California's cleaner-burning gasoline.

Department of Resources Recycling and Recovery (CalRecycle) is a department within the California Environmental Protection Agency that coordinates the state's recycling and waste management programs. CalRecycle also provides assistance with fire cleanup.

The Department of Toxic Substances Control (DTSC) tracks facilities that are authorized to handle hazardous waste such as federal Superfund and state Superfund sites, military facilities, voluntary cleanup sites, and school sites being evaluated for possible contamination.

The State Water Resources Control Board (SWRCB) regulates *Leaking Underground Storage Tanks* (LUSTs), Department of Defense facilities, and manages the *Spills, Leaks, Investigations & Cleanup* Program (SLIC), and landfills.

Hazardous Materials Regulatory Framework

The Resource Conservation and Recovery Act (RCRA) is a federal law that gives the *Environmental Protection Agency* (EPA) the authority to manage hazardous waste from "start to finish". This means the EPA controls the generation, transportation, treatment, storage, and disposal of hazardous waste. In 1992, the State received authorization from the EPA to oversee and regulate the federal RCRA in California.

Evacuation Planning Regulatory Framework

Government Code §65302 (Senate Bill 99). An update of the Safety Element must include identification of residential developments in any hazard area that do not have at least two emergency evacuation routes. This is intended to assist the County in identifying opportunities to improve the connectivity and resiliency of the transportation system.

Government Code §65302.15 (Assembly Bill 747) states that the county must identify evacuation routes and their capacity, safety, and viability under a range of emergency scenarios as well as identifying evacuation locations. The Safety Element may incorporate reference material from the LHMP to comply with this requirement.

Appendix E
Local Hazard Mitigation Plan

INCORPORATION

In compliance with *Assembly Bill 2140* (2006), the *Siskiyou County 2025 Local Hazard Mitigation Plan* (2025 LHMP) is herein incorporated and made a part of the *Siskiyou County General Plan Safety Element*.

2025 LOCAL HAZARD MITIGATION PLAN

The *2025 Local Hazard Mitigation Plan* (2025 LHMP) for the County of Siskiyou Planning Area was developed in accordance with the *Disaster Mitigation Act* (2000) and followed FEMA's Local Hazard Mitigation Plan guidance. The *2025 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.
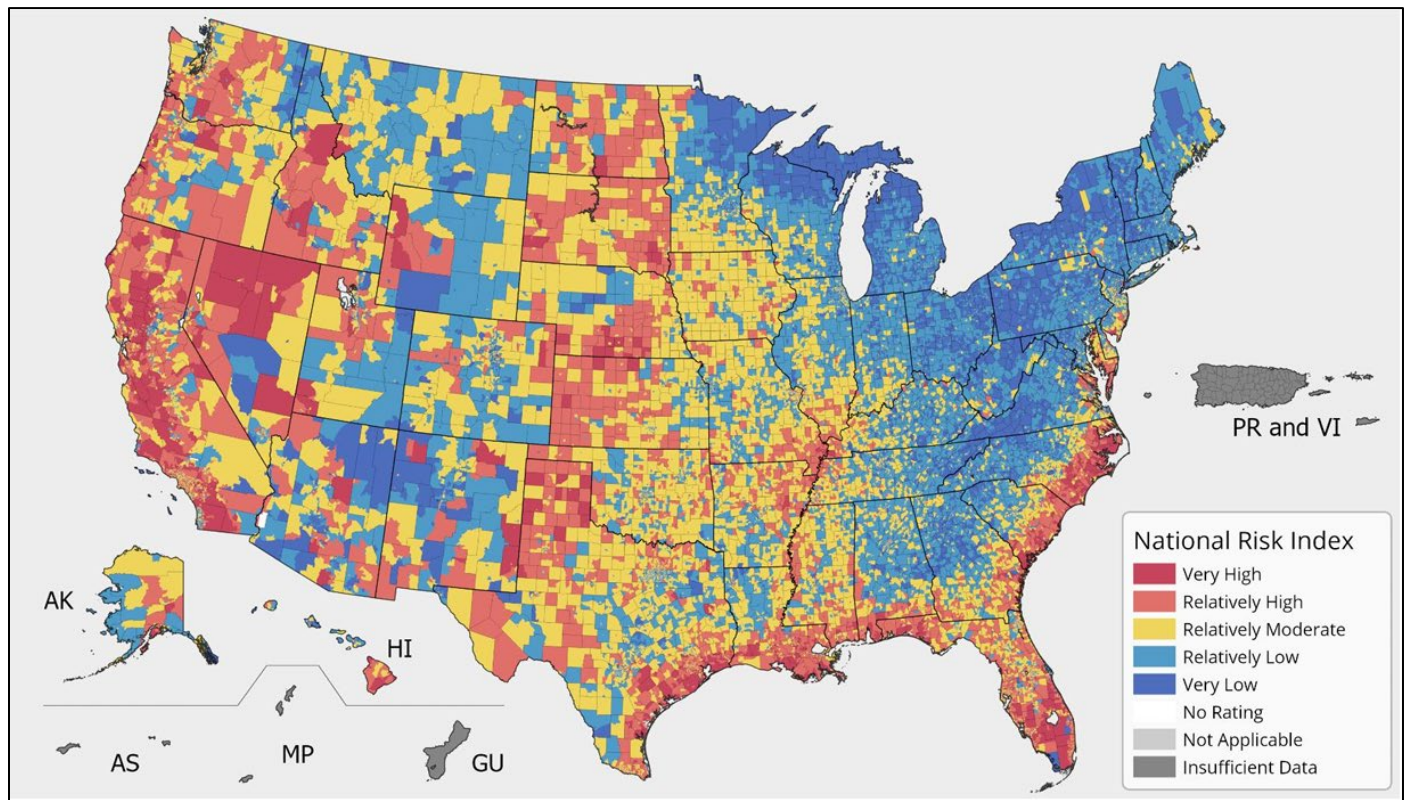
To view the 2025 LHMP in its entirety please visit:

https://www.siskiyoucounty.gov/emergencyservices/page/local-hazard-mitigation-plan

Appendix F
FEMA National Risk Index Methodology

General Risk Calculation

Natural hazard risk is generally calculated using two components: the likelihood of a natural hazard occurring multiplied by the expected consequences.

$$Risk\ =\ Likelihood\ x\ Consequence$$

FEMA National Index Risk Calculation

The National Risk Index instead uses three components to calculate natural hazard risk: a natural hazards component, a consequence enhancing component, and a consequence reducing component.

EAL is the natural hazards component, measuring the expected loss of life, building value, population, and/or agriculture value each year due to natural hazards. *Social Vulnerability* is the consequence enhancing component and analyzes demographic characteristics to measure susceptibility of social groups to the adverse impacts of natural hazards. *Community Resilience* is the consequence reducing component and uses demographic characteristics to measure a community's ability to prepare for, adapt to, withstand, and recover from the effects of natural hazards. The *Social Vulnerability* and *Community Resilience* components are combined into one *Community Risk Factor* (CRF) which is multiplied by the EAL component as shown below:

$$Risk = Expected\ Annual\ Loss\ x\ Community\ Risk\ Factor$$

$$where\ Community\ Risk\ Factor = f\left(\frac{Social\ Vulnerability}{Community\ Resilience}\right)$$

Risk Index values are determined by multiplying *EAL* by the *CRF*, which is a scaling factor unique to each community, varying as a function of the community's *Social Vulnerability* and *Community Resilience* values. All Risk Index values are calculated at the Census tract level. County values are calculated by summing the values from their tracts.
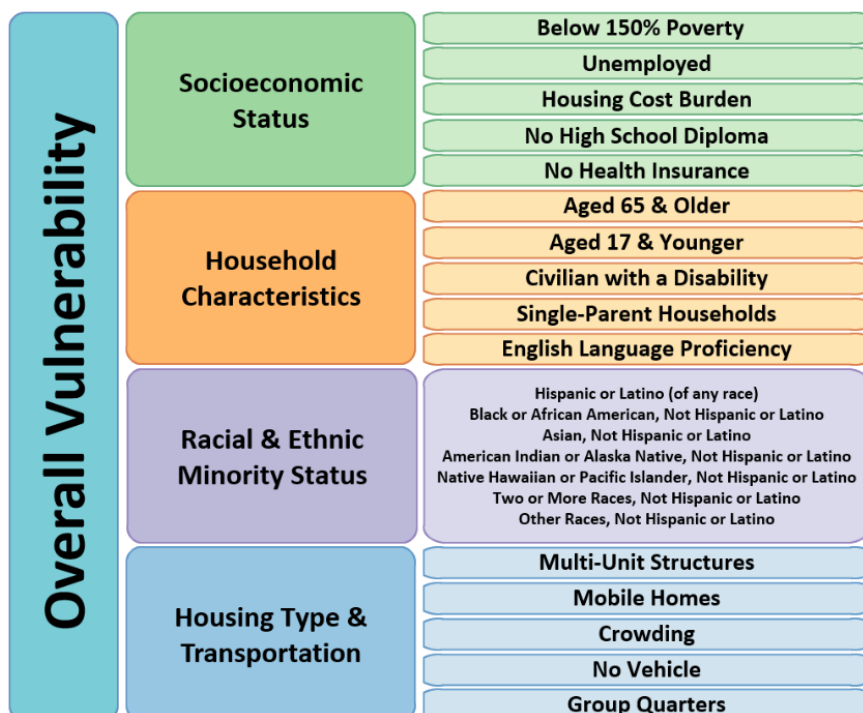
Social Vulnerability Source Data

The source data for *Social Vulnerability* is location specific and utilizes 16 socioeconomic variables thought to contribute to a community's reduced ability to prepare for, respond to, and recover from hazards. The dataset comes from the *Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry Social Vulnerability Index* (CDC/ATSDR SVI). For more information, please visit the CDC website.

Community Resilience Source Data

Community Resilience is defined by the *National Institute of Standards and Technology* (NIST) as the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions.

In the National Risk Index, *Community Resilience* is the consequence reducing component and represents the relative level of community resilience in comparison to all other communities at the same level. A higher *Community Resilience* score results in lower Risk Index values. Because *Community Resilience* is unique to a geographic location—specifically, a county—it is a geographic risk factor.

Community Resilience source data comes from the: *HVRI Baseline Resilience Indicators for Communities* (BRIC).

The HVRI BRIC dataset includes a set of 49 indicators that represent six types of resilience: social, economic, community capital, institutional capacity, housing/infrastructure, and environmental. The data is used to compare one county to another and a higher HVRI BRIC score indicates a stronger and more resilient community.

Community Resilience Indicators (County Level)

Social Resilience

Variable	Calculation	Data Source
Educational attainment	% Population over 25 with college education or more	American Community Survey
Pre-retirement age	% Population between 15 to 65 years of age	American Community Survey
Transportation Access	% Households with at least one vehicle	American Community Survey
Communication capacity	% Households with telephone service available	American Community Survey
English language competency	% Population proficient English speakers	American Community Survey
Non-special needs	% Population without sensory, physical, or mental disability	American Community Survey
Health insurance	% Population under age 65 with health insurance	American Community Survey
Mental health support	Psychosocial support facilities per capita	County Health Ranking
Food provisioning capacity	Food security rate	Map the Meal Gap
Physician access	Physicians per capita	American Community Survey

Economic Resilience

Variable	Calculation	Data Source
Homeownership	% Owner-occupied housing units	American Community Survey
Employment rate	% Labor force employed	American Community Survey
Race/ethnicity income equality	Gini coefficient (*Inverted*)	American Community Survey
Non-dependence on primary/tourism sectors	% Employees not in farming, fishing, forestry, extractive industry, or tourism	American Community Survey
Gender income equality	% Absolute difference between male and female median income divided by annual income (*Inverted*)	American Community Survey
Business size I	Ratio of large to small businesses	County Business Patterns (NAICS)
Business size II	Ratio of employees to establishments	County Business Patterns (NAICS)
Large retail-regional/national geographic distribution	Large retail stores per capita	County Business Patterns (NAICS)
Federal employment	% Labor force employed by federal government	American Community Survey
Energy burden	Average Energy Burden (% income), (*Inverted*)	Low-Income Energy Affordability Data

Community Capital

Variable	Calculation	Data Source
Place attachment-not recent immigrants	% Population not foreign-born persons who came to US within previous 5 years	American Community Survey
Place attachment-native born residents	% Population born in state of current residence	American Community Survey
Political engagement	% Voting age population participating in recent election	Presidential election data
Religious organizations	# Religious organizations per capita	County Business Patterns (NAICS)
Civic organizations	# Civic organizations per capita	County Business Patterns (NAICS)
Disaster volunteerism	# AmeriCorps volunteers per capita	AmeriCorps

Institutional Resilience

Variable	Calculation	Data Source
Mitigation spending	10-year average per capita spending for mitigation projects	FEMA Hazard Mitigation Grant Program
Flood insurance coverage	% Housing units covered by National Flood Insurance Program	FEMA NFIP
Performance regimes-state capital	Distance from county seat to state capital (*Inverted*)	National Atlas
Performance regimes-nearest metro area	Distance from county seat to nearest county seat within a Metropolitan Statistical Area (*Inverted*)	National Atlas
Political & jurisdictional fragmentation	# Governments and special districts per 10,000 persons (*Inverted*)	USA Counties
Disaster aid experience	# Presidential Disaster Declarations divided by # of loss-causing hazard events for 10-year period	FEMA PDD database and SHELDUS
Local disaster training	% Population in communities covered by Citizen Corps programs	FEMA Citizen Corps
Population stability	Population change over previous 5-year period (*Inverted*)	Census
Nuclear plant accident planning	% Population within 10 miles of nuclear power plant	HIFLD Nuclear Power Plants Database; Census
Crop insurance coverage	Crop insurance policies per square mile	Environmental Working Group Farm Subsidies

Housing/Infrastructural Resilience

Variable	Calculation	Data Source
Sturdier housing types	% Housing units not mobile homes	American Community Survey
Temporary housing availability	% Vacant housing units that are for rent	American Community Survey
Medical care capacity	# Hospital beds per capita	Covid Care map
Evacuation routes	Intersection density	National Neighborhood Data Archive
Housing stock construction quality	% Housing units built prior to 1970 or after 2000	American Community Survey
Temporary shelter availability	# Hotels/motels per capita	County Business Patterns (NAICS)
School restoration potential	# Public schools per capita	National Center for Education Statistics
Industrial re-supply potential	Rail miles per square mile	HIFLD
High speed internet infrastructure	% Population with access to broadband internet service	American Community Survey

Environmental Resilience

Variable	Calculation	Data Source
Local food suppliers	Farms marketing products through Community Supported Agriculture per capita	Census of Agriculture
Natural flood buffers	% Land in wetlands	National Land Cover Dataset
Efficient energy use	Megawatt hours per energy consumer (*Inverted*)	City and County Energy Profiles
Pervious surfaces	Average percent perviousness	National Land Cover Dataset
Efficient water use	Water Supply Stress Index (*Inverted*)	Water Risk Atlas

Community Risk Factor

The *CRF* is a scale factor that incorporates *Social Vulnerability* and *Community Resilience* in the National Risk Index to arrive at a distribution of risk values that better reflects the impacts communities experience from natural disasters. By design, the *CRF* ensures that higher *Social Vulnerability* and lower *Community Resilience*, relative to other counties at the same level, result in higher Risk Index values for a given level of *EAL*.

To generate a *CRF* value for a community, its *Social Vulnerability* is divided by its *Community Resilience* value, and this ratio is mapped to a triangular distribution with minimum 0.5, maximum 2, and mode 1.

A triangular distribution is a continuous probability distribution with a lower limit a, upper limit b, and mode c, where a < b and a ≤ c ≤ b. In a triangular distribution, the mode is the most likely value, which corresponds to the highest point of the triangular shape. The mode is always located between the minimum and maximum values of the distribution and is the value that has the greatest probability of occurring.

$$Community\ Risk\ Factor = f\left(\frac{Social\ Vulnerability}{Community\ Resilience}\right)$$

$$where\ f(\cdot) \rightarrow \tau(a = 0.5, b = 2, c = 1)$$

This triangular distribution was utilized for the National Risk Index for several reasons. *First*, the bounds are consistent with those used to calculate risk in previous versions of the National Risk Index data. *Second*, the shape highlights communities near both tails of the distribution without assigning extreme values to a small number of communities at the ends of the distribution. *Third*, since EAL is the primary driver of risk, a value of 1 was selected as the most appropriate mode for the CRF.

Expected Annual Loss

EAL is computed for each hazard type and only quantifies loss for relevant consequence types (i.e., buildings, population, or agriculture). For example, many hazard types only significantly impact buildings and population, so the loss to agriculture is not included in the computation. However, the *EAL* for *Drought* only quantifies the damage to agriculture in its computation. Agriculture is considered a relevant consequence type for hazards where it has historically contributed greater than 1% of the total losses. The hazard types where agriculture is a factor in determining EAL are: *Cold Wave*, *Heat Wave*, Riverine Flooding, *Strong Wind*, *Wildfire*, and *Winter Weather*.

All loss is quantified as a dollar amount. While building and agriculture (crops and livestock) losses are quantified in dollars in the source data, population loss is quantified as the number of fatalities and injuries and must be converted to ensure all *EAL* values use a common unit of measurement. Population loss is monetized into a population equivalence value using a *Value of Statistical Life* (VSL) approach in which each fatality or ten injuries is treated as $11.6 million of economic loss, an inflation-adjusted VSL used by FEMA, which is adjusted to account for inflation.

For a more in-depth analysis on how the National Risk Index values are calculated please visit the FEMA website or download the National Risk Index Technical Documentation at:

https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf

Appendix G
Evacuation Routes for Selected Communities
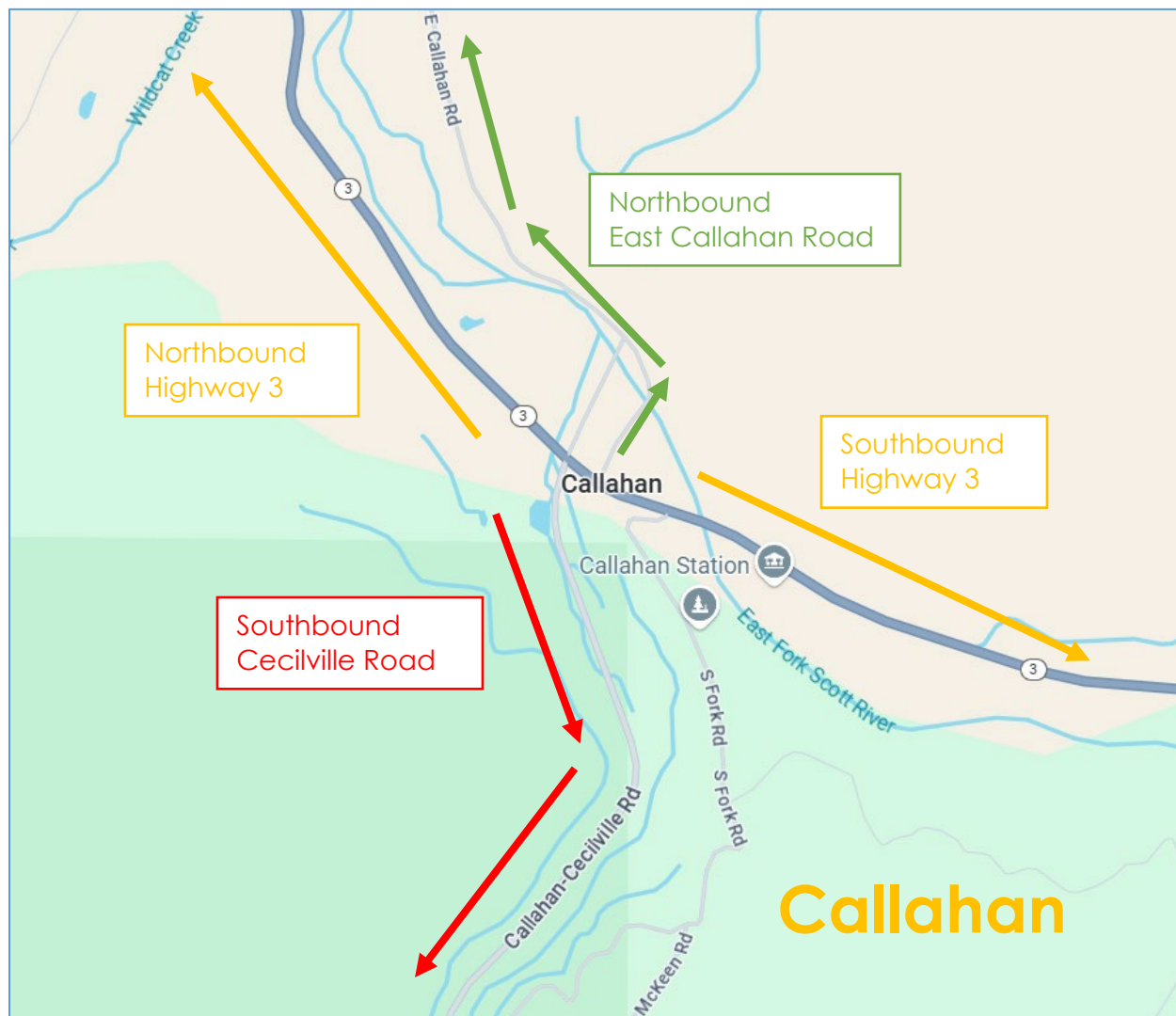
Evacuation Routes – Callahan

The community of Callahan (*Population less than 100*) is located at the intersection of Highway 3 and Cecilville Road, where the south and east fork of the Scott River meet. Primary evacuation routes for Callahan are *Highway 3*, *East Callahan Road*, and *Callahan-Cecilville Road*, all of which are in the 100 Year Floodplain. Schools, churches, and the Etna rodeo grounds could serve as safe locations for evacuees during a hazard event.
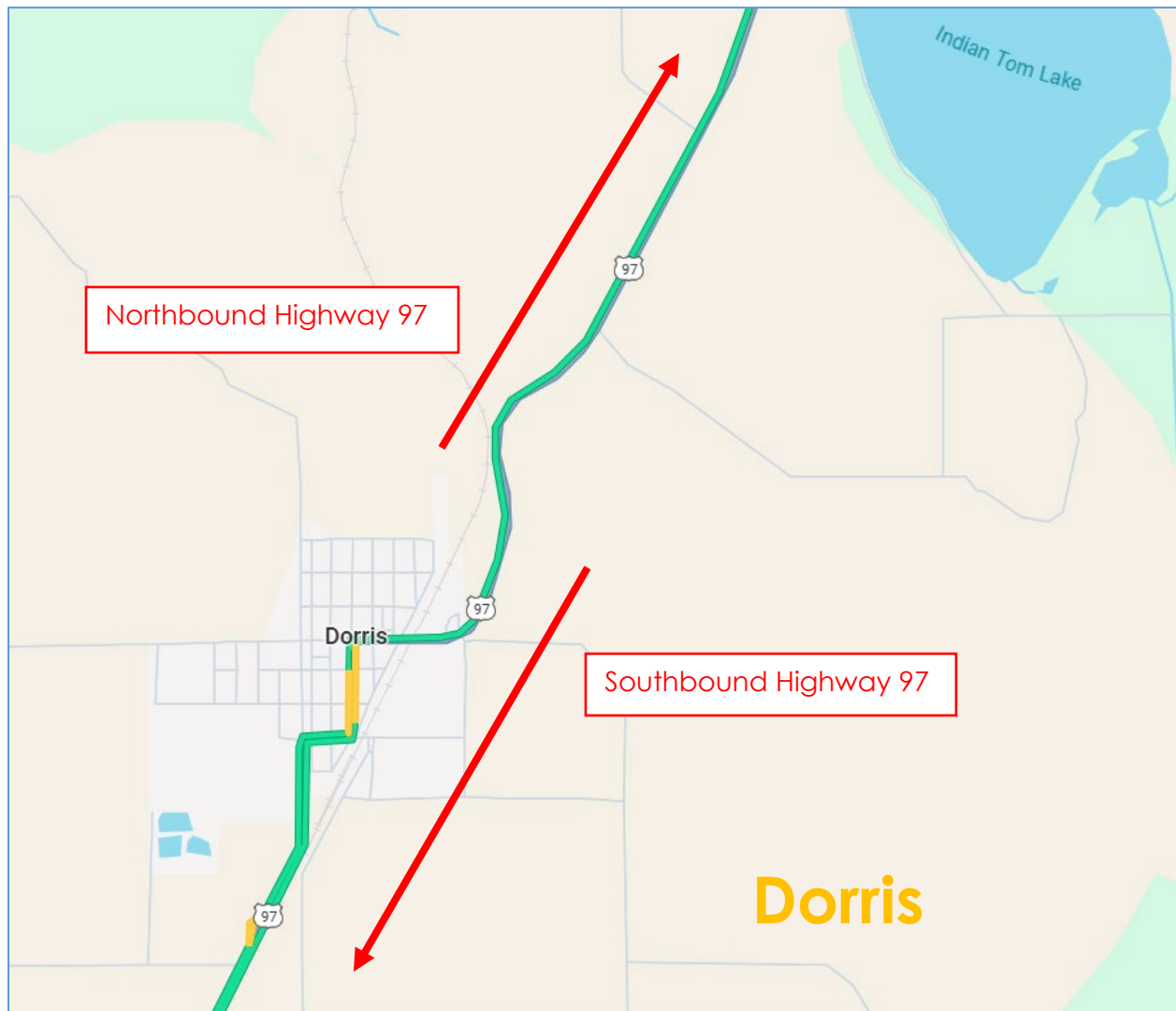
Evacuation Routes – Dorris

The town of Dorris (*Population 822*) is in the northeastern portion of Butte Valley, slightly south of the Oregon border, along Highway 97. The primary evacuation route out of Dorris is *Highway 97*, north to Oregon, and south to the town of Weed. Schools, churches, and community centers in Weed and Tulelake could serve as safe locations for evacuees during a hazard event.
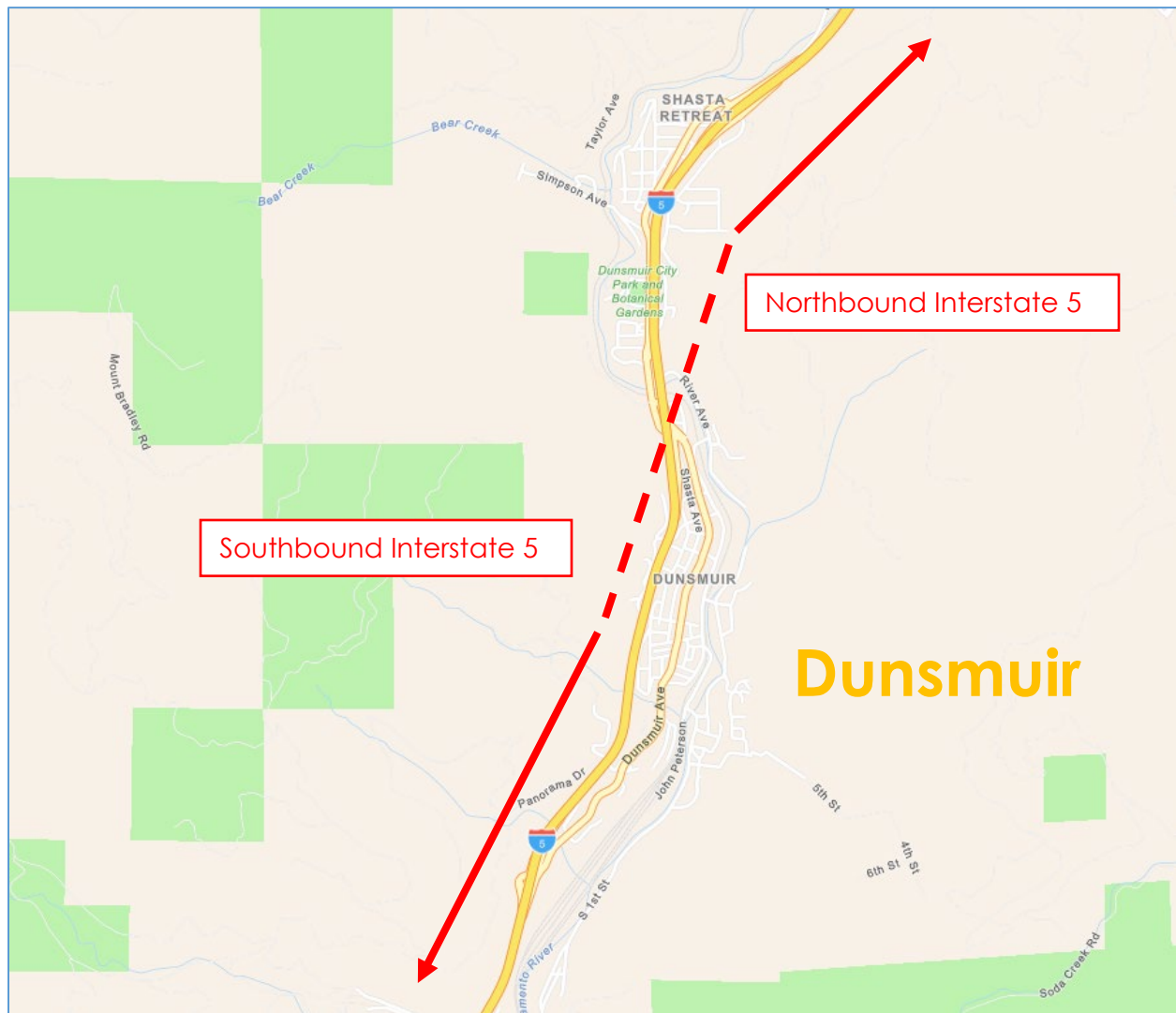
Evacuation Routes – Dunsmuir

The town of Dunsmuir (*Population 1,642*) is located on Interstate 5, near the County's southern border. The primary evacuation route out of the area is *Interstate 5*, northbound to the town of Mount Shasta and southbound to the town of Redding and Shasta County. Schools, churches, and community centers in Mount Shasta could serve as safe locations for evacuees during a hazard event. Given Dunsmuir's proximity to Shasta County, it is likely that many evacuees will instead choose to transit south towards Castella and Redding, California.

Northbound Highway 3

North on Island Road to Fort Jones

Etna

Southbound Sawyers Bar Road

Southbound Highway 3

Horn Lane towards Eastside Road
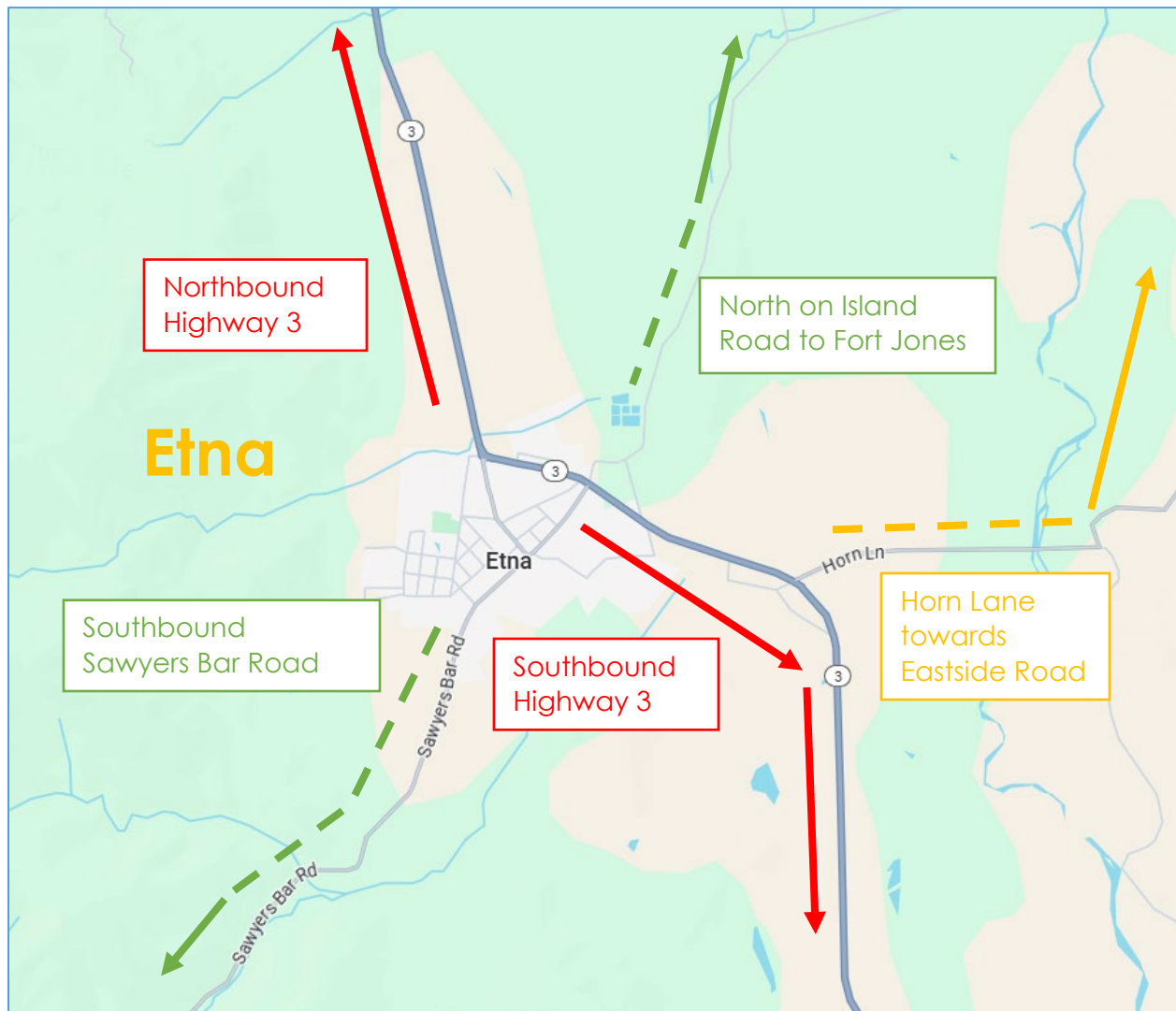
Evacuation Routes – Etna

The town of Etna (*Population 653*) is located on the west side of Scott Valley, 13 miles north of Callahan on Highway 3. The primary evacuation route is *Highway 3*, northbound to Fort Jones and Yreka, southbound towards the Community of Gazelle and the town of Weed. An alternative route, south on *Sawyers Bar Road* is available, which will take you over Etna Summit and towards the Communities of Sawyers Bar, Forks of Salmon and Somes Bar. Schools, churches, and community centers in Fort Jones could serve as safe locations for evacuees during a hazard event.
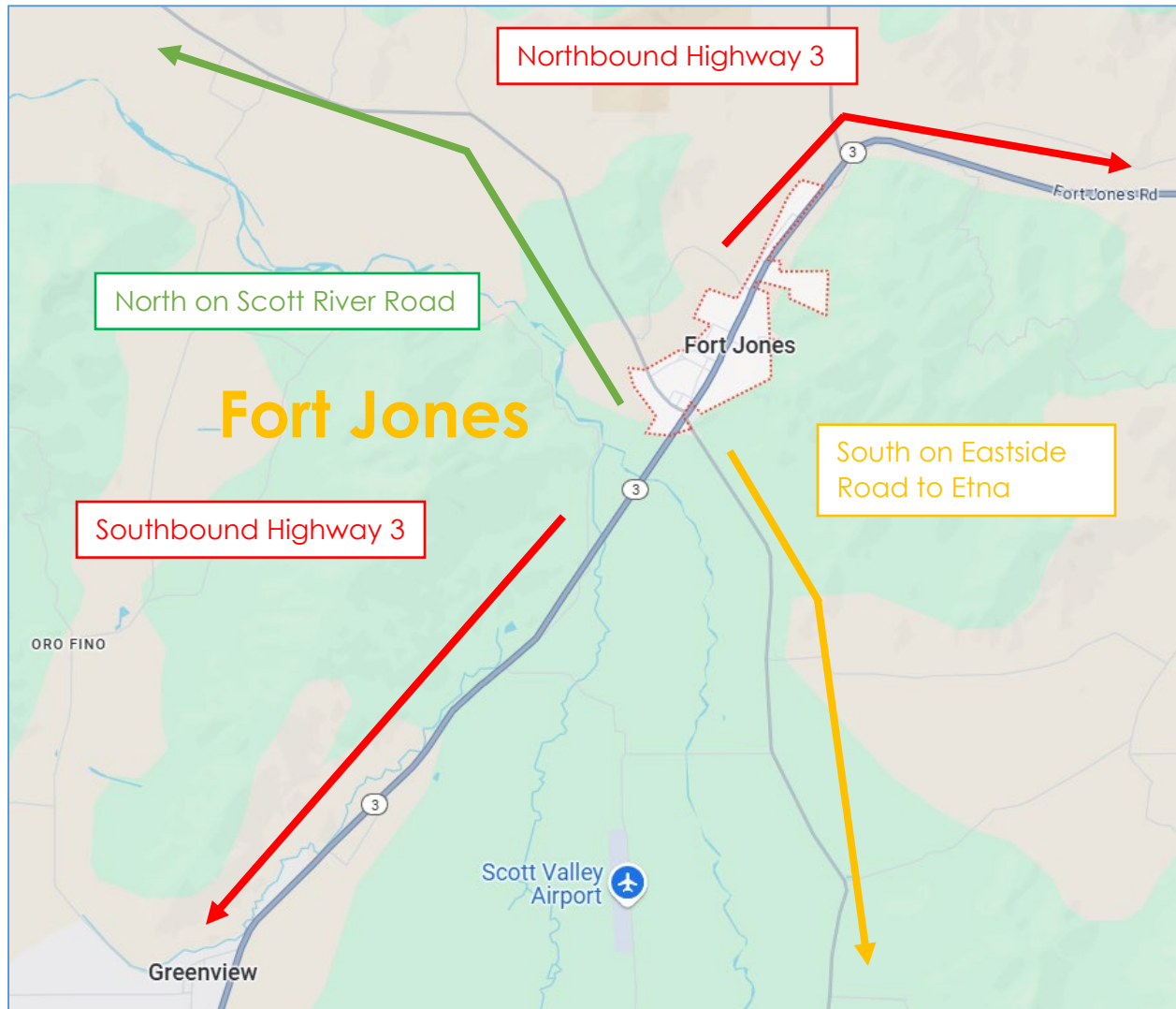
Evacuation Routes – Fort Jones

The town of Fort Jones (*Population 673*) is in Scott Valley, 12.5 miles north of Etna on Highway 3. The primary evacuation route out of Fort Jones is *Highway 3*, northbound to Yreka and southbound towards the town of Etna. *Scott River Road* and *Eastside Road* could also serve as evacuation routes. Schools, churches, and community centers in Yreka and Etna, and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event.
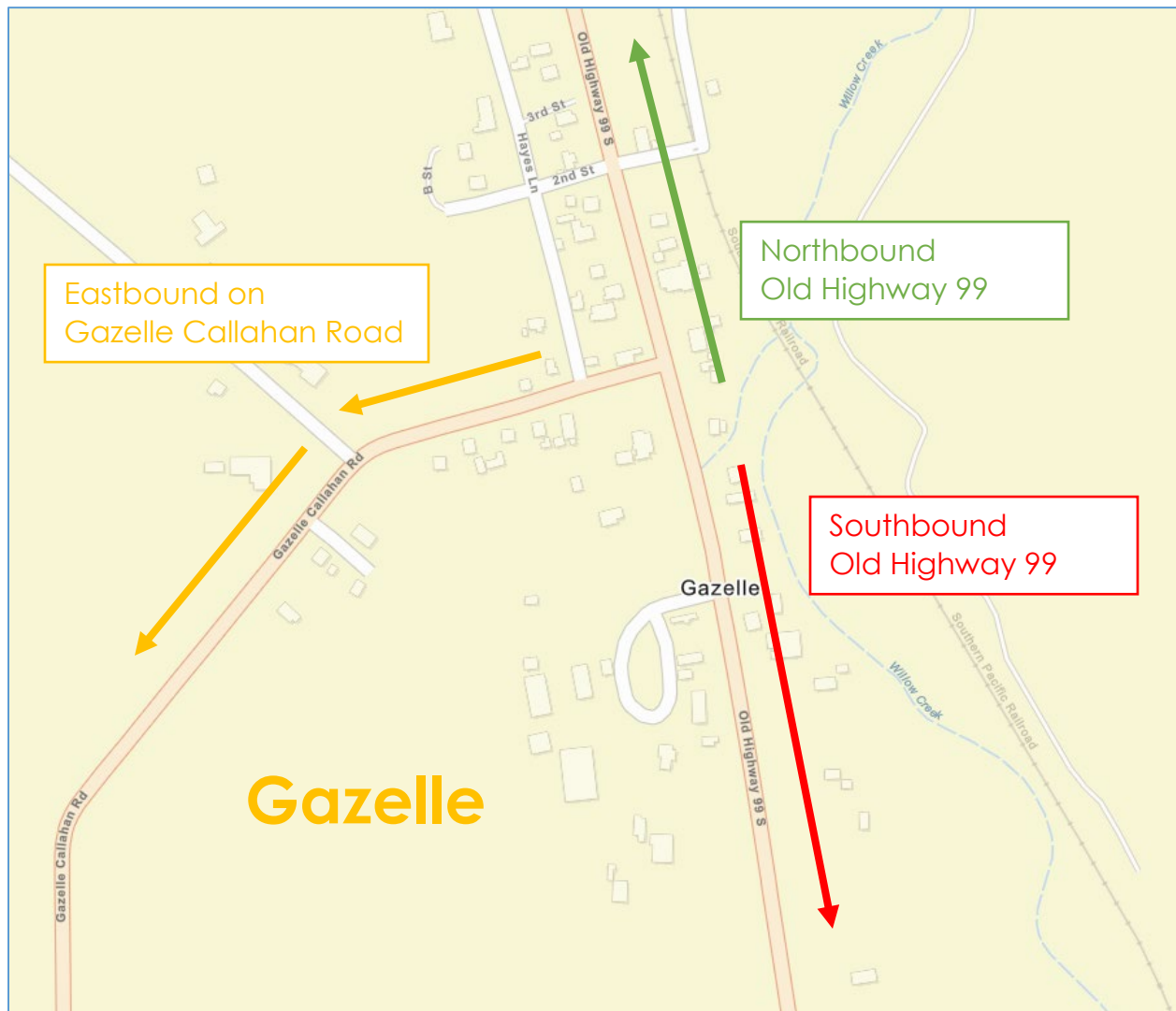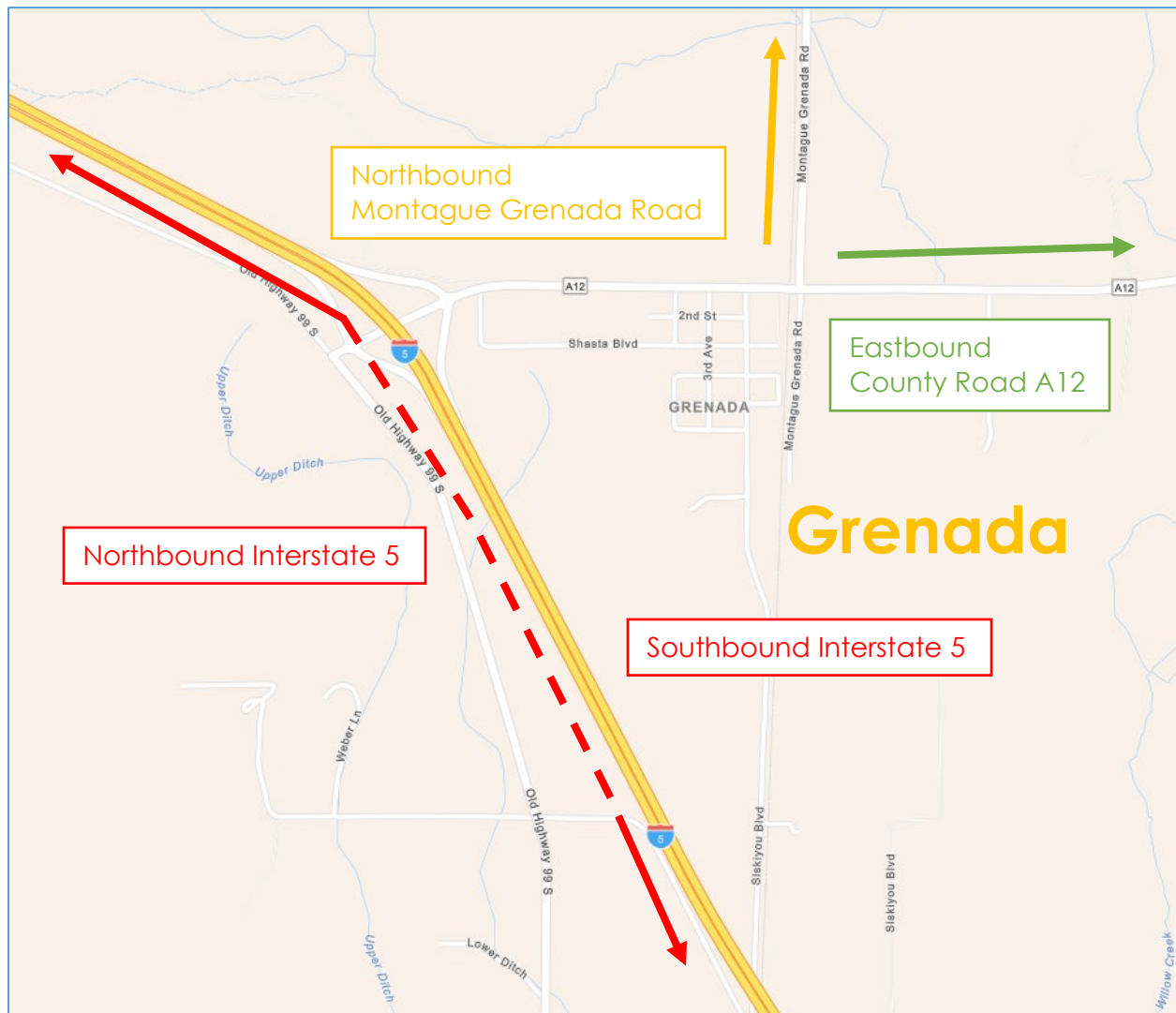
Evacuation Routes – Gazelle

The community of Gazelle (*Population 120*) is located west of Interstate 5 on Old Highway 99, between the Cities of Yreka and Weed. The main evacuation route is *Old Highway 99*, northbound to Yreka, southbound to Weed, or west along *Gazelle-Callahan Road* towards Callahan and the Scott Valley area. Schools, churches, and community centers in Yreka, Weed, and Montague, and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event.
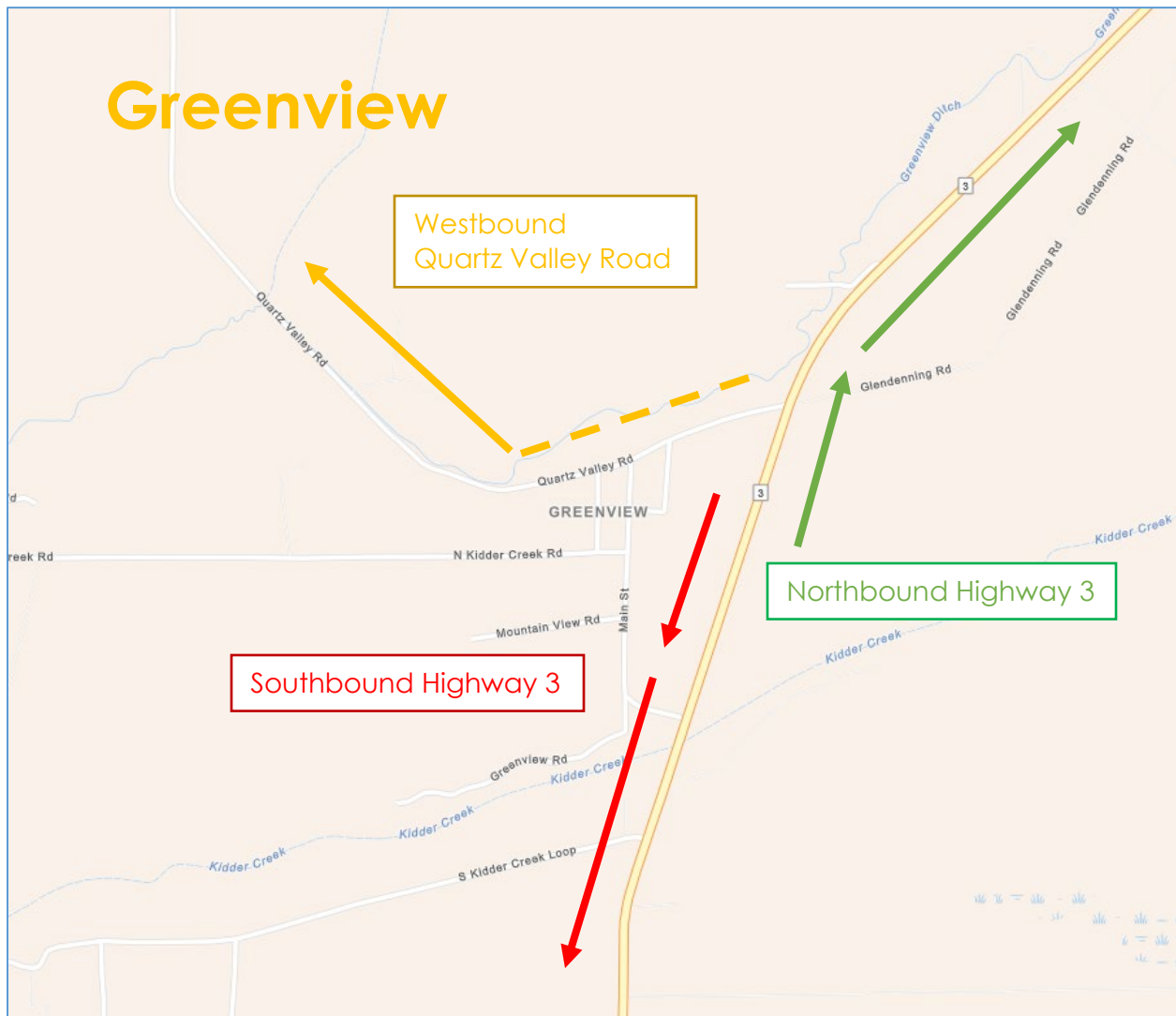
Evacuation Routes – Greenview

The community of Greenview (*Population 208*) is in Scott Valley, midway between Fort Jones and Etna on Highway 3. The main evacuation route for this area is *Highway 3*, northbound towards Fort Jones, and southbound towards Etna. *Quartz Valley Road* is an alternative route which will take you towards the Quartz Valley Indian Reservation and eventually to *Scott River Road* towards Fort Jones. Schools, churches, and community centers in Fort Jones and Etna could serve as safe locations for evacuees during a hazard event.
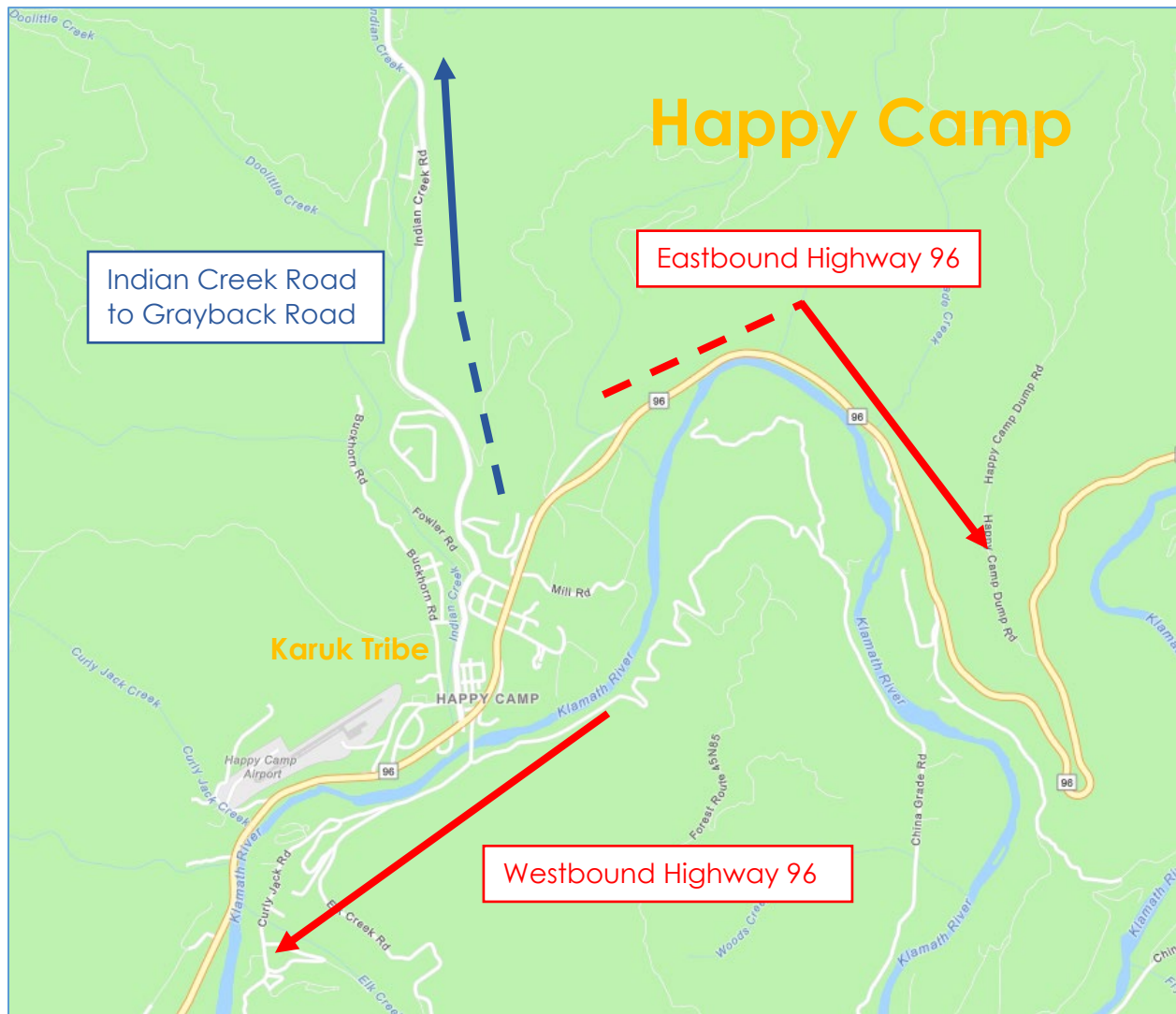
Evacuation Routes – Grenada

The community of Grenada (*Population 314*) is located along Interstate 5 and covers the land area between County Road A12, Montague Grenada Road, and Interstate 5. The primary evacuation route for this area is *Interstate 5*, northbound to Yreka and southbound to Weed. *County Road A12* and *Montague Grenada Road* are alternative routes if I-5 is not accessible. Schools, churches, and community centers in Yreka, Weed, and Montague, and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event.
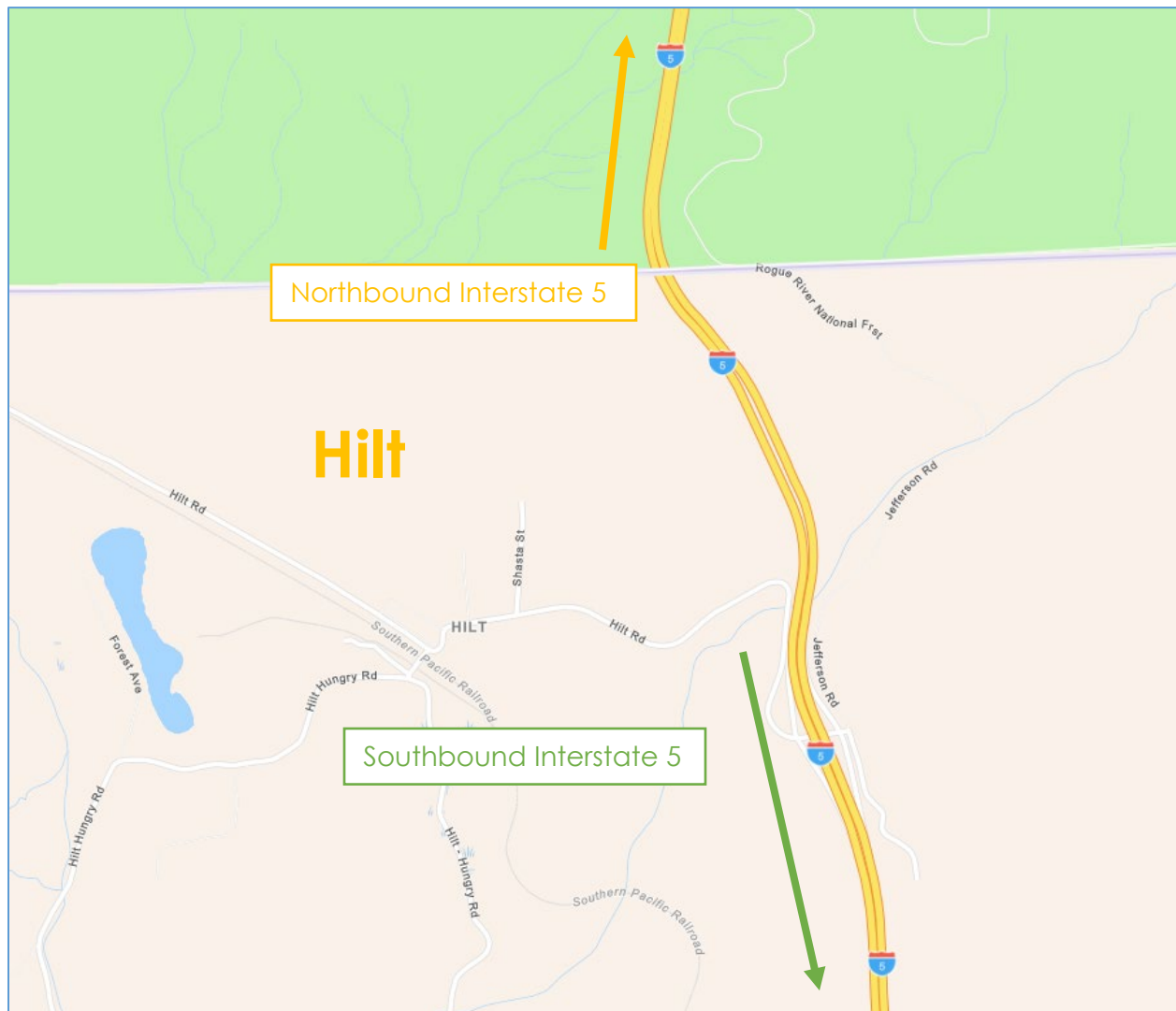
Evacuation Routes – Happy Camp

The community of Happy Camp (*Population 907*) is located on Highway 96, 70 miles west of Interstate 5. Primary evacuation routes are *Highway 96*, *Elk Creek Road*, *Indian Creek Road*, and *Buckhorn Road*. When Highway 96 is restricted, the only route out of the area is Indian Creek Road continuing to *Grayback Road*, up into Oregon. Forest Routes (unpaved roads) between Orleans and Happy Camp are available as a last resort. Schools, churches, and community centers in Orleans and Yreka and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event.
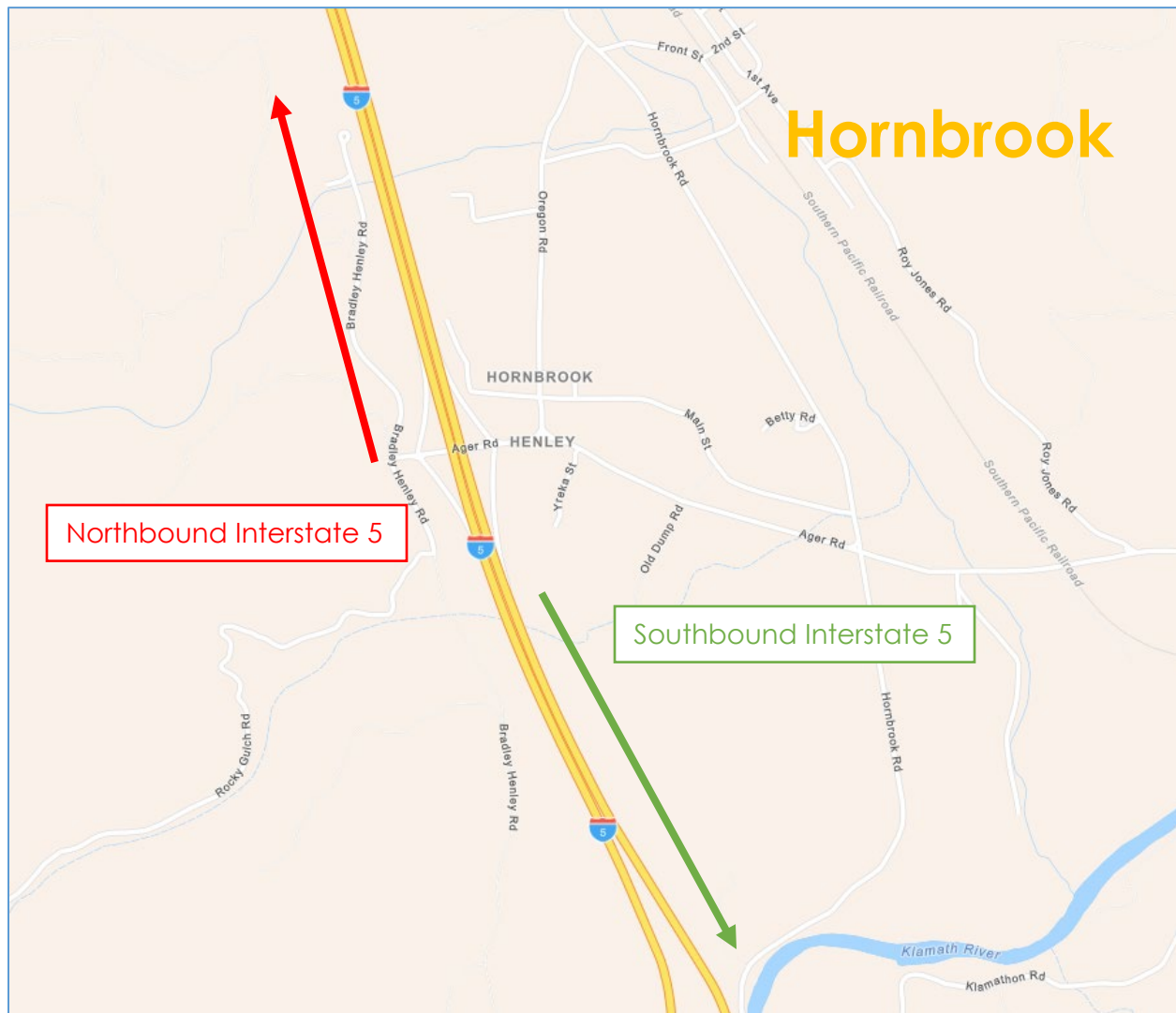
Evacuation Routes – Hilt

The community of Hilt (*Population 9*) is located west of Interstate 5, near the Oregon border. The sole evacuation route is *Hilt Road* to *Interstate 5*. Schools, churches, and community centers in Yreka and Montague, and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event. Given Hilt's proximity to Oregon, it is possible that evacuees will instead choose to transit north towards Ashland.

Evacuation Routes – Hornbrook

The community of Hornbrook (*Population 381*) is located east of Interstate 5, approximately 15 miles north of Yreka. The primary evacuation route is *Ager Road* out to *Interstate 5*. Schools, churches, and community centers in Yreka and Montague, and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event. Given Hornbrook's proximity to Oregon, it is possible that evacuees will instead choose to transit north towards Ashland.
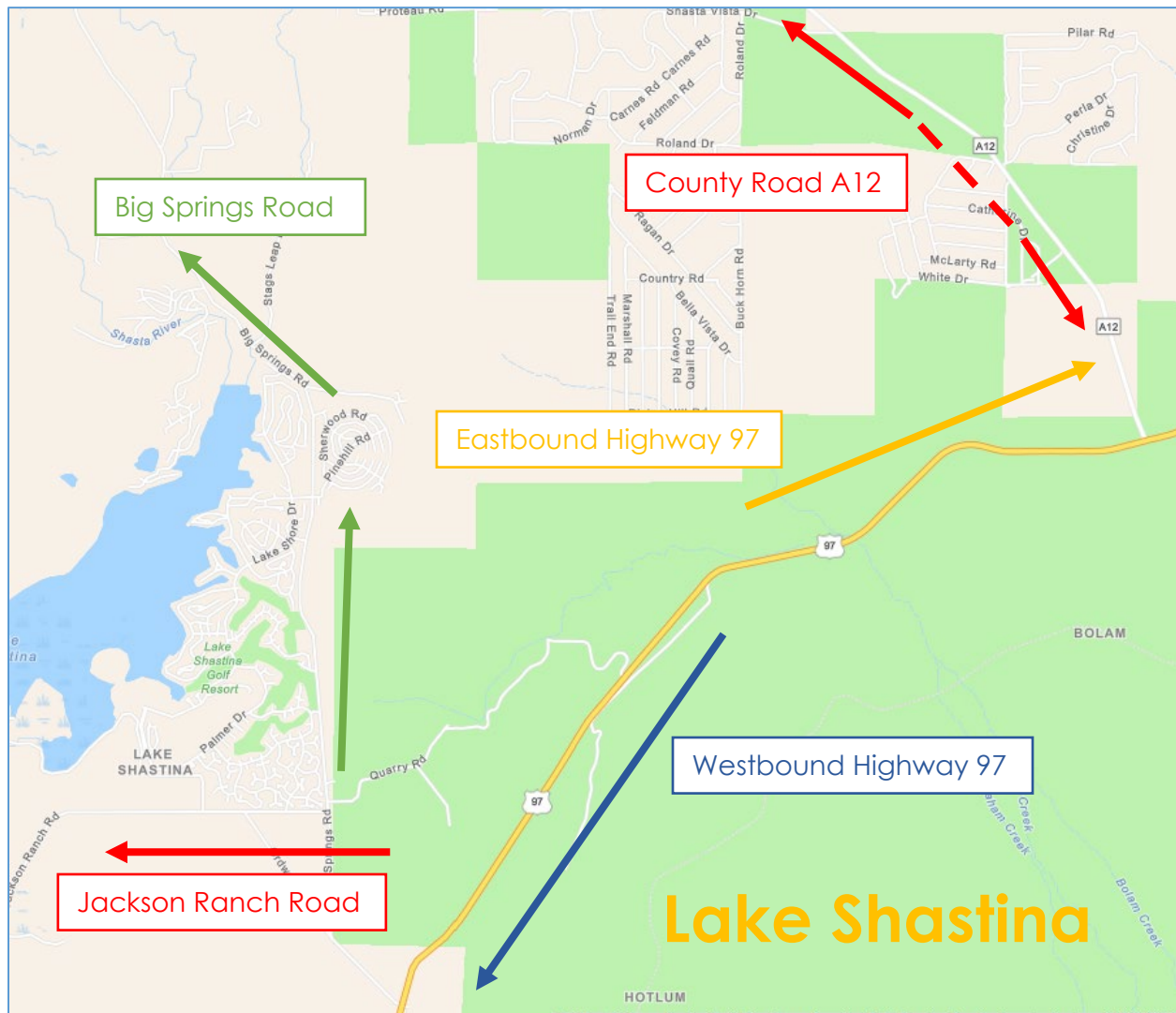
Evacuation Routes – Lake Shastina

The community of Lake Shastina (*Population 3,008*) is located north of Weed along Highway 97. The primary evacuation routes are *Jackson Ranch Road* westbound to *Interstate 5* and *Big Springs Road* southbound to *Highway 97*. *County Road A12* is also available, northbound to Grenada, and southbound to Highway 97. Schools, churches, and community centers in Yreka, Montague, and Weed, and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event.
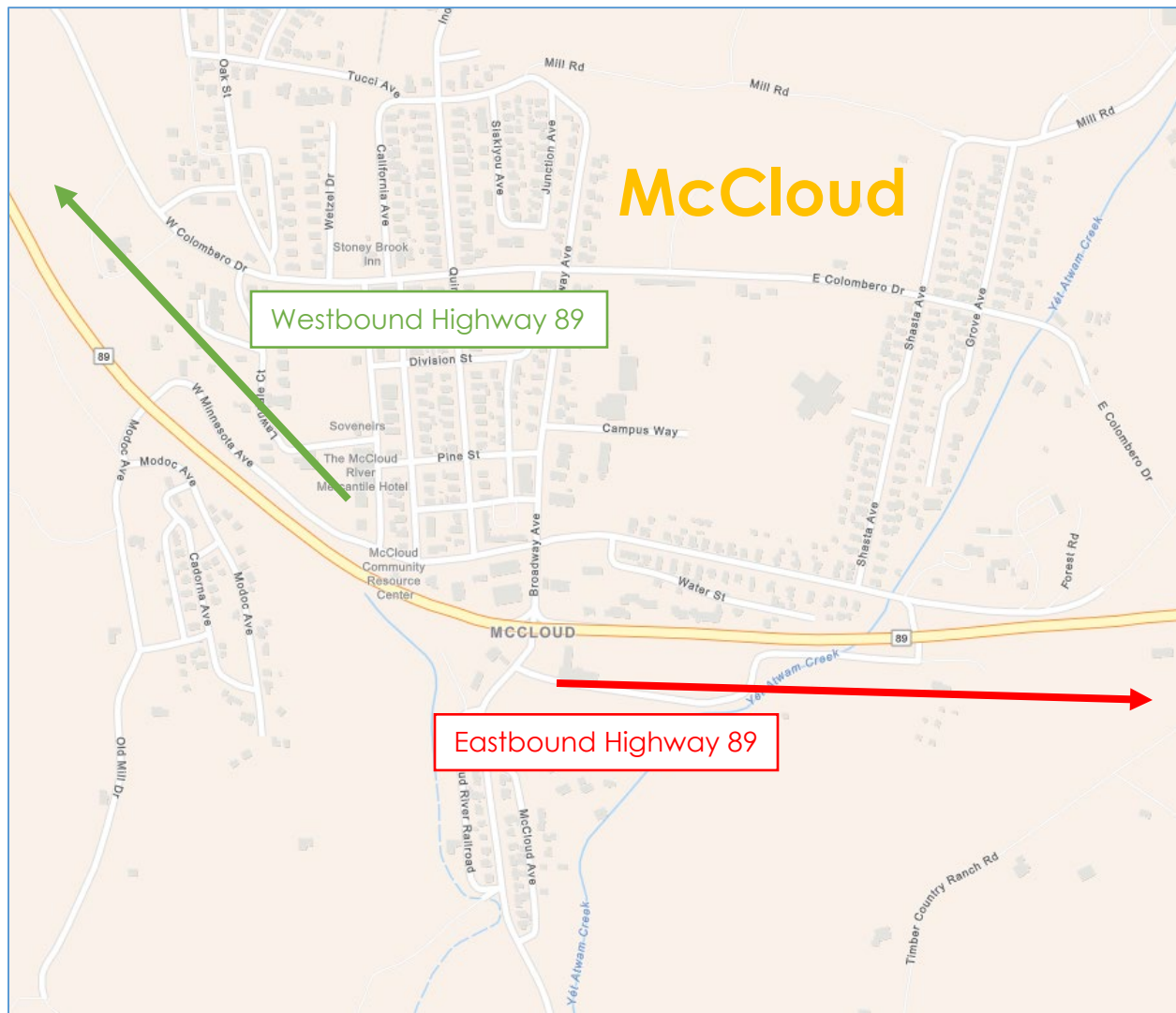
Evacuation Routes – Macdoel

The community of Macdoel (*Population 143*) is located on Highway 97, approximately 40 miles north of Weed, CA. The primary evacuation route is *Highway 97* north to Dorris and Klamath Falls and south to Weed, CA. Collector roads such as *Meiss Lake Road* and *Juniper Knoll Road* are alternate routes if Highway 97 is inaccessible. Schools, churches, and community centers in Yreka, and the Siskiyou County Fairgrounds, could serve as safe locations for evacuees during a hazard event. Given the community's proximity to Oregon, it is possible evacuees will instead choose to transit north towards Klamath Falls.
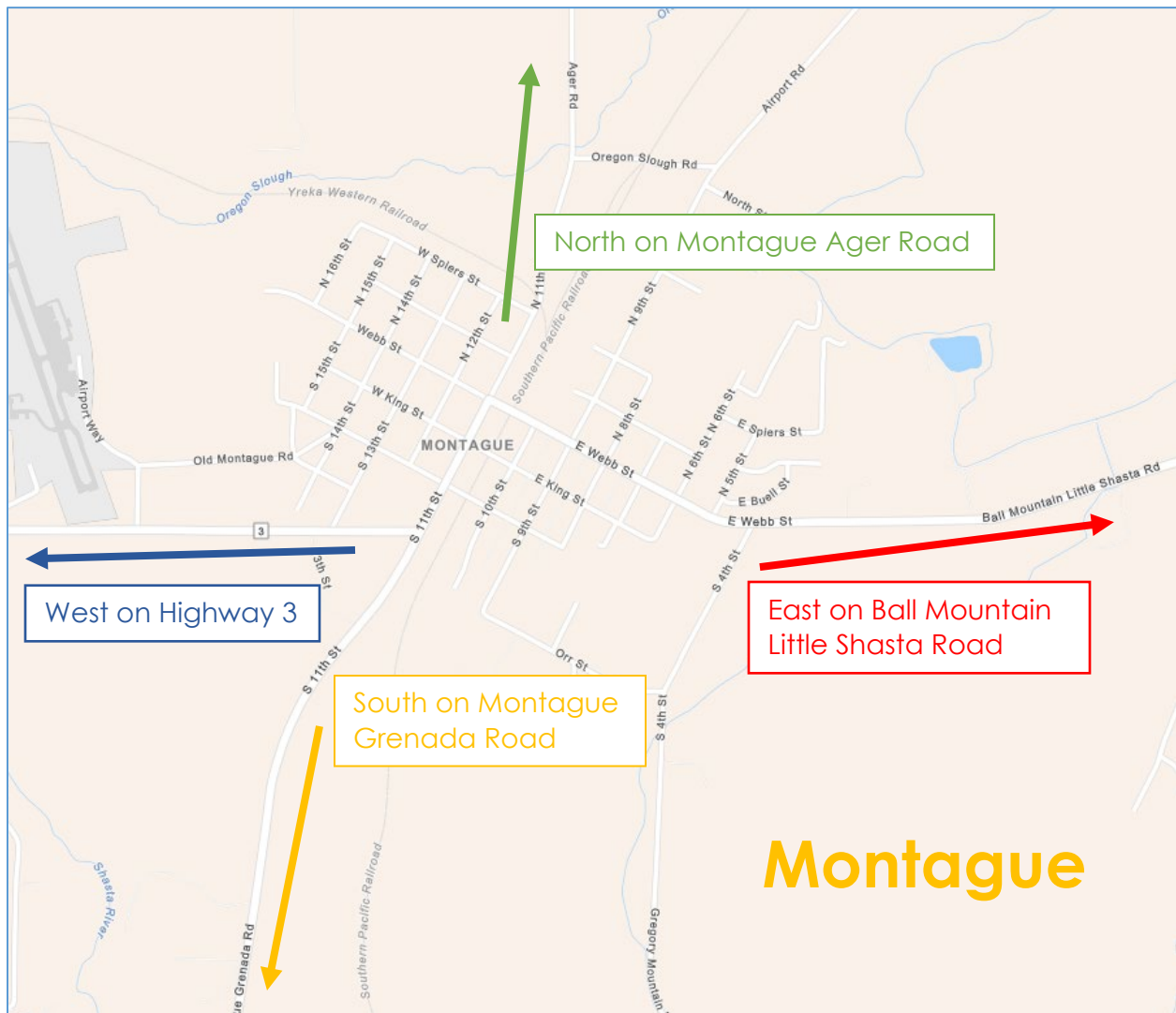
Evacuation Routes – McCloud

The community of McCloud (*Population 959*) is located east of Interstate 5, along Highway 89, 13 miles east of Mount Shasta. The primary evacuation route is *Highway 89*, westbound to the town of Mount Shasta and eastbound towards Shasta County. Schools, churches, and community centers in Mount Shasta, Weed, and Dunsmuir, could serve as safe locations for evacuees during a hazard event. Evacuees may likely also choose instead to transit into neighboring Modoc and Shasta Counties.
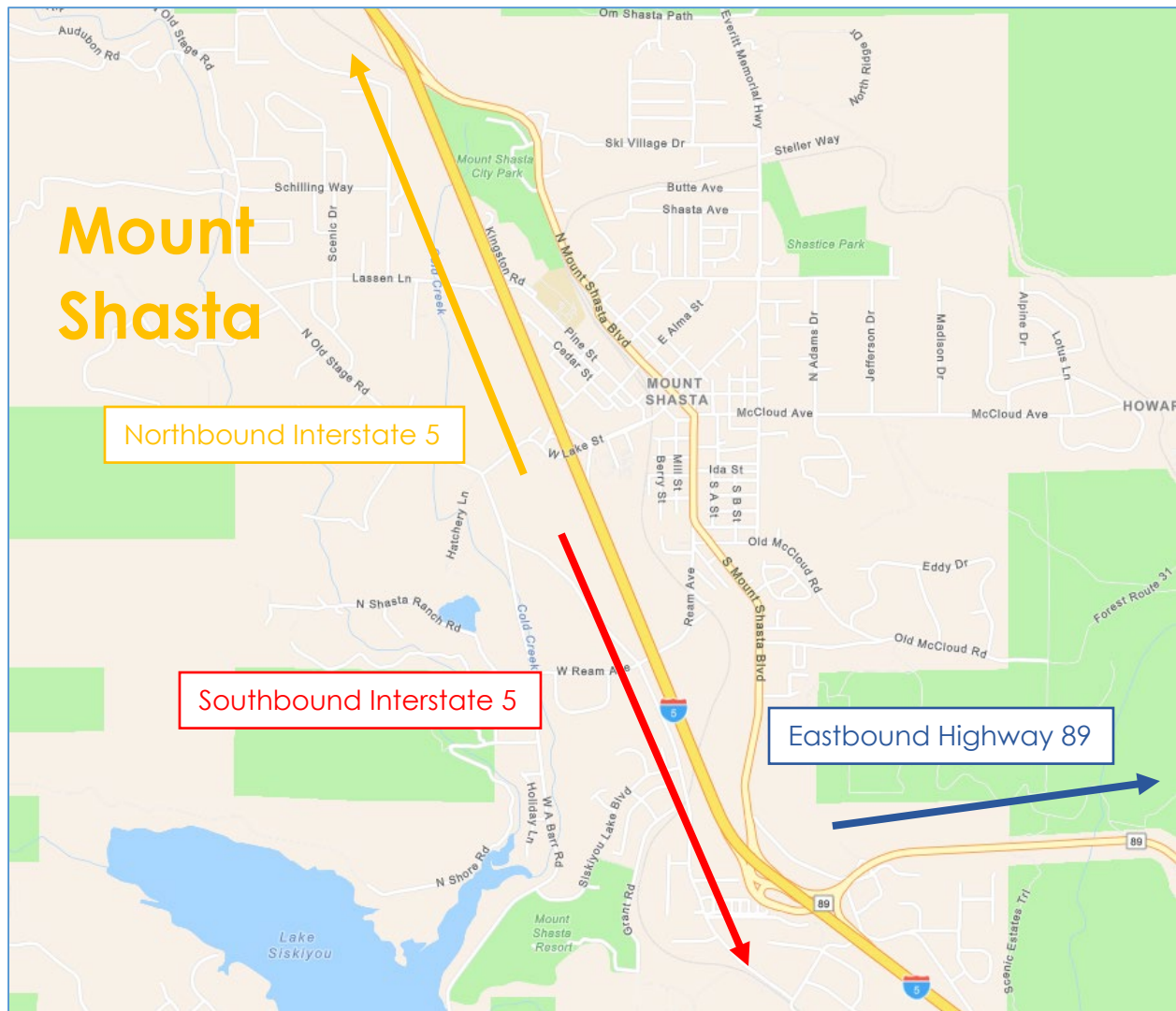
Evacuation Routes – Montague

The town of Montague (*Population 1,182*) is located east of Interstate 5, six miles east of Yreka on Highway 3, also referred to as Montague Road. The primary evacuation routes are *Highway 3* westbound to *Interstate 5*, *Montague Ager Road* heading north, *Ball Mountain Little Shasta Road* heading east, and *Montague Grenada Road* heading south. Schools, churches, and community centers in Yreka, and the Siskiyou County Fairgrounds, could serve as safe locations for evacuees during a hazard event.

Evacuation Routes – Mount Shasta

The town of Mount Shasta (*Population 3,179*) is located 8 miles north of Dunsmuir along Interstate 5. The primary evacuation route is *Interstate 5*, north to the town of Weed and south to the town of Dunsmuir. *Highway 89* towards McCloud is also possible. The major collector roads for this area are *North Mount Shasta Boulevard* and *South Mount Shasta Boulevard*, which both lead to Interstate 5. Schools, churches, and community centers in Weed, Dunsmuir, and McCloud could serve as safe locations for evacuees during a hazard event.
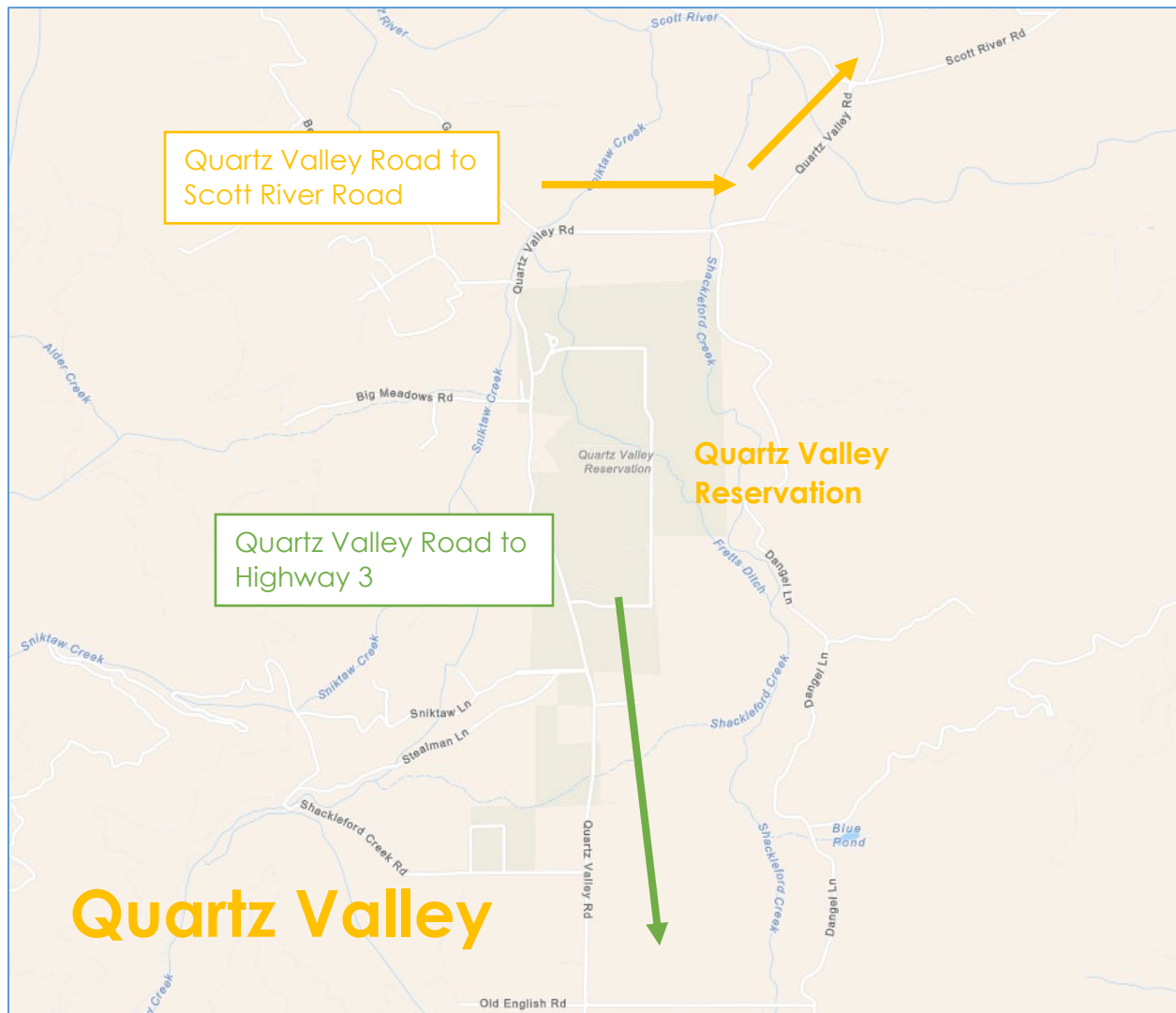
Evacuation Routes – Quartz Valley

The community of Quartz Valley (*Population 202*) is located northwest of Greenview along Quartz Valley Road. Primary evacuation routes for this area are Quartz Valley Road to Highway 3 and Quartz Valley Road to Scott River Road and Fort Jones. Schools, churches, and community centers in Fort Jones, Etna, and possibly Happy Camp could serve as safe locations for evacuees during a hazard event.
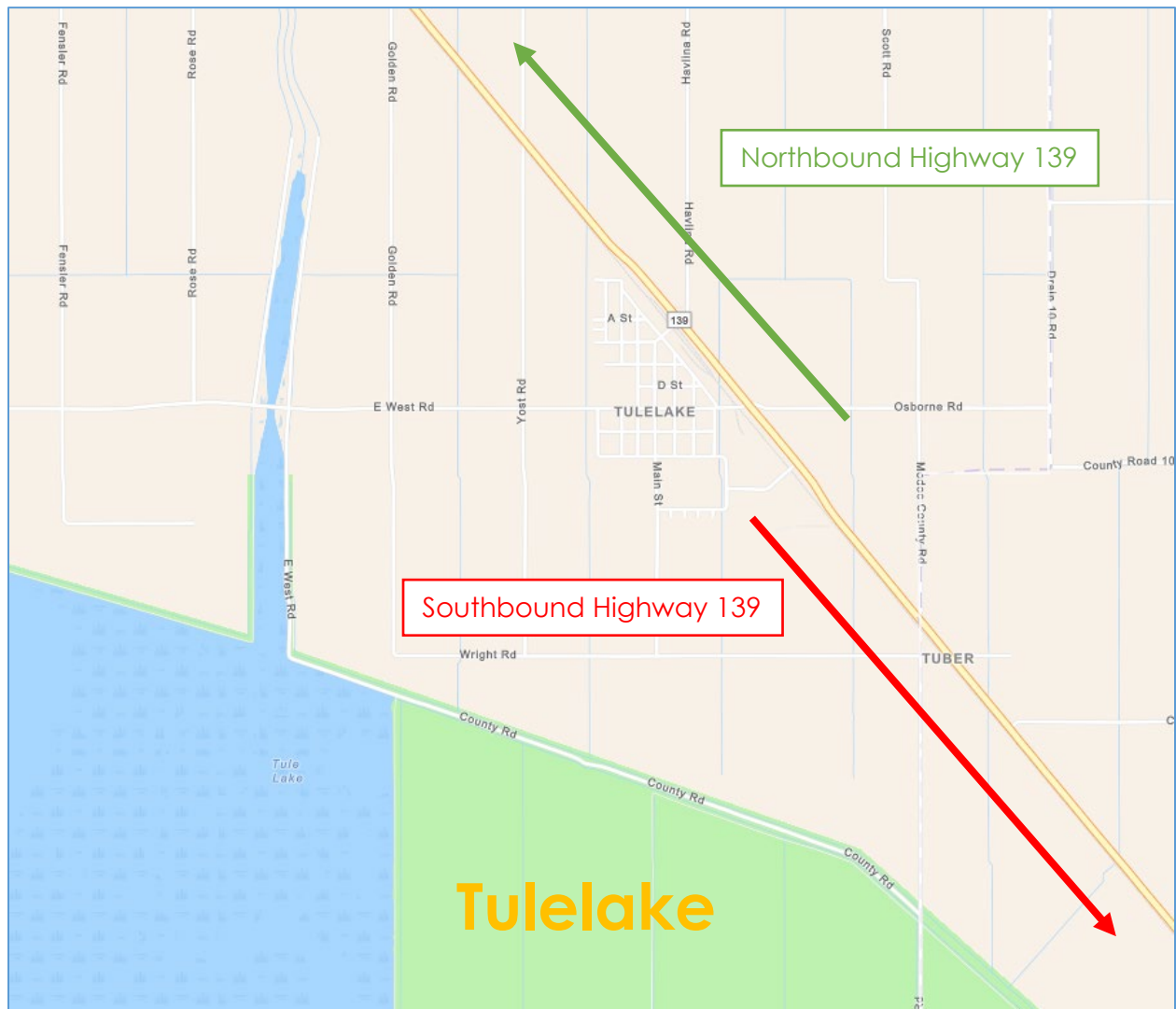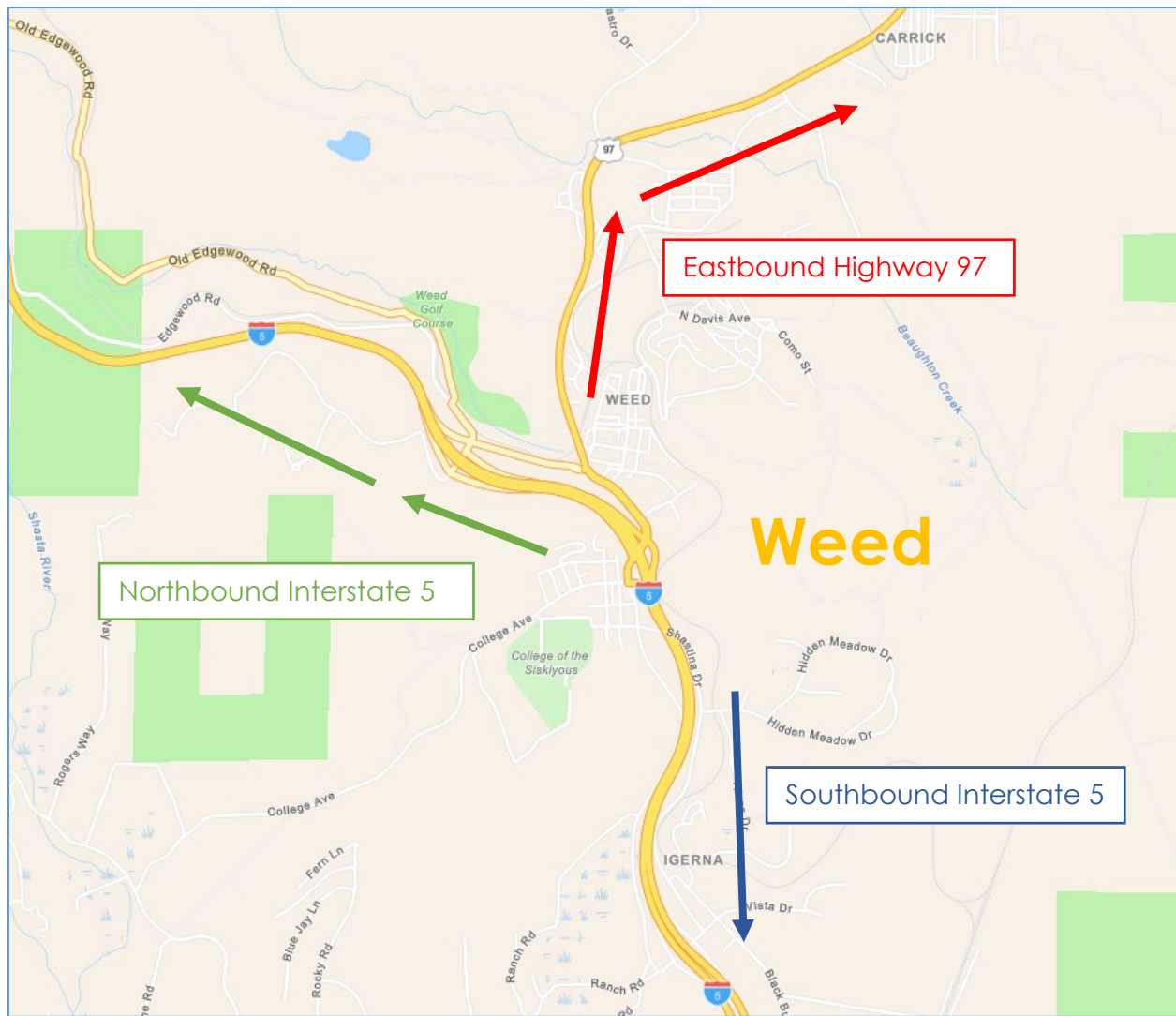
Evacuation Routes – Tulelake

The town of Tulelake (*Population 867*) is in the northeast corner of Siskiyou County along Highway 139, near the Oregon border. The primary evacuation route is *Highway 139* north towards the state of Oregon and south towards Modoc County. Schools, churches, and community centers in Yreka and Dorris, and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event. Given Tulelake's proximity to Oregon, it is possible that evacuees will instead choose to transit north towards Klamath Falls.

Evacuation Routes – Weed

The town of Weed (*Population 2,574*) is located at the interchange of Interstate 5 and Highway 97, 10 miles north of Mount Shasta, CA. The primary evacuation routes are *Highway 97* and *Interstate 5*. Schools, churches, and community centers in Yreka, Montague, Lake Shastina, Mount Shasta, and Dunsmuir, and the Siskiyou County Fairgrounds in Yreka, could serve as safe locations for evacuees during a hazard event.
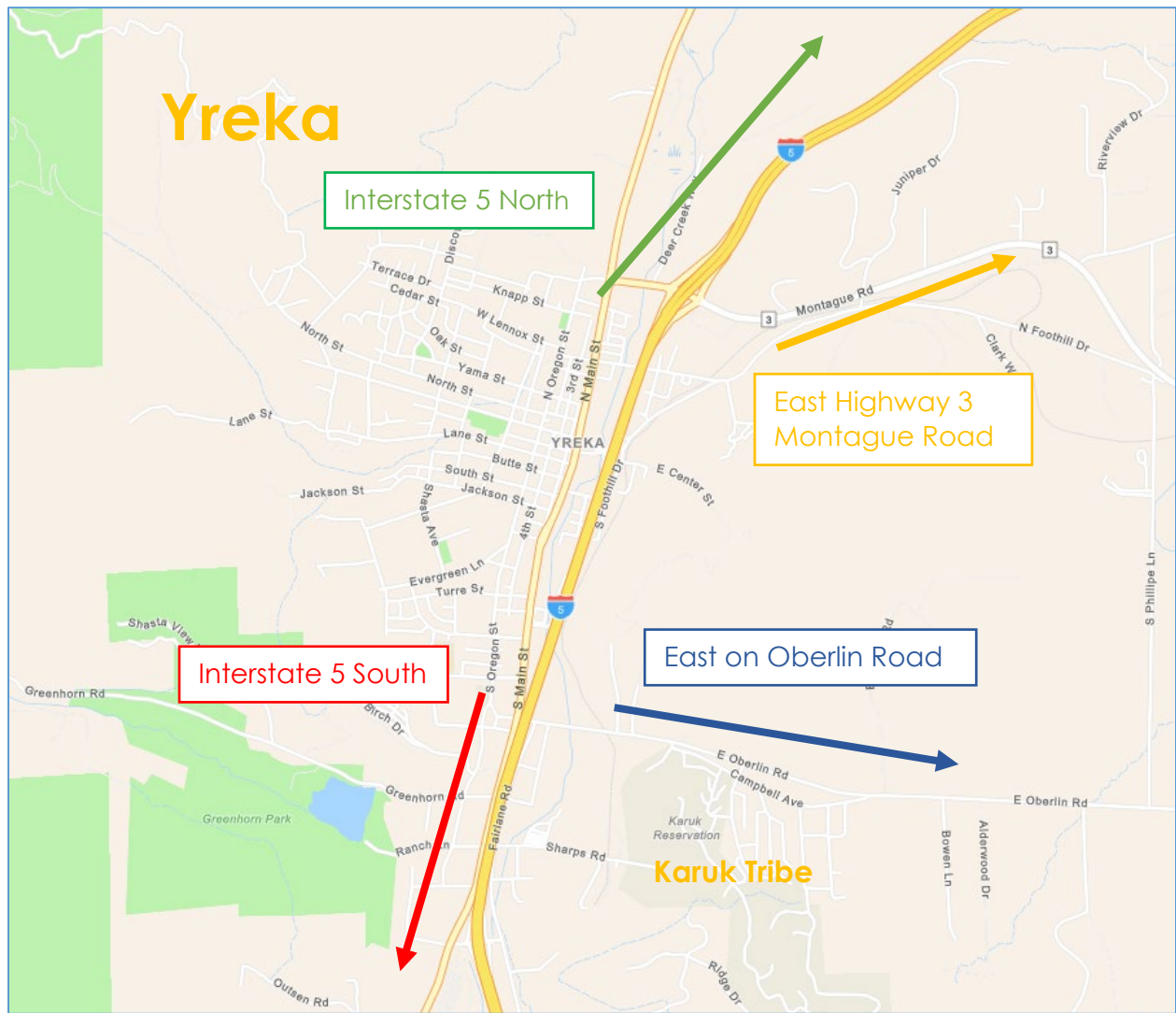
Evacuation Routes – Yreka

The town of Yreka (*Population 7,808*) is located on Interstate 5, approximately 22 miles south of the Oregon Border. The Primary evacuation route is *Interstate 5*. Alternative routes are *North* and *South Main Street*, running north and south through the town. *East Oberlin Road* and *Montague Road* (Highway 3) running eastbound. *Greenhorn Road* heading west and southbound on *Highway 3* towards Fort Jones. Given Yreka's proximity to Oregon, it is possible that evacuees will transit north towards Ashland, Oregon, or south on I-5 towards Lake Shastina, Weed, Mount Shasta, and Dunsmuir.

Appendix H
Residential Areas with One Evacuation Route

To view mapping for a specific location, click on the link in the description. For the most recent list email planning@co.siskiyou.ca.us.

No.	Area	Description	Latitude	Longitude
1	Dunsmuir	Intersection of 4th Street and Hilltop Drive.	41°12'09.4"N	122°16'12.1"W
2	Dunsmuir	Intersection of Katherine Street and South Francis Street.	41°12'07.6"N	122°16'29.8"W
3	Dunsmuir	Intersection of Dunsmuir Avenue and Elizabeth Street.	41°11'46.8"N	122°16'50.3"W
4	Dunsmuir	Intersection of Bush Street and Mountain Avenue.	41°12'29.6"N	122°16'11.7"W
5	Dunsmuir	Intersection of River Avenue and Upper River Avenue.	41°13'01.1"N	122°16'17.1"W
6	Dunsmuir	Intersection of Linda Place and Dunsmuir Avenue.	41°14'07.7"N	122°16'18.3"W
7	Dunsmuir	Intersection of Pinewood Road and Prospect Avenue.	41°14'05.0"N	122°16'31.5"W
8	Dunsmuir	Intersection of Wells Avenue and Hart Avenue.	41°13'52.5"N	122°16'39.8"W
9	Dunsmuir	Intersection of Scarlet Way and Dunsmuir Avenue.	41°13'42.4"N	122°16'33.1"W
10	Dunsmuir	Intersection of Shasta Terrace and Willow Street.	41°12'42.8"N	122°16'31.2"W
1	Etna	Intersection of Esther Warren Road and Sawyers Bar Road.	41°26'33.8"N	122°54'09.4"W
2	Etna	West on unnamed road, starting at 1389 Sawyers Bar Road.	41°26'48.4"N	122°54'02.2"W
3	Etna	Intersection of Pleasure Park Road and Callahan Street.	41°27'21.2"N	122°53'19.7"W
1	Mt. Shasta	Intersection of Lotus Lane and Shasta Acres Road.	41°18'51.9"N	122°17'01.4"W
1	Scott Valley	Intersection of Eastside Road and Hurds Gulch Road.	41°32'54.3"N	122°49'44.5"W

Appendix I, Residential Areas with Only One Evacuation Route

No.	Area	Description	Latitude	Longitude
2	Scott Valley	Intersection of Azalea Drive and French Creek Road.	41°21'23.2"N	122°54'03.4"W
3	Scott Valley	Intersection of French Creek Court and French Creek Road.	41°21'29.3"N	122°54'07.1"W
4	Scott Valley	Intersection of Facey Bingham Road and East Callahan Road.	41°22'28.8"N	122°49'20.5"W