Annex F Plumas Corp (Plumas County Fire Safe Council)

F.1 Introduction

This Annex details the hazard mitigation planning elements specific to the Plumas Corporation/Plumas County Fire Safe Council (PC/PCFSC or District), a new participating jurisdiction to the 2026 Plumas County Local Hazard Mitigation Plan (LHMP) Update. This Annex is not intended to be a standalone document but appends to and supplements the information contained in the Base Plan document. As such, all sections of the Base Plan, including the planning process and other procedural requirements apply to and were met by the District. This Annex provides information specific to the PC/PCFSC, with a focus on providing additional details on the planning process, risk assessment, and mitigation strategy for this jurisdiction.

F.2 Planning Process

As described above, the PC/PCFSC followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Plumas County Hazard Mitigation Planning Committee (HMPC), the District formulated their own internal planning team to support the broader planning process requirements. Internal planning participants, their positions, and how they participated in the planning process are shown in Table F-1. Additional details on Plan participation and District representatives are included in Appendix A.

Table F-1 PC/PCFSC – Planning Team

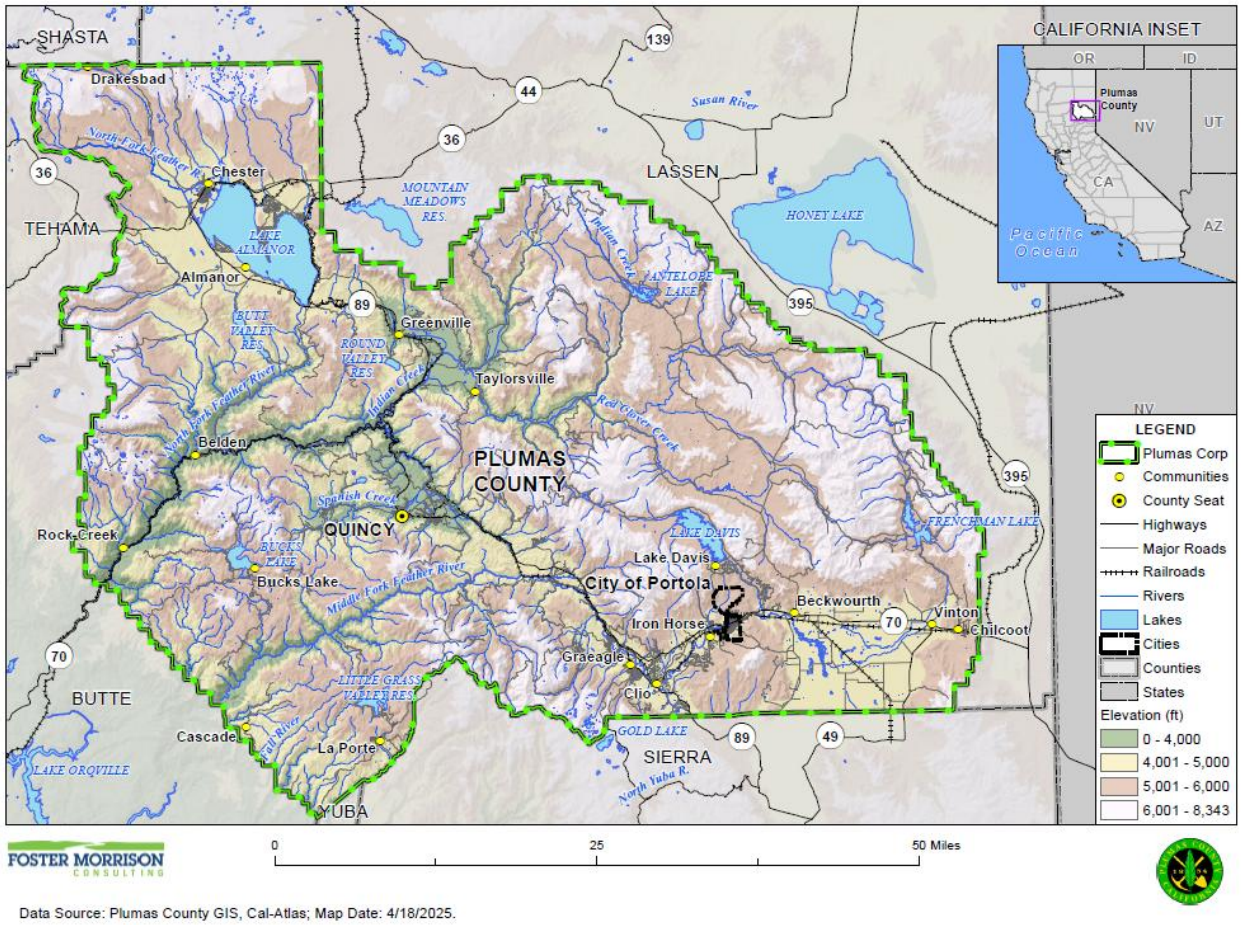
Name	Position/Title	How Participated
Gia Martynn	Executive Director, Plumas Corporation	Led overall planning effort for the District, coordinated District responses for hazard identification and mitigation actions
Matt West	Program Director, PC Fire Safe Council	Coordinated PCFSC-related District responses for hazard identification and mitigation actions
Jim Wilcox	Senior Executive Advisor, Plumas Corporation	Provided historical hazards to the LHMC, assisted in developing PC-related District responses for hazard identification and mitigation actions
Tommy Brenzovich	Program Manager, PCFSC Senior & Disabled & Home-hardening Programs	Developed PCFSC-related District responses for hazard identification and mitigation actions

Source: PC/PCFSC

F.3 District Profile

The community profile for the PC/PCFSC is detailed in the following sections. Figure F-1 displays a District map and the location of PC/PCFSC within Plumas County. As shown, the District's boundaries are the same as the County's.

Figure F-1 PC/PCFSC



Data Source: Plumas County GIS, Cal-Atlas; Map Date: 4/18/2025.

F.3.1. Overview and Background

Originally chartered in 1983 as a private, non-profit, public benefit organization. Plumas Corporation's 1983 mission was to "promote the orderly and beneficial expansion of the economic base of Plumas County for the common good and general welfare of the residents". Now, the primary mission of Plumas Corporation has evolved from a focus on traditional economic development to watershed restoration and health as a key element of a prosperous community.

In 1992, the organization contracted with Plumas County to carry out tourism and promotional activities, as part of their economic development program. In addition, Plumas Corporation was asked to provide fiscal sponsorship for the activities of the Feather River Coordinated Resources Management group (FRCRM), the Quincy Library Group (QLG), and the Plumas County Fire Safe Council (PCFSC). Budget

constraints in 2011 led Plumas County to terminate their tourism contract, resulting in the Corporation being unable to sustain its traditional economic development program. The Corporation downsized to focus on the FRCRM and PCFSC programs.

The FRCRM created a legacy of watershed stewardship that is commensurate with national, regional, and state-wide watershed management goals and strategies outlined in the National Fish and Wildlife Foundation's Sierra Nevada Meadow Restoration Business Plan, the Upper Feather River Integrated Regional Water Management Plan (IRWMP), and California's Water Action Plan. With the FRCRM's new focus, Plumas Corporation's project base now encompasses all of the Sierra Nevada and is available to provide watershed restoration services throughout the western United States.

Since the PC/PCFSC boundaries are the same as the County, the climate and geography of the District are the same as those in the Base Plan.

F.4 Risk Assessment

As defined by FEMA, risk is a combination of hazard, vulnerability, and exposure. "It is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage."

The PC/PCFSC risk assessment identifies and profiles relevant hazards and assesses the exposure of lives, property, infrastructure, and the environment to these hazards. The process allows for a better understanding of the District's potential risk and vulnerability to hazards and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

Building on the District Profile above, a risk assessment was performed for the District. This includes the following sections:

- F.4.1 Assets Inventory and Growth and Development Trends
- 0 Hazard Identification
- F.4.3 Hazard Profiles and Vulnerability to Specific Hazards

F.4.1. Assets Inventory and Growth and Development Trends

This section provides an inventory of the PC/PCFSC's total assets potentially at risk to hazards and an overview of growth and development trends. This section is broken into two parts:

- **Asset Inventory** – The assets inventory identifies the PC/PCFSC's total assets, including the people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. This data is not hazard specific, but is representative of total assets within the District, potentially at risk to identified hazards as discussed in Section F.4.3 Hazard Profiles and Vulnerability to Specific Hazards.
- **Growth and Development Trends** – A discussion of growth and development trends in the District, both current and future, is presented.

Assets Inventory

The District's asset inventory is detailed in the following sections:

- People and Populations
- Structures
- Critical Facilities and Infrastructure
- Community Lifelines
- Natural, Historic, and Cultural Resources
- Economic Assets and Community Activities of Value

A discussion of each of these assets follows and serves as the template for the asset discussion for each hazard in Section F.4.3.

People and Populations

The most important asset within any community are the people and populations that reside in the community. People and populations in the District include both District staff and workers as well as those populations located within District boundaries and are served by the District. This section includes an inventory of past and current populations of the District and also discusses vulnerable populations and underserved communities as a subsection of people and populations located within the District and potentially at risk to hazards. Information from the District and other sources as detailed below form the basis of this discussion.

Historic Population Trends and Current Population

The most important asset within any community are the people and populations that reside in the District. The District has 18 staff. In addition to District staff, the District provides services to the entire Plumas County Planning Area, which was discussed in greater detail in Chapter 4 (including discussion on vulnerable populations). Specifically, the District noted the following special and vulnerable populations in the District:

> ***There are vulnerable and underserved individuals/populations scattered throughout the District. Communications and services for these populations can be problematic due to limited transportation routes during hazardous events. Often, landline telephones and unreliable internet are the only mode of communication away from community hubs.***
>
> ***Plumas County has a significantly older population, with seniors making up 33% of the total population, well above the state's average of 16.2% (U.S. Census Bureau, 2021). Additionally, 12.5% of individuals under the age of 65 in Plumas County live with a disability, compared to the state average of 7.3% (California Department of Public Health, 2020). These populations are particularly vulnerable during wildfires, often due to mobility issues that necessitate specially equipped vehicles for evacuation. Many elderly and disabled individuals rely heavily on friends, family, or public transportation, making wildfire evacuations especially challenging (American Red***

Cross, 2022). Furthermore, these individuals may live in homes more susceptible to wildfire damage, as they often lack the physical ability or financial resources to implement adequate wildfire mitigation measures. Creating defensible space and performing home hardening in line with California Public Resources Code 4291 and building code requirements can be a significant barrier (California Department of Forestry and Fire Protection [CAL FIRE], 2021).

For 2023, the median household income in Plumas County was $64,946, well below the state's median of $96,334 (California Economic Development Department, 2023). Additionally, approximately 12.7% of Plumas County residents live below the poverty line, further limiting their ability to invest in fire preparedness and recovery measures (U.S. Census Bureau, 2021).

Structures and Critical Facilities

This section considers the PC/PCFSC's assets at risk, with a focus on key District assets such as critical facilities and infrastructure, and other District assets and their values. With respect to District assets, the majority of these assets are considered critical facilities as defined for this Plan. Critical facilities are defined for this Plan as:

Any facility, including without limitation, a structure, infrastructure, property, equipment or service, that if adversely affected during a hazard event may result in severe consequences to public health and safety or interrupt essential services and operations for the community at any time before, during and after the hazard event.

A critical facility is classified by the following categories: (1) Essential Services Facilities: (2) At-Risk Populations Facilities, and (3) Hazardous Materials Facilities.

Table F-2 lists critical facilities and other District assets identified by the District Planning Team as important to protect in the event of a disaster. PC/PCFSC's physical assets, valued at over $5 million, consist of structures and infrastructure to support the District's operations.

Table F-2 PC/PCFSC Critical Facilities and Infrastructure, and Other District Assets

Name of Asset	Facility Type	Replacement Value	Which Hazards Pose Risk
Building – 424 N. Mill Creek Rd/47 Trilogy Lane	Office space for Plumas Corp, PCFSC, and other community organizations	$5,000,000	Fire and Localized Flooding
Total		**$5,000,000**	

Source: PC/PCFSC

Community Lifelines

Assessing the vulnerability of the PC/PCFSC to natural hazards and disasters also involves reviewing and inventorying the community lifelines in place that could be affected. It is important to include these items in hazard discussions as the continuous operation of critical government and business functions is essential

to human health and safety, property protection, and economic security. The importance of community lifelines is discussed below:

- Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function.
- FEMA has developed a method for objectives-based response that prioritizes the rapid stabilization of Community Lifelines after a disaster.
- The integrated network of assets, services, and capabilities that provide lifeline services are used day-to-day to support the recurring needs of the community and enable all other aspects of society to function.
- When disrupted, decisive intervention (e.g., rapid re-establishment or employment of contingency response solutions) is required to stabilize the incident.

Community lifelines, as defined by FEMA, include the following:

- **Safety and Security** – Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
- **Food, Hydration, Shelter** – Food, Water, Shelter, Agriculture
- **Health and Medical –** Medical Care, Public Health, Patient Movement, Medical Supply Chain, Fatality Management
- **Energy –** Power Grid, Fuel
- **Communications** – Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch
- **Transportation** – Highway/Roadway/Motor Vehicle, Mass Transit, Railway, Aviation, Maritime
- **Hazardous Material –** Facilities, HAZMAT, Pollutants, Contaminants
- **Water Systems** – Potable Water Infrastructure, Wastewater Management

It should be noted that these community lifelines are all in place and functional as part of regular government operations in the Plumas County Planning Area serving as a partnership between the city, local special districts and agencies, and Plumas County. Due to its more rural nature, there is an interplay in community lifelines between all jurisdictions in the County. Most all of the District's community lifelines overlap with the Planning Area's. It should also be noted that these lifelines collectively include many of the critical facilities and infrastructure assets inventoried for this LHMP, including those assets owned by the District. As such, specific information on these community lifelines in the District and how they may be affected by a hazard event or disaster are discussed in the Base Plan.

Natural, Historic, and Cultural Resources

Assessing the vulnerability of the PC/PCFSC to natural hazards and disasters also involves inventorying the natural, historic, and cultural assets of the area. This step is important for the following reasons:

- Environmental and natural resources add to a community's identity and quality of life. They also help the local economy through agriculture, tourism, and recreation. They support ecosystem services, such as clean air and water.
- Conserving the environment may help people mitigate risk. It can also protect sensitive habitats, develop parks and trails, and build the economy.

- The community may decide that these types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- If these resources are impacted by a disaster, knowing so ahead of time allows for more prudent care in the immediate aftermath, when the potential for additional impacts are higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- Natural resources can have beneficial functions that reduce the impacts of natural hazards, such as wetlands and riparian habitat, which help absorb and attenuate floodwaters.

Natural Resources

PC/PCFSC has a variety of natural resources of value to the District. These natural resources parallel that of Plumas County as a whole. Information can be found in Section 4.2.1 of the Base Plan.

Historic and Cultural Resources

PC/PCFSC has a variety of historic and cultural resources of value to the District. These historic and cultural resources parallel that of Plumas County as a whole. Information can be found in Section 4.2.1 of the Base Plan.

Economic Assets and Community Activities of Value

Assessing the vulnerability of the PC/PCFSC to natural hazards and disasters also involves inventorying the economic assets and community activities of value in the District.

Economic Assets

After a disaster, economic resiliency is one of the major drivers of a speedy recovery. Each community has specific economic drivers. Economic assets for the County were discussed in Section 4.2.1 of the Base Plan and are assumed to be the same or similar for the District. In addition, the District noted that:

> ***The economy of Plumas County is strongly anchored in its forest-based sectors, with logging as the dominant force. Two major sawmills—Sierra Pacific Industries in Quincy and Collins Pine in Chester—lead the way, collectively processing over 250 million board feet of timber annually and employing hundreds of local residents in tasks ranging from harvesting and milling to trucking. Sierra Pacific Industries alone runs two Quincy mills staffed by approximately 300 employees and manages over 2.4 million acres across California, Oregon, and Washington. Concurrently, Collins Pine, with its Chester mill, employs around 122 people and sustainably manages 135,000 acres using uneven-aged forestry—which helps ensure long-term productivity through selective harvesting***
>
> ***The health of Plumas County's forests directly influences the timber industry's longevity. Salvage logging of fire-damaged timber is economically viable only within about two years post-fire, before rot and insect infestation significantly reduce wood quality.***

Therefore, maintaining healthy, unburned or "responsibly" burned forest stands is essential not just for immediate production, but for future timber supply. Timely fire prevention, rapid response, and sustainable forest management are crucial to preserving the industry's economic base in Plumas County.

Ranching and associated agricultural endeavors play a vital role in the economy of Plumas County, relying on essential resources such as clean water, adequate grazing land, and healthy air quality to sustain livestock operations. The region's ranching industry is especially dependent on water quality, as much of the local agriculture relies on access to natural water sources for irrigation and livestock consumption. Recent wildfires have had significant impacts on these resources, particularly affecting water quality by introducing contaminants such as ash and sediment into local rivers and streams. Furthermore, fires have disrupted grazing areas on public lands, reducing the availability of affordable pasture for ranchers. These effects are compounded by the challenges of post-fire restoration, as public lands managed by federal and state agencies often require extensive recovery efforts before they can be reopened for grazing. It's not just the immediate loss of grazing, but the long-term impact on soil health and water availability that has the biggest impact on this local industry.

Recreation is another significant contributor to the economy of Plumas County, attracting thousands of visitors each year. The region's diverse landscape—featuring expansive forests, mountain lakes, and scenic rivers—provides year-round opportunities for outdoor activities such as hiking, fishing, boating, and skiing. Plumas County's natural beauty draws eco-tourists, outdoor enthusiasts, and sports lovers, directly benefiting local businesses, tourism services, and infrastructure. Notable recreational hotspots like the numerous lakes in the area, the Feather River, the Lakes Basin Recreation area, Plumas Eureka State Park offer a range of activities, while the county's extensive trail systems and campgrounds support both day-trippers and overnight visitors (Plumas County Tourism, 2021). There are a number of large cycling events that are attended by thousands of participants each year. The economic impact of recreation extends beyond the spending in sectors like hospitality, retail, and transportation; it also supports significant employment in tourism-related fields, such as guiding services, hospitality management, and park services (California Economic Development Department, 2022). According to a report from the Outdoor Industry Association, outdoor recreation generates over $28 billion in consumer spending each year in California, underscoring the sector's role in driving local economies in rural areas like Plumas (Outdoor Industry Association, 2020).

Community Activities of Value

Inventorying economic assets in the District and their vulnerability to natural hazards and disasters also involves inventorying activities that have value to the community. This includes activities that are important to a community, like long-standing traditions such as a festival or fair or other activities that bring money into the communities such as sports tournaments and other recreational activities. Community

Activities of Value for the County were discussed in Section 4.2.1 of the Base Plan and are assumed to be the same or similar for the District.

Growth and Development Trends

As part of the planning process, the District looked at changes in growth and development, both current and future, and examined these changes in the context of hazard-prone areas, and how the changes in growth and development affect loss estimates and vulnerability over time. This inventory section details future development/redevelopment projects that are likely to occur over the next five years covered by this 2025 LHMP. For Districts, this generally includes the following:

- Construction/development projects related to adding new District facilities, infrastructure, land acquisition, etc.
- Plans for expansion or build out of the District's service area, including new service hookups, and other District functions related to where the District will be expanding services.

Population Trends and Projections

General growth in the District parallels that of the Plumas County Planning Area as a whole. Information can be found in Section 4.2.1 of the Base Plan.

Future Development Areas

It is important to review future development plans for the District. Future development should be sited in areas that are away from known hazard risks. If this is not possible, mitigation should be done to ensure that future development is protected against future hazards.

The District's growth has been relatively flat for a number of years. Most new home construction is in existing approved areas with the highest concentration being in the town of Greenville which was all but lost during the 2021 Dixie Fire. One possible project is the Moonlight-Superior Project, envisioned as an open-pit copper mine in the headwaters of Lights Creek. There is considerable community concern related to ground and surface water quality and flood hazards.

The District noted that it has no control over future development in areas the District provides services in.

Hazard Profiles and Vulnerability Assessment

Each hazard is profiled in the following format:

- **Hazard Profile** – A hazard profile is included for each hazard. This includes information on:
  - ✓ **Hazard Overview** – A general discussion of the hazard and related issues is detailed here.
  - ✓ **Location** and **Extent** – Location is the geographic area within the District that is affected by the hazard. Extent is the expected range of intensity for each hazard. These are discussed in specific detail for mapped hazards, and in more general detail for those hazards that do not have discrete mapped hazard areas.
  - ✓ **Past Occurrences** – Past occurrences are discussed for each hazard. A discussion of disaster declarations is included in each hazard section. NCDC events are also discussed. Other past

occurrences data specific to the District follow the disaster declarations and NCDC events for each hazard.

- ✓ **Climate Change** – This section contains the effects of climate change (as applicable). The possible influence of climate change on the hazard is discussed.

After the hazard profile, a vulnerability assessment is presented. As part of the vulnerability assessment, an estimate of the vulnerability of the District to each identified hazard, in addition to the estimate of risk of future occurrence, is provided in each of the hazard-specific sections. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

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

After this classification, a general discussion of hazard vulnerabilities occurs. This is done in the following format:

- **Vulnerability Overview** – A general discussion of the hazard vulnerability and related issues is detailed here.
- **Local Concerns** – This includes District provided information on how the District is uniquely affected by or vulnerable to each hazard.
- **Assets at Risk** – A discussion of the assets at risk follows, presented in the same order as in Section F.4.1 above, with a few exceptions. This includes sections on: People and Populations; Structures and Critical Facilities and Infrastructure; and Natural, Historic, and Cultural Resources. These are discussed in specific terms for mapped hazards, and in more general terms for those hazards that are unmapped. Sections on Community Lifelines and Economic Assets and Community Activities of Value are not included in the Sections below, as they are common to all jurisdictions and are fully covered in Section F.4.1 above and Chapter 4 of the Base Plan.
- **Impacts** – A discussion on hazard impacts follows. Impacts describe how each hazard can affect the District, its assets, and the ability to provide continued and reliable services. The type and severity of impacts reflect both the potential magnitude of the hazard and the vulnerability of the asset.
- **Future Conditions/Future Development** – A discussion of how future conditions and future development will affect or influence each hazard over time is also included. This considers both new District assets and improvements as well as any changes in service area.

F.4.2. Hazard Identification

The PC/PCFSC identified the hazards that affect the District and summarized their location, extent, likelihood of future occurrence, potential magnitude, and significance (or priority of a hazard) specific to the District.

Those hazards identified as a high or medium significance in Table F-3 are considered priority hazards for mitigation planning. Those hazards that occur infrequently or have little or no impact in the District were determined to be of low significance and not considered a priority hazard to the District. Significance was determined based on the hazard profile, focusing on key criteria such as frequency, extent, and resulting damage, including deaths/injuries and property, natural and cultural resources, and economic damage. The ability of a jurisdiction to reduce losses through implementation of existing and new mitigation measures was also considered as to the significance of a hazard. This assessment was used to prioritize those hazards of greatest significance, enabling the District to focus resources where they are most needed.

Table F-3 PC/PCFSC—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Ag Hazard: Severe Weather / Insects/Pests	Extensive	Highly Likely	Critical	Medium	Medium
Climate Change (adaptation)	Extensive	Likely	Limited	Medium	Low
Dam Failure					
Drought & Water Shortage (w/tree mortality)	Extensive	Likely	Limited	Medium	High
Earthquake					
Flood: 1%/0.2% annual chance (w/levee failure)	Significant	Occasional/Unlikely	Critical	High	Medium
Flood: Localized Stormwater	Significant	Highly Likely	Negligible	Medium	Medium
HazMat Transportation					
Landslide, Mudslide, and Debris Flow					
Severe Weather: Extreme Cold, Freeze, and Snow (w/avalanche)					
Severe Weather: Extreme Heat	Extensive	Highly Likely	Negligible	Medium	High
Severe Weather: Heavy Rains and Storms	Extensive	Highly Likely	Limited	Medium	Medium
Severe Weather: High Winds and Tornadoes	Extensive	Highly Likely	Limited	Medium	Low
Volcano					
Wildfire (w/smoke and air quality)	Extensive	Highly Likely	Catastrophic	High	Medium

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Climate Change Influence
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

F.4.3. Hazard Profiles and Vulnerability to Specific Hazards

This section includes the hazard profiles and vulnerability assessment for hazards ranked of medium or high significance specific to the PC/PCFSC (as identified in the Significance column of Table F-3). This section focuses on where and how the District is affected by their priority hazards. Chapter 4 of the Base Plan provides more detailed information about these hazards and their impacts on the Plumas County Planning Area. Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.2 of the Base Plan.

Power Interruption/Power Failure: A Common Vulnerability of all Hazards

An impact of almost all hazards evaluated as part of this LHMP Update relates to power shortage and/or power failures. The US power grid crisscrosses the country, bringing electricity to homes, offices, factories, warehouses, farms, traffic lights and even campgrounds. According to statistics gathered by the U.S. Department of Energy, major blackouts are on the upswing. Incredibly, over the past two decades, blackouts impacting at least 50,000 customers have increased 124 percent. The electric power industry does not have a universal agreement for classifying disruptions. Nevertheless, it is important to recognize that different types of outages are possible so that plans may be made to handle them effectively. In addition to blackouts, brownouts can occur. A brownout is an intentional or unintentional drop in voltage in an electrical power supply system. Intentional brownouts are used for load reduction in an emergency. Electric power disruptions can be generally grouped into two categories: intentional and unintentional. More information on types of power disruptions can be found in Section 4.3 of the Base Plan.

Public Safety Power Shutoff (PSPS)

An intentional disruption type of power shortage/failure event has been recently implemented in California as a result of wildfires starting as a result of downed power lines or electrical equipment. This was the case for the Camp Fire in 2018. As a result, California's three largest energy companies (including PG&E), at the direction of the California Public Utilities Commission (CPUC), are preparing all Californians for the threat of wildfires and power outages during times of extreme (fire) weather. To help protect customers and communities during extreme fire weather events, electric power may be shut off for public safety in an effort to proactively prevent wildfire. This is called a PSPS. More information on PSPS criteria can be found in Section 4.3 of the Base Plan.

In addition to PSPSs, to help prevent wildfires, electric utilities have begun to evolve safety efforts. This includes installing safety settings on powerlines in and around high fire-risk areas. These are known as Enhanced Powerline Safety Settings (EPSS), and they help prevent falling tree branches, animals and other hazards from causing a wildfire. By stopping ignitions, it helps prevent wildfires from starting and spreading. According to PG&E, if ignitions occur, the size of fires can be much smaller due to EPSS. In 2022, there was a 99% decrease in acres impacted by ignitions (as measured by fire size from electric distribution equipment (compared to the 2018-2020 average). This decrease occurred despite dry conditions.

Local Concerns

Power outages, planned and unplanned, are frequent in the District. Some of the more isolated communities/locales in the District are more prone to unplanned and/or extended outages related to weather events, equipment failure, or wildfire. A high percentage of homes are on domestic water wells, so lack of water supplies during extended outages is a major concern, as well as food spoilage. Due to the foregoing, many individual homes and businesses have installed permanent backup generation, predominately using propane fuel. However, many community members lack the resources (~$10,000) for backup generators. In addition, outages can affect communications, cutting off community members access to potentially critical emergency information and services.

Agricultural Hazards (Severe Weather/Pests/Invasive Species)

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile

Farming and related agricultural industries are not only important to Plumas County's economy, but they also play a central role in the way of life of County residents and help define the character of the County. Agriculture has always been an integral part of Plumas County and has continually grown and changed along with the County. Agriculture in the County can be affected by a variety of natural hazards. This Agricultural Hazard focuses on severe weather, as well as native and invasive species (insects, pests and weeds), all which can significantly affect the agricultural industry in the County. This hazard does not address pest and plants that cause impacts to human health, as those issues are addressed in other planning mechanisms in the County.

Agricultural losses occur on an annual basis and are often associated with severe weather events, including heavy rains, floods, heat, and drought and issues associated with insects, pests, agricultural diseases, and invasive species. Invasive species are organisms that are introduced into an area beyond their natural range and become a pest in the new environment. The 2023 State of California Multi-Hazard Mitigation Plan attributes most of the agricultural disasters statewide to drought, freeze, and insect infestations. Other agricultural hazards include fires, crop and livestock disease, insects, and noxious weeds.

Location and Extent

Agricultural hazards, including issues associated with severe weather as well as nuisance insects, pests and weeds, occur throughout the County where lands are used for farming, grazing, timber production, and other agricultural uses. The larger County has large swaths of agricultural lands. Areas of the County, such as the City of Portola and higher elevations of the County, contain fewer agricultural lands, and are thus not as greatly affected by agricultural hazards. While the City and special districts may not always be directly affected, they are indirectly affected economically when agricultural losses occur.

There is no scale that measures agricultural hazards. Agriculture in the District and County is at risk to many hazards: severe weather, as well as native and invasive insects, pests and weeds. Each of these has a different duration and speed of onset. Some, such as freeze, can have a short onset and a short duration. Drought can have a long onset and long duration. Agricultural hazards like nuisance pests and weeds can have short or long onset, and short or long durations. All agricultural losses can have a significant impact on affected communities.

Past Occurrences

Disaster Declaration History

There are no state or federal disaster declarations issued by Cal OES or FEMA. There have been 17 USDA Secretarial Disaster Declarations for the County since 2012 (as shown in the Past Occurrences in Section 4.3.6 of the Base Plan). 13 were from drought, 3 were from freeze, and 1 was from other severe weather events.

NCDC Events

The NCDC does not track agricultural events.

PC/PCFSC Events

The District noted that flooding occurred in 1986, 1997, and 2017. These affected agriculture in the District. The District also noted that Emergency Watershed Protection (EWP) work was undertaken in numerous locations in Plumas County after the 1986 & 1997 floods to rebuild streambanks, informal levees, and irrigation infrastructure throughout the District.

Climate Change and Agricultural Hazards

According to the 2021 CAS (as well as the 2024 Draft CAS), addressing climate change in agriculture will encompass reducing vulnerability through adapting to the ongoing and predicted impacts of climate. Agriculture in California is vulnerable to predicted impacts of climate change, including less reliable water supplies, increased temperatures, and increased pests.

The 2023 California State Hazard Mitigation Plan noted that California farmers contend with a wide range of crop-damaging pests and pathogens. Continued climate change is likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates. It also noted that change in climate can directly impact crop growth through new temperature patterns and northward shifts of pests and disease. Additionally, longer growing seasons may enable pest species to complete more reproductive cycles, which can increase severity of infestations.

Finally, the 2023 State Plan noted that temperature is not the only climatic influence on pests. For example, some insects are unable to cope in extreme drought, while others cannot survive in extremely wet conditions. Furthermore, while warming speeds up the life cycles of many insects, suggesting that pest problems could increase, some insects may grow more slowly as elevated carbon dioxide levels decrease the protein content of the leaves on which they feed.

Vulnerability to Agricultural Hazards (Severe Weather/Pests/Invasive Species)

According to historical hazard data, both severe weather affecting agriculture, and insects, pests, and weeds are an annual occurrence in the District. If left unchecked, severe weather, and agricultural pests and weeds can threaten native species, biodiversity, ecosystem services, recreation, water resources, agricultural and forest production, cultural resources, economies and property values, public safety, and infrastructure.

An assessment of a community's vulnerability to this hazard begins with an understanding of local exposure to the PC/PCFSC. This is included in the Local Concerns section below followed by a discussion of the District's Assets at Risk to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard. This includes:

- Flood related damage to fields, fences and irrigation infrastructure occurs throughout the District. Flooding can bring benefits to agricultural lands. Reducing flood magnitudes and organic/mineral debris loads while flood proofing infrastructure can mitigate negatives.
- Grasshoppers are a nearly annual problem somewhere in the District.
- Gray wolves have become a major concern to livestock producers.
- Star thistle is a concern for the District and the County. Star thistle thrives in disturbed lands. Restoring natural hydrologic and vegetative resilience can drown/crowd out star thistle.

Assets at Risk

Assets at risk from this hazard include people and populations; structures and critical facilities; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

People and populations in the District include both District staff and workers as well as those populations located within District boundaries and served by the District. Agricultural hazards have a minimal effect on people and populations in the District, including District staff and vulnerable populations. However, damage to crops from both severe weather and invasive and nuisance insects, pests, and weeds can cause significant increases in food prices and food insecurity among low-income communities.

Structures and Critical Facilities and Infrastructure

Structures and critical facilities and infrastructure in the District, including their owned assets, may be affected by agricultural hazards. Regarding nuisance species, some species can impact vegetation and can result in stream bank instability, erosion, and increased sedimentation, impacting ground stabilization and possibly causing foundation issues for nearby structures. If species cause trees and other vegetation to die, there is an increased risk of damage to roadways, powerlines, and buildings, and increased risk to wildfire. Some nuisance plants have been shown to destabilize soil due to high densities and shallow root systems, negatively impacting nearby buildings and septic systems. Other nuisance plant species have been known to clog culverts and streams, increasing flooding risk. Additionally, soil that becomes unstable due to decaying vegetation can impact critical facilities that are built on or around these soils.

According to Table F-2, the District's facility is not at risk to agricultural hazards.

Natural, Historic, and Cultural Resources

Natural resources can be affected by agricultural hazards. Negative impacts of severe weather and nuisance species to natural resources include the following:

- Loss of wildlife habitat and reduced wildlife numbers;
- Loss of native plant species;
- Reduced livestock grazing capacity;
- Increased soil erosion and topsoil loss;
- Diminished water quality and fish habitat.

Natural, historic, and cultural resources and the severe weather that affect agriculture in the County are discussed further in other sections of this Annex.

Impacts from Agricultural Hazards: (Severe Weather/Pests/Invasive Species)

The consequences of agricultural disasters to the District and larger Plumas County include ruined plant crops, loss of grazing lands, dead livestock, ruined feed and agricultural equipment, monetary loss, job loss, and possible multi-year effects (i.e., trees might not produce if damaged, loss of markets, food shortages, increased prices, possible spread of disease to people, and loss or contamination of animal products).

Overall, any type of severe agricultural disaster can have significant economic impacts on both the agricultural community, the PC/PCFSC, and the entire Plumas County Planning Area. They can also cause significant increases in food prices to the consumer due to shortages. Under some conditions, insects that have been present and relatively harmless can become hazardous. For example, severe drought conditions can weaken trees and make them more susceptible to destruction from insect attacks.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. These are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the PC/PCFSC include the following:

- Climate change is likely to exacerbate future agricultural hazards and associated impacts and vulnerability of the District.
- Population projections for the area served by the District show anticipated population loss, which limits additional impacts to the District. The District noted it has no control over population changes, it merely reacts to them by providing additional (or reduced) services.
- It is unknown how changes in land use and development will affect agricultural hazards in the District's service territory. PC/PCFSC planning efforts are in effect to reduce this risk and should be updated as necessary to continue to address future agricultural hazard conditions.

Future Development

The District noted it has no control over future development in the areas served by the District. Since the District shares the same boundaries as the unincorporated County, future conditions in the District regarding land use, migration, population changes, and climate change are the same as those in Section 4.3.7 of the Base Plan. Future development in the District is not likely to have an impact on agricultural hazards in Plumas County, except to the extent that agricultural lands are taken out of production as new development occurs reducing available land for agricultural uses, including those related to farming, timber production and grazing.

Climate Change

Likelihood of Future Occurrence–Likely
Vulnerability–High

Hazard Profile

Climate change adaptation is a key priority of the State of California. The 2023 State of California Multi-Hazard Mitigation Plan noted that climate change is already affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the State's infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and earlier runoff of both snowmelt and rainwater in the year. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing.

California's Adaptation Planning Guide: Understanding Regional Characteristics (from 2017) has divided California into 11 different regions based on political boundaries, projected climate impacts, existing environmental setting, socioeconomic factors and regional designations. The District falls in the North Sierra Region. A map and climate projections for this region are shown in Section 4.3.7 of the Base Plan and include an increase in temperatures, moderate changes in rainfall, and increased risk to wildfire.

Location and Extent

Climate change is a global phenomenon. It is expected to affect the whole of the PC/PCFSC, the Plumas County Planning Area, surrounding counties, and State of California. There is no scale to measure the extent of climate change. Climate change exacerbates other hazards, such as drought, extreme heat, flooding, wildfire, and others. The speed of onset of climate change is very slow. The duration of climate change is not yet known but is feared to be tens to hundreds of years.

Past Occurrences

Disaster Declaration History

Climate change has never been directly linked to any declared disasters.

NCDC Events

NCDC does not track climate change events.

PC/PCFSC Events

The District noted that the change in precipitation type from snow to rain and earlier snowmelt have begun affecting forest health/fire susceptibility, while also changing water supply reliability and the character of stream channels. Climate change has led to longer periods of elevated wildfire risk and paved the way for "Mega-fires" such as the North Complex in 2020 and the Dixie Fire in 2021, which significantly impacted

Plumas County. Across the western states and particularly California these mega fires are becoming more frequent and costly due to the suppression costs as well as the overall damage to infrastructure and personal property.

Vulnerability to Climate Change

The whole of the District is at some measure of vulnerability to climate change. The District Planning Team has concerns that the vulnerability of the District to climate change will continue to increase in the future. An assessment of a community's vulnerability to climate change begins with an understanding of local exposure to climate change. This is included in the Local Concerns section below followed by a discussion of the District's assets at risk, and impacts to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard. Specifically, the District is concerned that:

- The principal ongoing climate change effects across the District entail a higher elevation permanent snow line, an earlier snow melt, a longer growing season for all plants, and warmer, particularly night-time, temperatures. This creates a greater demand (scarcity) on the finite natural soil water supply.
- The above climate change effects will exacerbate wildfire and tree mortality risks in the remaining unburned forest in the District.
- The above climate change effects will make forest recovery process more complicated due to the fuel type conversion that often occurs within the footprint of large, devastating fires.
- Without mitigation, areas that were once rich in mature and developing forests may become permanent, more flammable brush fields.
- Areas that were once rich in mature and developing timber often become brushfields.
- Loss of ecosystem resilience and its profound effects on all aspects of community health and stability.

Assets at Risk

Assets at risk from this hazard include people and populations; structures and critical facilities and infrastructure; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

Climate change affects people and populations within a community, especially those climate change issues related to increases in temperature over time.

While all populations (District staff and those served by the District) can be affected by temperature extremes, populations particularly vulnerable include the very old and very young, medically fragile people, people without means of shelter (and air conditioning or heat) or transportation, people who are socially isolated and other vulnerable or underserved populations (as shown in the discussion in Section F.4.1). Acclimatization to extreme temperatures and other weather extremes may help reduce impacts from these

extreme events, such as from heat waves, in the healthy general population but may not be sufficient to protect those with underlying medical conditions.

Structures and Critical Facilities and Infrastructure

Climate change, on its own, does not generally impact structures. However, structures in areas of increased wildfire, drought, extreme heat, or flood areas exacerbated by the effects of climate change would be at increased risk, as described throughout this LHMP. Due to the slow onset of climate change, any structures in the District are expected to undergo improvements and adapt over time to a new climate normal.

Natural, Historic, and Cultural Resources

The rivers, streams, agricultural areas, and open space areas of the District support rich biodiversity, including many special-status species and habitat areas. These are all at risk from the effects of climate change. In addition, if heat continues to contribute to changes in wildfire patterns, all areas (on land) of the District are at increased risk from fire – including natural, historic, and cultural resources. Furthermore, as climate change exacerbates the extreme heat and drought hazard, areas of wetlands in the District may be reduced or dry up temporarily, which could damage habitat areas for waterfowl and other species that depend on these areas.

Impacts from Climate Change

The California APG: Understanding Regional Characteristics identified the following impacts specific to the North Sierra Region in which the District is part of:

- Increased temperatures
- Reduced precipitation
- Public health – heat and air pollution
- Reduced agricultural productivity (e.g., wine grapes)
- Reduced tourism

In addition to these sources, the 2023 State of California Hazard Mitigation Plan noted that according to California's Fourth Climate Change Assessment, the state will experience the following climate impacts:

- Annual average daily high temperatures are expected to rise by 2.7°F by 2040, 5.8°F by 2070, and 8.8°F by 2100 compared to observed and modeled historical conditions. These changes are statewide averages.
- Heat waves are projected to become longer, more intense, and more frequent.
- Warming temperatures are expected to increase soil moisture loss and lead to drier conditions. Summer dryness may become prolonged, with soil drying beginning earlier in the spring and lasting longer into the fall and winter.
- Droughts are likely to become more frequent and persistent through 2100.
- The strength of the most intense precipitation and storm events affecting California is expected to increase.
- Snowpack levels are projected to decline significantly by 2100 due to reduced snowfall and faster snowmelt.
- Marine layer clouds are projected to decrease.

- Extreme wildfires (i.e., fires larger than 24,710 acres) would occur 50 percent more frequently. The maximum area burned statewide may increase 178 percent by the end of the century.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change (which was discussed in the hazard profile section above), changes in population patterns, and changes in land use and development. The influencing effects of these factors on this hazard are discussed further in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the District include the following:

- As climate change continues to accelerate over time, climate related impacts to the District will continue to increase.
- Population projections for the area served by the District show shrinking populations, which should reduce the affect of this hazard and associated impacts to the District. The District may add staff, but this number would be small. The District noted it has no control over population changes in its service territory, it merely reacts to them by providing additional (or reduced) services.
- Changes in land use and development in the District are expected to be limited in the near future and thus are not likely to affect climate change impacts to the District. In addition, adherence to protective building codes for new development will also assist in limiting future impacts and associated vulnerabilities of the District to this hazard. With adherence to development standards, future losses to new development should be minimal.

Future Development

Climate change can influence future development in the District over time. The District could see population fluctuations as a result of climate impacts relative to those experienced in other regions, and these fluctuations are expected to impact demand for housing and other development. While there are currently no formal studies of specific migration patterns expected to impact the District, climate-induced migration was recognized within the UNFCCC Conference of Parties Paris Agreement of 2015 and is expected to be the focus of future studies.

Drought & Water Shortage

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile

Drought and water shortage are complex issues involving many factors—it occurs when a normal amount of precipitation and snow is not available to satisfy an area's usual water-consuming activities. Drought can often be defined regionally based on its effects. Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. Drought affects different sectors in different ways and with varying intensities. Adequate water supply is the most significant issue and is critical for agriculture, manufacturing, tourism, recreation, and commercial and domestic use. Drought has also affected tree mortality in the area in the past. As the population in the area continues to grow, so will the demand for water.

Tree Mortality and Drought

One of the secondary hazards of drought in the Plumas County Planning Area, that can also affect PC/PCFSC, is the increased risk to trees from beetle kill and other insects, pathogens and parasites, and other tree mortality and die back issues. Drought weakens trees and makes them more susceptible to insect infestation and other pathogens. Insects, such as bark beetles and others, frequently attack trees weakened by drought, disease, injuries, or other factors that may stress the tree. These insects and other pathogens can contribute to the decline and eventual death of trees throughout the District. The tree mortality and dieback problems are a high priority because of the issue of hazardous trees and an increased wildfire hazard. In addition to an increase in wildfire fuels, hazardous trees can fall onto structures causing damage and a result in a reduction on the tree canopy within the District that provides relief during extreme heat days.

Location and Extent

Drought and water shortage are regional phenomenon. The whole of the District and County is at risk. The US Drought Monitor categorizes drought conditions with the following scale:

- None
- D0 – Abnormally dry
- D1 – Moderate Drought
- D2 – Severe Drought
- D3 – Extreme Drought
- D4 – Exceptional Drought

Drought has a slow speed of onset and a variable duration. Drought can last for a short period of time (which does not usually affect water shortages) or for longer periods (which may challenge water supplies). Should a drought last for a long period of time, water shortage becomes a larger issue. Current drought conditions in the District are shown in Section 4.3.9 of the Base Plan.

Past Occurrences

Disaster Declaration History

There have been 2 state and 1 federal disaster declarations for Plumas County. This can be seen in Table F-4. Additionally, there have been 16 USDA Secretarial Disaster Declarations from drought in the County since 2012.

Table F-4 Plumas County –State and Federal Drought Disaster Declarations 1950-2025

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Drought	2	1976, 2015	1	1977

Source: Cal OES, FEMA

NCDC Events

There have been 2 NCDC drought events in Plumas County since 1993. These most likely had some impact on the District.

PC/PCFSC Events

Based on historical information, the occurrence of drought in California, including the PC/PCFSC, is cyclical, driven by weather patterns. Section 4.3.9 of the Base Plan notes that five droughts have occurred in the past 86 years that likely affected the District. Drought has occurred in the past and will occur in the future.

Recently, between 2020 and 2023 Plumas County experienced drought conditions that ranged from abnormally dry to extreme drought conditions with some areas experiencing exceptional drought conditions. These drought conditions exacerbated wildfire risk and were a major contributing factor to the destructive nature of the North Complex in 2020 as well as the Beckwourth Complex and Dixie Fire in 2021 (see discussions in the Wildfire hazard below). Fuels on the ground were tinder dry much earlier in the fire season than normal and fuel moistures remained low longer into the fall months causing the fire season to begin much earlier and run longer with no true break in fire season from one year to the next.

This drought period had a significant impact on overall forest health. Many trees succumbed to the lack of moisture and tree mortality increased. Bark beetle populations expanded during this time as well due to the trees inability to produce enough pitch to defend themselves from beetle infestation. This was another contributing factor to expanding tree mortality across the county. This mortality contributes to the fuel loading of the forest as well as creating areas with significant vertical continuity to wildland fuels which create added challenges for suppression activities.

Climate Change and Drought and Water Shortage

It is likely that climate change will increase the chance of future occurrence as well as future impacts associated with drought and water shortage. More information on future impacts to the District can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

Climate scientists studying California find that drought conditions are likely to become more frequent and persistent over the 21st century due to climate change. The experiences of California during recent years underscore the need to examine more closely the state's water storage, distribution, management, conservation, and use policies. The 2021 CAS (as well as the 2024 Draft CAS) stresses the need for public policy development addressing long term climate change impacts on water supplies. The CAS notes that climate change is likely to significantly diminish California's future water supply, stating that: California must change its water management and uses because climate change will likely create greater competition for limited water supplies needed by the environment, agriculture, and cities.

A 2018 report from the Public Policy Institute of California noted that thousands of Californians – mostly in rural, small, disadvantaged communities – already face acute water scarcity, contaminated groundwater, or complete water loss. Climate change would make these effects worse.

Cal Adapt scenarios for modeled future drought scenarios were shown in Section 4.3.9 of the Base Plan.

Vulnerability to Drought and Water Shortage

Based on historical information, the occurrence of drought and water shortage in California, including the District, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual drought with adverse impacts can vary in duration, and the period between droughts can be extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users. The vulnerability of the PC/PCFSC to drought may vary and include reduction in water supply, turf losses, impacts to natural resources, and an increase in dry fuels and tree dieback.

The whole of the District is at some measure of vulnerability to drought and water shortage. An assessment of a community's vulnerability to drought and water shortage begins with an understanding of local exposure to drought. This is included in the Local Concerns section below followed by a discussion of the District's Assets at Risk to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard.

As mentioned above, drought conditions elevate wildfire risks and add to the destructive nature of the fires in this area. Suppression efforts become more challenging due to the increased fire activity and more complex tactics required for firefighters to safely engage. Fuels reduction operations are also affected by drought due to the elevated project activity levels (PAL) on federal lands which limit operations in the forest based on environmental conditions such as temperature, winds, relative humidity, and fuel moisture. PALs are a metric used to limit operations in the forest based on environmental conditions such as temperature, winds, relative humidity, and fuel moisture. These PALs can have an impact on the operations and productivity of the Plumas County Firesafe Council's Hazardous Fuels Reduction program which implements projects on private and public lands.

The District noted that other local concerns include: domestic well failures, extremely low fuel moisture leading to extreme fire behavior, shortage of agricultural and environmental water, and accelerated tree mortality.

Assets at Risk

Assets at risk from this hazard include people and populations; structures and critical facilities and infrastructure; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

The people and populations (both staff and those served by the District) of the District are not directly affected by general drought conditions; although, their turfed areas, trees, and other water-depending resources can all be affected. In extreme drought conditions, however, residents and other populations within the District may be vulnerable to drought and water shortage issues. Water quality can be impacted causing health problems, especially to vulnerable populations where access to clean water supplies can be more challenging. Water shortages can have an effect on all of the populations in the District, but often have a greater effect on the unhoused and other vulnerable populations that may be unable to access and afford clean drinking water during shortages. During periods of drought as the costs of water usage may increase, those who are economically disadvantaged may be unable to afford the increased costs of potable water.

Structures and Critical Facilities and Infrastructure

Most District structures, critical facilities, and infrastructure have a limited vulnerability to drought and water shortage. Should drought conditions be severe enough to cause water shortage reliability issues, some facilities and infrastructure may be affected. Water and wastewater systems (like those of the District) may be impacted during times of reduced water supply and need to employ contingencies to remain functional and fully operational. Other water dependent systems may also be adversely affected. Further, the secondary hazard of drought (increased potential for spread of urban fires and wildfire) can pose a significant risk to District facilities. Drought can also stress trees, causing die off. These trees may fall on critical infrastructure adjacent to them and impact power lines and other utilities.

According to Table F-2, the District's facility is not at direct risk from drought and water shortage. This District noted that drought does exacerbate wildfire. As such, their facility is at risk from drought induced wildfires.

Natural, Historic, and Cultural Resources

Drought and water shortage can have a significant impact on natural resources. Water levels in reservoirs and lakes may be reduced and a loss of wetlands and coastal marsh areas may occur. Severe drought conditions can contribute to an increase in erosion of soils and lead to poor soil quality. Further, all of the trees in the District are at risk to drought impacts and a reduction in water supply. These trees provide a wealth of social and environmental benefits to District residents and visitors, from shade and beauty to air quality, carbon reduction and stormwater management. Drought can devastate crops and dry out pastures, dry out forests and critical habitat areas, and reduce food and water available for wildlife and livestock.

Additionally, drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding. It is unlikely that drought and water shortage would have a significant impact on historic and cultural resources in the District.

Impacts from Drought and Water Shortage

The vulnerability of the District to drought is District-wide, but impacts may vary and include reduction in water supply and an increase in dry fuels. The potential for a reduction in water supply during drought conditions generally leads to both mandated and voluntary conservations measures during extended droughts. During these times, the costs of water can also increase. Also of concern, the increased dry fuels, fuel loads, and tree mortality events associated with drought conditions can result in an increased fire danger. In areas of extremely dry fuels, the intensity and speed of fires can be significant. Water supply and flows for fire suppression can also be an issue during extended droughts. Drought can also lead to turf losses and cause tree die off within the District.

Other qualitative impacts associated with drought in the District are those related to water intensive activities such as municipal usage, commerce, tourism, and recreation use. With more precipitation likely falling as rain instead of snow in the Sierra's, and warmer temperatures causing decreased snowfall to melt faster and earlier, water supply is likely to become more unreliable. In addition, drought and water shortage is predicted to become more common. This means less water available for use over the long run, and additional challenges for water supply reliability, especially during periods of extended drought.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change (which was discussed in the hazard profile discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. These are discussed below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the PC/PCFSC include the following:

- Climate change is likely to exacerbate future drought conditions and associated impacts and vulnerability of the District to drought and water shortage.
- Population projections for the area served by the District show the population to be shrinking, which limits additional impacts to the District. The District may add staff, but this number would be small. The District noted it has no control over population changes in its Planning Area, it merely reacts to them by providing additional (or reduced) services.

- It is unknown how changes in land use and development will affect drought and water shortage in the District's Service Area. The District conducts water supply planning to ensure a continued water supply to address future drought conditions.

Future Development

The County has access to large quantities of water through its groundwater supply. Though not currently planned or expected, any population growth in the District will add additional pressure to the local water companies during periods of drought and water shortage.

Flood: 1%/0.2% Annual Chance (w/Levee Failure)

Likelihood of Future Occurrence–Occasional (1%)/Unlikely (0.2%)
Vulnerability–High

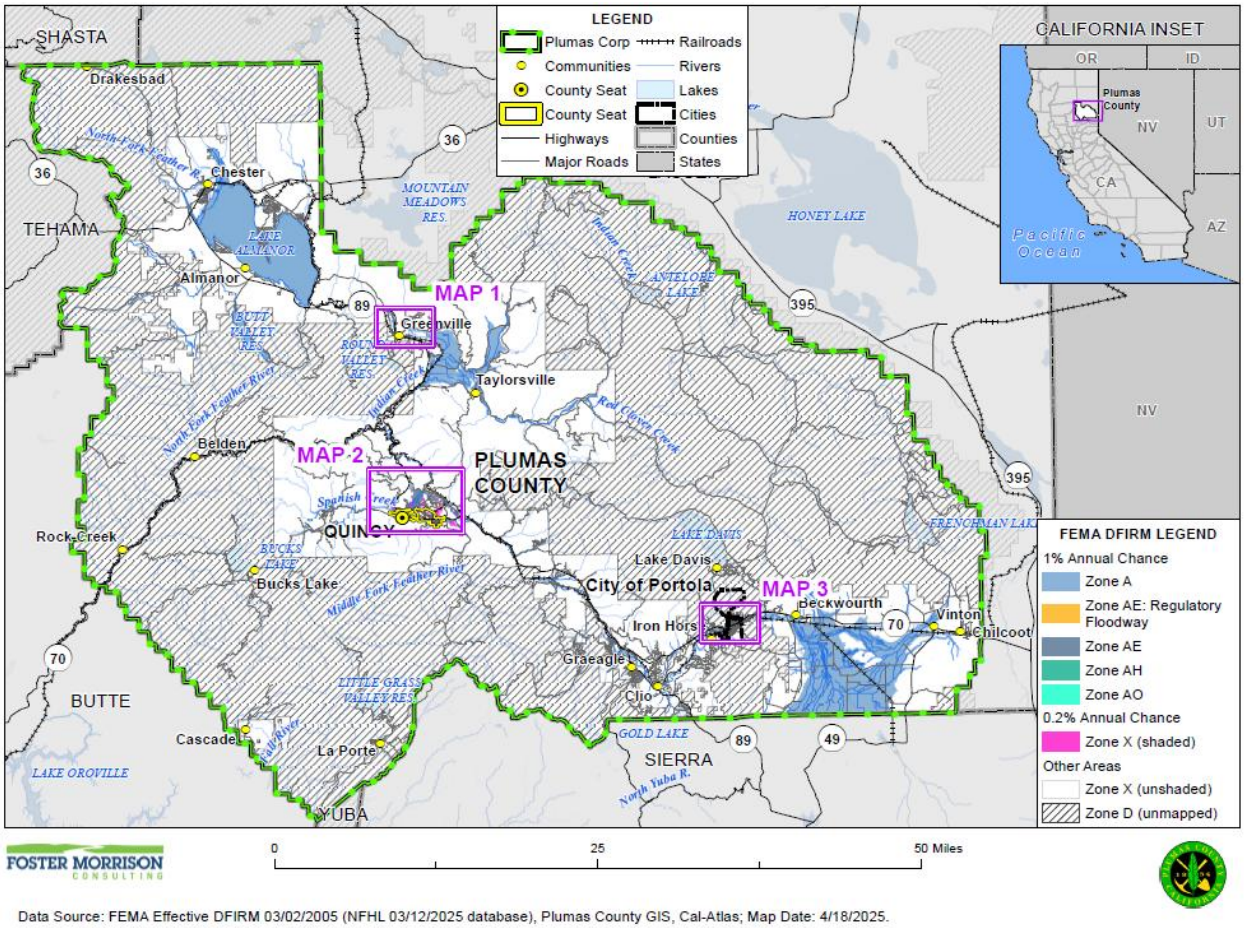
Hazard Profile

This hazard analyzes the FEMA DFIRM 1% and 0.2% annual chance floods. These tend to be the larger floods that can occur in the District and have caused damage in the past. Flooding can be a significant problem in the District. Historically, the District has been at risk to flooding primarily during the winter and spring months when river systems in the District swell with heavy rainfall and snowmelt runoff. The District has also been at risk during atmospheric river flood events. Normally, storm floodwaters are kept within defined limits by a variety of storm drainage and flood control measures (like levees) located throughout the Plumas County Planning Area and the PC/PCFSC. Occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage. Flooding has occurred both within the 1% and 0.2% annual chance floodplains and in other localized areas in the District. Levee failure flooding is also an issue in the District.

Location and Extent

The PC/PCFSC has areas located in the 1% and 0.2% annual chance flood zones. This is seen in Figure F-2.

Figure F-2 PC/PCFSC – FEMA DFIRM Flood Zones



Data Source: FEMA Effective DFIRM 03/02/2005 (NFHL 03/12/2025 database), Plumas County GIS, Cal-Atlas; Map Date: 4/18/2025.

Table F-5 details the DFIRM mapped flood zones located within the District.

Table F-5 PC/PCFSC– DFIRM Flood Hazard Zones

Flood Zone	Description	Present in District
A	1% annual chance flooding: No base flood elevations provided	X
AE	1% annual chance flooding: Base flood elevations provided	X
AE Regulatory Floodway	1% annual chance flood: Regulatory floodway; Base flood elevations provided	X
AH	1% annual chance flood areas of shallow flooding between one to three feet deep. Regulatory floodway; Base flood elevations provided	X
Shaded X	0.2% annual chance flooding: The areas between the limits of the 1% annual chance flood and the 0.2-percent-annual-chance (or 500-year) flood	X
X (unshaded)	Area of minimal flood hazard	X

Source: FEMA DFIRM 03/02/2005

Additionally, flood extents can generally be measured in volume, velocity, and depths of flooding. Expected flood depths in the District vary, depending on the nature and extent of a flood event; specific depths are unknown. Flood durations in the District tend to be short to medium term, until either the storm drainage system can catch up or flood waters move downstream. Flooding in the District tends to have a shorter speed of onset, due to the amount of water that flows through the District.

Geographical flood extents for the District from the FEMA DFIRMs are shown in Table F-6.

Table F-6 PC/PCFSC – Geographical DFIRM Flood Zone Extents

Jurisdiction / Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
City of Portola						
1% Annual Chance Flood Hazard	168	0.01%	10	0.01%	157	0.01%
0.2% Annual Chance Flood Hazard	1	0.0001%	0.1	0.0001%	0.7	0.00005%
Other Areas	3,323	0.2%	2,227	2.4%	1,096	0.1%
City of Portola Total	**3,491**	**0.2%**	**2,237**	**2.4%**	**1,254**	**0.1%**
Unincorporated Plumas County						
1% Annual Chance Flood Hazard	84,609	5.1%	23,036	24.8%	61,573	3.9%
0.2% Annual Chance Flood Hazard	1,431	0.1%	667	0.7%	764	0.05%
Other Areas	1,582,631	94.6%	67,072	72.1%	1,515,559	96.0%
Unincorporated Plumas County Total	1,668,671	99.8%	90,775	97.6%	1,577,896	99.9%
Grand Total	**1,672,162**	**100.0%**	**93,013**	**100.0%**	**1,579,150**	**100.0%**

Source: FEMA DFIRM 03/02/2005

Past Occurrences

Disaster Declaration History

A list of state and federal disaster declarations for Plumas County from flooding is shown on Table F-7. These events also likely affected the District to some degree.

Table F-7 Plumas County – State and Federal Disaster Declarations from Flood 1950-2025

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (including heavy rain and storm)	22	1950, 1955, 1958 (twice), 1964, 1963, 1964, 1969, 1970 1980, 1986, 1993, 1992*, 1995 (twice*), 1996, 1997, 2006, 2017 (twice*), 2023 (twice*)	19	1950, 1955, 1958 (twice), 1963, 1964, 1969, 1970, 1986, 1992 (twice), 1995 (twice), 1997, 2006*, 2017 (twice*), 2023 (twice*)

Source: Cal OES, FEMA
*included a landslide component

NCDC Events

The NCDC tracks flooding events for the County. Events have been tracked for flooding since 1993. Plumas County has seen 15 events. Depending on the location, these events most likely had some impact on the District.

PC/PCFSC Events

The District noted that the following events had affects or damages to the District:

1955 Flood – anecdotal accounts speak of profound changes in the condition of many stream channels throughout the District. Many of the original county bridges were lost. Deleterious effects of some post-flood channel repairs and "modifications" still persist.

1986 Flood – long duration high intensity rain on snow. Flood of record (36,200 cfs) on Indian Creek at that time. Extensive damage to county road and bridges, Hwy 70 in Feather River Cyn and Union Pacific railroad line severely damaged.

1997 Flood – long duration rain on snow event with high antecedent moisture. Currently stands as flood of record on Indian Creek since 1906 (42,000- 44,000 cfs). Despite higher flows, there was less local infrastructure damage. Feather River Cyn Hwy 70 & railroad severely damaged again.

2017 Flood – long duration rain event with high antecedent moisture. Solidly between the '86 & '97 floods in stage and volume. Feather River Cyn Hwy 70 & railroad severely damaged for 3rd time.

Other NCDC flood events – events from the early 1960's and 1990's were similar to the 1955 flood in magnitude (±25,000 cfs at Arlington Bridge), but far less in effects. Effects would be more localized.

Indian Creek at the exit from Indian Valley was gaged by the USGS from 1906 to 1993, with notable later events back-calculated by USGS or Plumas Corp. It serves as a magnitude surrogate for discussions here. Discharge volume in the 1986 was 30% greater than any previous flood in the period of record. 1997 was 15% greater than 1986, with the 2017 flood volume solidly in between.

Climate Change and Flood

It is likely that climate change will increase the chance of future occurrence as well as future impacts associated with flood. More information on future impacts to the District can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

According to the 2021 CAS (as well as the 2024 Draft CAS), climate change may affect flooding in California, the Plumas County Planning Area, and the PC/PCFSC. While average annual rainfall may increase or decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century. It is possible that average soil moisture and runoff could decline, however, due to increasing temperature, evapotranspiration rates, and spacing between rainfall events. Reduced snowpack and increased number of intense rainfall events are likely to put additional pressure on water infrastructure which could increase the chance of flooding associated with breaches or failures of flood control structures such as levees and dams. Cal Adapt future precipitation projections were shown in Section 4.3.4.

Vulnerability to Flood: 1% and 0.2% Annual Chance

Floods have been a part of the District's historical past and will continue to be so in the future. During winter months, long periods of precipitation and the timing of that precipitation are critical in determining the threat of flood, and these characteristics further dictate the potential for widespread structural and property damage. Predominantly, the effects of 1% and 0.2% annual chance flooding are generally confined to areas near the waterways of the District. As waterways grow in size from local drainages, so grows the threat of flood and dimensions of the threat.

The whole of the District is at some measure of vulnerability to floods. An assessment of a community's vulnerability to flood begins with an understanding of local exposure to flood. This is included in the Local Concerns section below followed by a discussion of the District's Assets at Risk to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard. The principal large flood hazard water bodies are Middle Fork Feather River (Sierra Valley/Portola), Spanish Creek (Quincy area), Indian Creek (Indian Valley/Genesee) and North Fork Feather River (Chester/Canyon).

Generalized flooding of communities has not been a significant issue in the District, historically. Of more concern is community isolation due to flooded roads, washed out bridges/culverts and/or debris blockages. Again, using Indian Valley/Indian Creek as examples: at 10,000 cfs North Valley Road (Cassity Corner) and the west bridge on Stampfli Lane are flooded, folks south of those points can still exit via Arlington Bridge; at 25,000 cfs Arlington Bridge is overtopped, as is Deadfall Bridge, leaving Taylorsville, North Arm and Genesee isolated from medical and other services; at the same stage Genesee Road at Rocky Point floods isolating Genesee from Taylorsville, Ward Creek Road floods isolating residents on the south side of Genesee Valley. Similar scenarios occur in each of the principal inhabited valleys in the District. The 204 square mile Last Chance Creek watershed is one of two large sub watersheds to Indian Creek. Indian

Creek flows through Genesee and Indian valleys where flooding and channel instability are current hazards to the populace.

The Last Chance Creek watershed contains one of the longest contiguous meadow floodplain systems in the Sierra Nevada Mountains. Last Chance Creek is severely down cut (incised) throughout the 36 miles of meadow floodplain. Principal stressors were logging railroad grades built in the low gradient meadow in the 1930s & '40s, channel modification, livestock grazing, and roads. These incised channels funnel all flows downstream, rapidly draining out this headwater basin into the populated Genesee and Indian valleys.

Loss of floodplain function and the rapid drainage of these headwater basins reduces the meadow's ability to capture and store springtime snowmelt and rain as shallow groundwater. Sixty percent of California's water supply originates in the Sierra Nevada, and meadows are a key component of that supply, helping to regulate water flow, temperature, and quality. As the headwaters of the State Water Project, the Feather River Watershed provides water to over 26 million Californians. Although wet meadows are less than one percent of the overall landscape in Plumas County, meadows' unique hydrologic and ecological functions are recognized as being vital to watershed health and are valued for the ecosystem goods and services they provide, such as crucial habitat for many endemic and special status wildlife species. Known as biological diversity hot spots, healthy meadows provide refugia for wildlife during droughts and wildfire. Wet and moist meadows sequester carbon in the soil, where it isn't susceptible to being lost in a wildfire. In addition, functioning meadow floodplains provide natural fire breaks reducing fire intensities and rate of spread.

Over 6,000 acres of meadow surface are available for flood attenuation along Last Chance and its tributaries. From 1995 to 2007, 9 miles and 800 acres of floodplain has been restored by Plumas Corporation. The work restored the hydraulic base level of Last Chance and tributaries back to the historic meadow level, recovering crucial floodplain function. The larger Last Chance Creek project was originally divided into Phase 1, Phase 2, and Phase 3. Phase 1 is primarily complete representing the abovementioned accomplishments. Phase 2 has been designed; funds to complete NEPA/CEQA, permits and implementation are needed. Phase 3 awaits planning funds.

The District is also concerned with rain on snow events, which can cause greater flooding in the District. Loss of headwater floodplains accelerates the movement of floodwaters originating from rain-on-snow events. Such events are expected to occur with more frequency with climate change.

Assets at Risk

Assets at risk from this hazard include people and populations; structures and critical facilities; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

All people and populations (both District staff and those in the Service Area) located in the 1% and 0.2% annual chance floodplains are at some risk to flooding. Certain vulnerable populations located within areas prone to flooding may be at increased risk to this hazard, especially during a large event with minimal advance notice. These vulnerable populations include: the unhoused, those with limited mobility, and those that lack the resources to leave the area.

Populations served by the District can be the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. The District's ability to provide services to its populations during flood events is paramount.

Structures and Critical Facilities

Certain District structures are at risk of DFIRM flooding and primarily include those structures located within the 1% and 0.2% annual chance floodplains. None of the District assets listed in Table F-2 would be at risk to flooding.

Flooding presents a threat to both critical facilities and infrastructure, as well as community lifelines. Critical infrastructure plays an immensely important role in our communities. As previously noted, communities rely on roads, rail corridors, and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout California.

Natural, Historic, and Cultural Resources

Large flood events can affect natural, historic, and cultural resources. There are a number of ways floodwaters can impact natural resources and the environment. Wildlife habitats can be destroyed by floodwaters. Contaminated floodwater can pollute rivers and habitats. Silt and sediment can destroy natural areas. Riverbanks and natural levees can be eliminated as rivers reach bankfull capacity. Rivers can be widened, and deposition can increase downstream. Trees can be uprooted by high-velocity water flow. Plants that survive the initial flood may die due to being inundated with water. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures within the flooded areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged and lost during extreme flood events. Any of these that fall in the flood zones shown on Figure F-2 would be vulnerable.

Impacts from Flood: 1% and 0.2% Annual Chance

Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Large flood events, including those associated with 1% and 0.2% annual chance floods, can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. People may be swept away in floodwaters, causing injuries or deaths. Floods can be extremely dangerous, and even six inches of moving water can knock over a person given a strong current. During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Floodwaters can transport large objects downstream which can damage or remove stationary structures. Structures can be damaged directly from floodwaters and can also be damaged from trees falling as a result of water-saturated soils. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services causing power outages. The interruption of power causes major problems and can result in the closure of

governmental offices and community businesses. Roads can be damaged and closed, causing safety and evacuation issues.

Standing water can cause damage to crops, roads, foundations, and electrical circuits. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, loss of environmental resources, and economic impacts.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change (which was discussed in the hazard profile discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. These are discussed below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the PC/PCFSC include the following:

- As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time.
- Population projections for the area served by the District show the population to be shrinking, which limits additional impacts to the District. The District may add staff, but this number would be small. The District noted it has no control over population changes in its service territory, it merely reacts to them by providing additional (or reduced) services.
- Changes in land use and development in the District are expected to be limited in the near future and thus are not likely to affect flooding and associated impacts to the District. Additional development traditionally leads to additional flooding. In addition, adherence to protective building codes for new development will also assist in limiting future impacts and associated vulnerabilities of the District to this hazard. With adherence to development standards, future losses to new development should be minimal.

Future Development

Future development in the District may be built in the floodplain, as long as it conforms to the standards of the floodplain ordinance. The County and Portola enforce their floodplain management ordinance on areas inside the District. More detail on the specifics of the floodplain ordinance can be found in Section 4.4.1 of the Base Plan and in Section A.5.1 of the City of Portola annex. New District facilities and assets will be sited in such a way as to reduce the risk from flooding to District structures.

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile

Flooding occurs in areas other than the FEMA mapped 1% and 0.2% annual chance floodplains. Flooding may be from drainages not studied by FEMA, lack of or inadequate drainage infrastructure, or inadequate maintenance. Localized, stormwater flooding occurs throughout the District and the Plumas County Planning Area, especially during the rainy season from November through April. Prolonged heavy rainfall (including that from atmospheric river events) contributes to a large volume of runoff resulting in high peak flows of moderate duration.

Location and Extent

The PC/PCFSC is subject to localized flooding throughout the District. This is discussed in the Localized Stormwater Flooding section below. Flood extents are usually measured in areas affected, velocity of flooding, and depths of flooding. Expected flood depths in the District vary by location. Flood durations in the District tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Localized flooding in the District tends to have a shorter speed of onset, especially when antecedent rainfall has soaked the ground and reduced its capacity to absorb additional moisture.

Past Occurrences

Disaster Declaration History

There have been no state or federal disaster declarations specific to localized floods. There would most likely have been localized flood events during the 22 state and 19 federal disaster declarations for flood events, including heavy rains and storms, as shown in the previous 1%/0.2% annual chance flood section.

NCDC Events

The NCDC occurrences of localized flooding are included in the 1% and 0.2% annual chance flood hazard profile above where past flood events were noted. These include 15 flood related events for the entire County Planning Area reported since 1993.

PC/PCFSC Events

Localized flooding in the District has generally been of a stochastic nature, from transient causes; not recurring events. Typically, localized flooding occurs with high intensity rain on saturated soils/snowmelt generating mineral and organic debris loads, temporary debris jams, beaver dams, etc., often enhanced by recent wildfire effects. This occurs yearly.

Climate Change and Localized Flood

It is likely that climate change will increase the chance of future occurrence as well as future impacts from localized floods. Atmospheric river events, occurring in recent years, is thought to be attributed to climate change and reflect storms of greater volume and intensity. More information on future impacts to the District can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

Even if average annual rainfall may decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century, increasing the likelihood of overwhelming stormwater systems built to historical rainfall and storm averages. This makes localized flooding more likely.

Vulnerability to Localized Flood

Flood vulnerability and their impacts vary by location and severity of any given flood event and will likely only affect certain areas of the District during specific times. Based on the risk assessment, it is evident that floods will continue to have potentially significant impacts to certain areas of the District. However, while flooding can cause significant impacts, depending on the duration and volume of precipitation and the drainage in any given area, many of the floods in the District are minor, localized flood events that are more of a nuisance than a disaster.

Many areas of the District are at some measure of vulnerability to localized flooding. An assessment of a community's vulnerability to localized flooding begins with an understanding of local exposure to localized flooding. This is included in the Local Concerns section below followed by a discussion of the District's Assets at Risk to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard.

Historically, the District has been affected by flooding of streams and creeks occurring during heavy rain and storm (including atmospheric river) events. Additional development in the District and in the watersheds of these streams affects both the frequency and duration of damaging floods through an increase in stormwater runoff and contributes to localized flooding occurring in areas throughout the District. The lack of, or inadequate, drainage of built infrastructure in the District contributes to localized flooding issues. Impervious services in the district will also exacerbate rain on snow events flooding.

Assets at Risk

Assets at risk from this hazard include people and populations; structures and critical facilities; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

All District staff and populations served (including vulnerable populations) are traditionally not highly vulnerable to localized flooding, but their structures and contents can be at risk. Localized flooding may also cause transportation issues as roads and lanes are impacted or closed and affect the ability for District staff and District residents to travel throughout the District.

Structures and Critical Facilities and Infrastructure

Structures and critical facilities and infrastructure in areas with localized flooding can be affected if floodwaters intrude into the structure. Structures in low lying areas, can be at greater risk. Buildings with older foundations that are prone to water intrusion are also at greater risk. Once water finds its way into a structure, it tends to continue to do so until the path that brings water into a structure is mitigated. Structures can also be damaged by trees that have become uprooted and fall during rain and storm events. Large trees falling onto structures can cause significant damage.

The District's only asset (as shown in Table F-2) is at risk to localized flooding. Plumas Corp owns property that is adjacent to elevated water holding ponds that are used to store run-off from the Sierra Pacific Industries mill. This water is utilized to spray log stock to minimize checking and splitting of logs prior to milling operations. During periods of heavy rainfall the ponds can reach capacity and on occasion have overflowed. Additionally, due to the earthen construction of the containment walls small breaches have been witnessed during heavy rain events. Large pumps are regularly utilized to manage water levels and mitigate overflow risks. The combined risk of overflowing and potential breaches pose a threat of flooding to Plumas Corp assets particularly due to the reliance on mechanized equipment to mitigate the hazard.

Natural, Historic, and Cultural Resources

Natural resource assets may have some vulnerabilities to localized flood during major storm events, but can benefit from floodwaters, often by design. Many open spaces take overflow water and release it into the underlying soils and natural areas. Wetlands areas in the District actually help reduce the risk of flooding, as they can absorb excess rainfall that would have to be drained away from impervious surfaces. Flooding can provide many benefits to the natural environment, including recharging wetlands and groundwater, increasing fish production, creating wildlife habitat, and rejuvenating soil fertility. These smaller localized flooding events often provide more benefits to the environment in comparison to negative impacts associated with large flood events. Historic and cultural resources may be at some measure of vulnerability if they are located in areas subject to repeated localized flooding.

Impacts from Localized Flood

Primary concerns associated with stormwater flooding include impacts to infrastructure that provide a means of ingress and egress throughout the community. Ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical District infrastructure. Objects can also be buried or destroyed through sediment deposition. Floodwaters can break utility lines and interrupt services to District facilities. Standing water can cause damage to crops, roads, and foundations of District facilities. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

Life safety issues from localized flooding would be more limited. The amount and type of damage or flooding that occurs varies from year to year and from storm to storm, depending on the quantity of precipitation and runoff.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. These are discussed below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the PC/PCFSC include the following:

- As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time.
- Population projections for the area served by the District show the population to be shrinking, which limits additional impacts to the District. The District may add staff, but this number would be small. The District noted it has no control over population changes in its service territory, it merely reacts to them by providing additional (or reduced) services.
- Changes in land use and development in the District are expected to be limited in the near future and thus are not likely to affect flooding and associated impacts to the District. Additional development traditionally leads to additional flooding. In addition, adherence to protective building codes for new development will also assist in limiting future impacts and associated vulnerabilities of the District to this hazard. With adherence to development standards, future losses to new development should be minimal.

Future Development

The risk of stormwater/localized flooding to future development can be minimized by accurate recordkeeping of repetitive localized storm activity. Mitigating the root causes of the localized stormwater or choosing not to develop in areas that often are subject to localized flooding will reduce future risks of losses due to stormwater/localized flooding. Future development in the District will add to the drainage issues already faced by the District, unless adequate drainage facilities are installed in new development locations.

Severe Weather: Extreme Heat

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile

According to FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and lasts for several weeks. Heat kills by taxing the human body beyond its abilities. In extreme heat and high humidity, evaporation is slowed, and the body must work extra hard to maintain a normal temperature." Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children, those who are sick or overweight, and those that work or recreate outdoors are more likely to experience heat exhaustion or succumb to extreme heat.

In addition to the risks faced by citizens of the District, there are risks to the built environment from extreme heat. While extreme heat on its own does not usually affect structures, extreme heat during times of drought can cause wildfire risk to heighten. Extreme heat can lead to interruptions in power, power outages, and when combined with high winds, to Public Safety Power Shutdown (PSPS) events, creating significant issues in the District. Extreme heat can also affect air quality conditions making certain populations more vulnerable to heat related issues.

Location and Extent

Extreme heat events occur on a regional basis. Extreme heat can occur in any location of the District. Extreme heat occurs throughout the District primarily during the summer months.

The NWS has in place a system to initiate alert procedures (advisories or warnings) when extreme heat is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The NWS HeatRisk forecast provides a quick view of heat risk potential over the upcoming seven days. The heat risk is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale which is similar in approach to the Air Quality Index (AQI) or the UV Index. This can be seen in Section 4.3.3 of the Base Plan.

Past Occurrences

Disaster Declaration History

There have been no federal or state disaster declarations from extreme heat.

NCDC Events

The NCDC data shows 7 extreme heat incidents for Plumas County since 1993, some of which likely affected the District.

PC/PCFSC Events

The District noted that extreme heat is a yearly event. Past damages from extreme heat only could not be recalled.

Climate Change and Extreme Heat

The 2021 CAS (as well as the 2024 Draft CAS), citing a California Energy Commission study, states that "over the past 15 years, heat waves have claimed more lives in California than all other declared disaster events combined." This study shows that California is getting warmer, leading to an increased frequency, magnitude, and duration of heat waves. These factors may lead to increased mortality from excessive heat.

As temperatures increase, California and Plumas County will face increased risk of death from dehydration, heat stroke, heat exhaustion, heart attack, stroke and respiratory distress caused by extreme heat. According to the 2021 CAS (as well as the 2024 Draft CAS) report and the 2023 State of California Hazard Mitigation Plan, by 2100, hotter temperatures are expected throughout the state, with projected increases of 3-5.5°F (under a lower emissions scenario) to 8-10.5°F (under a higher emissions scenario). These changes could lead to an increase in deaths related to extreme heat in Plumas County.

Vulnerability to Severe Weather: Extreme Heat

Extreme heat is becoming more frequent, intense, longer lasting and geographically widespread. Extreme heat occurs on an annual basis in the County and the District. In recent years, compounded by climate change conditions, summer months continue to get a bit hotter. The whole of the District is at some measure of vulnerability to extreme heat. An assessment of a community's vulnerability to extreme heat begins with an understanding of local exposure to extreme heat. This is included in the Local Concerns section below followed by a discussion of the District's Assets at Risk to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard.

The District noted that extreme heat occurs every year, and that the greatest risk from this hazard is the cascading effects of dry temperatures and increased wildfire risk.

Assets at Risk

Assets at risk from this hazard include people and populations; structures and critical facilities; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

All District staff and the populations served by the District are at some vulnerability to extreme heat. Those District employees that work outdoors or inside facilities without proper cooling systems are likely to be most affected by extreme heat conditions.

Extreme heat can also affect air quality conditions making certain populations more vulnerable to heat related issues. All populations served by the District are vulnerable to extreme heat, but it generally affects people spending large amounts of time outside or without means of cooling indoor structures. During extended periods of high temperatures, extreme heat may overload the demands for electricity to run air conditioners and can present health concerns to individuals. When interruptions in power occur during extreme heat, the risk of heat related illnesses and deaths increase. Extreme heat is a significant concern to vulnerable populations. The unhoused; individuals who exercise or train outdoors; outdoor workers (like District staff); individuals that lack the resources to afford heat; and the young, old, or medically fragile individuals are more susceptible to heat related impacts. In addition to vulnerable populations, pets and livestock are at risk to extreme heat conditions.

Structures and Critical Facilities and Infrastructure

Extreme heat normally does not generally impact structures and critical facilities and Infrastructure, but individuals working in structures may be affected during periods of extended heat, especially in structures that might not be equipped with air conditioning or other means of cooling. The District noted that extreme heat has caused interruptions to power in the past. Also depending on the structure, sensitive contents such as IT equipment can be impacted, especially if a power outage occurs.

PC/PCFSC noted that extreme heat will not directly affect its owned asset, but a wildfire that is exacerbated by extreme heat could affect the structure shown in Table F-2.

Natural, Historic, and Cultural Resources

Natural resource assets, including those located in District, may be vulnerable during periods of extreme heat. These include turfed areas; landscapes, trees, wildlife and habitat areas, and wetlands and marsh lands. Recently, trees were lost in areas of the District that were weakened by drought and extreme heat. Extreme heat may also cause drought-like conditions, contributing to other issues. For example, several weeks of extreme heat increases evapotranspiration and reduces moisture content in vegetation, leading to higher wildfire vulnerability in the region for that time period, even if the rest of the season is relatively moist. Historic and cultural resources are not expected to be affected by extreme heat.

Impacts from Severe Weather: Extreme Heat

The District experiences temperatures in excess of 100°F during the summer and fall months. The temperature moves to 105-110°F in rather extreme situations. During these times, drought conditions may worsen, and the District may see an increase in dry fuels contributing to the wildfire hazard. Extreme heat can damage agricultural assets in the District service territory. Also, power outage and PSPS events may occur during these times as well. Health issues are a primary concern with this hazard, especially to vulnerable populations, although economic impacts can also be an issue.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change (which was discussed in the hazard profile section above), changes in population patterns, and changes in land use and development. The influencing effects of these factors on this hazard are discussed further in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for District include the following:

- As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time.
- Population projections for the area served by the District show the population to be shrinking, which limits additional impacts to the District. The District may add staff, but this number would be small. The District noted it has no control over population changes in its service territory, it merely reacts to them by providing additional (or reduced) services.
- Changes in land use and development in the District are expected to be limited in the near future and thus are not likely to affect heat and associated impacts to the District. In addition, adherence to protective building codes for new development will also assist in limiting future impacts and associated vulnerabilities of the District to this hazard. With adherence to development standards, future losses to new development should be minimal.

Future Development

Future development in the District will take extreme heat into account. In the event of grid-tied power outages, a reliable backup power source must be included in development plans. Additionally, implementing energy efficiency and conservation efforts to reduce stress on electricity systems during heat waves.

Severe Weather: Heavy Rains and Storms

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile

Storms in the District occur annually and are generally characterized by heavy rain often accompanied by strong winds and sometimes lightning and hail. Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail that is three-quarters of an inch or greater, winds in

excess of 50 knots (57.5 mph), or a tornado. Heavy precipitation in the District falls mainly in the fall, winter, and spring months. Wind often accompanies these storms; hail and lightning are rare in the District.

Location and Extent

Rains and storms can occur in any location of the District. All portions of the District are at risk to heavy rains and storms. Most of the severe rains occur during the fall, winter, and spring months in the District as discussed below (with problem flooding areas associated with heavy rains and storms discussed in the Flood: Localized Stormwater section). There is no scale by which heavy rains and severe storms are measured. Magnitude of storms is measured often in rainfall and damages. The speed of onset of heavy rains can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Hail and lightning are rarer in the District and Plumas County. Duration of severe storms in the District can range from minutes to hours to days.

Past Occurrences

Disaster Declaration History

According to historical hazard data, severe weather, including heavy rains and storms, is an annual occurrence in the District. This contributes to many of the federal disaster declarations related to flooding. Disaster declarations from flooding, including heavy rains and storms, are shown on Table F-8. In addition, there have been two USDA disaster declarations from heavy rain and storms (once in 2016 and once in 2017) since 2012.

Table F-8 Plumas County – State and Federal Disaster Declarations from Flood (Heavy Rain and Storms) 1950-2025

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	22	1950, 1955, 1958 (twice), 1964, 1963, 1964, 1969, 1970 1980, 1986, 1993, 1992*, 1995 (twice*), 1996, 1997, 2006, 2017 (twice*), 2023 (twice*)	19	1950, 1955, 1958 (twice), 1963, 1964, 1969, 1970, 1986, 1992 (twice), 1995 (twice), 1997, 2006*, 2017 (twice*), 2023 (twice*)

Source: Cal OES, FEMA

NCDC Events

The NCDC data recorded 132 hail, heavy rain, and storm incidents for Plumas County since 1950.

PC/PCFSC Events

The District noted that heavy rains and storms are an annual occurrence often resulting in flooding. Events causing flood issues are listed in the Past Occurrences section of the Flood: 1%/0.2% Annual Chance and Flood: Localized Stormwater Flooding discussions above.

Climate Change and Heavy Rains and Storms

It is likely that climate change will increase the chance of future occurrence as well as future impacts from heavy rains and storms. More information on future impacts to the District can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

According to the 2021 CAS (as well as the 2024 Draft CAS), while average annual rainfall may increase or decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century. It is unlikely that hail will become more common in Plumas County and the PC/PCFSC. The amount of lightning is not projected to change.

Cal-Adapt noted that, on average, the projections show little change in total annual precipitation in California. Furthermore, among several models, precipitation projections do not show a consistent trend during the next century. Cal-Adapt modeled scenarios are shown in Section 4.3.4 of the Base Plan.

Vulnerability to Heavy Rain and Storms

Heavy rain and severe storms are the most frequent type of severe weather occurrences in the District. These events can cause both significant and localized flooding. Flooding can be worse during times where the ground is already saturated. Wind often accompanies these storms and has caused damage in the past. Hail and lightning are rare in the District, but also can cause damage, with lightning occasionally igniting wildfires.

The whole of the District is at some measure of vulnerability to heavy rain and storms. An assessment of a community's vulnerability to heavy rains and storms begins with an understanding of local exposure to heavy rain and storms. This is included in the Local Concerns section below followed by a discussion of the District's Assets at Risk to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard.

The District noted that one of the primary issues associated with heavy rains and storms is the resulting flooding caused by large precipitation events. Heavy rains and storms have a significant relationship with flooding risks, as well as, impacting water quality and agricultural infrastructure. The District is also concerned with rain on snow events, which can cause greater flooding in the District. Specific waterbodies, locations, event magnitudes and damages have been discussed under Vulnerability to Flood: 1% and 0.2% Annual Chance.

Assets at Risk

Assets at risk from this hazard include people and populations; structures and critical facilities; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

All District staff and the populations served by the District are at some vulnerability to heavy rains and storms. Those District employees that work outdoors could be affected to a limited extent by this hazard. All populations served by the District have some measure of risk to heavy rains and storms. Those populations that work or recreate outside and unhoused individuals are more vulnerable to impacts from heavy storm events. Heavy rains and storms occur every year and do not generally cause significant adverse impacts to individuals; it is the secondary hazard, flooding, which poses the biggest impact to people.

Structures and Critical Facilities and Infrastructure

District facilities and structures have some risk to heavy rains and storms. Heavy rain and storms can affect critical facilities and infrastructure during large events. Structures built to modern building codes are built to withstand heavy rains and storms (including thunderstorm winds and lightning); older structures may be more vulnerable. During a heavy storm, localized flooding may cause water intrusion into buildings from the outside. Trees can be downed causing impacts to structures. Older homes and buildings may be at increased risk to heavy rains and storms. Power outages during severe storm events can occur, impacting the use of structures until the power is back online. Local roads, streets, and bridges can be impacted resulting in closures restricting traffic flow in the District. In certain areas, large storms can cause erosion and localized landslides which can impact affected facilities.

The District noted that heavy rains may bring on floods that can affect the structures in Table F-2.

Natural, Historic, and Cultural Resources

Large rain and storm events and associated flooding can affect natural, historic, and cultural resources. Silt and sediment can damage natural areas. Trees can be uprooted and downed by high winds. Extended periods of rainfall can erode natural banks along waterways and degrade soil stability for terrestrial species. While some natural systems can be adversely impacted during these large storms, heavy rain events can also provide benefits. Groundwater and wetland areas can be recharged and water supplies replenished. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures affected by large storm events, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged, and lost during extreme rain and storm and events.

Impacts from Heavy Rain and Storms

Impacts from heavy rains and storms include damage to property, critical facilities and infrastructure, and the natural landscape. This includes: erosion; downed trees; damaged utility structures and infrastructure; power outages; road damage and blockages; and even lightning strikes to critical infrastructure and people. Lightning can also cause wildfires and urban fires to occur. Landsliding and erosion occur when the soil on slopes becomes oversaturated and fails. Climate change may cause these impacts to worsen.

Actual damage associated with the primary effects of severe storms and heavy rains has been somewhat limited. It is the secondary hazards caused by these severe weather events, such as floods and erosion that would likely have the greatest impact.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change (which was discussed in the hazard profile section above), changes in population patterns, and changes in land use and development. The influencing effects of these factors on this hazard are discussed further in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the District include the following:

- As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time.
- Population projections for the area served by the District show the population to be shrinking, which limits additional impacts to the District. The District may add staff, but this number would be small. The District noted it has no control over population changes in its service territory, it merely reacts to them by providing additional (or reduced) services.
- Changes in land use and development in the District are expected to be limited in the near future and thus are not likely to affect heavy rains and storm and associated impacts to the District. In addition, adherence to protective building codes for new development will also assist in limiting future impacts and associated vulnerabilities of the District to this hazard. With adherence to development standards, future losses to new development should be minimal.

Future Development

New District facilities follow state and local building codes which should reduce the risk to future development in the District from heavy rains and storms. New critical facilities should be built to withstand hail damage, lightning, and thunderstorm winds. Changes in land use may also amplify the impacts of heavy rains and storms, as additional impervious surfaces can cause additional runoff and localized flooding throughout the District.

Severe Weather: High Winds and Tornado

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile

High winds, as defined by the NWS glossary, are sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration. High winds can cause significant property damage, threaten public safety, and have adverse economic impacts from business closures and power loss.

High winds, can cause power outages, and when combined with high temperatures and low humidity can also lead to PSPS events. Winds can also drive fires in and near the District.

Portions of the District are also located in or near a special wind hazard region, which is a result of foehn winds. A foehn wind is a type of dry down-slope wind that occurs in the lee (downwind side) of a mountain range. Winds of this type are called "snow-eaters" for their ability to make snow melt or sublimate rapidly. These types of winds are also associated with the rapid spread of wildfires, making some regions which experience these winds particularly fire prone.

Another special type of wind event can occur in the District. Microbursts have occurred in the County. According to the National Weather Service, a microburst is a downdraft (sinking air) in a thunderstorm that is less than 2.5 miles in scale. Some microbursts can pose a threat to life and property, but all microbursts pose a significant threat to aviation. Although microbursts are not as widely recognized as tornadoes, they can cause comparable, and in some cases, worse damage than some tornadoes produce. In fact, wind speeds as high as 150 mph are possible in extreme microburst cases.

Tornadoes are rotating columns of air marked by a funnel-shaped downward extension of a cumulonimbus cloud whirling at destructive speeds of up to 300 mph, usually accompanying a thunderstorm. Tornadoes form when cool, dry air sits on top of warm, moist air. Tornadoes are the most powerful storms that exist. Tornadoes, though rare in Plumas County, can affect areas of the District, primarily during the rainy season in the late fall, winter, and early spring.

Location and Extent

The entire District is subject to significant, non-tornadic (straight-line), winds (both straight line and microburst). Each area of the District is at risk to high winds. Magnitude of winds is measured often in speed and damages. These events are often part of a heavy rain and storm event but can occur outside of storms. The speed of onset of winds can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of winds in California is often short, ranging from minutes to hours. The Beaufort scale is an empirical 12 category scale that relates wind speed to observed conditions at sea or on land. Its full name is the Beaufort Wind Force Scale. The Beaufort Scale was shown in Section 4.3.5 of the Base Plan.

Tornadoes, while rare, can occur at any location in the District. Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita scale. Both scales are sets of wind estimates (not measurements) based on damage. The new scale (EF) provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis and better correlation between damage and wind speed. It is also more precise because it considers the materials affected and the construction of structures damaged by a tornado. The F Scale and EF Scale are shown in Section 4.3.5 of the Base Plan.

Past Occurrences

Disaster Declarations

There have been no federal or state disaster declarations in the County for winds and tornadoes.

NCDC Events

The NCDC data recorded 94 high wind and 0 tornado incidents for Plumas County since 1950. Many of these wind events likely affected the District.

PC/PCFSC Past Occurrences

The District noted no past events of high winds and tornados.

Climate Change and High Winds and Tornado

According to the 2021 CAS (as well as the 2024 Draft CAS), while average annual rainfall may increase or decrease slightly, the intensity of individual thunderstorm events is likely to increase during the 21st century. This may bring stronger thunderstorm winds. The CAS does not discuss non-thunderstorm winds or tornadoes.

Vulnerability to Severe Weather: High Wind and Tornadoes

The District is subject to potentially destructive high winds and tornadoes. High winds are common throughout the area and can happen during most times of the entire year and outside of a severe storm event. Tornadoes are rare. High winds and tornadoes can be a significant public safety and economic concern. The whole of the District is at some measure of vulnerability to wind and tornadoes.

An assessment of a community's vulnerability to high winds begins with an understanding of local exposure to wind and tornadoes. This is included in the Local Concerns section below followed by a discussion of the District's Assets at Risk to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard.

The District is in or adjacent to a special wind hazard region, which is a result of foehn winds. This snow-removing ability is caused not only by warmer temperatures, but also the low relative humidity of the air mass coming over the mountain(s). They are also associated with the rapid spread of wildfires, making some regions which experience these winds particularly fire prone. Burn patterns of almost all historic large wildfires in the larger County indicate they occurred during foehn winds.

High winds can cause rapid wildfire growth as well as long range spotting due to extended ember transport distances. This situation requires adjusting suppression tactics that result in larger areas being burned due to the inability in many cases to work directly on the edge of the fire.

Assets at Risk

Assets at risk from this hazard include people and populations; structures and critical facilities; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

All District staff and the populations served by the District are at some vulnerability to high winds and tornadoes. Certain vulnerable populations are at the greatest risk to the effects of high winds and tornadoes. These include the unsheltered, those with access and functional needs, the medically fragile experiencing power outages as a result of wind events, and those working or caught outdoors during a wind or tornado event.

Structures and Critical Facilities and Infrastructure

All structures and critical facilities and infrastructure in the District have some measure of risk from high wind and tornadoes. Though rare, a tornado could cause damage to virtually all District facilities in the tornado touchdown path. During a wind or tornado event, power lines in the District can be damaged by falling trees caused by wind. High winds are a cause for PSPS events to be declared, causing power outages to occur. High winds and tornadoes could cause sparks from electric wires and other sources, which could lead to wildfire ignition. Once ignited, high winds can also cause wildfires to rapidly spread and become out of control. High wind conditions can cause wildfires to move into more urban areas destroying structures and whole communities, as seen in recent wildfire events in the West.

PC/PCFSC noted that its structures are at minimal risk to wind, but wind driven fires could affect the structures listed in Table F-2.

Natural, Historic, and Cultural Resources

Natural resources, such as trees, are vulnerable to high winds. Increased streambank erosion can occur during periods of high water and high winds. High wave action during significant wind events can impact marsh lands and habitat areas. Soil erosion can also occur during high winds. Most all natural, historic, or cultural resources are at risk to tornadoes. Tornadoes can tear apart habitats, causing fragmentation across ecosystems and can damage and destroy historic structures and cultural resources.

Impacts from Severe Weather: High Winds and Tornado

Wind and tornadoes can cause damage to property and loss of life. While most tornado damage is caused by violent winds, the majority of injuries and deaths generally result from flying debris. Property damage can include damage to buildings, fallen trees, and power lines. District facilities may also be damaged or destroyed. Access roads and streets may be blocked by debris, delaying necessary emergency response. Winds can push automobiles off roads, damage roofs and structures, cause power outages, and cause secondary damage due to flying debris and hazardous trees. High winds can also contribute to the spread and intensity of wildfires. High winds during periods of high water can cause impacts to and streambanks from accelerated erosion. Climate change may affect this hazard and cause winds to increase in velocity in the District.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change (which was discussed in the hazard profile section above), changes in population patterns, and changes in land use and development. The influencing effects of these factors on this hazard are discussed further in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the District include the following:

- Climate change is likely to exacerbate future wind conditions and associated impacts and vulnerability of the County. Climate change is not likely to affect future tornado conditions.
- Population projections for the area served by the District show the population to be shrinking, which limits additional impacts to the District. The District noted it has no control over population changes, it merely reacts to them by providing additional (or reduced) services.
- Land use planning should be proactive to address future hazard conditions. Building codes in the County ensure that new development is built to current building standards to withstand high winds, which should reduce the risk to future development in the County from high winds and tornadoes. With adherence to development standards, future losses to new development should be minimal. Changes in land use and increased development may amplify the impacts of high winds and tornadoes, as additional structures in the County increase the number of buildings at risk to high winds and tornadoes.

Future Development

The District relies on the County to enforce the local building codes which includes standards for new development to minimize damage from windstorms. New District facilities are built to state and local codes. New critical facilities and infrastructure should also consider adding backup power systems to limit impacts associated with power outages.

Wildfire (with smoke and air quality)

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Extremely High

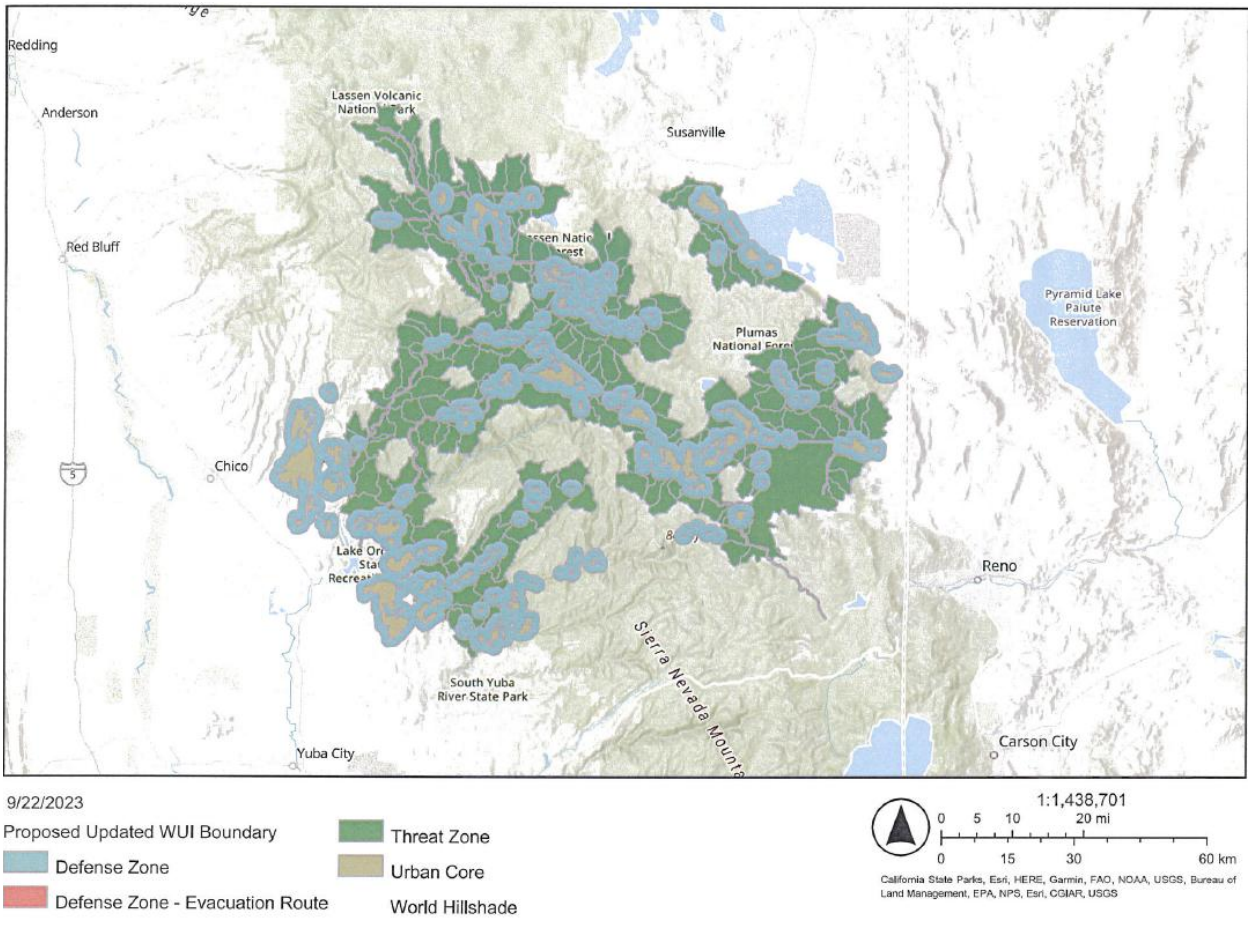
Hazard Profile

Wildland fire and the risk of a conflagration is an ongoing concern for the PC/PCFSC. Throughout California, communities are increasingly concerned about wildfire safety as increased development in the foothills and mountainous areas and subsequent fire control practices have affected the natural cycle of fire regimes. Wildland fires affect grass, forest, and brushlands, as well as structures. Where there is human access to wildland areas, the risk of fire increases due to a greater chance for human carelessness and historical fire management practices. Historically, the fire season extends from early spring through late fall of each year during the hotter, dryer months; however, in recent years, the risk of wildfire has become a year around concern.

Fire conditions arise from a combination of high temperatures, low moisture content in the air and fuel, accumulation of vegetation, and high winds. These weather conditions can result in red flag (e.g., fire weather) days, and can result in PSPS events in the District. While wildfire risk has predominantly been associated with more remote forested areas and wildland urban interface (WUI) areas, significant wildfires also occur in more populated developed areas. There is also the concern of wildfires occurring in these more remote, forested areas, that under certain weather conditions, can extend into areas not generally considered at a high risk to wildfire. Smoke and air quality also become an issue, both from fires occurring inside and outside of the Plumas County Planning Area and the District.

The WUI for the PC/PCFSC is shown on Figure F-3.

Figure F-3 WUI for Plumas County and the PC/PCFSC Planning Area



Wildfire Smoke and Air Quality

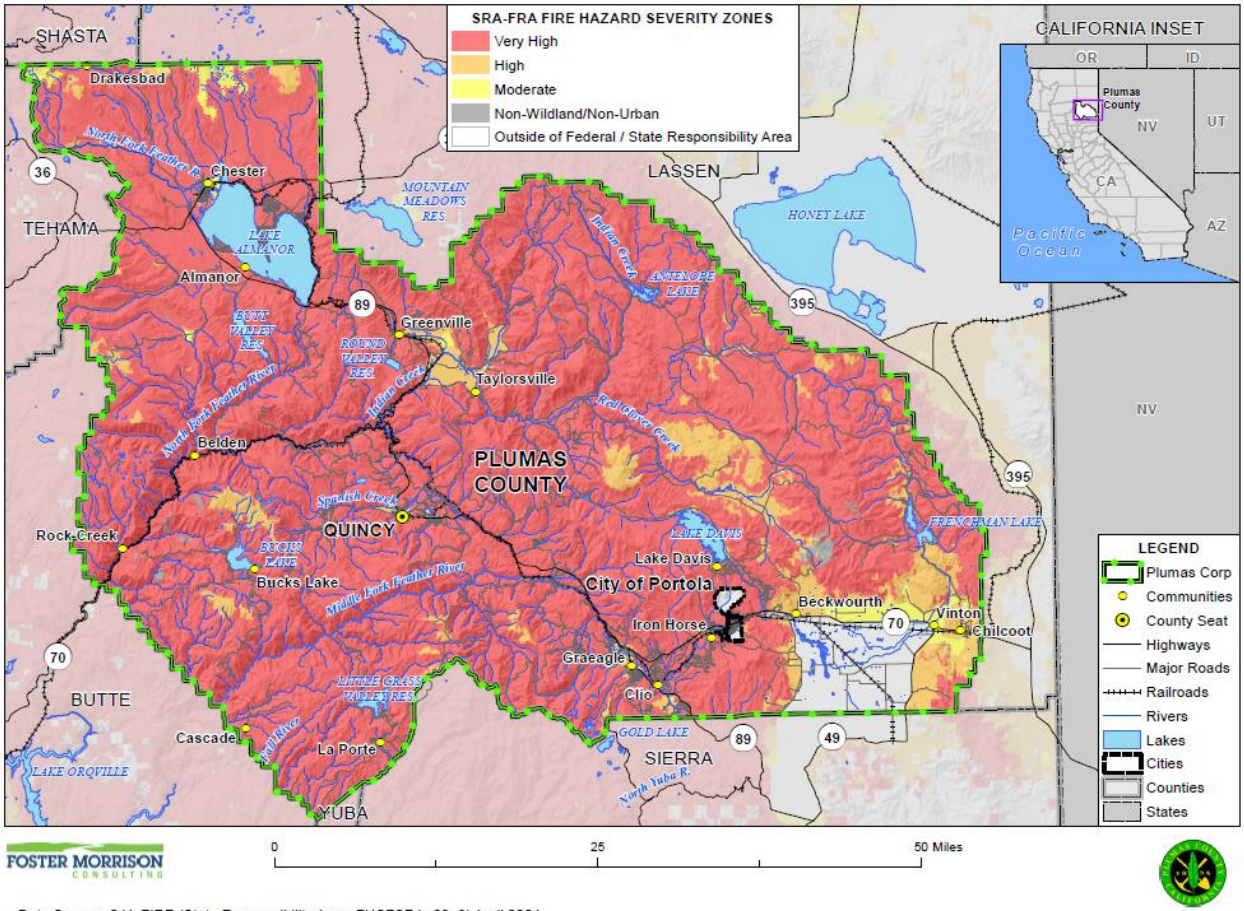
Smoke from wildfires is made up of gas and particulate matter, which can be easily observed in the air. Air quality standards have been established to protect human health with the pollutant referred to as PM2.5 which consists of particles 2.5 microns or less in diameter. These smaller sizes of particles are responsible for adverse health effects because of their ability to reach the lower regions of the respiratory tract.

Wildfire smoke can have negative effects to those who live in or near a fire burn area. Smoke and air pollution from wildfires can be a severe health hazard. Significant wildfires occurring in both Plumas County, nearby northern California communities, and elsewhere have created significant air pollution affecting area residents. This was the case during the 2021 Caldor Fire, as well as others that affected the Plumas County Planning Area.

Location and Extent

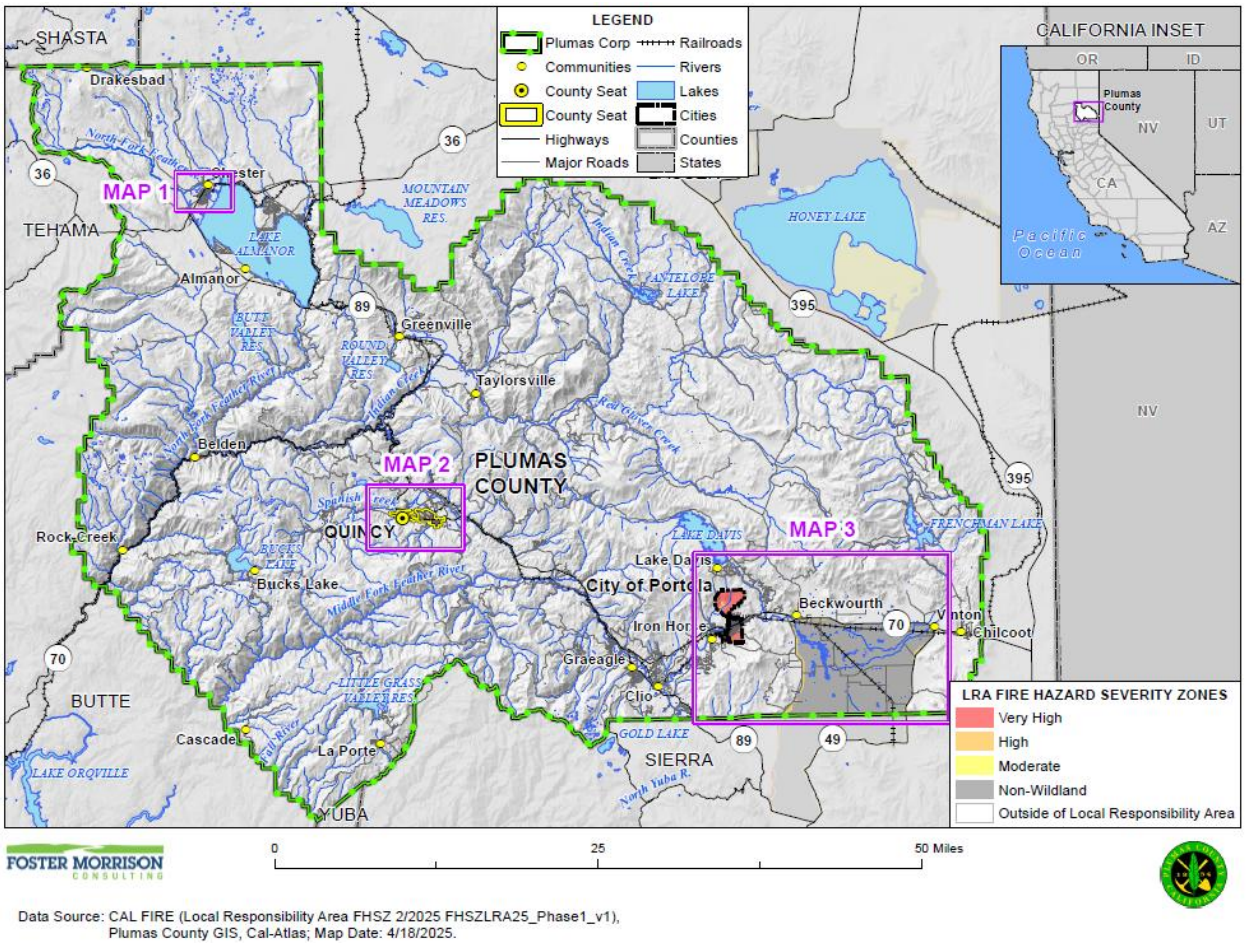
Wildfire can affect all areas of the District. CAL FIRE has estimated that the risk varies across the District and has created maps showing risk variance. Following the methodology described in Section 4.3.16 of the Base Plan, wildfire maps for the PC/PCFSC were created. Figure F-4 shows the CAL FIRE State Responsibility Areas (SRA) and Federal Responsibility Areas (FRA) and their associated Fire Hazard Severity Zones (FHSZ) in the District. Figure F-5 shows the CAL FIRE Local Responsibility Areas (LRA) and their associated Fire Hazard Severity Zones (FHSZ) in the District. As shown on the maps, FHSZs within the District range from Moderate to Very High.

Figure F-4 PC/PCFSC – CAL FIRE SRA/FRA Fire Hazard Severity Zones



Data Source: CAL FIRE (State Responsibility Area: FHSZSRA_23_3) April 2024,
CAL FIRE (Federal Responsibility Area: Draft c32fhszl06_1) September 2007,
Plumas County GIS, Cal-Atlas; Map Date: 4/18/2025.

Figure F-5 PC/PCFSC – CAL FIRE LRA Fire Hazard Severity Zones



Data Source: CAL FIRE (Local Responsibility Area FHSZ 2/2025 FHSZLRA25_Phase1_v1), Plumas County GIS, Cal-Atlas; Map Date: 4/18/2025.

Wildfires tend to be measured in structure damages, injuries, and loss of life as well as on acres burned. Fires can have a quick speed of onset, especially during periods of drought or during hot dry summer months. Fires can burn for a short period of time or may have durations lasting for a week or more. Geographical FHSZ extents in the SRA/FRA are shown in Table F-9, while extents in the LRA are shown on Table F-10.

Table F-9 PC/PCFSC – CAL FIRE SRA/FRA Fire Hazard Severity Zone Geographical Extents

Jurisdiction/ Fire Hazard Severity Zones	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
City of Portola						
Very High	5	0.0003%	3	0.003%	2	0.0002%
High	5	0.0003%	0.0001	0.0000001%	5	0.0003%
Moderate	-		-		-	

Jurisdiction/ Fire Hazard Severity Zones	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Non-Wildland/Non-Urban	-		-		-	
Outside of Federal / State Responsibility Area	3,481	0.2%	2,234	2.4%	1,246	0.1%
City of Portola Total	**3,491**	**0.2%**	**2,237**	**2.4%**	**1,254**	**0.1%**
Unincorporated Plumas County						
Very High	1,454,532	87.0%	40,739	43.8%	1,413,793	89.5%
High	116,705	7.0%	19,400	20.9%	97,305	6.2%
Moderate	39,004	2.3%	6,405	6.9%	32,599	2.1%
Non-Wildland/Non-Urban	13,602	0.8%	0.01	0.00001%	13,602	0.9%
Outside of Federal / State Responsibility Area	44,775	2.7%	24,214	26.0%	20,560	1.3%
Unincorporated Plumas County Total	**1,668,618**	**99.8%**	**90,759**	**97.6%**	**1,577,859**	**99.9%**
Grand Total	**1,672,109**	**100.0%**	**92,996**	**100.0%**	**1,579,113**	**100.0%**

Source: CAL FIRE

Table F-10 PC/PCFSC – CAL FIRE LRA Fire Hazard Severity Zone Geographical Extents

Jurisdiction/ Fire Hazard Severity Zones	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
City of Portola						
Very High	3,235	0.2%	2,016	2.2%	1,219	0.1%
High	250	0.01%	221	0.2%	28	0.002%
Moderate	0	0.0%	0	0.0%	0	0.0%
Non-Wildland	0	0.0%	0	0.0%	0	0.0%
Outside of Local Responsibility Area	6	0.0004%	0.002	0.000002%	6	0.0004%
City of Portola Total	**3,491**	**0.2%**	**2,237**	**2.4%**	**1,254**	**0.1%**

Jurisdiction/ Fire Hazard Severity Zones	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Unincorporated Plumas County						
Very High	1,400	0.1%	742	0.8%	658	0.04%
High	1,279	0.1%	588	0.6%	690	0.04%
Moderate	488	0.03%	258	0.28%	230	0.01%
Non-Wildland	41,625	2.5%	22,641	24.3%	18,984	1.2%
Outside of Local Responsibility Area	1,623,211	97.1%	66,542	71.5%	1,556,670	98.6%
Unincorporated Plumas County Total	**1,668,003**	**99.8%**	**90,771**	**97.6%**	**1,577,231**	**99.9%**
Grand Total	**1,671,494**	**100%**	**93,009**	**100%**	**1,578,485**	**100%**

Source: CAL FIRE

Past Occurrences

Disaster Declaration History

There has been eight state and six federal disaster declarations due to fire, as shown in Table F-11.

Table F-11 Plumas County – State and Federal Wildfire Disaster Declarations 1950-2025

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Fire	8	1960 (unnamed), 1987(Clarks Fire), 1999 (Bucks Fire), 2020 (twice – Bear Fire, North Complex Fire), 2021 (three – Dixie Fire, Monument Fire, Lava Fire/Beckwourth Complex)	6	1999 (Bucks Fire), 2008 (BTU Lightning Complex), 2020 (twice – Bear Fire, North Complex Fire), 2021 (twice – Dixie Fire, Lava Fire/Beckwourth Complex)

Source: Cal OES, FEMA

NCDC Events

The NCDC has tracked 15 wildfire events in the County dating back to 1993. Many more fires have occurred, but were not reported to the NCDC database.

PC/PCFSC Events

The District noted the following events:

2020 – The North Complex Fire was a massive wildfire complex that burned in the Plumas National Forest in Northern California in the counties of Plumas and Butte. Twenty-one fires were started by lightning on

August 17, 2020; by September 5, all the individual fires had been put out with the exception of the Claremont and Bear Fires, which merged on that date, and the Sheep Fire, which was then designated a separate incident. On September 8, strong northeast winds caused the Bear/Claremont Fire to explode in size, rapidly spreading to the southwest. On September 8, 2020, the towns of Berry Creek and Feather Falls were immediately evacuated at 3:15 p.m. PDT with no prior warning. By September 9, 2020, the towns of Berry Creek and Feather Falls in Butte County had been leveled, with few homes left standing. The fire threatened the city of Oroville, before its westward spread was stopped. The fire killed 16 people and injured more than 100. The complex burned an estimated 318,935 acres (uncertain how many acres were in Plumas County specifically), and was 100% contained on December 3. The fire was managed by the U.S. Forest Service in conjunction with Cal Fire, with the primary incident base in Quincy. At the time, the North Complex Fire was the eighth-largest in California's history and was the deadliest fire in the 2020 California wildfire season.

Smoke from the fire created extremely unhealthy air conditions in Quincy and nearby communities for several weeks. After the fire grew explosively in size on September 9, smoke reached the Sacramento Valley and the San Francisco Bay area (where the effects of the smoke led to the day being referred to as Orange Skies Day) with ash falling from the sky between Danville, San Jose, and San Francisco.

From a forestry standpoint a great many of the acres of timber may be considered as a crop due to the cyclic harvesting practices and ongoing management techniques employed by the local lumber companies. Additionally, the US Forest Service in the area employs very similar forest management techniques to provide additional harvest opportunities for local lumber companies.

The District also noted the following impacts from the fire:

- Greater than 100 injuries to firefighters and public between Plumas and Butte Counties
- 16 (14 residents of Berry Creek and 2 residents of Feather Falls, both communities are in Butte county.)
- Approximately 2,471 structures were destroyed, including homes and businesses.
- The towns of Brush Creek and Berry Creek were nearly completely destroyed.
- Significant damage to above ground power transmission and distribution infrastructure. Significant damage to roads and associated drainage features from falling trees, rock slides and post rain debris flows.
- Roads and bridges suffered structural damage due to the intense heat.
- The fire posed a significant threat to the Oroville Dam.
- Significant business/economic impacts due to widespread evacuations for extended periods of time. Additionally, economic impacts were realized from National Forest closures that halted timber harvest operations across the county on Federal lands. Recreation is a large part of the economy of the local area., Forest closures and unhealthy/unsafe environmental conditions halted the flow of people to the area which ultimately impacted the earnings of local businesses.
- Roads were closed into evacuated areas during the incident. Post incident activities created significant impacts on traffic flow through affected areas.
- The fire caused long-term environmental damage, leading to erosion concerns, water quality issues, and habitat destruction.
- Wildlife displacement and destruction of ecological zones in Plumas National Forest.
- Approximately $450 million in damages.

2021 – The Dixie Fire ignited on July 13, 2021, in Butte County, California and soon spread across Plumas, Lassen, Tehama, and Shasta counties. It became the largest single (non-complex) wildfire in California history, burning 963,309 acres before full containment on October 25, 2021. Due to extreme fire behavior, including recurring pyrocumulus cloud formation and ember spotting up to a mile ahead, suppression efforts were extremely challenging. Originating in Butte County spreading to Plumas, Lassen, Tehama, and Shasta counties. The fire started on July 13, 2021, and was declared 100% contained on October 25, 2021.

From a forestry standpoint a great many of the acres of timber may be considered as a crop due to the cyclic harvesting practices and ongoing management techniques employed by the local lumber companies like Collins Pines and Sierra Pacific Industries. Additionally, the US Forest Service in the area employs very similar forest management techniques to provide additional harvest opportunities for local lumber companies.

The Dixie Fire destroyed approximately 1,300 structures and damaged 94 others. Many homes within the Dixie footprint survived the fire, but had significant impacts to the surrounding vegetation around the property and associated infrastructure such as water supply and solar power generation.

The town of Greenville suffered catastrophic losses, with most of its historic downtown area burned to the ground. A hotel, a restaurant, 2 gas/service stations, the local library branch, a pharmacy, several storefronts, a fire station with apparatus, a local tribal resource center with medical and dental clinics, and the post office were all lost during the fire. The community of Canyon Dam which was located 10 miles north of Greenville was razed by the fire as well. There was also fire related damage on the outskirts of Chester.

The following infrastructure damage occurred:

- Power infrastructure: Extensive damage to Pacific Gas & Electric (PG&E) transmission lines and utility poles, leading to widespread power outages. These power outages resulted in entire communities relying on generator supplied electricity for a full year or more after the incident.
- Water supply systems: Local water infrastructure was contaminated due to burned plastic pipes and exposure to hazardous debris. The water system within Greenville effectively collapsed due to the elevated demands from the firefighting resources.
- Telecommunications: Disruptions occurred as cell towers, fiber-optic lines, and electrical lines supplying the communication sites were impacted, affecting emergency communications.
- Highway closures: Portions of Highways 70, 36, and 44 were shut down due to fire activity, fallen trees, and hazardous conditions. Following the incident, closures highway and road closures were widespread in order to mitigate hazards associated with the post fire hazard tree removal, road corridor stabilization
- Transportation networks: Roads, bridges, and highways sustained damage from intense heat, falling trees, and rockslides.

The District also noted the following impacts from the fire:

- The Greenville Library, post office, businesses, and historic buildings were completely destroyed.
- Severe air quality degradation occurred across Northern California, Nevada, and Oregon, with smoke plumes reaching as far as the East Coast.

- Soil erosion and watershed contamination from fire retardants and burned vegetation threatened local water sources.
- Damages were estimated at $1.15 billion, with further uninsured losses significantly adding to the financial burden.

PG&E announced a $45 million settlement with counties affected by the fire.

Climate Change and Wildfire

It is likely that climate change will increase the chance of future occurrence as well as future impacts from wildfire. More information on future impacts to the District can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

Warmer temperatures can exacerbate drought conditions. Drought often kills plants and trees, which serve as fuel for wildfires. Warmer temperatures could increase the number of wildfires and pest outbreaks, such as the western pine beetle. Cal-Adapt's wildfire tool predicts the potential increase in the amount of burned areas for the year 2090-2099, as compared to recent (2010) conditions. This is shown in Section 4.3.16 of the Base Plan. Based on this model, Cal-Adapt predicts that wildfire risk in Plumas County will increase moderately at the end of the century. However, wildfire models can vary depending on the parameters used. Cal-Adapt does not take landscape and fuel sources into account in their model. In all likelihood, in the Plumas County Planning Area, precipitation patterns, high levels of heat, topography, and fuel load will determine the frequency and intensity of future wildfire.

Vulnerability to Wildfire

Risk and vulnerability to the District from wildfire is of significant concern. Wildfires that occur in the District occur from a variety of both natural and manmade causes. The District can be affected both by fires that start on or near District lands as well as those that start elsewhere and move into the District. In addition to burning large areas of land, air quality can be affected in the District by smoke from fires occurring inside the District as well as those from many miles away.

The whole of the District is at some measure of vulnerability to wildfire. An assessment of a community's vulnerability to wildfire begins with an understanding of local exposure to wildfire. This is included in the Local Concerns section below followed by a discussion of the District's Assets at Risk to this hazard.

Local Concerns

The District has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce risk and vulnerability to this hazard.

Plumas County includes 29 recognized Communities at Risk (CAR): Almanor, Beckwourth, Belden, Blairsden, Bucks Lake, Canyon Dam, Caribou, Chester, Clio, Crescent Mills, Cromberg, Delleker, Genesee, Graeagle, Greenville, Hamilton Branch, Indian Falls, Johnsville, Keddie, La Porte, Meadow Valley, Mohawk, Paxton, Portola, Prattville, Quincy-East Quincy, Seneca, Taylorsville, and Twain. Plumas County has a higher risk of wildfires than 98% of the other counties in the United States. In addition, the

State's Fire Hazard Severity Zone map identifies the majority of the communities in Plumas County as "Very High Severity" (76.2%), with few in the "High" (19.1%) and "Moderate" (4.7%) categories.

In 2020 and 2021, a collective 947,632 acres within Plumas County were burned by the Dixie, North Complex, and other large wildfires. This area totals a startling 57% of the County. During the Dixie Fire of 2021, Plumas County lost the towns of Greenville, Indian Falls, Warner Valley, and Canyon Dam destroying nearly all of these town's infrastructure and decimating the surrounding forests. Without their homes, forest, and basic infrastructure, most of these communities' populations were displaced, contributing to an ongoing housing crisis in Plumas County. It is critically important to strategically protect the remaining "green" corridor in Plumas County, recover fire-impacted communities, and implement parcel-specific hazard mitigation with a long-term vision for resiliency.

The North Complex Fire and Dixie Fire underscore the urgent need for increased wildfire mitigation efforts, including:

- Forest thinning and controlled burns to reduce fuel loads.
- Improved evacuation planning and emergency communication systems.
- Hardening of infrastructure such as underground power lines and fire-resistant building materials.
- Greater investment in home hardening and defensible space programs for homeowners in high-risk areas.

The likelihood of another large-scale wildfire in Plumas County remains extremely high due to the following factors:

- Drought conditions: Persistent dry weather has left forests vulnerable to ignition and rapid spread.
- Fuel accumulation: Dead and drought-stressed trees provide excessive fuel for future fires.
- Climate change: Rising temperatures and prolonged fire seasons increase the risk of extreme wildfires.

The District does not have data on smoke impacts or air quality issues, however the PCFSC maintains an air purifier loan program that is utilized during fire season by residents with respiratory issues.

Assets at Risk

Assets at risk from this hazard include people and populations served; structures and critical facilities; and natural, historic, and cultural resources. These are discussed in the following sections.

People and Populations

All populations (both District staff and Service Area populations) are at some vulnerability to wildfire. Certain vulnerable populations are at greater risk to the effects of wildfire as well as smoke and air quality issues that wildfires bring. Vulnerable populations include the unhoused, infants and children under age five and their caregivers, the elderly (65 and older), individuals with disabilities, individuals' dependent on medical equipment, individuals who exercise, recreate, or work (like District staff) outdoors, and individuals with impaired mobility.

Structures and Critical Facilities and Infrastructure

All structures in the District have some risk to wildfire. Wildfire presents a threat to critical facilities and infrastructure. District facilities at risk from wildfire were shown in Table F-2.

Natural, Historic, and Cultural Resources

Natural, historic, and cultural resources located within areas at risk to wildfire would be vulnerable. Should a wildfire occur in the District, the impacts to natural, historic and cultural resources could be extensive and include air pollution, contamination from water runoff containing toxic products, other environmental discharges or releases from burned materials affecting soils, habitat areas, wildlife, and aquatic resources, and total destruction of natural resources. Debris and runoff from burned areas can affect reservoirs and rivers in the District. Historic and cultural resources can be damaged or destroyed and are often more vulnerable due to their older age, construction type, and lack of fire prevention infrastructure such as sprinklers.

Impacts from Wildfire

Potential impacts from wildfire include loss of life and injuries; damage to structures, critical facilities and infrastructure, and other improvements, natural and cultural resources, croplands, and timber; and loss of recreational opportunities. Out of control wildfires can have catastrophic impacts. Wildfires can cause short-term and long-term disruption to the District. Fires can have devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the District by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water storage capacity, and degrading water quality. Fires can also affect air quality in the District; smoke and air pollution from wildfires can be a severe health hazard. Smoke impacts may come from wildfires outside the District, as well as from within.

Although the physical damages and casualties arising from wildland-urban interface or conflagration fires may be severe, it is important to recognize that they also cause significant economic impacts by resulting in a loss of function of buildings and infrastructure. Economic impacts of loss of transportation and utility services may include traffic delays/detours from road and bridge closures and loss of electric power, potable water, and wastewater services. Schools and businesses can be forced to close for extended periods of time. Recently, the threat of wildfire, combined with the potential for high winds, heat, and low humidity, has caused PG&E, Plumas Sierra REC, or Liberty Utilities to initiate a PSPS which can also significantly impact a community through loss of services, business closures, and other impacts associated with loss of power for an extended period. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

The impacts of a fire are felt long after the fire is extinguished. In addition to the loss of property in fires, the loss in vegetation and changes in surface soils alters the environment. When supporting vegetation is burned, hillsides become destabilized and prone to erosion. The burnt surface soils are harder and absorb less water. When winter rains come, this leads to increased runoff, erosion, and landslides in hilly areas.

Wildfire smoke can also have negative effects to those who live in or near a fire burn area. Smoke and air pollution from wildfires can be a severe health hazard. Significant wildfires occurring in nearby northern California communities since the previous LHMP have created significant air pollution affecting area

residents. District residents have been affected by wildfire smoke and poor air quality, from fires both within the County and from those much further away.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the District may be affected in the future by climate change (which was discussed in the hazard profile above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. These are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

This section provides a discussion of how future conditions will influence or affect the hazard over time and also discusses future development relative to each hazard.

Future Conditions

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the PC/PCFSC include the following:

- Climate change is likely to exacerbate future wildfire conditions and associated impacts and vulnerability of the District to wildfire.
- Population projections for the area served by the District show the population to be shrinking, which limits additional impacts to the District. The District noted it has no control over population changes, it merely reacts to them by providing additional (or reduced) services.
- Changes in land use and development in the District are expected to be limited in the near future and thus would have possible associated wildfire impacts to the District. Additional development traditionally leads to additional fires. In addition, adherence to protective building codes for new development will also assist in limiting future impacts and associated vulnerabilities of the District to this hazard. With adherence to development standards, future losses to new development should be minimal.

The District will take wildfire into account when siting new facilities. Fire hydrants, defensible space, well production, water storage, and distribution should all be considered when assessing future development. New facilities will be built to the most current California Building standards for wildfire.

Future Development

Additional growth and development within moderate or higher fire hazard severity zones in the District would place additional assets at risk to wildfire. More vulnerable populations may experience a disproportionate impact from wildfire, and this should be considered as development continues. However, District building codes are in effect and should continue to be updated as appropriate to reduce future impacts.

F.5 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation education, outreach, and partnerships, and other mitigation efforts.

F.5.1. Regulatory Mitigation Capabilities

Table F-12 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the PC/PCFSC. ***The final table cell needs to be filled out as well.***

Note: The District does not have the authority to regulate land use and development within its jurisdiction. Authority for promulgating and enforcing zoning, land use, and development requirements falls to counties and incorporated communities. As such development within the District's jurisdictional boundaries will conform to the zoning and land use development ordinances and building codes of the county or incorporated community in which the District is located.

Table F-12 PC/PCFSC's Regulatory Mitigation Capabilities

Plans	In Place Y/N	Does the plan address hazards? Can the plan be used to carry out mitigation actions? When was it last updated??
Capital Improvements Plan	N	
Climate Change Adaptation Plan	N	
Community Wildfire Protection Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. Was last updated in 2019.
Comprehensive/Master Plan	N	
Continuity of Operations Plan	N	
Economic Development Plan	N	
Land Use Plan	N	
Local Emergency Operations Plan	N	
Stormwater Management Plan	N	
Transportation Plan	N	
Other		
Land Use Planning and Ordinances	**Y/N**	**Is the ordinance an effective way to reduce hazard impacts? Is the ordinance adequately administered and enforced?**
Acquisition of land for open space and public recreation use	N/A	
Building code	N/A	
Flood insurance rate maps	N/A	

Floodplain ordinance	N/A	
Natural hazard-specific ordinance (stormwater, steep slope, wildfire)	N/A	
Subdivision ordinance	N/A	
Zoning ordinance	N/A	
Other		
How can these capabilities be expanded and improved to reduce risk?		
CWPP will continue to be updated and Firewise communities will continue to be sought. The wildfire mapping from CAL FIRE for SRA and LRA will be adapted and used in the next CWPP. The Fire Safe Council will continue to work with the County on any ordinances related to wildfire.		

Source: PC/PCFSC

F.5.2. Administrative/Technical Mitigation Capabilities

Table F-13 identifies the District department(s) responsible for activities related to mitigation and loss prevention in the PC/PCFSC.

Table F-13 PC/PCFSC's Administrative and Technical Mitigation Capabilities

Administration	In Place Y/N	Describe capability Is coordination effective?
Staff		**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official		
Civil Engineer, including dam and levee safety		
Community Planner		
Emergency Manager		
Floodplain Administrator		
GIS Coordinator		
Planning Commission		
Other	Y	Multi-jurisdiction Project Managers; conceptual project development
Technical	**Y/N**	**Has capability been used to assess/mitigate risk in the past?**
Grant writing	Y	Has been used in past.
Hazard data and information	Y	Has been used in past.
GIS analysis		
Mutual aid agreements		
Other	Y	Yes, grant & project administration

How can these capabilities be expanded and improved to reduce risk?
Administrative and technical mitigation capabilities can be expanded by leveraging inter-organizational partnerships to minimize redundant efforts and increase consistency of technical data utilized for mitigation practices. Targeted recruitment of district staff members can further enhance the administrative and technical capacity of the district by matching future staff knowledge, skills, and abilities with organizational needs. Emphasizing professional development can further expand the overall administrative and technical mitigation capabilities by combining existing corporate knowledge with new or enhanced skills of existing staff.

Source: PC/PCFSC

F.5.3. Fiscal Mitigation Capabilities

Table F-14 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

Table F-14 PC/PCFSC's Fiscal Mitigation Capabilities

Funding Resource	In Place Y/N	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding		
Community Development Block Grant		
Federal funding programs (non-FEMA)	Y	Plumas Corp and PCFSC has managed numerous projects that are funded through the USFS, USBOR
Fees for water, sewer		
Capacity fees for new development		
State funding programs	Y	Plumas Corp and PCFSC has received funding from CAL FIRE and other state agencies for several of its programs including community chipping, senior disabled defensible space assistance, larger scale hazardous fuels reduction work, and stream and meadow restoration.
Stormwater utility fee		
Other	Y	Plumas Corp funding from numerous private non-governmental organizations for restoration projects that offer multiple benefits, including mitigating some of above hazards.
How can these capabilities be expanded and improved to reduce risk?		
Additional funding opportunities would perpetuate existing programs and allow them to grow in scale to more closely match the needs of the communities we serve.		

Source: PC/PCFSC

F.5.4. Mitigation Education, Outreach, and Partnerships

Table F-15 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information.

Table F-15 PC/PCFSC's Mitigation Education, Outreach, and Partnerships

Program/Organization	In Place Y/N	How widespread are each of these in your community?
Community newsletters	Y	PCFSC distributes a monthly newsletter to almost 2000 community members.
Hazard awareness campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, school programs, public events)	Y	Plumas County hosts around 30 Firewise communities. During May, which is Wildfire Preparedness month, the PCFSC puts on a wildfire preparedness fair in conjunction with a children's fair which is very well attended.
Local news	N	
Organizations that interact with underserved and vulnerable communities	N	
Social media	Y	The PCFSC maintains a daily robust social media presence informing the public about various tips, reminders, alerts, events, etc. pertaining to wildfire safety/preparedness.
How can these capabilities be expanded and improved to reduce risk?		
Continued growth of newsletter mailing list and increased social media followership.		

Source: PC/PCFSC

F.5.5. Other Mitigation Efforts

The District has many other completed or ongoing mitigation projects/efforts that include the following:

- Most of Plumas Corporation/FireSafe Council projects are considered climate adaptation activities, loosely following the Feather River Watershed Management Strategy (2004). Restoring stream/floodplain connectivity with meadow restoration promotes significant watershed resilience against floods and drought exacerbated by climate change. To date, over 70 miles of channel and 5,600 acres of floodplain have been restored in the District.
- After the 1997 flood, the Indian Valley Flood Management Study (CH2MHill, 1997), was done for the Plumas County Dept. of Public Works. The Study identified and surgically evaluated a number of flood mitigation measures. Meadow & floodplain restoration in the upper watershed was determined to be one of the more feasible and effective measures. Upper watershed work has the potential to lower flood stages 1- 3 feet by attenuating peak inflows to the valley, depending on the spatial extent of that restoration work. To date, Plumas Corporation has implemented restoration work on over 2,800 acres of meadow floodplain in the Indian Creek basin. Varying levels of meadow floodplain work has also been implemented in the Middle Fork, North Fork and Spanish Creek watersheds since 1995.
- The PCFSC's Senior/Disabled Defensible Space Program assists senior and disabled residents of Plumas County in creating and maintaining defensible space around their homes to make them more resilient from wildfire threats. This program has been operating for 20 years and is set to treat nearly 300 homes in 2025, nearly doubling the number from just five years ago from the 2021 field season. More than 80% of the participants have low to moderate incomes.

- The Community Chipping Program is open to all residents of Plumas County and many participants are also in the Senior Disabled Defensible Space Program. Over the past 5 years the Chipping program has been utilized by 1,532 residents of the county, chipping an estimated 9,000 cubic yards of material. Without the program the material would have otherwise been left on the property, sent to the landfill, or burned by the property owner which comes with some inherent wildfire risk and impacts to air quality.
- The Hazardous Fuels Reduction Program managed by the PCFSC treats larger pieces of property to enhance wildfire resilience. Annually the program treats an average of 2,400 acres of both private and public lands utilizing a variety of methods. These methods include mastication, timber sales, and hand thinning, piling, and burning. These treatments expand the bubble of protection around the community and help to enhance the safety of fire personnel who may need to engage in suppression activities in the treated area.
- The PCFSC offers mentorship and technical assistance for the 30 Firewise USA communities in Plumas county. This Firewise status identifies community level involvement to enhance wildfire safety, and can often be a mechanism to receive discounts on homeowners insurance premiums. Over 300 Fire Safe Home Visits have occurred across the county. These visits provide the homeowner with a detailed report that helps guide them towards enhancing their homes wildfire resiliency by prioritizing defensible space and home hardening activities.

F.6 Mitigation Strategy

F.6.1. Mitigation Goals and Objectives

The PC/PCFSC adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

F.6.2. NFIP Mitigation Strategy

The District does not participate in the NFIP, as it is not an eligible participant. A few of the District's projects work to reduce impacts from flooding thus furthering the objectives of the NFIP.

F.6.3. Mitigation Actions

The Planning Team for the PC/PCFSC identified and prioritized the following mitigation actions based on the risk assessment. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, and timeline are also included. The following hazards were considered a priority for purposes of mitigation action planning based on criteria detailed in Chapter 5:

- Agricultural Hazards (Severe Weather/Pests/Invasive Species)
- Climate Change
- Drought & Water shortage
- Floods: 1%/0.2% annual chance
- Floods: Localized Stormwater
- Severe Weather: Extreme Heat

- Severe Weather: High Winds and Tornado
- Severe Weather: Heavy Rain and Storms (Wind, Hail, Lightning)
- Wildfire (w/smoke and air quality)

Non-priority hazards for mitigation planning include:

- Dam Failure
- Drought & Water shortage
- Earthquake
- Hazardous Materials Transport
- Landslide, Mudslide, and Debris Flow
- Severe Weather: Extreme Cold, Freeze, and Snow (w/avalanche)
- Volcano

It should be noted that many of the projects submitted by each jurisdiction in Table 5-4 in the Base Plan benefit all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the countywide public outreach action, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority. Collectively, this LHMP's multi-jurisdictional mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5-years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each priority hazard for the five year coverage of this planning process, each jurisdiction has focused on identifying those projects which are realistic and reasonable for them to implement and would like to preserve their hazard priorities should future projects be identified where the implementing jurisdiction has the future capacity to implement.

Mitigation Actions

Action 1. Update the Plumas County Communities Wildfire Protection Plan

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6, 7, 8, 9

Issue/Background (Problem Statement): Planning for wildfire has significantly changed since the last CWPP was prepared in 2019. Catastrophic megafires across California and within Plumas County have triggered major changes to the way that we understand, analyze, respond to, and recover from wildfire. These changes have resulted in new laws and regulations that impact every level of planning and preparedness. In addition, there are several aspects of geography, history, and culture that present unique challenges in planning, education, and effective outreach in Plumas County.

Most recently, the catastrophic wildfires in 2019, 2020, and 2021 impacted communities and people across the entire county and at all levels of organizations that provide public safety, planning, and mitigation support. Many homes, businesses, recreational assets, and natural resources were lost as a result of the Walker, North Complex, Dixie, and Beckwourth fires, and this had an immediate impact on the larger community's social, economic, and cultural fabric. In addition to the displacement during these fires and in

the immediate aftermath, the concurrent impacts from the Covid19 pandemic created a deep disruption that we have not yet recovered from. In the context of wildfire planning and response, this disruption caused a large number of people to move or leave their jobs as they sought to cope with the fire impacts. The CWPP update project seeks to build back from those losses and fill some of the information, planning, and capacity gaps we are currently faced with.

Project Description: Plumas County Fire Safe Council (PCFSC) will facilitate a major update to the Plumas County Communities Wildfire Protection Plan (CWPP) to address fundamental changes to our fire geography and communities after successive catastrophic wildfires. The update will be supported by an independent Hazardous Fuels Assessment that is currently in progress, and it will continue to integrate the goals of the National Forest and Range Lands Action Plan (2014) and Strategic State Fire Plan (2018). The update will bring the plan into conformance with key plans that have been updated or created since 2019, including the multi-jurisdictional Plumas County Local Hazard Mitigation Plan update (currently in progress), the CalFire LMU Strategic Fire Plan (2025), and the Wildfire and Forest Resilience Action Plan Implementation Strategy (2022). The CWPP Toolkit (2024) and other best practices will be used to make the update a collaborative document reflective of the organizations, government entities, and people of Plumas County.

An additional objective of this project is to support the County of Plumas, City of Portola, and three fire protection districts in planning to implement Chapter 7(a) building codes and defensible space programs for high and very high severity wildfire zones in Local Responsibility Areas within Plumas County. Community safety, housing affordability and insurance access are primary factors in program implementation. In 2025, PCFSC established a role to coordinate among fire protection districts, acting in coordination with the Plumas County Fire Chiefs Association who will serve a key role.

With the CWPP Toolkit as a starting point, we are implementing an outreach and education program that is informed by the intensive work we have been engaging in since 2021 to build up our Firewise Communities and provide accurate and unbiased information across communication channels. PCFSC Outreach Coordinator, Amber Hughes, leverages the independent spirit of Plumas County to educate newcomers, challenge old-timers, and activate people to have agency to make their homes and communities safer.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: PCFSC is primarily using the CWPP Toolkit published in 2024 to organize and implement the planning, education, and outreach activities for this project.

Responsible Office/Partners: Plumas Fire Safe Council. Key collaborators for this project include Plumas County Planning Department, Plumas County Office of Emergency Services, Plumas County Fire Chiefs Association, USDA Forest Service, USDA Bureau of Land Management, CalFire, and Feather River Stewardship Coalition. Collaborators will participate in training and working group sessions to craft various elements of the plan update, and they will also serve a key function in representing a broad range of stakeholders across the county.

Benefits (Losses Avoided): Catastrophic wildfire has already impacted large areas of Plumas County, with demonstrated losses to every category of investment, including infrastructure, timber, water, commercial and residential properties, county and other government facilities. The 2021 Dixie Fire, the largest of recent wildfires to impact Plumas County, cost $637.4 million for suppression activities, with losses estimated at least $1.15 billion USD. Increasing global temperatures and the impact on the hydroclimate cycle, fuels, and wind events in California are projected to increase the level of wildfire risk to Plumas County and its residents over the next 10 years.

Potential Funding (Local Budgets, Grant Funds, etc.): PCFSC is using an existing County Coordinator grant from CalFire (through the California Fire Safe Council) along with self-funded work with the Plumas Fire Chiefs Association to fund the update. In addition, PCFSC is seeking grant funds from several other sources to complete its funding needs for this project.

Timeline: 2026-2027

Project Priority (High, Medium, Low): High

Action 2. Firewise Program Promotion and Public Education

Hazards Addressed: Wildfire, Drought, Severe Weather: Extreme Heat, Severe Weather: High Winds and Tornadoes

Goals Addressed: 1, 2, 3, 4, 5, 6, 7, 8, 9

Issue/Background (Problem Statement): Plumas County is home to 30 recognized Firewise USA® communities, each built on the principle of neighbors helping neighbors to reduce wildfire risk. Firewise is entirely volunteer-based, and residents make a substantial commitment of time, resources, and effort to maintain their status. This includes organizing neighbors, purchasing materials, carrying out small-scale mitigation projects, and documenting progress.

One of the most important requirements is that all Firewise sites complete five-year risk assessments and three-year action plans. These documents guide local mitigation work and will be formally incorporated into the 2026 Community Wildfire Protection Plan (CWPP) update. This means the volunteer work done by Firewise communities directly shapes countywide priorities and state and federal mitigation strategies in Plumas County.

Despite this impact, Firewise communities often struggle to sustain themselves. Because Firewise USA® is a program framework and not a 501(c)(3), local sites cannot apply for grants directly. Without organizational support, it is difficult for them to secure resources or implement their action plans. PCFSC fills this gap by providing technical assistance, collecting and managing Firewise data, and serving as the administrative backbone that creates potential access to grants and external resources.

Project Description:

- Increasing awareness of Firewise Communities throughout Plumas County.
- Providing technical assistance and resources to support the 30 existing Firewise sites.

- Mentoring and assisting new neighborhoods seeking Firewise recognition.
- Supporting Firewise leaders in completing required five-year risk assessments and three-year action plans and preparing them for integration into the 2026 CWPP.
- Incorporating equity-focused outreach to ensure vulnerable populations can participate in Firewise activities.
- Delivering public education activities that highlight defensible space, home hardening, and community-wide survivability strategies.
- Acting as the administrative backbone for Firewise sites, navigating logistics, managing data, and creating potential grant access to sustain community projects and capacity-building.

Other Alternatives:

- Limit promotion to passive outreach. Relying on flyers, websites, or word-of-mouth without active support would not provide the technical assistance or data collection required for Firewise communities to meet their obligations.
- Leave Firewise promotion entirely to NFPA or CAL FIRE. While these organizations provide program oversight, they do not have the local capacity to mentor communities, track progress, or integrate Firewise work into the CWPP.
- Focus only on parcel-level treatments. Defensible space and home hardening are critical, but funding is increasingly directed toward landscape-scale or community-based projects. Without Firewise, parcel-level work remains isolated, provides limited collective impact, and is less competitive for potential grant funding.
- Do nothing. Firewise growth would stall, existing sites would lose support, and required risk assessments/action plans would not be integrated into the 2026 CWPP, weakening both local resilience and countywide mitigation planning.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Community Wildfire Protection Plan (CWPP), Plumas County Local Hazard Mitigation Plan (LHMP), Firewise USA® program framework (NFPA), PCFSC outreach and pre-fire education programs, Local Fire Protection District community outreach and support programs, Plumas County OES, social services, and public health initiatives, UC Cooperative Extension and school-based education partnerships, VOAD (Voluntary Organizations Active in Disaster) and other stakeholder networks.

Responsible Office/Partners: PCFSC (lead), Firewise site leaders and neighborhood coordinators, Local Fire Protection Districts, CAL FIRE, USDA Forest Service, Plumas County OES, social services, and public health, UC Cooperative Extension and VOAD partners

Benefits (Losses Avoided): Expanded participation in Firewise USA® program across Plumas County. Stronger capacity in existing Firewise communities, leading to improved survivability. Reduced wildfire ignition potential and spread through coordinated community action. Greater equity in outreach, ensuring marginalized households are included. Cost savings from reduced suppression needs and property loss. Enhanced intergenerational awareness through youth and family participation in Firewise activities. Creation of potential grant access for Firewise sites through PCFSC sponsorship, increasing opportunities for resources and capacity-building. Regular five-year risk assessments and three-year action plans completed and integrated into the CWPP, ensuring Firewise communities shape countywide wildfire strategies. Amplification of volunteer commitment, ensuring local efforts influence state and federal mitigation work in Plumas County.

Potential Funding (Local Budgets, Grant Funds, etc.): FEMA Hazard Mitigation Assistance (HMGP, BRIC) — potential access through PCFSC sponsorship, CAL FIRE Fire Prevention Grants — potential access through PCFSC sponsorship, USDA Forest Service partnerships, USDA CWDG, Stevens, and RAC Grants — potential access through PCFSC sponsorship, PG&E Resilience Grants, Sierra Nevada Conservancy, OCO–AIM and other philanthropic or regional community foundation grants, Local allocations and community in-kind support.

Timeline: Short-term (1–3 years / initial grant cycles):

- Expand Firewise promotion and develop educational materials.
- Deliver equity-focused public education activities.
- Provide direct technical assistance to Firewise site leaders in completing risk assessments and action plans.
- Support communities in identifying potential grant opportunities with PCFSC acting as sponsor.

Strategic Outcome: Strengthen visibility and participation in Firewise across Plumas County, while ensuring local planning documents are produced and positioned for integration into countywide wildfire strategy.

Medium-term (3–5 years / CWPP implementation phase):

- Deepen capacity-building within the 30 existing Firewise communities while also supporting enrollment of new sites.
- Strengthen partnerships with local fire districts, OES, social services, public health, CAL FIRE, and USFS.
- Expand collaboration with schools, UC Cooperative Extension, and VOAD networks.
- Collect and organize risk assessments and action plans from Firewise communities to align with the 2026 CWPP.
- Continue to create potential access to funding through PCFSC sponsorship and data-driven support.

Strategic Outcome: Position Firewise communities as core contributors to the 2026 CWPP, ensuring neighborhood-level risk reduction efforts are integrated into countywide wildfire planning.

Long-term (5+ years / sustained funding and program maturity):

- Secure recurring, diversified funding streams to sustain and expand capacity.
- Institutionalize Firewise promotion and technical assistance as a core PCFSC program.
- Advance Firewise sustainability by maintaining strong capacity in existing communities and mentoring new sites toward long-term self-sufficiency.
- Ensure that risk assessments and action plans are consistently integrated into CWPP updates and used to guide long-term mitigation priorities.

Strategic Outcome: Establish PCFSC as the permanent organizational backbone for Firewise communities, supporting volunteers, creating potential grant access, and ensuring all residents are Prepared & Aware.

Project Priority (High, Medium, Low): Low

Action 3. WUI Map Project: Implementation of Fire Hazard Severity Zone, Insurance Rating, and Other Classification Systems for Wildfire Risk Management and Identification of Wildland Urban Interface Areas

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6, 7, 8, 9

Issue/Background (Problem Statement): Within the State of California, the State Fire Marshal is charged with assigning fire hazard severity zones (FHSZ) for all areas within the State Responsibility (SRA) and for medium, high, and very high FHSZ areas within Local Responsibility Areas (LRA). Federal responsibility areas are not within the scope of this program. The State Fire Marshal completed major updates to the FHSZ for SRA in 2024 and for the LRA in 2025. These changes significantly impacted areas within the county that fall within the scope of State wildland urban interface (State WUI) lands. This includes the application of regulations for land use development, building siting, setbacks, fuel modifications, and building design and construction for new development in all areas of the SRA and Very High FHSZ in the LRA.. For existing development and structures, these changes significantly increase the number of homes and properties within Plumas County that are required to meet defensible space, home hardening and retrofit, and real estate disclosure requirements that apply to all properties within the SRA and both Very High and High FHSZ within the LRA.

Plumas County is among a few California counties where the proportion of federally managed land significantly impacts the overall approach to wildland fire risk identification and management. This configuration has led the county to develop a County WUI designation and map that integrates hazards and risks associated with all land types within Plumas County. This WUI map was formally adopted by the Board of Supervisors in 2023.

These risk categories and assignments to properties within Plumas County tend to be correlated with the lack of availability and cost for obtaining casualty insurance.

Project Description: For this project, the State WUI map and the Plumas County WUI map will be incorporated into CWPP hazard, risk, and mitigation analyses. These maps will also be used to provide context for datasets that include insurance coverage rates for properties in Plumas County along with premium cost and affordability analysis. Because insurance ratings, coverage, certifications, and discounts are changing so quickly, updates to this analysis may be required more frequently than the 5-year CWPP update cycle.

Other Alternatives: Let residents, property owners, and others make their own interpretations using a range of federal, state, and local sources to piece together how WUI designations affect their property management.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Communities Wildfire Protection Plan Update (2026)

Responsible Office/Partners: Plumas County Planning Department, PCFSC, Plumas County Office of Emergency Services, California Department of Insurance, CalFire / California Fire Marshal, US Forest Service

Benefits (Losses Avoided): Clear delineations and communication of what is defined as Wildland Urban Interface is critical for residents and property owners in Plumas County understanding how various regulations apply, including costs associated with compliance and insurance.

Potential Funding (Local Budgets, Grant Funds, etc.): This project is projected to be completed as part of the CWPP update, with ongoing communication and data availability coordinated between the PCFSC, Plumas County, and City of Portola.

Timeline: 2026 and ongoing throughout the duration of the plan

Project Priority (High, Medium, Low): Medium

Action 4. Biomass Management and Utilization Program

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): Plumas County faces a growing challenge in managing excess forest biomass generated by fuels reduction projects, wildfire recovery efforts, and defensible space maintenance on both public and private lands. Without reliable outlets, biomass accumulates on the landscape, increasing wildfire risk, threatening air quality, and creating significant disposal challenges for landowners and agencies. Currently, most material is either left in place, chipped on-site, or piled and burned—methods that are costly, labor-intensive, and not always sustainable.

Project Description: Develop and implement a countywide Biomass Management and Utilization Program that creates sustainable and cost-effective pathways for handling excess forest biomass and community-generated green waste. This action provides an umbrella framework for a variety of project types, including but not limited to:

- Establishing permanent and/or seasonal biomass collection and disposal sites.
- Expanding community chipping and hauling programs.
- Partnering with biomass utilization facilities (e.g., bioenergy production, biochar, wood products, compost, mulch).
- Developing small-scale, distributed bioenergy or gasification facilities.
- Supporting pilot projects for innovative biomass uses (e.g., erosion control, carbon sequestration, soil enhancement).
- Conducting public outreach to encourage community participation in biomass reduction efforts
- Reduce hazardous fuel loads across the county.
- Support defensible space compliance and fuels reduction projects.
- Decrease wildfire ignition potential and spread.
- Promote sustainable and environmentally sound biomass utilization.

- Improve air quality by reducing pile burning.
- Create local jobs and economic opportunities through forest product markets.

Other Alternatives:

- Alternatives could include Wood products – Dimensional lumber, engineered wood, particleboard, plywood, and oriented strand board (OSB). Mulch and soil amendments
- Chipped biomass used for landscaping, erosion control, or improving soil health.
- Compost – Blending biomass with organic waste streams to create nutrient-rich soil products.
- Fiber products – Paper, cardboard, packaging, and textiles.
- Land & Ecosystem Benefits
- Erosion control & slope stabilization – Using chipped biomass as ground cover.

Existing Planning Mechanism(s) through which Action Will Be Implemented: CAL FIRE Vegetation Treatment Program (VTP) and Calif. Forest improvement Program (CFIP)

Responsible Office/Partners: Plumas County Fire Safe Council, USDA Forest Service: Plumas National Forest, CAL FIRE, UC Cooperative Extension, and Feather River Resource Conservation District

Benefits (Losses Avoided):

- Reduction of hazardous forest fuels and vegetative debris, lowering wildfire intensity and spread.
- Decreased risk of structure loss, property damage, and threats to life safety during wildfire events.
- Lower suppression costs by reducing available fuel loads across landscapes and communities.
- Reduced reliance on pile burning, improving air quality and avoiding public health impacts from smoke exposure.
- Increased community compliance with defensible space regulations, reducing vulnerability of individual homes and neighborhoods.
- Avoided long-term economic losses by protecting critical infrastructure, businesses, and tourism resources from wildfire impacts.
- Creation of local markets for biomass utilization, providing jobs and diversifying the rural economy.
- Enhanced resilience of forested watersheds, reducing post-fire erosion, flooding, and water quality impacts.

Potential Funding (Local Budgets, Grant Funds, etc.): FEMA Hazard Mitigation Grant Program (HMGP), CAL FIRE Fire Prevention and Wood Products Grants, USDA Forest Service partnerships and agreements, Sierra Nevada Conservancy grants, State of California Climate and Carbon Reduction Programs (e.g., Cap-and-Trade funds), County funds and private sector investments

Timeline:

- Short-term (1–3 years): Expand existing chipping programs, organize community green waste events, identify potential biomass markets.
- Medium-term (3–5 years): Establish collection infrastructure, develop public–private partnerships for utilization projects.
- Long-term (5–10 years): Construct or support local biomass utilization facilities, create sustainable program funding sources, expand regional biomass economy.

Project Priority (High, Medium, Low): High

Action 5. Community Encompassing Firelines and Shaded Fuel Breaks

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): Communities in Plumas County face increasing wildfire risks due to heavy fuel loads, changing climate conditions, and the proximity of wildland vegetation to neighborhoods. Current suppression efforts are challenged by the lack of strategically placed and maintained firelines that can safely support firefighting operations and enable the use of prescribed fire for fuels management. Without pre-established, community-scale firelines and shaded fuel breaks, suppression resources are limited in their ability to safely anchor operations and protect life, property, and natural resources.

Project Description: This project will develop and maintain community-encompassing firelines designed for dual use in wildfire suppression and prescribed fire operations. Firelines will consist of a combination of constructed lines, shaded fuel breaks, and the integration of existing natural or built features such as greenbelts, parks, irrigated landscapes, and fire-hardened recreation trails. These linear features will be strategically placed around and through communities to:

- Provide safe access and anchor points for firefighting resources.
- Serve as containment lines for prescribed burning and fuel reduction.
- Enhance community defensible space at a landscape scale.
- Connect to existing roads, rivers, ridges, and other natural fire breaks to create a more resilient network.

Other Alternatives:

- Continue reliance on emergency dozer line construction during active wildfire incidents (less strategic, greater environmental impact).
- Focus solely on parcel-level defensible space and fuel reduction treatments without landscape-scale connectivity (limited effectiveness for large fire events).

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County Community Wildfire Protection Plan (CWPP), Local Hazard Mitigation Plan (LHMP), U.S. Forest Service and CAL FIRE cooperative agreements, Community Parks and Recreation Master Plans, Sierra Buttes Trail Stewardship Connected Communities Master Plan.

Responsible Office/Partners: Plumas County Fire Safe Council (lead), CAL FIRE, U.S. Forest Service (Plumas National Forest), Local Fire Protection Districts, Plumas County Planning & Recreation Departments, and Sierra Buttes Trail Stewardship

Benefits (Losses Avoided):

- Reduced risk of wildfire spread into communities.
- Increased safety and tactical options for firefighters.

- Protection of critical infrastructure, homes, and recreation resources.
- Expanded opportunities for prescribed fire, reducing hazardous fuels in a controlled setting.
- Enhanced recreation assets (fire-hardened trails, parks) that double as fire protection features.

Potential Funding (Local Budgets, Grant Funds, etc.): FEMA Hazard Mitigation Assistance (HMA) grants, CAL FIRE Fire Prevention and Forest Health grants, USDA Forest Service funding programs, PG&E Community Resilience Grants, and Local government allocations and in-kind support

Timeline: 5 years or more

Project Priority (High, Medium, Low): High

Action 6. Continue and Promote Defensible Space (PRC 4291) Projects including Assistance Efforts for Senior and Disabled Residents.

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): Plumas County's communities are entirely within the Wildland Urban Interface (WUI) and are primarily defined as Very High Hazard Severity Zones. In recent years Plumas County residents have been regularly impacted by wildfire in the form of poor air quality, power outages, loss of access to public lands, loss of infrastructure, contamination of water, and, in some cases, personal property losses. A growing number of residents are aware of their responsibility to create defensible space.

The county's population over 65 years of age is 29.8%, far outpacing the State's estimated 16.2%. According to the California Census, 21.3% of Plumas County residents have a disability (as compared with the State's 11.7%). These populations have been shown to be the most vulnerable in wildfire situations. They are also the least likely to have the physical or financial ability to comply with Public Resources Code (PRC) 4291 hazardous fuel reduction requirements. Recently the CAL FIRE Lassen-Modoc Unit has had difficulty hiring Defensible Space Inspectors, making a locally-administered incentive program an even more vital resource to Plumas County residents

Project Description: For twenty years the Plumas County Fire Safe Council's Defensible Space program has been assisting senior and disabled residents to create and maintain defensible space and thereby comply with the public resources code. The program reduces fuels 100 feet surrounding habitable structures and removes litter accumulations on roofs, gutters, and decks. The program manager provides Home Ignition Zone consultations with each participant, sharing additional ways that residents can harden their home. A licensed and insured defensible space operator is contracted to complete necessary fuel reduction work. Final inspections for PRC 4291 compliance are conducted by the program manager. Generally residences treated through the program have passed subsequent CAL FIRE Defensible Space inspections.

In addition, multiple organizations and agencies work to promote defensible space to the general public through site visits, informational workshops, Firewise outreach, and distribution of digital and print materials.

Other Alternatives: Alternatives include:

- Providing an incentive program to all Plumas County residents. The Fire Safe Council does not currently have the capacity to administer a program available to 18,000+ residents. Additionally, the Council board has on multiple occasions declined to expand the program beyond those with physical and financial limitations.
- Provide Defensible Space services to residences that are strategically located regardless of age or disability. More contiguous treatments adjacent to existing hazardous fuels reduction projects could serve as part of a more fortified barrier to wildfire moving through a community.
- Not providing an assistance program. Participation in the existing program continues to grow. Over the past four years the program has more than doubled the number of clients served. Ceasing the program would leave many residences out of compliance with PRC 4291 and at high risk in wildfire situations.

Existing Planning Mechanism(s) through which Action Will Be Implemented: California PRC 4291, California SB 190, California AB 38

Responsible Office/Partners: Plumas County Fire Safe Council (education, implementation and outreach), CAL FIRE (funding, education, and outreach), USDA Forest Service (funding and outreach), Plumas County Office of Emergency Services (outreach)

Benefits (Losses Avoided): The defensible space assistance program reduces the risk of wildfire by reducing the likelihood that a residential ignition source (such as a pile burn) will lead to a wildfire or threaten a structure. The program reduces the potential impact of wildfire by creating defensible space that allows for more successful suppression efforts as well as reduced potential for fire to carry through a community particularly in the case of strategically located contiguous treatments.. In conjunction these factors have the ability to significantly reduce the amount of greenhouse gasses released from wildfires.

Potential Funding (Local Budgets, Grant Funds, etc.): Various federal and state grant sources

Timeline: Ongoing

Project Priority (High, Medium, Low): High

Action 7. Improve Local Plumas County Fire Department Capacity and Response Capabilities

Hazards Addressed: Ag Hazards, Climate Change, Drought and Water Shortage, Flood, Localized Flood, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): Plumas County Fire Departments are the first responders and at the front lines of all hazards, including structure and wildland fire, hazardous materials incidents, and any other disaster response. With 14 individual fire departments that are spread across the county they cover 95% of the population. These rural departments are often the first on scene, have the most local knowledge

and public awareness, but lack the funding, personnel, equipment, training and resources to most effectively suppress or respond to these hazards. Each of these districts are funded by a small share of property taxes, supplemented in some cases by voter-approved special assessments. This limited funding is not enough to meet the staffing requirements, state mandated firefighter safety gear and training, station and apparatus replacement and repair, that are required to effectively and efficiently respond to these incidents. In addition, the majority of the department staffing relies on volunteers which has become increasingly difficult to adequately recruit and retain.

One of the duties of Plumas County Fire Departments is wildfire protection, and Wildfire Hazard ranks as one of the top hazard risks for the county as it is extensive geographically, and it is highly likely to occur with a catastrophic potential of outcome. In addition in 2025, CAL FIRE released an updated Fire Hazard Severity Zones (FHSZ) map that puts 93% of Plumas County Local Responsibility Area (LRA) parcels within a FHSZ ranging from moderate to very high. This updated mapping requires homeowners to meet state requirements and the presiding fire districts to make the assessments. This is an increase in the responsibilities of local departments which will further stretch these underfunded departments.

Project Description: Plumas County Fire Departments are in strategic positions throughout the county to be the front line on mitigation efforts. This project will:

- Create a long-term plan for comprehensive wildfire response and coverage. Provide additional training, equipment, personnel, and funding to improve response capacity through grants or other funding sources. Find more ways to collaborate on mitigation efforts. Update technology including communication equipment, CAD, radio towers, dispatch, mapping, preplanning.
- Assist districts in developing volunteer recruitment and retention strategies to improve response team numbers and stability.
- Improve ability for community education and outreach.

Other Alternatives:

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas Fire Safe Council has a Plumas County Fire Chiefs Association Support Specialist that is a liaison between the Fire Chiefs, Fire Safe Council, Sheriff's Office (who handles county emergency dispatching), CAL FIRE, USFS, and Plumas County to align and coordinate collaborative efforts to implement

Responsible Office/Partners: PCFSC, Plumas County Fire Chiefs Association, Plumas County, Sheriff's Office, USFS, PCOES

Benefits (Losses Avoided): A quicker and more effective response limits the spread and impact of hazards, reducing the total cost of initial damage and reduces the cost of recovery efforts including cleanup, repairs, and rebuilding.

Potential Funding (Local Budgets, Grant Funds, etc.): Increased Property Taxes, expanding districts to include parcels not currently covered. Grants through Cal Fire, USDA, US Gov, or California

Timeline: Ongoing

Project Priority (High, Medium, Low): High

Action 8. Countywide Green Waste Disposal and Utilization Program

Hazards Addressed: Wildfire, Hazardous fuels

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): Plumas County experiences high wildfire risk due to the accumulation of hazardous vegetative fuels around homes, businesses, and communities. As residents work to meet California's Defensible Space requirements, they generate large amounts of green waste. Currently, disposal options are limited to pile burning (which contributes to air quality issues and is not feasible for all residents) or hauling to County transfer stations at personal expense. This lack of accessible, affordable disposal options contributes to non-compliance with defensible space regulations and increases wildfire vulnerability.

Project Description: Develop and implement a countywide Green Waste Program that provides safe, legal, and cost-effective disposal options for residents and landowners. Program components may include:

- Establishment of designated green waste drop-off sites across the county.
- Development of partnerships with biomass utilization facilities (e.g., bioenergy, mulch, compost, or erosion control products).
- Public outreach and education on defensible space, fire-safe landscaping, and proper disposal methods.

Other Alternatives:

- County Climate Action Plan / Sustainability Plan
  - ✓ If the County has or develops one, biomass diversion and green waste management support greenhouse gas reduction and carbon sequestration goals.
- Air Quality Management District Programs
  - ✓ Aligns with strategies to reduce pile burning and improve air quality.
- Public Health & Safety Programs
  - ✓ Green waste reduction contributes to healthier communities by lowering smoke exposure and wildfire risk.
- Public Works Capital Improvement Plan (CIP)
  - ✓ If the County invests in permanent green waste sites or biomass infrastructure, it can be incorporated into the CIP.
- State-Level Programs
  - ✓ California's SB 1383 (Organic Waste Diversion Law) and CalRecycle programs require jurisdictions to reduce disposal of organic materials. Your action could be tied into compliance.
- Regional or Interagency Collaboratives
  - ✓ Sierra Nevada Conservancy or similar regional initiatives that fund forest and biomass projects.
  - ✓ Cooperative fire protection agreements with CAL FIRE or USFS.
- Local Firewise USA® Communities Plans
  - ✓ Green waste disposal services can directly support neighborhood-level mitigation actions adopted in Firewise assessments.
- Watershed or Resource Conservation District Plans

- ✓ If you partner with RCDs or watershed groups, green waste can be reused for erosion control, soil stabilization, or habitat restoration.

Existing Planning Mechanism(s) through which Action Will Be Implemented: This action will be implemented through the Plumas County Local Hazard Mitigation Plan, Community Wildfire Protection Plan, General Plan Safety Element, County Solid Waste Management programs, Fire Safe Council initiatives, and CAL FIRE defensible space compliance programs.

Responsible Office/Partners: Plumas County Fire Safe Council, Plumas County Office of Emergency Services, Local Fire Protection Districts, U.S. Forest Service / CAL FIRE, Plumas County Public Works / Transfer Stations, Private contractors and biomass facility operators

Benefits (Losses Avoided):

- Reduce hazardous fuel loads around homes and communities.
- Increase participation in defensible space and fuels reduction projects.
- Improve public safety, air quality, and community resilience.
- Support long-term sustainable biomass utilization opportunities.
- Significant reduction in hazardous vegetative fuels near homes and communities.
- Decreased wildfire ignition potential and spread.
- Increased community participation in defensible space compliance.
- Improved air quality due to reduced pile burning.
- Creation of local economic opportunities through biomass utilization.

Potential Funding (Local Budgets, Grant Funds, etc.):

- FEMA Hazard Mitigation Grant Program (HMGP)
- CAL FIRE Fire Prevention Grants
- USDA Forest Service partnerships
- County general funds and tipping fee revenues
- Private sector and community contributions

Timeline:

- Short-term (1–3 years): Expand community chipping program and establish seasonal green waste collection events.
- Medium-term (3–5 years): Develop permanent green waste drop-off infrastructure and create contracts with biomass utilization facilities.
- Long-term (5–10 years): Sustain and expand program through diversified funding sources and integrated countywide participation

Project Priority (High, Medium, Low): High

Action 9. Hazardous Fuels Reduction – Implementation, Monitoring, and Maintenance

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): Plumas County faces significant wildfire risk due to overgrown forest conditions, drought-stressed vegetation, extensive tree mortality from bark beetle infestations, and the wildland-urban interface (WUI) where homes and infrastructure are adjacent to wildland fuels. In recent years, there has been intensified fire weather conditions, creating longer fire seasons and more extreme fire behavior. Dense forest conditions create dangerous fuel loads that threaten public safety, critical infrastructure, evacuation routes, and community assets. Without proactive hazardous fuels reduction, the county remains vulnerable to catastrophic wildfires that could result in loss of life, property damage, and environmental degradation.

Project Description: Implement comprehensive hazardous fuels reduction treatments including mechanical thinning, mastication, hand thinning, prescribed burning, and strategic placement of fuel breaks throughout high-risk areas of Plumas County. Focus on protecting evacuation routes, defensible space around structures, critical infrastructure corridors, and municipal water supplies. Create, monitor, and maintain fuel breaks to slow fire spread and provide safe zones for firefighting operations. Coordinate treatments across jurisdictional boundaries to create landscape-scale fire resilience.

Other Alternatives:

- No action - Accept existing wildfire risk with reactive suppression response only
- Structure-focused approach only - Limit activities to defensible space around individual properties
- Suppression-only strategy - Rely entirely on firefighting resources without proactive fuel reduction
- Regulatory approach only - Implement stricter building codes and vegetation management ordinances without active treatment

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County Community Wildfire Protection Plan (CWPP), 2025 Hazardous Fuels Assessment - Deer Creek Resources, LLC, Local Hazard Mitigation Plan (LHMP), CAL FIRE , U.S. Forest Service Forest Health and Restoration programs

Responsible Office/Partners:

- Plumas County Fire Safe Council
- Plumas Corporation
- CAL FIRE
- U.S. Forest Service (Forest Health Protection, Plumas National Forest and Lassen National Forest)
- Feather River Resource Conservation District
- Plumas County Planning and Public Works Departments
- Local Fire Protection Districts
- Utility companies (hazard tree management along powerlines)

Benefits (Losses Avoided):

- Reduced hazardous fuel loads
- Improved firefighter and public safety along evacuation routes and public spaces.

- Enhanced forest health and resilience to drought and pests.
- Protection of homes, infrastructure, and utilities from wildfire spread.
- Increased availability of biomass and wood products as beneficial by-products of removal.

Potential Funding (Local Budgets, Grant Funds, etc.): Local, state, federal, and private grant sources. Cost-effective partnerships with local timberland owners (lower per acre rates). CAL FIRE grants, FEMA HMGP, USDA Forest Service grants, California Climate Investments, streamlined EPP permitting

Timeline: Ongoing

Project Priority (High, Medium, Low): High

Action 10. Develop a Program to Promote and/or Incentivize Home Hardening Retrofitting including: Roofs, Vents, Siding, Windows, etc.

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): Many of the homes in Plumas County are in the Wildland urban intermix which poses challenges for wildfire suppression in terms of community fire protection and structure triage. In addition, many of these homes and subdivisions were built prior 2008 when current fire standards were enacted. As a consequence, a large majority of homes in Plumas County may not meet current fire code and may be in need of structure retrofits to improve resistance to fire.

Project Description: The Plumas County Fire Safe Council is well known throughout the county for its public outreach, support of NFPA Firewise USA Sites, and direct fuel reduction assistance programs to landowners – many of which focus on defensible space. This proposal intends to build on existing organizational strengths to add additional capacity to develop technical assistance for home ignition zone assessments and developing home hardening/retrofitting programs as envisioned in State assembly bill AB38. This project would include collaboration between, Plumas County Fire Safe Council, local fire departments, the planning department, and support from UC Cooperative Extension.

This Project proposes two phases of implementation.

The first phase is providing outreach, education, and technical assistance for home ignition zone assessment of homes, commercial structures, and community infrastructure. This includes developing outreach materials about wildfire and the built environment, providing workshops and educational offerings to educate residents about home hardening and preparedness, and developing programs to provide site specific home consultations on the home ignition zone to help residents identify, assess, and prioritize home hardening retrofits to make their home more resistant to wildfire. This outreach effort would be well paired with defensible space programs already being delivered to Plumas county residents.

The second phase is to provide home retrofitting assistance program to improve structural resistance to wildfire, or to improve community infrastructure for wildfire preparedness as described in Calif. Assembly Bill AB38. This would include developing and implementing cost-share, grant funded, or incentive based

projects and programs to help residents with projects that improve home resistance to fire and enhance community wildfire preparedness and protection. Home retrofit projects may include replacement of out of code structure vents, installing fire resistant roofing, siding or windows, and/or installing snow protectors on propane regulators. Community wildfire preparedness and protection projects may include installation of secondary water supplies, developing community water supplies, developing community safety zones or temporary areas of last resort refuge, or improving fire safety of power, communications, and road infrastructure. These implementation efforts would likely need to be implemented in a phased manner.

Other Alternatives: Currently, there are no other alternative programs such that the de facto alternative is not providing residents home hardening support.

Existing Planning Mechanism(s) through which Action Will Be Implemented: State Assembly Bill AB38 provides state level direction and guidance to develop programs to mitigate fire hazard and support communities by delivering programs that improve wildfire preparedness. Home hardening & retrofitting is included in these activities.

Responsible Office/Partners: County Agencies (OES, Building & Planning Departments); Plumas County Fire Safe Council, UC Cooperative Extension,

Benefits (Losses Avoided): Reduced risk to people and property from wildfire.

Potential Funding (Local Budgets, Grant Funds, etc.):

- Phase 1: $150- $200K to develop the staffing, materials and outreach programs for a two-three year period. This would fund staffing for a Home ignition zone assessment consultation, preferably a candidate with professional forestry or wildland fire fighting skillset who can also assess defensible space as well as the home ignition zone.
- Phase 2: First phase of implementation could be $500K-$1million

Timeline: Two – Three year timeline would be necessary for phase 1 outreach and development. With the last year implementing an initial stage of phase 2.

Project Priority (High, Medium, Low): High

Action 11. Last Chance Creek Watershed Floodplain Restoration Project

Hazards Addressed: Ag Hazard: Severe Weather; Climate Change; Drought & Water Shortage (w/tree mortality; Flood (1%/0.2% annual chance and Localized Stormwater); Severe Weather: Extreme Heat, Heavy Rains and Storms; Wildfire (w/smoke and air quality)

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): The 204 square mile Last Chance Creek watershed is one of two large sub watersheds to Indian Creek. Indian Creek flows through Genesee and Indian valleys where flooding and channel instability are current hazards to the populace. The Last Chance Creek watershed contains one of the longest contiguous meadow floodplain systems in the Sierra Nevada Mountains. Last

Chance Creek is severely downcut (incised) throughout the 36 miles of meadow floodplain. Principal stressors were logging railroad grades built in the low gradient meadow in the 1930s & '40s, channel modification, livestock grazing, and roads. These incised channels funnel all flows downstream, rapidly draining out this headwater basin into the populated Genesee and Indian valleys.

Loss of floodplain function and the rapid drainage of these headwater basins reduces the meadow's ability to capture and store springtime snowmelt and rain as shallow groundwater. Sixty percent of California's water supply originates in the Sierra Nevada, and meadows are a key component of that supply, helping to regulate water flow, temperature, and quality. As the headwaters of the State Water Project, the Feather River Watershed provides water to over 26 million Californians. Although wet meadows are a less than one percent of the overall landscape in Plumas County, meadows' unique hydrologic and ecological functions are recognized as being vital to watershed health and are valued for the ecosystem goods and services they provide, such as crucial habitat for many endemic and special status wildlife species. Known as biological diversity hot spots, healthy meadows provide refugia for wildlife during droughts and wildfire. Wet and moist meadows sequester carbon in the soil, where it isn't susceptible to being lost in a wildfire. In addition, functioning meadow floodplains provide natural fire breaks reducing fire intensities and rate of spread.

Over 6,000 acres of meadow surface are available for flood attenuation along Last Chance and its tributaries. From 1995 to 2007, 9 miles and 800 acres of floodplain has been restored by Plumas Corporation. The work restored the hydraulic base level of Last Chance and tributaries back to the historic meadow level, recovering crucial floodplain function. The larger Last Chance Creek project was originally divided into Phase 1, Phase 2, and Phase 3. Phase 1 is primarily complete representing the abovementioned accomplishments. Phase 2 has been designed; funds to complete NEPA/CEQA, permits and implementation are needed. Phase 3 awaits planning funds.

Project Description: The project is primarily located on public lands managed by USDA Forest Service-Plumas National Forest. The principal objective of the restoration work is to raise the hydraulic base level of the channel/floodplain system back to the historic meadow surface. This typically allows normal stream flows to access pre-existing remnant channels, while flood flows spread across the expansive floodplain surface. Longer residence times allows for enhanced infiltration to shallow and deeper groundwater basins, while filtering sediment and nutrients into the meadow ecosystem. This longer residence time in a functional floodplain reduces the pulse in flows downstream by allowing water to spread out and discharge downstream more slowly. Restoring floodplain function may be accomplished utilizing a variety of techniques, including complete and partial channel fill, raised riffles, and use of process-based channel structures (i.e., beaver dam analogs and post-assisted log structures), to name a few. Treatments would be specific to individual site conditions and constraints.

Other Alternatives: none

Existing Planning Mechanism(s) through which Action Will Be Implemented: Feather River Watershed Strategy (2004), Upper Feather River Integrated Regional Water Management Plan (2016), Tributaries Forest Recovery Project Environmental Assessment & Decision Notice (2025), California State Water Action Plan (2014), Sierra Nevada Conservancy 2024-2029 Strategic Plan (2024)

Responsible Office/Partners: Plumas Corporation, Plumas National Forest, Plumas County, private landowners

Benefits (Losses Avoided): Reduction in flood stage in Genesee and Indian valleys, avoiding damage/loss to agricultural productivity, ranch/farm infrastructure, and residential homes; Reduction in sediment supply downstream, improving water quality for aquatic resources, recreation, and agricultural irrigation; Reduction in water temperatures, improving water quality for aquatic species and recreation; Increased surface water residence time extending surface water availability for wildlife and vegetation, and allowing for enhanced infiltration to shallow and deeper groundwater basins mitigating impacts from drought and water shortage, climate change, and wildfire.

Potential Funding (Local Budgets, Grant Funds, etc.): Estimated costs- $12,000,000. Grants- State grant programs via CA Wildlife Conservation Board and Sierra Nevada Conservancy; Plumas National Forest Dixie Fire funds; Corporate Investments- Microsoft, Coca-Cola, Disney, Proctor and Gamble, etc.

Timeline: 2026-2035

Project Priority (High, Medium, Low): High

Action 12. Mountain Meadows Watershed Floodplain Restoration Project

Hazards Addressed: Ag Hazard: Severe Weather; Climate Change; Drought & Water Shortage (w/tree mortality; Flood (1%/0.2% annual chance and Localized Stormwater); Severe Weather: Extreme Heat, Heavy Rains and Storms; Wildfire (w/smoke and air quality)

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): The 153 mi^2 Mountain Meadows watershed is the northeastern headwaters of the North Fork Feather River. The Mountain Meadows basin is located in southwestern Lassen County, but drains immediately into Plumas County. There are 7,500 acres of meadow in the basin, of which 1016 acres of floodplain have been or is being restored, and ~1070 additional acres are in planning. The unrestored sections of Goodrich Creek, McKenzie Creek, Duffy Creek and Robbers Creek are severely downcut (incised). Principal stressors were logging railroad grades built in the low gradient meadow in the 1910's & '20's, channel modification, livestock grazing, and roads. These incised channels capture and contain all flows, rapidly draining out of the basin into Plumas County.

Loss of floodplain function and the rapid drainage of these headwater basins reduces the meadows' ability to capture and store springtime snowmelt and rain as shallow groundwater. Sixty percent of California's water supply originates in the Sierra Nevada, and meadows are a key component of that supply, helping to regulate water flow, temperature, and quality. As the headwaters of the State Water Project, the Feather River Watershed provides water to over 26 million Californians. Although wet meadows are a less than one percent of the overall landscape in the Sierra Nevada mountains, meadows' unique hydrologic and ecological functions are recognized as being vital to watershed health and are valued for the ecosystem goods and services they provide, such as crucial habitat for many endemic and special status wildlife species. Known as biological diversity hot spots, healthy meadows provide refugia for wildlife during droughts and wildfire. Wet and moist meadows sequester carbon in the soil, where it isn't susceptible to

being lost in a wildfire. In addition, functioning meadow floodplains provide natural fire breaks reducing fire intensities and rate of spread.

From 2016 to 2023, 5 miles and 804 acres of floodplain has been restored by Plumas Corporation. The work restored the hydraulic base level of Greenville Creek, East Creek, Upper Goodrich Creek, and Mountain Meadows Creek back to the historic meadow level, recovering crucial floodplain function. The next project in the queue is McKenzie Meadow- Phase 1, a 212-acre project beginning construction in Sept. 2025. The 492-acre McKenzie Meadow- Phase 2 is currently in the design phase. Implementation funding is being sought. The 579-acre Lower Goodrich/Moonlight Road Project is also in the design, CEQA/NEPA review and permitting phase. Implementation funding is being sought for implementation in 2026.

Project Description: The project occurs on private lands owned by Sierra Pacific Industries, Collins Pine, and Red River Forests. The principal objective of the restoration work is to raise the hydraulic base level of the channel/floodplain system back to the historic meadow surface. This typically allows normal stream flows to access pre-existing remnant channels, while flood flows spread across the expansive floodplain surface. Longer residence times allows for enhanced infiltration to shallow and deeper groundwater basins, while filtering sediment and nutrients into the meadow ecosystem. This longer residence time in a functional floodplain reduces the pulse in flows downstream by allowing water to spread out and discharge downstream more slowly. Restoring floodplain function may be accomplished utilizing a variety of techniques, including complete and partial channel fill, raised riffles, and use of process-based channel structures (i.e., beaver dam analogs and post-assisted log structures), to name a few. Treatments would be specific to individual site conditions and constraints.

Other Alternatives: none

Existing Planning Mechanism(s) through which Action Will Be Implemented: Upper Feather River Integrated Regional Water Management Plan (2016), Mountain Meadows Watershed Restoration Action Plan (2013), California State Water Action Plan (2014), Sierra Nevada Conservancy 2024-2029 Strategic Plan (2024)

Responsible Office/Partners: Plumas Corporation, private landowners

Benefits (Losses Avoided): Reduction in flood stage into Lake Almanor, avoiding damage/loss to recreational infrastructure, residential homes, agricultural productivity, ranch/farm infrastructure, and reducing stress on dam infrastructure; Reduction in sediment supply downstream, improving water quality for aquatic resources, recreation, and agricultural irrigation; Reduction in water temperatures, improving water quality for aquatic species and recreation; Increased surface water residence time extending surface water availability for wildlife and vegetation, and allowing for enhanced infiltration to shallow and deeper groundwater basins mitigating impacts from drought and water shortage, climate change, and wildfire.

Potential Funding (Local Budgets, Grant Funds, etc.): Estimated costs- $5,000,000. Grants- State grant programs via CA Wildlife Conservation Board and Sierra Nevada Conservancy; Plumas National Forest Dixie Fire funds; Corporate Investments- Microsoft, Coca-Cola, Disney, Proctor and Gamble, etc.

Timeline: 2026-2035

Project Priority (High, Medium, Low): High

Action 13. Upper Feather River Watershed Post-Fire Water Quality Monitoring Project

Hazards Addressed: Flood (1%/0.2% annual chance and Localized Stormwater, Severe Weather: Heavy Rains and Storms; Wildfire (w/ smoke and air quality)

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): California's variable climate frequently creates a pattern of cascading hazards in which multiple drought years can be followed by extreme heat and wildfire and subsequent wet years. Wildfires leave behind a hydrophobic soil surface layer that increases surface runoff; when combined with precipitation or extreme rainfall events, surface runoff can be significantly degraded by ash, nutrients, metals, combustion byproducts from anthropogenic sources, debris torrents, and sediment. Many beneficial uses of receiving surface waters can be impaired, including human health/drinking water, recreation, fish consumption, and wildlife/ecosystems. A ready-to-deploy water quality monitoring program can be implemented during storm events post-fire to detect the threats to beneficial uses that can be used to tailor the type and location of remediation and restoration actions.

Project Description: Plumas Corporation has been conducting monitoring at key locations in the Upper Feather River watershed for more than 25 years. A post-fire water quality surveillance program will be developed during a fire that tiers to this program and can be supplemented by existing long-term data. As the rainy season approaches post-fire, incoming weather systems will be closely tracked to implement sampling during the first precipitation events that are expected to produce surface runoff. The monitoring plan will identify sample locations based on the extent/intensity of the wildfire, quality assurance/quality control (QA/QC) procedures, chain of custody requirements, the selected independent laboratory for analysis, and frequency of sampling. Constituents sampled will vary based on the degree of wildland-urban interface (WUI) in the watershed impacted by the wildfire, but will be selected from the following broad categories: field measurements (e.g., conductivity, temperature, etc.); minerals and solids (e.g., alkalinity, total suspended solids, E. coli, etc.), nutrients (ammonia, phosphorus, total organic carbon (TOC), etc.), total and dissolved metals (e.g., aluminum, arsenic, nickel, etc.), polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs).

Other Alternatives: none

Existing Planning Mechanism(s) through which Action Will Be Implemented: Feather River Watershed Working Group – Northern California, Feather River Watershed Strategy (2004), Upper Feather River Integrated Regional Water Management Plan (2016), California State Water Action Plan (2014)

Responsible Office/Partners: Plumas Corporation, Plumas National Forest, Plumas County, private landowners, Central Valley Regional Water Quality Control Board, California Department of Water Resources

Benefits (Losses Avoided): Mitigating damage/loss to cold and warmwater fish habitats; preventing human health impacts due to water quality impairment (from drinking water, contact recreation, and fish consumption).

Potential Funding (Local Budgets, Grant Funds, etc.): Estimated costs - $250K; Grants: CA Wildlife Conservation Board Streamflow Enhancement & Forest Restoration programs; Secure Rural Schools Title II Funds; other grant sources and fire emergency funds as available.

Timeline: 2026-2035 (focusing on a one- to two-year window post-fire)

Project Priority (High, Medium, Low): High

Action 14. Red Clover Creek Watershed Floodplain Restoration Project

Hazards Addressed: Ag Hazard: Severe Weather; Climate Change; Drought & Water Shortage (w/tree mortality; Flood (1%/0.2% annual chance and Localized Stormwater); Severe Weather: Extreme Heat, Heavy Rains and Storms; Wildfire (w/smoke and air quality)

Issue/Background (Problem Statement): The 119 mi2 Red Clover Creek watershed is one of two large sub watersheds to Indian Creek. Indian Creek flows through Genesee and Indian valleys where flooding and channel instability are current hazards to the populace. Red Clover Valley contains more than 2,000 acres of restored floodplain, with ~2,000 additional acres in planning. The unrestored sections of Red Clover Creek, Dixie Creek, Crocker Creek and McReynolds Creek are severely downcut (incised). Principal stressors were logging railroad grades built in the low gradient meadow in the 1930s & '40s, channel modification, livestock grazing, and roads. These incised channels capture all flows, rapidly draining out of the basin into the populated Genesee and Indian valleys downstream.

Loss of floodplain function and the rapid drainage of these headwater basins reduces the meadow's ability to capture and store springtime snowmelt and rain as shallow groundwater. Sixty percent of California's water supply originates in the Sierra Nevada, and meadows are a key component of that supply, helping to regulate water flow, temperature, and quality. As the headwaters of the State Water Project, the Feather River Watershed provides water to over 26 million Californians. Although wet meadows are a less than one percent of the overall landscape in Plumas County, meadows' unique hydrologic and ecological functions are recognized as being vital to watershed health and are valued for the ecosystem goods and services they provide, such as crucial habitat for many endemic and special status wildlife species. Known as biological diversity hot spots, healthy meadows provide refugia for wildlife during droughts and wildfire. Wet and moist meadows sequester carbon in the soil, where it isn't susceptible to being lost in a wildfire. In addition, functioning meadow floodplains provide natural fire breaks reducing fire intensities and rate of spread.

From 2006 to 2022, 9 miles and 880 acres floodplain has been restored by Plumas Corporation, primarily on Plumas National Forest and Goodwin Family Ranch lands. The work restored the hydraulic base level of Red Clover and tributaries back to the historic meadow level, recovering crucial floodplain function. The next project in the queue is McReynolds Valley, a 750-acre project currently in the design, CEQA/NEPA review and permitting phase. Implementation funding is being sought.

Project Description: The project is located on both private and public lands. The principal objective of the restoration work is to raise the hydraulic base level of the channel/floodplain system back to the historic meadow surface. This typically allows normal stream flows to access pre-existing remnant channels, while flood flows spread across the expansive floodplain surface. Longer residence times allows for enhanced

infiltration to shallow and deeper groundwater basins, while filtering sediment and nutrients into the meadow ecosystem. This longer residence time in a functional floodplain reduces the pulse in flows downstream by allowing water to spread out and discharge downstream more slowly. Restoring floodplain function may be accomplished utilizing a variety of techniques, including complete and partial channel fill, raised riffles, and use of process-based channel structures (i.e., beaver dam analogs and post-assisted log structures), to name a few. Treatments would be specific to individual site conditions and constraints.

Other Alternatives: none

Existing Planning Mechanism(s) through which Action Will Be Implemented: Feather River Watershed Strategy (2004), Upper Feather River Integrated Regional Water Management Plan (2016), Tributaries Forest Recovery Project Environmental Assessment & Decision Notice (2025), California State Water Action Plan (2014), Sierra Nevada Conservancy 2024-2029 Strategic Plan (2024)

Responsible Office/Partners: Plumas Corporation, Plumas National Forest, Plumas County, private landowners

Benefits (Losses Avoided): Reduction in flood stage in Genesee and Indian valleys, avoiding damage/loss to agricultural productivity, ranch/farm infrastructure, and residential homes; Reduction in sediment supply downstream, improving water quality for aquatic resources, recreation, and agricultural irrigation; Reduction in water temperatures, improving water quality for aquatic species and recreation; Increased surface water residence time extending surface water availability for wildlife and vegetation, and allowing for enhanced infiltration to shallow and deeper groundwater basins mitigating impacts from drought and water shortage, climate change, and wildfire.

Potential Funding (Local Budgets, Grant Funds, etc.): Estimated costs- $8,000,000. Grants- State grant programs via CA Wildlife Conservation Board and Sierra Nevada Conservancy; Plumas National Forest Dixie Fire funds; Corporate Investments- Microsoft, Coca-Cola, Disney, Proctor and Gamble, etc.

Timeline: 2026-2035

Project Priority (High, Medium, Low): High

Action 15. Tree Mortality Action Plan – Monitoring, Prevention, and Mitigation

Hazards Addressed: Wildfire, Climate Change, Drought

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): Tree mortality in Plumas County has increased significantly due to drought stress, bark beetle infestations, and wildfire damage. Dead and dying trees create dangerous fuel loading conditions, elevate the risk of crown fire, and threaten public safety by increasing hazards along roads, recreation areas, and near homes. Without a coordinated action plan, tree mortality will continue to outpace response efforts, reducing forest health, weakening community resilience, and increasing long-term suppression costs.

Project Description: This project will promote and develop a county-wide Tree Mortality Action Plan to provide a framework for monitoring, prevention, and mitigation activities. The plan will:

- Establish protocols for monitoring and early detection of insect infestation and drought stress.
- Identify priority treatment zones based on risk to communities, infrastructure, and evacuation routes.
- Support removal and safe utilization of dead and dying trees through biomass and wood product markets.
- Promote reforestation with climate-resilient and fire-adapted native species.
- Coordinate with landowners, agencies, and utilities to ensure effective and consistent implementation.
- Incorporate public education on tree health, defensible space, and long-term forest stewardship.

Other Alternatives:

- Address tree mortality on a parcel-by-parcel basis without a coordinated county strategy (inefficient and costly).
- Rely solely on emergency hazard tree removal during wildfire response or post-disaster recovery (reactive rather than proactive).

Existing Planning Mechanism(s) through which Action Will Be Implemented: Plumas County Community Wildfire Protection Plan (CWPP), Local Hazard Mitigation Plan (LHMP), CAL FIRE Tree Mortality Task Force guidelines, U.S. Forest Service Forest Health and Restoration programs

Responsible Office/Partners: Plumas County Fire Safe Council, CAL FIRE, U.S. Forest Service (Forest Health Protection, Plumas National Forest), Feather River Resource Conservation District, Plumas County Planning and Public Works Departments, Local Fire Protection Districts, Utility companies (hazard tree management along powerlines)

Benefits (Losses Avoided):

- Reduced hazardous fuel loads from dead and dying trees.
- Improved firefighter and public safety along evacuation routes and public spaces.
- Enhanced forest health and resilience to drought and pests.
- Protection of homes, infrastructure, and utilities from falling hazard trees and wildfire spread.
- Increased availability of biomass and wood products as beneficial by-products of removal.

Potential Funding (Local Budgets, Grant Funds, etc.): FEMA Hazard Mitigation Assistance (HMA) grants, CAL FIRE Forest Health and Fire Prevention grants, USDA Forest Service Forest Health Protection funding, PG&E Vegetation Management Programs, Local government and community cost-share initiatives

Timeline: Ongoing

Project Priority (High, Medium, Low): Medium

Action 16. Tributaries Forest Recovery Project

Hazards Addressed: Ag Hazard: Severe Weather; Climate Change; Drought & Water Shortage (w/tree mortality; Flood (1%/0.2% annual chance and Localized Stormwater); Severe Weather: Extreme Heat, Heavy Rains and Storms; Wildfire (w/smoke and air quality)

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background (Problem Statement): The Tributaries project encompasses a large portion of the major tributaries to Indian Creek. Indian Creek flows through Genesee and Indian valleys where flooding and channel instability are current hazards to the populace and agricultural operations. Over 60% of the Tributaries project area sustained high severity fire, with near complete loss of forest structure. Additionally, many of the headwater streams within the project area lost all large wood and vegetative channel structure, resulting in repeated debris flows. These events were most notable in July 2020, October 2021 and June 2023, damaging or destroying County and Federal forest road infrastructure. These debris torrents are loading up the mainstem stream channels with sediments poised to be mobilized in the next major flood event, potentially impacting populated areas long after the "emergency" is over. Many of the degraded mainstem and headwater meadows were also severely impacted by fire severity, adversely affecting their ability to store and meter these sediments. 226 road crossings were surveyed in the Tributaries project area. 187 crossings were deemed to be at risk of failure, with further risk of damaging sediment loads released into the Indian Creek system.

Furthermore, to forestall the potential for the Feather River watershed to convert to a fire-dominated chaparral ecosystem, both reforestation and commercial/pre-commercial thinning of residual green stands are significant activities in the Tributaries project. Creating a more fire resilient forest structure will also mitigate flood, debris flow and drought conditions in the future.

Project Description: Plumas Corporation is the lead partner assisting the Plumas National Forest with planning and implementation of the 163,000-acre Tributaries Forest Recovery Project (Tributaries). Tributaries is an all-hands, all-lands project to accelerate recovery of all forest values in the Dixie (2021) and Walker (2019) fire footprints. The proposed actions in the Tributaries project represent a suite of the following activities to replace lost forest conditions, while incorporating the predicted effects of climate change: conduct site preparation and conifer planting in strategic locations; improve the resilience of remaining green forest stands to future wildfire by fuel reduction and thinning from below; restore and enhance wildlife and botany with an emphasis on elk, California spotted owl (CSOW) and aquatic resources; identify, assess and develop treatments for road crossings that are impairing water quality, impacting downstream sediment supplies and/or are barriers to aquatic organism passage; develop restoration alternatives to restore meadow function for multiple benefits; and develop a suite of maintenance activities to ensure the investment in the recovery of forest values is sustained.

The project has completed CEQA review, with the NEPA process planned for completion by the end of the 2025 calendar year.

Other Alternatives: none

Existing Planning Mechanism(s) through which Action Will Be Implemented: Tributaries Forest Recovery Project Environmental Assessment & Decision Notice (2025), California's Wildfire and Forest Resilience Action Plan (2021), USDA Forest Service Wildfire Crisis Strategy (2022), Feather River Watershed Strategy (2004), Upper Feather River Integrated Regional Water Management Plan (2016), California State Water Action Plan (2014), Sierra Nevada Conservancy 2024-2029 Strategic Plan (2024)

Responsible Office/Partners: Plumas Corporation, Plumas National Forest, Plumas County, Trout Unlimited, Maidu Summit Consortium

Benefits (Losses Avoided): Reduction in flood stage in Genesee and Indian valleys, avoiding damage/loss to agricultural productivity, ranch/farm infrastructure, and residential homes; Reduction in sediment supply downstream, improving water quality for aquatic resources, recreation, and agricultural irrigation; Reduction in water temperatures, improving water quality for aquatic species and recreation; Increased surface water residence time extending surface water availability for wildlife and vegetation, and allowing for enhanced infiltration to shallow and deeper groundwater basins mitigating impacts from drought and water shortage, climate change, and wildfire; Reduction in forest fuel loads, creating forest stands that are more resilient to wildfire and burn at lower intensity creating less smoke and reducing impacts on air quality.

Potential Funding (Local Budgets, Grant Funds, etc.): Estimated costs- $125,000,000. Grants- State grant programs via CA Wildlife Conservation Board, Sierra Nevada Conservancy, and CalFire; Plumas National Forest Dixie Fire funds; Corporate Investments- Microsoft, Coca-Cola, Disney, Proctor and Gamble, etc.

Timeline: 2026-2035

Project Priority (High, Medium, Low): High

Action 17. Prescribed burning projects and Plumas Underburn Cooperative programs

Hazards Addressed: Wildfire

Issue/Background (Problem Statement): Wildfire proves a threat to Plumas County communities as proven by losses from many high-intensity fires of recent memory (2021 Dixie Fire, 2021 Beckwourth Complex, and 2020 North Complex to name a few). High-intensity wildfires in the Wildland-Urban Interface will continue to threaten lives, infrastructure, and natural resources as our forests at the elevation of 3,000 to 4,000 feet (where many communities are located) historically burned every 3-5 years. By strategically treating areas around communities with prescribed fire we can mimic historic (pre-colonization) low-intensity wildfires to minimize losses to communities and restore forest health.

Not only is prescribed fire a tool utilized by agencies and organizations, it is a common tool for landowners managing small-acre private lands. Resources on how to properly implement prescribed fire on private lands been inadequate until a few years ago, leading to pile burns "escaping" and turning into wildfires. The Plumas Underburn Cooperative (PUC), a program of PCFSC and Feather River Resource Conservation District, started in 2019 to increase education related to prescribed burning within the County. PUC is a prescribed burn association

Project Description: The Plumas County Fire Safe Council, along with partners and contractors will plan, prepare, and implement prescribed burning across different scales within Plumas County. With projects across public and private lands, the main goal of this project is community protection (mitigating wildfire hazards), with the added benefits of forest restoration and community education. This can include utilizing firefighters, contractors, and natural resource specialists to do burning at a large scale, volunteers and community members at a small scale, or any mix of personnel and objectives. Project preparation includes fireline construction/improvement (utilizing handlines, roads, and/or dozer line, etc.) and fuels rearranging (logging, mastication, hand thinning/piling, hand thinning/scattering, hand thinning/chipping, and/or other mechanical fuels reduction methods). Prescribed burning implementation follows preparation; where a pile burn or a broadcast burn will take place. Community engagement is key in every step of this process, ensuring the public is aware of all activities to keep them safe and informed.

The Plumas Underburn Cooperative (PUC) has proved to be a great tool for accomplishing many small goals around the community. This includes educating landowners and neighbors about how and why to do forest treatments around their property, with the goal of emphasizing prescribed fire, and how to burn safely. From participating in the program, community members are helping each other create a safer community, working with Firewise Communities and other community organizations. PUC is a strong program, giving community members resources to accomplish hazard mitigation goals at a low cost to the community and the grantor (historically the funding needs for the program are for Program Manager(s), equipment, and other small programmatic costs). Through educating the community about prescribed fire using PUC as the tool, there will be more community members supportive of larger-scale prescribed burning and other hazard mitigation projects.

Although there are many tools that can be utilized in hazardous fuels reduction projects to rearrange ladder fuels (chipping, scattering, and masticating), burning is an ideal solution because it eliminates the fuel source entirely. The only other comparable solution is to haul debris off-site to a landfill/transfer site or greenwaste facility utilizing trucks, which can be more time intensive, labor intensive, and expensive.

Other Alternatives:

1. Thinning and leaving material on-site. This would consist of other types of hazardous fuels reduction projects without prescribed fire (mastication, hand thinning and chipping, or hand thinning and scattering).
2. Thinning and transporting material off-site. This would consist of hand thinning and placing chips or whole/partial amounts of vegetation into trucks and hauling to transfer site, landfill, greenwaste facility, or other. Logging would be another example of this.
3. No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: CA SB 310 (civil liability, cultural burns), CA SB 926 (prescribed fire claims fund), CA Standardized Prescribed Fire Plan, Plumas County Community Wildfire Protection Plan (CWPP), 2025 Plumas County Hazardous Fuels Assessment - Deer Creek Resources, LLC, Plumas County Local Hazard Mitigation Plan (LHMP), CAL FIRE Burn Permitting (as required), NSAQMD Air Pollution Permitting (as required), Other planning mechanisms.

Responsible Office/Partners: Plumas County Fire Safe Council (education, implementation, and outreach), Feather River Resource Conservation District (implementation and outreach), CAL FIRE (funding, implementation, and outreach), USDA Forest Service (funding, implementation, and outreach), Feather River College (education and outreach), The Watershed Research and Training Center (education, implementation, outreach),Plumas Prescribed Fire Training Exchange partners (education and implementation), Other partners as opportunities arise.

Benefits (Losses Avoided): Prescribed burning projects benefit the community by reducing the risk of losing lives, infrastructure, and natural resources by moderating fire behavior during high-severity wildfires. This moderated fire behavior increases the chances of flammable infrastructure (i.e. homes, businesses, outbuildings) catching on fire and allows fire suppression resources (i.e. fire crews and fire engines) to safely engage and defend communities.

Furthermore, educating the community on safe residential burning practices can benefit the community by reducing wildfires started by improper residential burning practices.

Potential Funding (Local Budgets, Grant Funds, etc.): Grant opportunities: CAL FIRE, USDA Forest Service, Sierra Nevada Conservancy, Other state, federal, and private grant programs

Timeline: Starting at the beginning of this plan and then ongoing

Project Priority (High, Medium, Low): High