Annex D Gold Mountain Community Services District

D.1 Introduction

This Annex details the hazard mitigation planning elements specific to the Gold Mountain Community Services District (GMCSD 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 GMCSD, with a focus on providing additional details on the planning process, risk assessment, and mitigation strategy for this jurisdiction.

NOTE TO DISTRICT (PUTTING UP FRONT SO IT IS EASY TO SEE/FIND) – THERE WAS A 2005 LEACHFIELD FAILURE EVENT YOU PROVIDED. WE COULD NOT SEE WHAT HAZARD IT WAS ASSOCIATED WITH. WAS THE WATER TABLE HIGH DURING THIS TIME FROM FLOODING? LET US KNOW WHAT HAZARD THIS IS ASSOCIATED WITH, SO WE CAN GET THAT INFORMATION IN THE PLAN.

ALSO – CAN WE GET A COPY OF YOUR MOST RECENT MASTER PLAN?

D.2 Planning Process

As described above, the GMCSD 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 D-1. Additional details on Plan participation and District representatives are included in Appendix A. FILL OUT TABLE WITH WHO PARTICIPATED AND HOW.

Table D-1 GMCSD – Planning Team

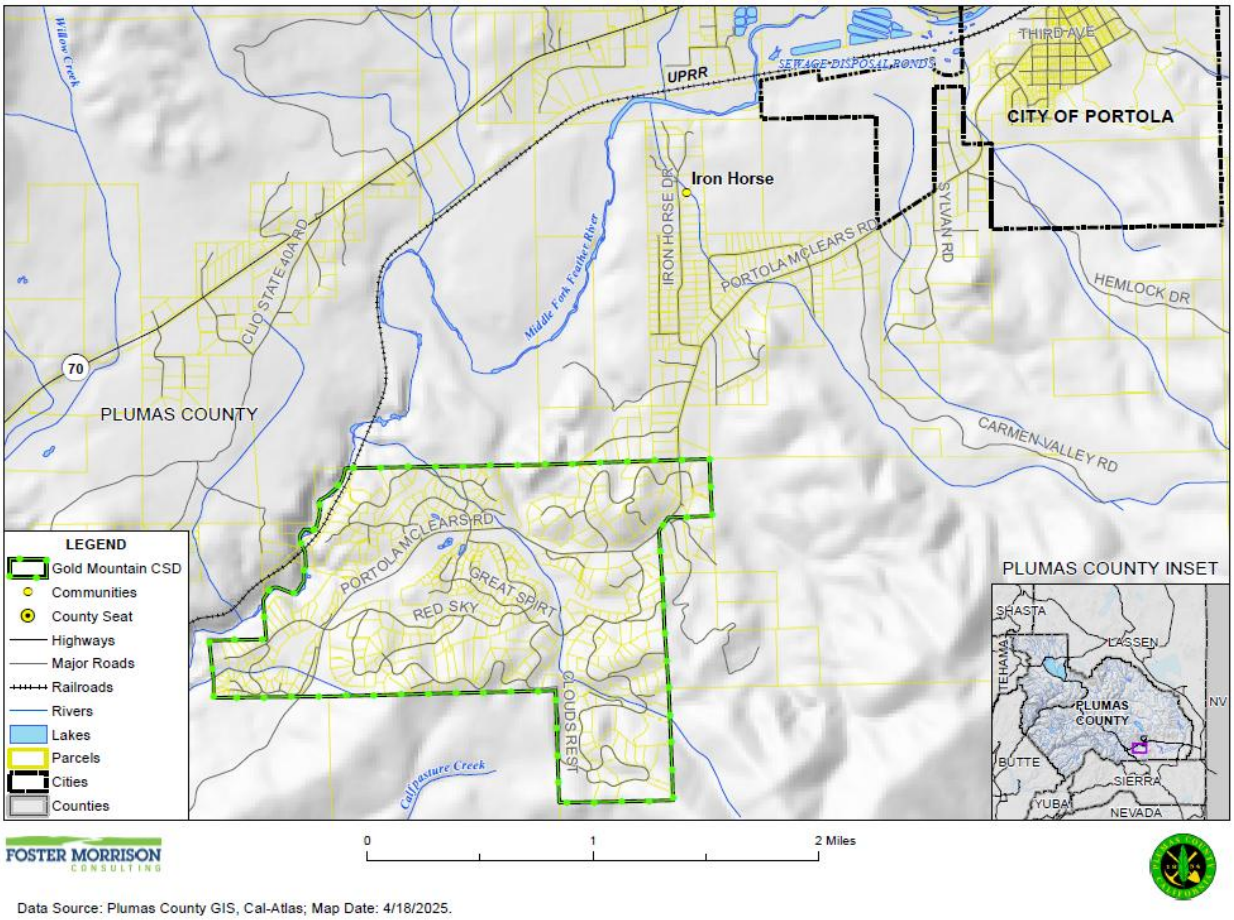
Name	Position/Title	How Participated

Source: GMCSD

D.3 District Profile

The community profile for the GMCSD is detailed in the following sections. Figure D-1 displays a District map and the location of GMCSD within Plumas County.

Figure D-1 GMCSD



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

D.3.1. Overview and Background

Gold Mountain Community Services District (GMCSD) provides fire suppression, fire prevention, emergency medical, retail water delivery, and wastewater collection and disposal. Fire and EMS services are provided via a contract with the City of Portola. Road maintenance and snow removal are provided by the Gold Mountain Homeowner's Association.

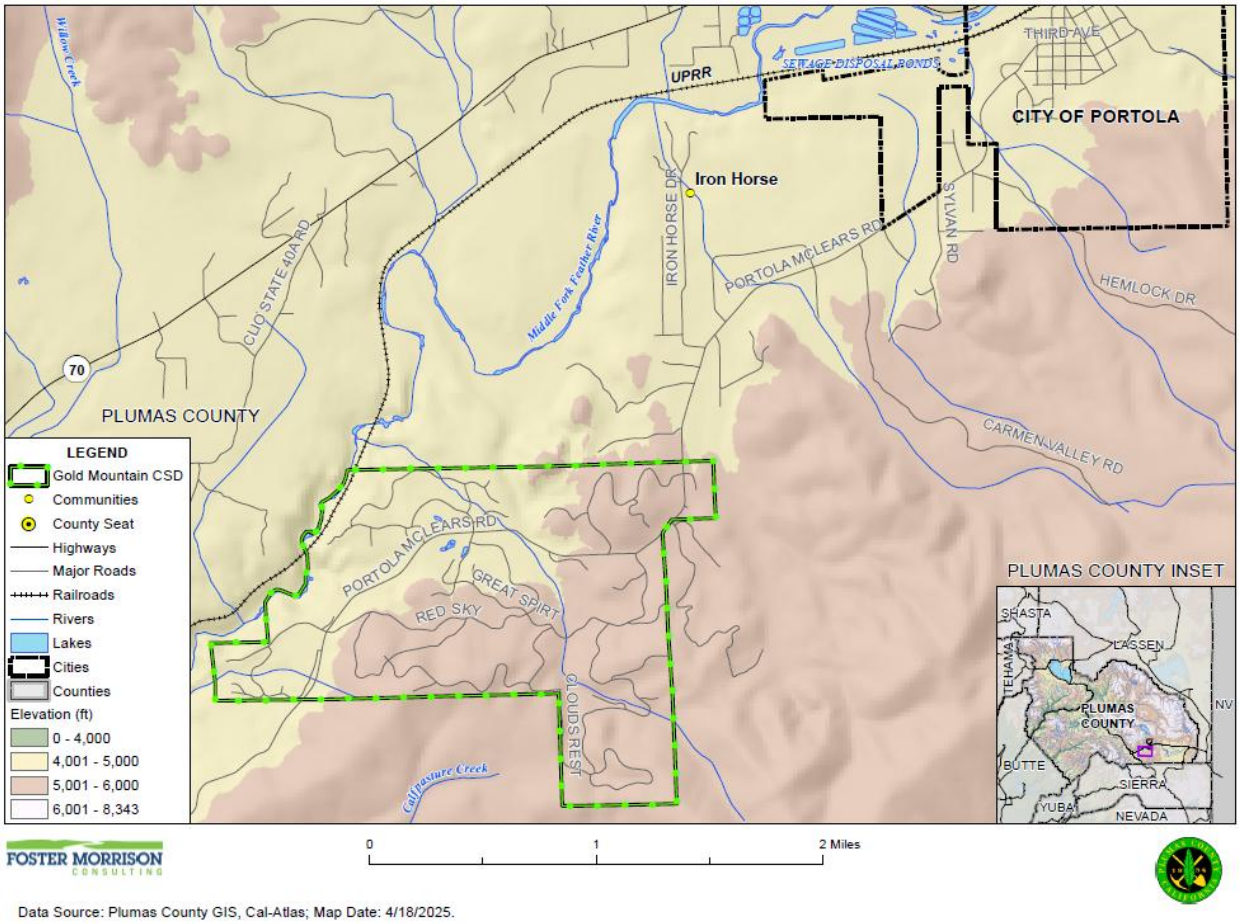
GMCSD was formed in 1996 as a dependent special district; when members from the Board of Supervisors were designated as the District's Board of Directors. In 2005, the board of directors was expanded to include five members and GMCSD became an independent service district. The principal act that governs the District is the State of California Community Services District Law. CSDs may potentially provide a wide array of services, including water supply, wastewater, solid waste, police and fire protection, street lighting and landscaping, airport, recreation and parks, mosquito abatement, library services; street maintenance and drainage services, ambulance service, utility undergrounding, transportation, abate graffiti, flood protection, weed abatement, hydroelectric power, among various other services.

The District was formed to serve the water, wastewater, and fire protection requirements for the Gold Mountain planned development, a predominately senior, retirement golf course and mountain community.

Two thirds of the developed residential structure are second homes or vacation homes resulting in a higher population during the summer months and a low winter population. Open year round, the resort population fluctuates dramatically between winter and summer, with upwards of several hundred guests during peak season weekend events. The District provides domestic water to residences and the resort from four deep granite wells, distributing water though nine pressure zones served by seven lift stations. The resort maintains its own golf course irrigation system fed by wells using the same deep granite aquifers shared with the district. To date, there is little evidence of any aquifer deterioration.

GMCSD is located in the eastern part of Plumas County, about three miles south and west of the City of Portola. The District borders the Feather River in the west, EPRFPD in the north, and the Plumas National Forest in the east and south. GMCSD's boundary is entirely within Plumas County. The District's boundaries encompass approximately 1,294 acres or two square miles. Since its formation, there have been no annexations to or detachments from GMCSD. There are elevation changes inside the District, as shown on Figure D-2.

Figure D-2 GMCSD - Elevation Map



D.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 GMCSD 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:

- D.4.1 Assets Inventory and Growth and Development Trends
- D.4.2 Hazard Identification
- D.4.3 Hazard Profiles and Vulnerability to Specific Hazards

D.4.1. Assets Inventory and Growth and Development Trends

This section provides an inventory of the GMCSD'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 GMCSD'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 D.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 D.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 X staff. NUMBER OF DISTRICT STAFF? PUT THIS IN THE POP SECTIONS BELOW

In addition to District staff, the District provides services to 86 private residential structures, seven commercial residential properties, and two private residences under construction. Based on a household size slightly less than the County average of 2.1 people per household, the estimated population of GMCSD is 180. However, the District estimates that less than one quarter of these residences are occupied on a full-time basis. Summer resort business adds significant numbers to the local population including the hotel, rental units, and resort guests. Based on GIS analysis of 2020 Census data, it is estimated that there are approximately 76 residents that make use of the area as their primary residence. The population of the area tends to be mostly those over the age of 50.

Structures and Critical Facilities

This section considers the GMCSD'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 D-2 lists critical facilities and other District assets identified by the District Planning Team as important to protect in the event of a disaster. GMCSD's physical assets, valued at over $X million, consist of structures and infrastructure to support the District's operations. PLACE NAMES, FACILITY TYPES, AND VALUES WITH DISTRICT ASSETS. FILL OUT LAST COLUMN OF TABLE – WHAT HAZARDS ARE EACH DISTRICT FACILITY AT RISK FROM? THIS WILL HELP INFORM THE ASSETS AT RISK IN EACH OF THE HAZARD DISCUSSIONS BELOW.

Table D-2 GMCSD Critical Facilities and Infrastructure, and Other District Assets

Name of Asset	Facility Type	Replacement Value	Which Hazards Pose Risk
Total		**$ 0**	

Source: GMCSD

Community Lifelines

Assessing the vulnerability of the GMCSD 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 GMCSD 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

GMCSD 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. ANY UNIQUE NATURAL RESOURCES IN THE DISTRICT?

Historic and Cultural Resources

GMCSD 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. ANY UNIQUE HISTORICAL OR CULTURAL RESOURCES IN THE DISTRICT?

Economic Assets and Community Activities of Value

Assessing the vulnerability of the GMCSD 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.

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

TALK ABOUT FUTURE GROWTH IN THE DISTRICT. 2022 MSR HAD SOME ITEMS, BUT WE ARE NOT SURE IF THAT IS CURRENT. ARE MORE STAFF/CONTRACTORS GOING TO BE ADDED? ARE MORE PEOPLE EXPECTED TO BE NEEDING SERVICE? THIS WILL BACKFILL THE FD SECTIONS BELOW

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. NEED YOUR FUTURE DEVELOPMENT AREAS. WHAT WILL BE DEVELOPED OVER THE NEXT 5 YEARS?

D.4.2. Hazard Identification

The GMCSD 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 D-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 D-3 GMCSD—Hazard Identification Assessment

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

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

D.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 GMCSD (as identified in the Significance column of Table D-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.

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 D.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 D.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.

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

HAS THE DISTRICT BEEN AFFECTED IN THE PAST BY POWER OUTAGE EVENTS? INCLUDE EVENTS AND DAMAGES. WHAT ARE THE DISTRICT'S PRIMARY CONCERNS WITH POWER OUTAGES? DO YOU HAVE OR NEED BACKUP POWER FOR CRITICAL INFRASTRUCTURE?

Drought & Water Shortage

Likelihood of Future Occurrence–Likely
Vulnerability–High

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 GMCSD, 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 D-4. Additionally, there have been 16 USDA Secretarial Disaster Declarations from drought in the County since 2012.

Table D-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.

GMCSD Events

Based on historical information, the occurrence of drought in California, including the GMCSD, 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.

LIST PAST EVENTS AFFECTING THE DISTRICT. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE? IF NO PAST EVENTS, PLEASE STATE THAT.

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 GMCSD 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.

The GMCSD provides the district with water from deep fractured granite aquifers. The district's domestic water system includes three producing wells, two 140,000-gallon water storage tanks, and a distribution system including both gravity fed and pressurized connection to our customers. The quality of the water is excellent and requires no specialized treatment. The CSD constantly monitors water quality in accordance with state regulations and provides notification to all customers on the rare occasion that tests for any contaminants exceed state defined levels.

GMCSD staff is very experienced with tracking water production and managing pumping to allow the wells to recharge and maintain natural hydrologic functions. The Nakoma Resort is the CSD's largest customer for domestic water, however Nakoma maintains its own private wells for golf course irrigation.

The GMCSD supports the California Water Board's position that efficient water use is the most cost-effective way to achieve long term conservation goals, as well as to provide for water supply reliability.

GMCSD water district depends on ground/deep well water for supply of potable water to community. There are no alternatives for water supply to community. In the event of a fire, water usage for hydrants vs community may be an issue, as seen in Gold Complex Fire of 2024.

OTHER VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? CAN THE DISTRICT PROVIDE DETAILS ON THE DROUGHT ISSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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 dependent 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.

INSERT ASSETS AT RISK FROM Table D-2

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, 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. This is however less of a concern due to the access to groundwater wells that the District uses

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 GMCSD 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

While the existing domestic water infrastructure is capable of meeting current peak community demands, the GMCSD understands that the domestic water infrastructure will need to be increased to meet requirements at full buildout. The CSD maintains a professionally engineered "trigger point" study that allows us to keep capacity ahead of demand. We are currently in the process of developing two new wells with plans to have a fourth well online during the 2020 summer season, and a fifth well within the next few years. THIS IS FROM YOUR WEBSITE – CAN YOU UPDATE THIS? Longer term plans include installing a new higher elevation water tank in the district to increase overall storage capacity, provide for additional gravity flow connections, and to increase flow rates for district fire hydrants. The CSD also has room in our existing tank farm to eventually install another large capacity storage tank to support future growth. However, population growth in the District will add additional pressure to the District as a water company during periods of drought and water shortage.

ADD ANYTHING SENT.

Earthquake

Likelihood of Future Occurrence–Occasional (minor)/ Unlikely (major)
Vulnerability–High

Hazard Profile

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the sides of the fault together. Stress builds up, and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks, such as water, power, gas, communication, and transportation. Earthquakes may also cause collateral emergencies including dam and levee failures, seiches, hazmat incidents, fires, avalanches, and landslides. The degree of damage depends on many interrelated factors. Among these are: the magnitude, focal depth, distance from the causative fault, source mechanism, duration of shaking, high rock accelerations, type of surface deposits or bedrock, degree of consolidation of surface deposits, presence of high groundwater, topography, and the design, type, and quality of building construction.

Location and Extent

Since earthquakes are regional events, the whole of the District is at risk to earthquake. The GMCSD, Plumas County, and surrounding areas have some level of risk from seismic and geologic hazards. Faults

in and around the District are shown in Section 4.3.10 of the Base Plan. These include the Almanor Fault, Butt Creek Fault Zone, the Mohawk Valley Fault, and others that traverse the County. The Indian Valley Fault is also considered an active fault located within the County. A significant seismic event on any of these major faults could cause damage in the GMCSD.

The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. An earthquake's magnitude is expressed in whole numbers and decimals (e.g., 6.8). Seismologists have developed several magnitude scales, as discussed in Section 4.3.10 of the Base Plan.

Another measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface. Seismic shaking is typically the greatest cause of losses to structures during earthquakes. The District is located in an area where earthquakes of some magnitude occur.. Seismic shaking maps for the area in Section 4.3.10 of the Base Plan show Plumas County and the District fall within a low to moderate shake risk.

Past Occurrences

Disaster Declaration History

There has been no state or federal disaster declarations in Plumas County from earthquake.

NCDC Events

The NCDC does not track earthquake events.

GMCSD Events

As shown in the Base Plan, no disaster declarations have occurred in the County due to earthquake. The HMPC noted no past occurrences of earthquakes that affected the District in any meaningful way.

IS THE ABOVE TRUE? IF NOT, LIST PAST EVENTS AFFECTING THE DISTRICT. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE? IF NO PAST EVENTS, PLEASE LET US KNOW.

Climate Change and Earthquake

Climate change is unlikely to increase earthquake frequency or strength. More information on future impacts can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

Vulnerability to Earthquake

The combination of plate tectonics and associated California coastal mountain range building geology generates earthquakes as a result of the periodic release of tectonic stresses Earthquake vulnerability is primarily based on population and the built environment. More urban areas in high seismic hazard zones are the most vulnerable, while uninhabited areas are less vulnerable. The primary impacts of concern are

life safety and property damage. Although several faults are in and near the Plumas County Planning Area, seismic hazard mapping indicates that the District has low to moderate seismic hazard potential. There is the potential for the District and Plumas County Planning Area to be subject to some level of moderate seismic shaking. Some degree of structural damage due to stronger seismic shaking could be expected.

Earthquake shaking can also cause liquefaction to occur. Areas with loose soil and high water tables are at risk from liquefaction. There are limited areas in and near the District prone to liquefaction.

The whole of the District is at some measure of vulnerability to earthquake. An assessment of a community's vulnerability to earthquakes begins with an understanding of local exposure to earthquakes. 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.

BACKFILL FROM MITIGATION ACTIONS.

VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? CAN THE DISTRICT PROVIDE DETAILS ON THE EARTHQUAKE ISSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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 residing in the District Service Area) are at risk from earthquake shaking and associated hazards. The greatest risk to people and populations from earthquake is death and injury. More information on people and populations at risk to earthquake shaking events can be seen in the Hazus scenarios developed for this LHMP. More information on the Hazus scenarios and how the County and District may be affected is included in Section 4.3.10 of the Base Plan.

Structures and Critical Facilities and Infrastructure

All structures and critical facilities and infrastructure in the District are vulnerable to earthquakes, depending on the severity and location of the event. The Hazus scenarios conducted for the entire Plumas County Planning Area show how structures may be affected. INSERT ASSETS AT RISK FROM Table D-2

Natural, Historic, and Cultural Resources

The 2023 State Hazard Mitigation Plan noted that environmental problems from earthquakes can be numerous. It is possible for earthquakes to reroute streams, which can change the water quality, possibly damaging habitat and feeding areas. Streams fed by groundwater and/or springs may dry up because of changes in underlying geology. Another threat to the environment from earthquakes is the potential release of hazardous materials. Historical and cultural resources are at risk, often due to their age and construction types. The Hazus scenarios in Section 4.3.10 of the Base Plan and included below are relatively silent on the vulnerability to natural, historic, and cultural resources, but impacts to these resources could be long lasting.

Impacts from Earthquake

Earthquakes can strike without warning and cause dramatic changes to the landscape of an area that can have devastating impacts on the built environment. The greatest impact is to life safety of the GMCSD staff, residents, and visitors. Other impacts to the District could include damages to infrastructure such as roads, bridges, and dams; damages and loss of services to utilities and critical infrastructure, including those related to gas, power, water, wastewater and communication systems; damages to structures and other development; and possible loss of life and injuries.

Earthquakes can also cause failure of dams, levees, and reservoirs. Facilities and land downslope from dams or water reservoirs might be subject to flooding, if the dams, reservoirs, or other flood control structures fail as a result of an earthquake.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community.

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 GMCSD include the following:

- As discussed in the hazard profile section, climate change is not anticipated to affect 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 earthquake 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

Although new growth and development would fall in the area affected by earthquake, given the limited chance of major earthquake and the building codes in effect, development in areas prone to earthquakes will continue to occur. The District enforces the California Building Code, which mandates construction techniques that minimize seismic hazards. Future development in the District is subject to these building codes and land use planning. LOOK AT THEIR FD INPUT.

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 GMCSD is subject to localized flooding throughout the District. This is discussed in Table D-5 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.

GMCSD Events

LIST PAST EVENTS AFFECTING THE DISTRICT. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE? IF NO PAST EVENTS, PLEASE STATE THAT.

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 localized flooding 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 infrastructure in the District contributes to localized flooding issues. The District is also concerned with rain on snow events, which can cause greater flooding in the District.

Localized flooding could render leachfields useless, clog pipes, and cause vegetation to fall on facilities and impact accessibility to CSD facilities for repair.

The District tracks localized flooding areas. Affected localized flood areas identified by the GMCSD are summarized in Table D-5. FILL OUT TABLE WITH LOCALIZED FLOODING AREAS IN THE DISTRICT. IF NONE, LET US KNOW THAT AS WELL.

Table D-5 GMCSD – List of Localized Flooding Problem Areas

Road/Area Name	Flooding	Pavement Deterioration	Washouts	High Water/ Creek Crossing	Landslides/ Mudslides	Debris	Downed Trees

Source: GMCSD

OTHER VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? WHAT DISTRICT ASSETS ARE ADVERSELY AFFECTED BY FLOOD EVENTS? DO FLOOD EVENTS RESULT IN LOSS OF SERVICE, EVEN TEMPORARILY?CAN THE DISTRICT PROVIDE DETAILS ON THE ROOT CAUSE OF LOCALIZED FLOOD ISSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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.

INSERT ASSETS AT RISK FROM Table D-2

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 GMCSD 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. TRUE? ADD FROM ANY FD ITEMS SENT

Landslide, Mudslide, and Debris Flow

Likelihood of Future Occurrence–Highly Likely
Vulnerability–High

Hazard Profile

Like its earthquake-generating faults, California's mountainous terrain is a consequence of dynamic geologic processes in operation as the North American Plate grinds past the Pacific Plate. According to the CGS, a landslide is a general term for a variety of mass-movement processes that generate a down-slope movement of mud, soil, rock, and/or vegetation. Landslides are classified into many different types based on form and type of movement. They range from slow-moving rotational slumps and earth flows, which can slowly distress structures but are less threatening to personal safety, to fast-moving rock avalanches and debris flows that are a serious threat to structures and have been responsible for most fatalities during landslide events. For the purposes of this LHMP Update, the term landslide includes mudslides, debris flows, and rockfalls that tend to occur suddenly; as well as hillside erosion, which is a similar process that tends to occur on smaller scales and more gradually but can exacerbate landslide events.

Landslides, debris flows and mudslides are closely related to flooding, as both processes are related to precipitation, runoff, and the saturation of ground by water. In addition, landslides, mud flows, and debris flows can occur on small, steep stream channels and are often mistaken for floods. However, landslide events may be much more destructive than floods because of their higher densities, high debris loads, and high velocities.

Natural conditions that contribute to landslide, mudslides, debris flows, hillside and streambank erosion, include the following:

- Degree of slope
- Water (heavy rain, river flows, or wave action)
- Unconsolidated soil or soft rock and sediments
- Lack of vegetation (no stabilizing root structure)
- Previous wildfires and other forest disturbances (discussed in the Wildfire section below)
- Road building, excavation, and grading
- Earthquake

The 2023 California State Hazard Mitigation Plan noted that more than one third of California is mountainous terrain that generally trends parallel to the coast, forming a barrier that captures moisture from offshore storms originating in the Gulf of Alaska and Mexico. Steep topography, weak rocks, heavy winter rains, and occasional earthquakes all lead to slope failures more frequently than would otherwise occur under gravity alone. This is true in the sloped areas that exists in much of the District.

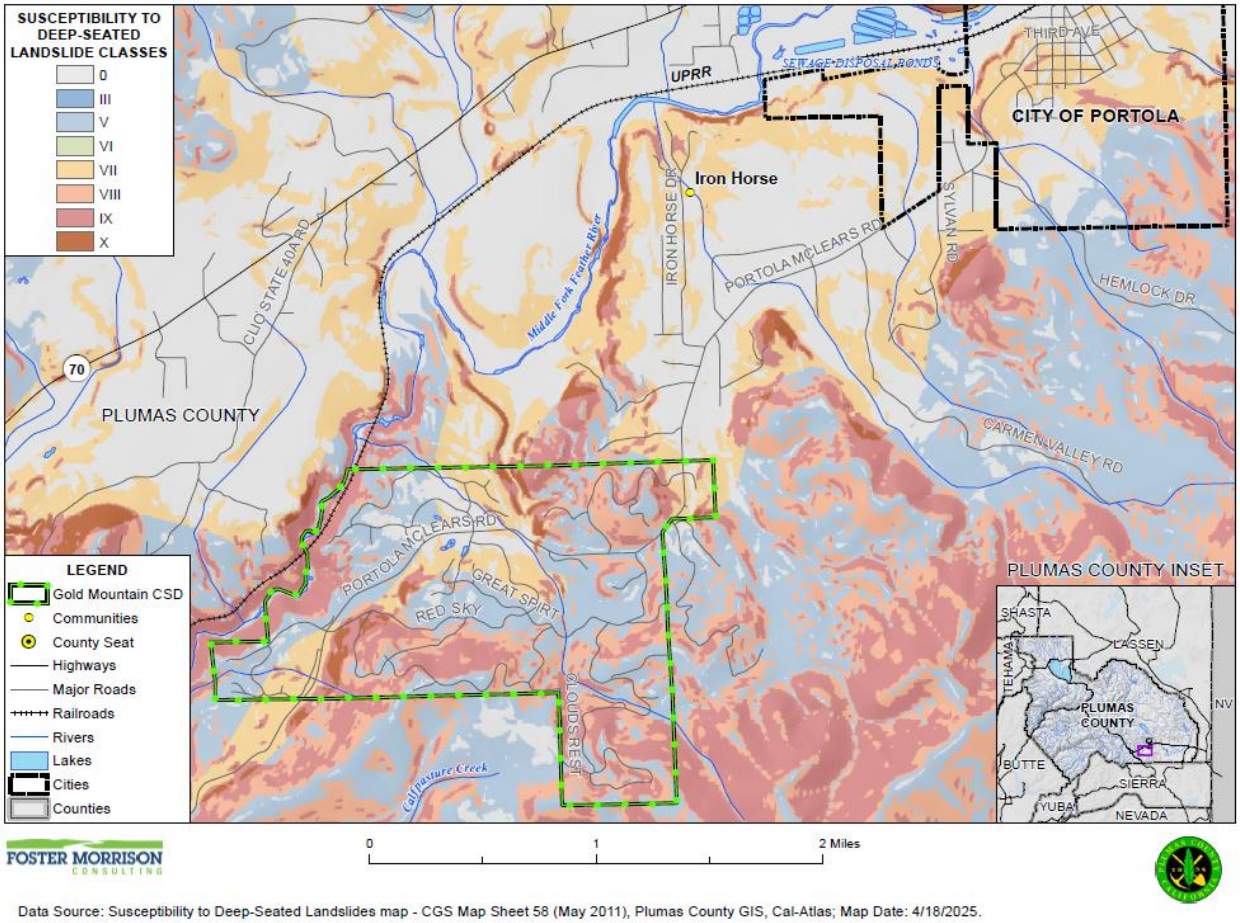
Location and Extent

Landslides can occur in areas with steep slopes and weak soils. It can also occur in areas where erosion has previously occurred. Both winter storms (precipitation-induced) and earthquake triggered landslides

tend to occur in or near places that have experienced previous landslides. However, landslides may also occur in other locations over time. Landslides and debris flows may also occur in fire burn scar areas.

Figure D-3 shows the CGS areas at susceptible to deep-seated landslides. The legend on Figure D-3 shows the susceptibility scale (from 0-X with 0 being the least and X being the most susceptible) that the CGS uses to show the susceptibility of landslides. It is a primarily a combination of slope class and rock strength. Geographic extents of these classes are shown on Table D-6. According to the 2023 State Hazard Mitigation Plan, the susceptibility classes were further categorized into Very High (susceptibility class X) and High (susceptibility classes VII, VIII, & IX) for exposure analysis. The rest of the classes were not categorized. CGS mapping indicates that portions of the District and surrounding area are at high to very high susceptibility areas for landslides. This can be seen in the darker orange and red colors. The speed of onset of landslide is often short, especially in past landslide areas as well as in post-wildfire burn scar areas, but it can also take years for a slope to fail. Landslide duration is usually short, though digging out and repairing landslide areas can take some time.

Figure D-3 GMCSD – Susceptibility to Deep-Seated Landslides



Data Source: Susceptibility to Deep-Seated Landslides map - CGS Map Sheet 58 (May 2011), Plumas County GIS, Cal-Atlas; Map Date: 4/18/2025.

Table D-6 GMCSD – Susceptibility to Deep-Seated Landslide Geographical Extents by Class

Susceptibility to Deep-Seated Landslide Class	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
0	123	10%	54	13%	69	8%
III	0	0.0%	0	0.0%	0	0.0%
V	441	34%	153	36%	288	33%
VI	0	0.0%	0	0.0%	0	0.0%
VII	150	12%	64	15%	86	10%
VIII	264	20%	58	14%	207	24%
IX	292	23%	80	19%	212	24%
X	26	2%	13	3%	13	1%
Grand Total	**1,297**	**100%**	**422**	**100%**	**875**	**100%**

Source: CGS

Past Occurrences

Disaster Declarations

There have been no disaster declarations associated with just landslides in Plumas County; however, as shown in Table D-7, there have been 9 state and 10 federal disaster declarations for flood (including heavy rains and storms) which included landslides as a component.

Table D-7 Plumas County – Federal and State Disaster Declarations Summary 1950-2025

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (events that included landslide)	9	1995 (twice), 2006 (twice), 2017 (twice), 2019, 2023 (twice)	10	1995 (twice), 2006 (twice), 2017 (twice), 2019, 2023 (three)

Source: Cal OES, FEMA. Retrieved March 2025.

NCDC Events

The NCDC contains 21 records for landslides or debris flows in Plumas County since 1993. Three was one that affected the District in April/May of 2005 as discussed below..

GMCSD Past Occurrences

The District noted the following event:

April/May 2005 – There was a landslide on cut bank above District water storage tanks at Lot 188/189 Dream Maker. No deaths or injuries occurred. There was property damage of $93,269, due to significant remediation and stabilization. In addition there were other damages of $46,731 for repairs to tank and water plumbing infrastructure. There were temporary traffic restrictions during repairs. Damage and subsequent

repairs required district to put water use restrictions in place until tanks could be returned to full operational capability.

LIST OTHER PAST EVENTS AFFECTING THE DISTRICT. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE? IF NO PAST EVENTS, PLEASE STATE THAT.

Climate Change and Landslide and Debris Flows

According to the 2021 CAS (as well as the 2024 Draft CAS), climate change may result in precipitation extremes (i.e., wetter wet periods and drier dry periods). More information on precipitation increases can be found in Section 4.3.4 of the Base Plan. While total average annual rainfall may decrease only slightly, rainfall is predicted to occur in fewer, more intense precipitation events. The combination of a generally drier climate in the future, which will increase the chance of drought and wildfires, and the occasional extreme downpour is likely to cause more mudslides, landslides, and debris flows.

Vulnerability from Landslide

Portions of the District are at some measure of vulnerability to landslide. This is true when atmospheric rivers or heavy rain and storm events occur. Post wildfire areas are also more prone to landslide events. An assessment of a community's vulnerability to landslide begins with an understanding of local exposure to landslide. 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.

District staff noted that Gold Mountain is in an area of mountainous terrain with steep hillsides and canyon. Depending on ground saturation and levels of precipitation, further ground shifts can be expected. Landslide could damage a booster station, well system, or water tank, causing reduction of services to community until repair is completed which could be weeks. Landslides could also make access to the area or equipment limited for a longer time than just repair.

OTHER VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? CAN THE DISTRICT PROVIDE DETAILS ON THE ROOT CAUSE OF LANDSLIDE ISSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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 populations (both District staff and District residents) located within areas of landslide susceptibility, especially in the High to Very High hazard areas (i.e., Classes VII to X) are at some vulnerability to landslide. Most vulnerable are those people working or residing in these landslide potential areas as well as those that might reside or work within the landslide run out areas. People residing in the District service areas as well as District staff may also be cut off from transportation routes if roads and streets providing a means of ingress and egress are impacted. Certain vulnerable populations may be at greater risk due to the often sudden onset of a landslide event and include: the unsheltered, those with limited mobility, and those that lack the resources to leave the area.

Structures and Critical Facilities and Infrastructure

Landslides can affect the built environment of the District and those structures and critical facilities located within the High to Very High hazard areas (i.e., Classes VII to X) are especially vulnerable, as are the structures located within the landslide run out areas. INSERT ASSETS AT RISK FROM Table D-2.

Natural, Historic, and Cultural Resources

Landslides can affect natural, historic, and cultural resources that lie in the landslide area, or the landslide run out area. Landslides can destroy large tracts of forest and open space areas, destroy wildlife habitat, and remove productive soils and vegetation from slopes. It can also fill in waterways, impact water quality, and potentially affect flooding potential. Natural resources that fall in the High or Very High susceptibility areas shown on Figure D-3 would be most vulnerable, as well as those in the run-out areas. As shown on the map, this would include a moderate area of the developed area District.

Impacts from Landslide

Any type of landslide may result in damages or complete destruction of buildings in their path, as well as deaths and injuries. Landslides can cause road blockages by depositing debris on road surfaces or road damage if the road surface itself slides downhill. Utility lines and pipes are also prone to breakage in slide areas. Large landslides can collapse into water bodies, causing seiches. Landslides can relocate river channels. Landslides and debris flows can also impact water quality and the storage capacity of surface water reservoirs used to store potable water.

Landslides, debris flows, and mud flows impacts vary by location and severity of any given event and will likely only affect certain areas of the District susceptible to landslide. Based on the risk assessment, there is moderate potential for significant landslides to occur in the District. Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility; and
- Significant economic impact (jobs, sales, tax revenue) to the community.

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 District include the following:

- Climate change is likely to exacerbate future landslide, mudslide, and debris flow conditions and associated impacts and vulnerability of the District to landslide.
- 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.
- It is unknown how changes in land use and development will affect landslide in the District. Building that occurs in the VI or higher deep seated landslide classes may increase risk to additional lands. County building codes are in effect to reduce this risk and should be updated as necessary to continue to address future landslide or erosion conditions.

Future Development

Additional growth and development within moderate or higher deep-seated landslide susceptibility classes in the District would place additional values at risk to landslide. New District facilities will take landslide into account when siting new facilities.

Severe Weather: Extreme Cold, Freeze, and Snow (w/avalanche)

Likelihood of Future Occurrence–Highly Likely
Vulnerability–High

Hazard Profile

According to the National Weather Service (NWS) and the Western Regional Climate Center (WRCC), extreme cold often accompanies a winter storm or is left in its wake. Snow can occur during these events. Excess snow can cause avalanches to occur. Prolonged exposure to cold can cause frostbite or hypothermia and can be life-threatening. Infants and the elderly are some of the most susceptible. Pipes may freeze and burst in homes or buildings that are poorly insulated or without heat. Freezing temperatures can cause significant damage to agricultural industry.

Location and Extent

Extreme cold and freeze events occur on a regional basis. There is no scale for extreme cold and freeze other than temperatures below 32°F, which can occur with some regularity in the winter months in the District. Extreme cold and freeze have a slow onset and can be generally be predicted in advance for the County. Freeze events can last for hours (in a cold overnight), or for days to weeks at a time. Extreme cold can occur in any location of the City. All portions of the District are at risk to extreme cold and freeze.

Snowfall can affect almost all areas of the County and the District. In the elevations of the District, severe snowstorms are some of the most common extreme weather events that occur in the City and Plumas County. There is no scale (i.e. Richter, Enhanced Fujita) to measure the effects of snowfall other than snow depths. Heavy snow has a slow to moderate onset and can generally be predicted in advance for the County. Snow events can last for hours or for days, and snow can stay on the ground for weeks to months at a time.

Avalanche affects only certain areas of the County and the District. The combination of steep slopes, abundant snow, weather, snowpack, and an impetus to cause movement to create an avalanching episode. This is rare in the District. Speed of onset of avalanche is short, as is the duration of each event. Most avalanches occur during and shortly after storms between January and March. A scale of avalanche danger has been created for North America. This scale can be seen in Section 4.3.2 of the Base Plan.

Past Occurrences

Disaster Declaration History

The County has had no past federal and one past state disaster declarations for extreme cold and freeze. There were no disasters from snow or from avalanche. Table D-8 shows the dates of the disaster declarations. There have been USDA disaster declarations (2016, twice in 2022, 2023) from freeze since 2012.

Table D-8 Plumas County – Federal and State Disaster Declarations for Freeze 1950-2025

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Freeze	1	2007	0	–

Source: Cal OES, FEMA

NCDC Events

The NCDC data shows 549 extreme cold, freeze, and snow incidents for Plumas County since 1993, some of which likely affected the District.

GMCSD Events

LIST PAST EVENTS AFFECTING THE DISTRICT FOR EXTREME COLD, FREEZE, AND AVALANCHE. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE? IF NO PAST EVENTS, PLEASE STATE THAT.

Climate Change and Extreme Cold, Freeze, and Snow (w/avalanche)

According to the 2021 CAS (as well as the 2024 Draft CAS), freezing spells and snow are likely to become less frequent in California as climate temperatures increase; if emissions increase, freezing events could occur only once per decade in large portion of the State by the second half of the 21st century. According to a California Natural Resources Report in 2014, it was determined that while fewer freezing spells would decrease cold related health effects, too few freezes could lead to increased incidence of disease as vectors and pathogens do not die off.

Vulnerability to Extreme Cold, Freeze, and Snow (w/avalanche)

Extreme cold and freeze events happen in the District each year. Snow occurs regularly and can contribute to avalanches occurring in sloped areas. Cold, freeze, snow, and avalanche can impact both structures and populations in the Planning Area and in extreme conditions, may affect the ability of the District to operate. The whole of the District and County Planning Area has some measure of vulnerability to extreme cold, freeze, and snow, including avalanches.

An assessment of a community's vulnerability to this hazard begins with an understanding of local exposure to District. 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.

BACKFILL WITH MITIGATION ACTIONS.

The District is also concerned with rain on snow events, which can cause greater flooding in the District.

POWER OUTAGES? OTHER VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? CAN THE DISTRICT PROVIDE DETAILS ON THE EXTREME COLD, FREEZE, SNOW, AND AVALANCHE ISSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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 the District serve are at some vulnerability to extreme cold, freeze, and snow. Some employees may face a risk while working outdoors. All populations served by the District are vulnerable to extreme cold and freeze, but this hazard generally affects people spending large amounts of time outside (including District staff). Prolonged exposure to cold can cause frostbite or hypothermia and

can be life-threatening. Vulnerable populations to cold and freeze include the unhoused; individuals who exercise or train outdoors; outdoor workers; individuals that lack the resources to afford heat; and the young, old, or medically fragile individuals that are more susceptible to cold related impacts. In addition to vulnerable populations, pets and livestock are at risk to freeze and cold. Snow has an effect on buildings, but its effect on people and populations are minimal. Avalanche can affect populations, though the District has few developed areas at risk to avalanche.

Structures and Critical Facilities and Infrastructure

Structures and critical facilities and infrastructure in the District have some measure of risk from extreme cold and freeze. Buildings can be affected directly by freeze, pipes that feed buildings can be damaged during periods of extreme cold and cause water damage and other related impacts to a structure. Structures can also be damaged by downed trees during freeze and winter storm events. Snowfall can occur and can be heavy enough to damage structures. Transportation networks, communications, and utilities infrastructure are the most vulnerable physical assets in the District. Infrastructure such as roads, highways, and bridges can become slippery or blocked by large snow events, causing accidents and road closures.

INSERT ASSETS AT RISK FROM Table D-2.

Natural, Historic, and Cultural Resources

Depending on how low the temperatures go and the duration of an extreme cold and freeze event, natural resources in the District may be affected. During periods of freeze, trees in the District may be damaged. This is especially true if a freeze occurs during a winter storm with winds and precipitation. Other natural resources like wildlife may be at risk during a period of freeze. While it is rare for historic buildings to be affected directly by freeze, damages to pipes that feed historic buildings can be damaged during periods of extreme cold and cause additional impacts to the structures.

Impacts from Severe Weather: Extreme Cold, Freeze, and Snow

Extreme cold and freeze can affect critical facilities and infrastructure, down trees, break pipes, and can be a life safety issue. Transportation networks, communications, and utilities infrastructure are often the most vulnerable physical assets in the District. Infrastructure such as roads and utilities are at risk to freezing temperatures and snow, causing failures and hazardous road conditions. When extreme cold is coupled with high winds, snows, and freezing storms, power lines may be downed, resulting in power outages and an interruption of utilities and critical services. During periods of extremely low or prolonged cold temperatures, other impacts to the District can include interruption in business and school activities.

The elderly, the young, and those experiencing medical issues are often more vulnerable to temperature extremes, but anyone can be affected. Exposure to cold temperatures can cause hypothermia and frostbite. Those exercising or recreating outdoors, outdoor workers, and the unhoused may be at a higher risk.

One of the most significant impacts from snow avalanches are the closure of transportation corridors, which can isolate populations and interrupt commodity flows. Avalanches tend to occur during extended periods of snow when new snow is deposited on the existing snowpack causing stress on the layers beneath and triggering a collapse resulting in an avalanche. Avalanches can also be triggered by severe weather such

as high winds and unusually warm weather and even earthquake events. There may be occasions where avalanches contribute to the presence of other hazards, such as flash floods resulting from mountainside erosion. Avalanches might cause erosion on sloped terrain, thereby increasing the likelihood of future landslides. In addition, debris deposited in a river or stream because of avalanches might alter its flow and contribute to flooding later.

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 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 these factors for the District include the following:

- Climate change is unlikely to exacerbate extreme cold, freeze, and snow (and avalanche) and their associated impacts to the District.
- 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 area are expected to be limited in the near future and thus are not likely to affect extreme cold and freeze 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.

Future Development

Future development built to code should be able to withstand extreme cold and freeze. Pipes at risk of freezing should be mitigated by either burying or insulating them from freeze as new facilities are improved or added. Current State of California and Plumas County codes provide such provisions for new construction. New wells and appurtenances will be built inside insulated buildings, reducing the risk of loss of potable water due to frozen pipes. TRUE?

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. The District experiences temperatures in excess of 100°F during the summer and fall months. 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.

GMCSD Events

LIST PAST EVENTS AFFECTING THE DISTRICT. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE? IF NO PAST EVENTS, PLEASE STATE THAT.

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.

BACKFILL WITH MITIGATION ACTIONS.

VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? CAN THE DISTRICT PROVIDE DETAILS ON EXTREME HEAT SSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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.

INSERT ASSETS AT RISK FROM Table D-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. TRUE? ANYTHING TO ADD TO HOW YOU WILL BE AFFECTED BY HEAT IN THE FUTURE?

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 shown in Table D-5 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 D-9. IN addition, there have been two USDA disaster declarations from heavy rain and storms (once in 2016 and once in 2017) since 2012.

Table D-9 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.

GMCSD Events

KEEP THE BELOW INFO IF NO PAST OCCURRENCES ARE SENT

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.

LIST PAST EVENTS AFFECTING THE DISTRICT. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE? IF NO PAST EVENTS, PLEASE STATE THAT.

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 GMCSD. 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.

Flooding (from heavy rains and localized flooding) could render leachfields useless, clog pipes and cause vegetation to fall on facilities and impact accessibility to CSD facilities for repair.

The District noted that one of the primary issues associated with heavy rains and storms is the resulting flooding caused by large precipitation events. A list of localized flooding problem areas are shown on Table D-5 above. The District is also concerned with rain on snow events, which can cause greater flooding in the District.

OTHER VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? CAN THE DISTRICT PROVIDE DETAILS ON THE HEAVY RAIN ISSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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.

INSERT ASSETS AT RISK FROM Table D-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. ADD ANY FD ITEMS SENT

Severe Weather: High Winds and Tornado

Likelihood of Future Occurrence–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.

GMCSD Past Occurrences

LIST PAST EVENTS AFFECTING THE DISTRICT. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE? IF NO PAST EVENTS, PLEASE STATE THAT.

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 are a permanent factor in the weather impact on the Nakoma Community, and GMCSD facilities. High winds could cause trees to fall on a booster station, well system, water tank, causing reduction of services to community until repair is completed which could be weeks.

POWER OUTAGES? OTHER VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? CAN THE DISTRICT PROVIDE DETAILS ON THE WIND ISSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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.

INSERT ASSETS AT RISK FROM Table D-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. ADD ANY FD ITEMS SENT

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 GMCSD. 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.

Wildfire Smoke and Air Quality

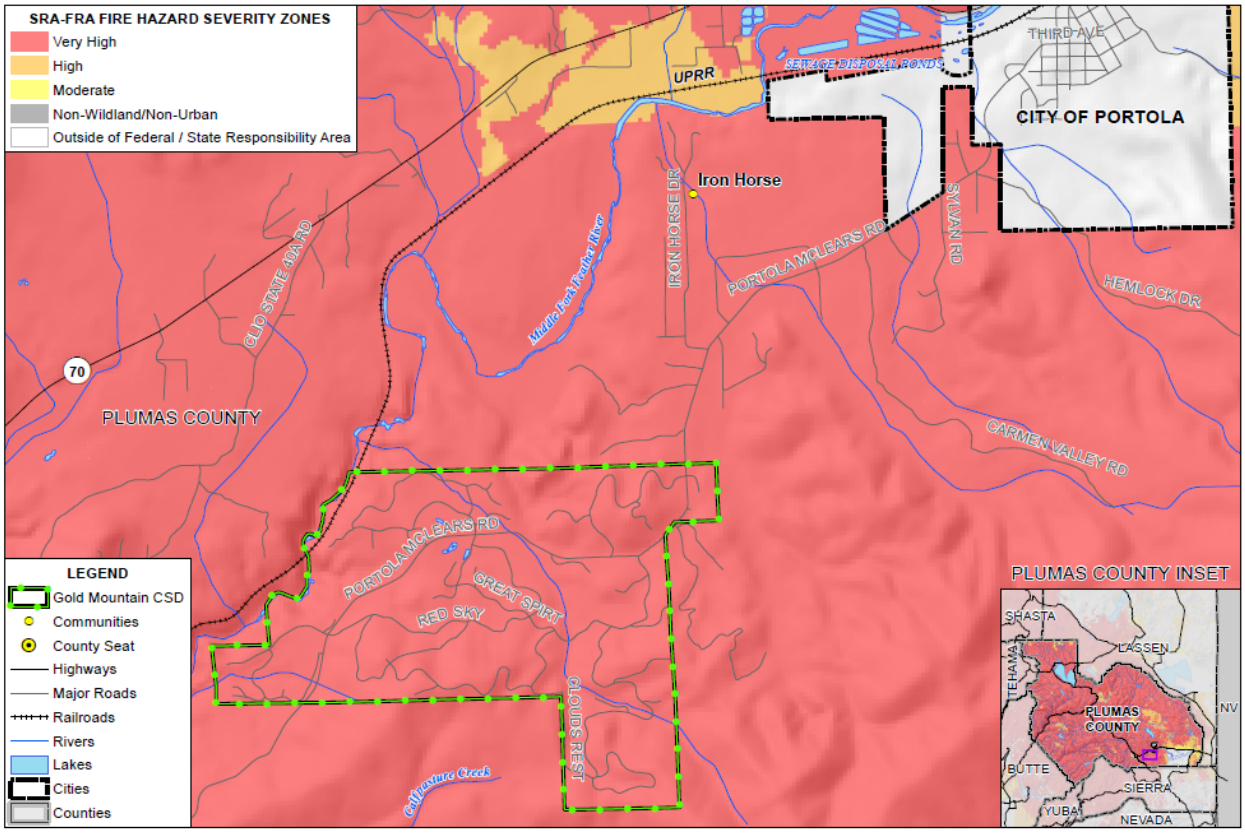
Smoke from wildfires is made up of gas and particulate matter, which can be easily observed in the air. Air quality standards have been established to protect human health with the pollutant referred to as PM2.5 which consists of particles 2.5 microns or less in diameter. These smaller sizes of particles 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

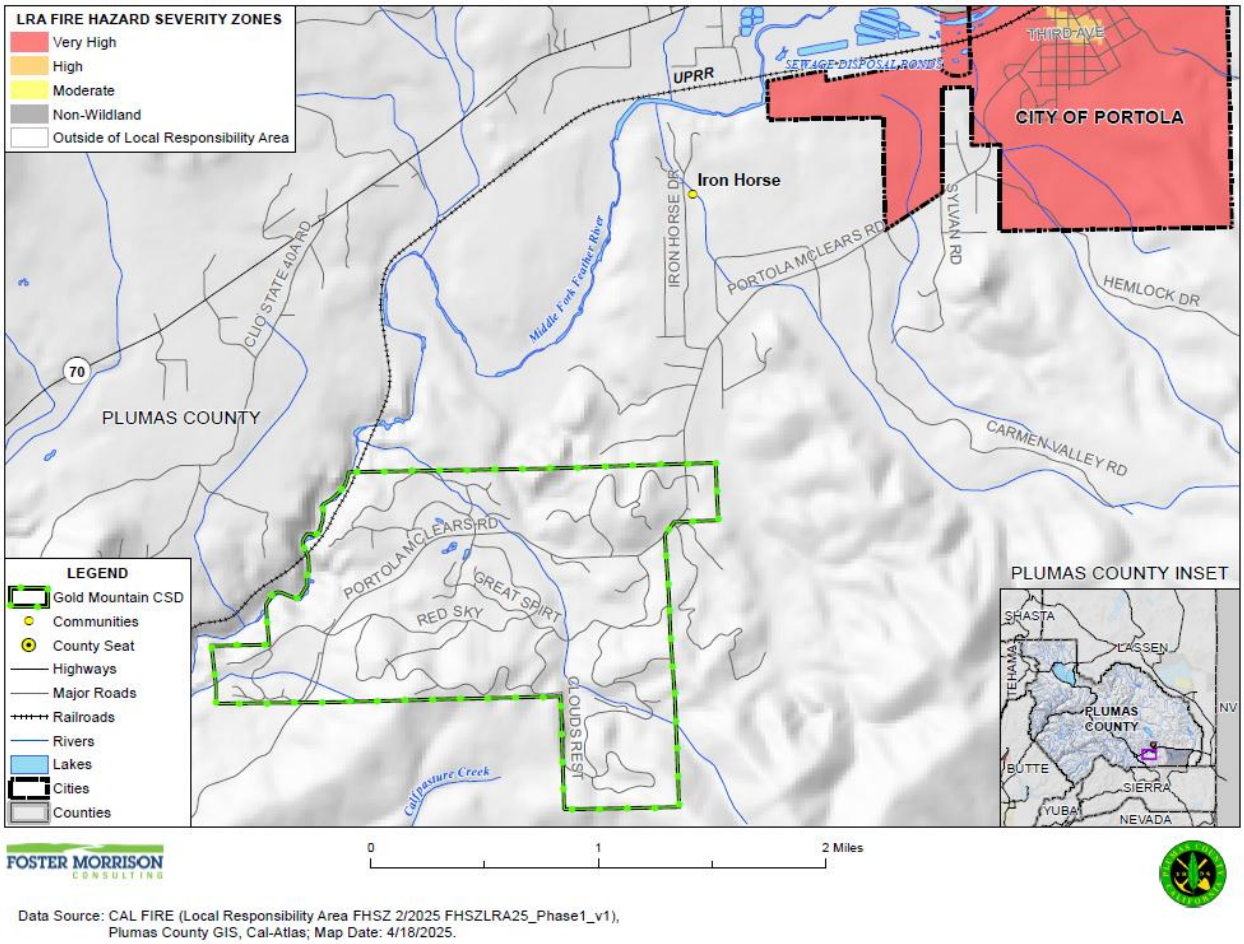
Wildfire can affect all areas of the District. CAL FIRE has estimated that the risk varies across the District and has created maps showing risk variance. Following the methodology described in Section 4.3.16 of the Base Plan, wildfire maps for the GMCSD were created. Figure D-4 shows the CAL FIRE State Responsibility Areas (SRA) and Federal Responsibility Areas (FRA) and their associated Fire Hazard Severity Zones (FHSZ) in the District. Figure D-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, the District lies in the Extremely High FHSZ.

Figure D-4 GMCSD – 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 D-5 GMCSD – 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 D-10. No District area falls in the LRA; as such, no tabular analysis is presented here.

Table D-10 GMCSD – CAL FIRE SRA/FRA Fire Hazard Severity Zone Geographical Extents

Fire Hazard Severity Zones	Total Acres	% of Total Acres*	Improved Acres	% of Total Improved Acres*	Unimproved Acres	% of Total Unimproved Acres*
Very High	1,297	100.0%	422	100.0%	875	100.0%
High	0	0.0%	0	0.0%	0	0.0%
Moderate	0	0.0%	0	0.0%	0	0.0%
Non-Wildland/Non-Urban	0	0.0%	0	0.0%	0	0.0%
Outside of Federal / State	0	0.0%	0	0.0%	0	0.0%

Fire Hazard Severity Zones	Total Acres	% of Total Acres*	Improved Acres	% of Total Improved Acres*	Unimproved Acres	% of Total Unimproved Acres*
Responsibility Area						
Grand Total	**1,297**	**100.0%**	**422**	**100.0%**	**875**	**100.0%**

Source: CAL FIRE

* CAL FIRE's FHSZ SRA (FHSZSRA_23_3) released in April 2024. CAL FIRE's FHSZ FRA not updated as part of the new SRA release. The new data (SRA areas) and the old FRA areas were merged in GIS to provide countywide FRA/SRA coverage. Dataset does not include any LRA coverage nor does it include any old SRA coverage. The percentages in the table below are calculated by the total acreage of the FRA/SRA data coverage within each jurisdiction

Past Occurrences

Disaster Declaration History

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

Table D-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.

GMCSD Events

The District noted that there were the following events that affected the District:

July 22-29, 2024 – The Gold Complex Fire occurred, which was a major wildfire event adjacent to the community. It occurred on NFS and private forestry lands east of Hwy 89 and south of GMCSD. This was a most severe event resulting from lightning strikes in or near the community since inception in 1996. Collateral damage due to CSD's support providing water from our system. Drawdown resulted in a negative pressure situation and system contamination. The Community was evacuated, and Nakoma Resort shutdown had all their events cancelled. Loss of income was high, but no estimate were available. All CSD resources including personnel and fire apparatus dedicated to support firefighting efforts and providing water to supporting fire departments. Due to the Fire, Highway A15 and access to the Gold Mountain community was shut down for 4 days.

LIST ABNY OTHER PAST EVENTS AFFECTING THE DISTRICT. INCLUDE INFORMATION ON IMPACTS AND DAMAGES AS AVAILABLE.

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.

2024 Gold Complex Fire highlighted areas that need annual review and upgrades if needed. Heavy use of one fire Hydrant caused an area in the community to have no water for a few days until tank could refill. If heavy ground/ladder fuel exists around water tanks or booster stations, impact on water supply to the community could be negatively impacted. CSD would be unable to perform its obligation to supply potable water.

The GMCSD is charged with providing structural fire protection and emergency medical services to the Gold Mountain community. These services are provided through an agreement (annual contract) with the Beckwourth Fire District. The Nakoma community is a FireWise Community, which certifies the

community's efforts to reduce fire risk. The mission of the Nakoma Community Firewise Committee is to support and encourage activities which reduce hazardous fire fuel loads in our community.

OTHER VULNERABILITIES/CONCERNS/ISSUES SPECIFIC TO THE DISTRICT? CAN THE DISTRICT PROVIDE DETAILS ON THE WILDFIRE ISSUES THAT WOULD SUPPORT MITIGATION ACTION DEVELOPMENT?

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 District 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. INSERT ASSETS AT RISK FROM Table D-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 GMCSD 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. ADD ANY FD ITEMS WHEN SENT

D.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.

D.5.1. Regulatory Mitigation Capabilities

Table D-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 GMCSD. ***Fill out table and make sure to address the notes (third) column and the last cell of the table. The final table cell needs to be filled out as well. We know much of this table does not apply to you, but fill out the areas that do.***

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 D-12 GMCSD'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		

Climate Change Adaptation Plan		
Community Wildfire Protection Plan		
Comprehensive/Master Plan		
Continuity of Operations Plan		
Economic Development Plan		
Land Use Plan		
Local Emergency Operations Plan		
Stormwater Management Plan		
Transportation Plan		
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		
Building code		
Flood insurance rate maps		
Floodplain ordinance		
Natural hazard-specific ordinance (stormwater, steep slope, wildfire)		
Subdivision ordinance		
Zoning ordinance		
Other		
How can these capabilities be expanded and improved to reduce risk?		
FILL OUT HOW CAPABILITIES CAN BE EXPANDED.		

Source: GMCSD

D.5.2. Administrative/Technical Mitigation Capabilities

Table D-13 identifies the District department(s) responsible for activities related to mitigation and loss prevention in the GMCSD. ***Fill out table and make sure to address the notes (third) column and the last cell of the table. Much of this will not apply to you as the District. Fill out the areas that do apply to you. The final table cell needs to be filled out as well.***

Table D-13 GMCSD'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		
Technical	**Y/N**	**Has capability been used to assess/mitigate risk in the past?**
Grant writing		
Hazard data and information		
GIS analysis		
Mutual aid agreements		
Other		
How can these capabilities be expanded and improved to reduce risk?		
FILL OUT HOW CAPABILITIES CAN BE EXPANDED.		

Source: GMCSD

D.5.3. Fiscal Mitigation Capabilities

Table D-14 identifies financial tools or resources that the District could potentially use to help fund mitigation activities. ***Fill out table and make sure to address the notes (third) column and the last cell of the table. The final table cell needs to be filled out as well.***

Table D-14 GMCSD'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)		
Fees for water, sewer		
Capacity fees for new development		
State funding programs		

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?
Stormwater utility fee		
Other		
How can these capabilities be expanded and improved to reduce risk?		
FILL OUT HOW CAPABILITIES CAN BE EXPANDED.		

Source: GMCSD

D.5.4. Mitigation Education, Outreach, and Partnerships

Table D-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. ***Fill out table and make sure to address the notes (third) column and the last cell of the table. The final table cell needs to be filled out as well.***

Table D-15 GMCSD's Mitigation Education, Outreach, and Partnerships

Program/Organization	In Place Y/N	How widespread are each of these in your community?
Community newsletters		
Hazard awareness campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, school programs, public events)		
Local news		
Organizations that interact with underserved and vulnerable communities		
Social media		
How can these capabilities be expanded and improved to reduce risk?		
FILL OUT HOW CAPABILITIES CAN BE EXPANDED.		

Source: GMCSD

D.5.5. Other Mitigation Efforts

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

When GM was developed, only seven fire hydrants were required, all serving commercial uses. Over time the District has added 15 additional hydrants at strategic locations to cover the community. It is important to understand that the fire department uses the hydrants to fill their trucks, not to connect a hose to fight the fire. We work closely with our fire providers to identify the best location for hydrants to strategically cover the entire community and will continue to add additional hydrants as the community grows.

GMCSD maintains two 140,000 gallon water storage tanks to ensure we have adequate water supplies for firefighting. In addition, the CSD partnered with the Nakoma Resort to ensure its new 90,000 gallon recreational pool was equipped with hookups to make that additional water source available in the case of an emergency. Nakoma's golf course also includes a number of large holding ponds as part of its irrigation and landscape plans. Rural fire departments all include suction equipment to ensure such pools are also available as a water source in an emergency.

The CSD has partnered with the GM Homeowners Association (HOA) to develop a limited quick attack firefighting capability. Using a large pickup equipped with a water tank. Foam generators, and gasoline powered pump, we have created a Quick Attack Vehicle (QAV) to provide an initial response capability in the community. Each year the CSD's Fire Coordinator provide training to a cadre of community volunteers on this system, first aide, and basic wild land firefighting techniques. There have been a number of incidents where community volunteers using the QAV were first on scene to knock down small fires.

The GM CSD sponsors a highly recognized Firewise Committee that has received accolades at county and state levels for their aggressive and creative approach towards fire safety within the community. Committee holds regular awareness meetings year round, evacuation drills during the fire season, and a pancake breakfast as part of the annual owners meeting.

In conjunction with the Gold Mountain HOA, and in cooperation with the Firewise Committee, the District has been very active in developing and implementing a hazardous fuel treatment (HFT) program at Gold Mountain. Reducing the fuel load is a significant step towards ensuring our resilience to wildfire. Wildland fire protection is provided by the United States Forest Service and all local volunteer fire departments.

OTHER PAST HAZARD MITIGATION TYPE PROJECTS AND ACTIVITIES THAT HAVE BEEN IMPLEMENTED BY HAZARD. INCLUDE ANY NOTABLE HAZARD RISK REDUCTION MEASURES.

D.6 Mitigation Strategy

D.6.1. Mitigation Goals and Objectives

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

D.6.2. NFIP Mitigation Strategy

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

D.6.3. Mitigation Actions

The Planning Team for the GMCSD 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:

- Drought & Water Shortage
- Earthquake
- Floods: Localized Stormwater
- Landslide, Mudslide, and Debris Flow
- Severe Weather: Extreme Cold, Freeze, and Snow (w/avalanche)
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rain and Storms (Wind, Hail, Lightning)
- Severe Weather: High Winds and Tornado
- Wildfire (w/smoke and air quality)

Non-priority hazards for mitigation planning include:

- Agricultural Hazards (Severe Weather/Pests/Invasive Species)
- Climate Change
- Dam Failure
- Floods: 1%/0.2% annual chance
- Hazardous Materials Transport
- 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

NEED ACTIONS FOR EARTHQUAKE, EXTREME HEAT, AND EXTREME COLD

Action 1. Drought Impact on CSD Service

Hazards Addressed: Drought and water shortage (that may cause low potable water supplies, lack of or low water for hydrants-impacting fire protection), Wildfire

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

Issue/Background (Problem Statement): GM CSD water district depends on ground/deep well water for supply of potable water to community. There are no alternatives for water supply to community. In the event of a fire, water usage for hydrants vs community may be an issue, as seen in Gold Complex fire of 2024.

Project Description: Identify cost and location for additional water tank. Prepare a plan to implement an effective wastewater capture system to help homeowners reduce potable water use. Identify non potable equipment for use in areas such as exterior irrigation systems and educate community on potable water conservation actions, such as during red flag days to request limited use of water.

Other Alternatives: Explore alternate water sources such as adjacent water rights owners, major rehabilitation of existing wells, add an additional well. Plan for additional water tank(s) to increase storage capacity. Plan for Wastewater Plant to aid in recapture of water and reuse accordingly. Update engineering plans based on current planned construction demands in the community. Develop Finance Strategy for next phase of capital projects based on Engineering Plans.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Capital Improvements Plan

Responsible Office/Partners: Gold Mountain Community Services District

Benefits (Losses Avoided): Ability to provide water and septic services to Nakoma Community as required.

Potential Funding (Local Budgets, Grant Funds, etc.): None at this time other than GMCSD fees.

Timeline: 2025-2030

Project Priority (High, Medium, Low): High – Water tank, Booster Station; Medium –Wastewater Plant

Action 2. Flood/Landslide/High Wind Mitigation

Hazards Addressed: Flood, Localized Flood, Landslide, Severe Weather: Heavy Rain and Storms, and Severe Weather: High Winds potential impact on infrastructure of GM CSD water tanks, booster stations, pipes, and septic fields.

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

Issue/Background (Problem Statement): High Winds are a permanent factor in the weather impact on the Nakoma Community, and GMCSD facilities. High winds could cause trees to fall on a booster station, well system, water tank, causing reduction of services to community until repair is completed which could be weeks. Landslides could also cause same issues to impact on GM facilities, perhaps making access to the area or equipment limited for a longer time than just repair. Flooding (as well has heavy rains and localized flooding) could render leachfields useless, clog pipes and cause vegetation to fall on facilities and impact accessibility to CSD facilities for repair.

Project Description: Identify potential impact from low to high on CSD equipment such as water tanks, booster stations, water pipes, septic field and update both action and dollars needed to support, enhance or rectify any noted issues.

Other Alternatives: none

Existing Planning Mechanism(s) through which Action Will Be Implemented: Annual survey and recommendations with help from outside professional sources if needed

Responsible Office/Partners: Gold Mountain Community Services District

Benefits (Losses Avoided): Prevent/reduce loss of GM CSD's ability to service community as required.

Potential Funding (Local Budgets, Grant Funds, etc.): As of 2025 is only through GM CSD budget and Community fees.

Timeline: 2025-2030

Project Priority (High, Medium, Low): High

Action 3. Fire Prevention Hazard and Impact on CSD Services

Hazards Addressed: Wildfire

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

Issue/Background (Problem Statement): 2024 Gold Complex Fire highlighted areas that need annual review and upgrades if needed. Heavy use of one fire Hydrant caused an area in the community to have no water for a few days until tank could refill. If heavy ground/ladder fuel exists around water tanks or booster stations, impact on water supply to the community could be negatively impacted. CSD would be unable to perform its obligation to supply potable water.

Project Description: Identification of Fire Hazards and Impact in community near CSD facilities, water towers, booster stations, fire hydrants. Annual fire hazard identification for remediation plans, including the following:

- annual survey to map and identify all territories in GM that can create fire hazards
- annual identification and removal of fire hazards close to water towers, booster stations, CSD properties
- create and post updated signage on each fire hydrant in CSD district for flow rate, usage and map of additional nearby hydrants for First Responder usage.
- hold annual meeting with First Responders to ensure all are familiar with availability and location of fire hydrants, gate codes, community topography.
- continue Forest Management 8 zone mapping which will identify areas for remediation and help map out timing to best implement fuel reduction based on projected finances available.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: There is a 5 year Plan that identifies work and upgrades on water and well systems-total dollars identified is $6,077,936.98. CSD Board Meetings where Directors will vote on projects to be first acted upon based upon both ranking of probability hazard and dollars available vs. to be set aside from CSD fees to community.

Responsible Office/Partners: Gold Mountain CSD

Benefits (Losses Avoided): Infrastructures such as stable water tanks, potable well systems will allow CSD to perform its role to supply water and septic to community. There are no other options for Nakoma Community for water or septic access other than GMCSD

Potential Funding (Local Budgets, Grant Funds, etc.): As of this time, the only funding is through CSD fees to community which does not cover costs for action. Grant funds will be identified and sought.

Timeline: 5 year plan starting in 2025

Project Priority (High, Medium, Low): High