Annex L Northstar Community Services District and Fire Department

L.1 Introduction

This Annex details the hazard mitigation planning elements specific to Northstar Community Services District and Fire Department (NCSD & FD&FD or District), a previously participating jurisdiction to the 2016 Placer 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 additional information specific to NCSD & FD, with a focus on providing additional details on the risk assessment and mitigation strategy for this District.

L.2 Planning Process

As described above, the District followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Placer 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 L-1. Additional details on plan participation and District representatives are included in Appendix A.

Table L-1 NCSD & FD – Planning Team

Name	Position/Title	How Participated
Eric Martin	District Engineer	Plan Contributor
Joe Barron	Forester	Plan Contributor
Jason Gibeaut	Division Chief	Plan Contributor
Sean Bailey	Fire Chief	Plan Contributor
Jeff Botto	Fire Engineer	Plan Organizer

Coordination with other community planning efforts is paramount to the successful implementation of this LHMP Update. This section provides information on how the District integrated the previously approved 2016 Plan into existing planning mechanisms and programs. Specifically, the District incorporated into or implemented the 2016 LHMP through other plans and programs shown in Table L-2.

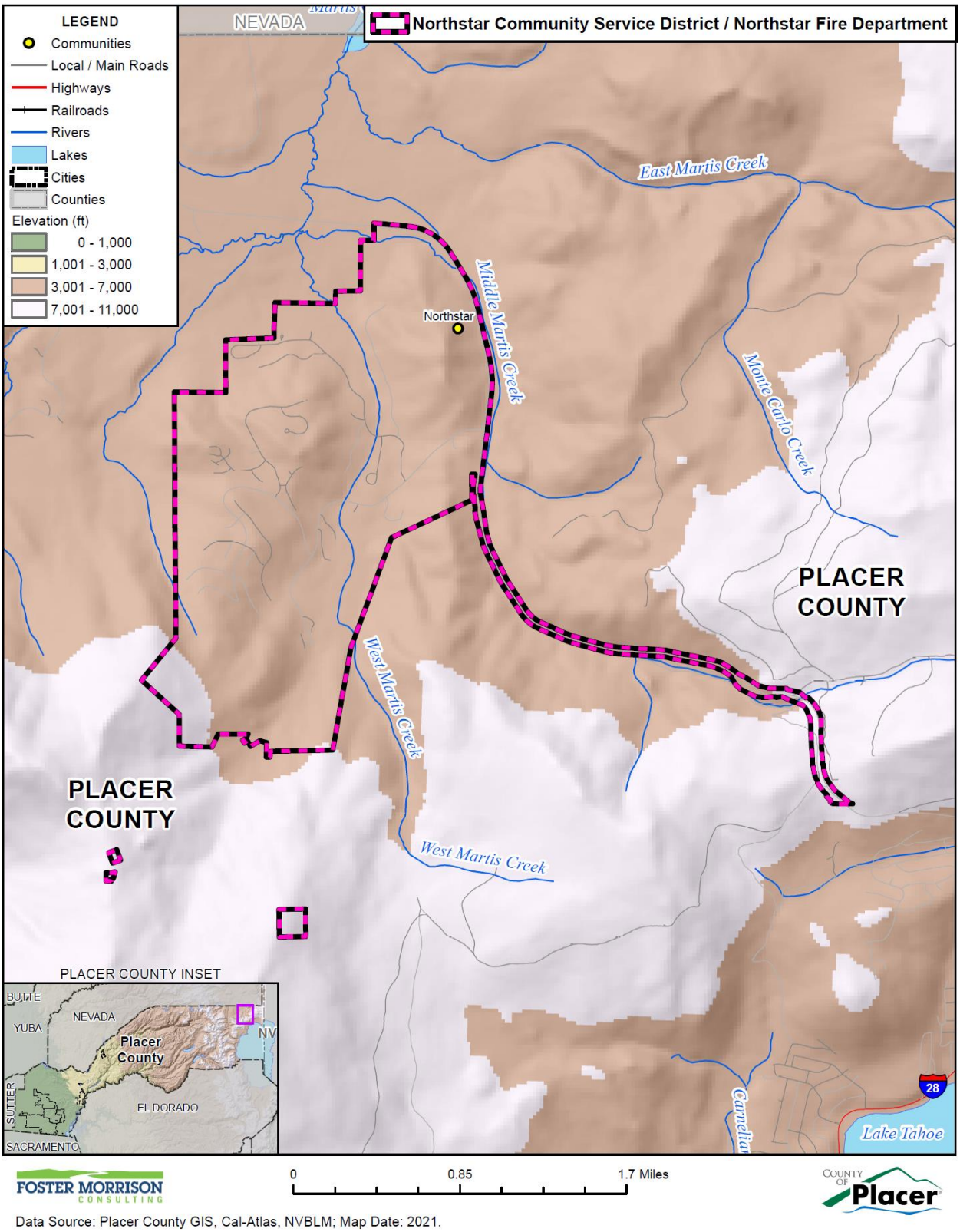
Table L-2 2016 LHMP Incorporation

Planning Mechanism 2016 LHMP Was Incorporated/Implemented In.	Details: How was it incorporated?
N/A	No related planning was done by the District since 2016.

L.3 District Profile

The District profile for the NCSD & FD is detailed in the following sections. Figure L-1 displays a map and the location of the District within Placer County.

Figure L-1 NCSD & FD



Data Source: Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

L.3.1. Overview and Background

In 1972, the Northstar Fire Department was formed as a Placer County Services Area governed by the Placer County Board of Supervisors. The Northstar Community Services District (NCSD & FD) was founded in 1990 under Government Code 61600 as a local government entity to serve the Northstar region with governmental services. The District currently provides water, sewer collection, solid waste management, recycling services, fire protection, fuels management, snow removal, road surface maintenance, and trail construction and maintenance. These services are supported by property taxes, the Measure E Parcel Tax, and water, sewer and solid waste user fees.

In the fall of 2015, after six years of operating the adjacent water system through a contract with Placer County Water Agency, the District acquired full ownership and operations of the Martis Valley Water System serving Lahontan, Martis Camp, Schaffer's Mill, and Hopkins Village. The District looks forward to continuing the highest level of service as we experience continued growth in our service area.

The NCSD & FD is governed by a five-person, elected Board of Directors composed of registered voters from the communities served by the District. The role of the Board of Directors is to provide responsible leadership by determining District policy while day-to-day operations are overseen by a board-appointed General Manager.

L.4 Hazard Identification

NCSD & FD identified the hazards that affect the District and summarized their location, extent, frequency of occurrence, potential magnitude, and significance specific to District (see Table L-3).

Table L-3 NCSD & FD—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Agriculture Pests and Diseases	Limited	Unlikely	Negligible	Low	Medium
Avalanche	Significant	Unlikely	Negligible	Low	Medium
Climate Change	–	–	–	–	–
Dam Failure	Limited	Unlikely	Limited	Medium	Medium
Drought & Water Shortage	Extensive	Occasional	Negligible	Low	High
Earthquake	Extensive	Occasional	Limited	Medium	Low
Floods: 1%/0.2% annual chance	Significant	Occasional	Negligible	Low	Medium
Floods: Localized Stormwater	Significant	Occasional	Negligible	Low	Medium
Landslides, Mudslides, and Debris Flows	Limited	Unlikely	Negligible	Low	Medium
Levee Failure					Medium
Pandemic	Extensive	Occasional	Critical	Medium	Medium
Seiche					Medium
Severe Weather: Extreme Heat	Extensive	Unlikely	Negligible	Low	High
Severe Weather: Freeze and Snow	Extensive	Highly-likely	Negligible	Medium	Medium
Severe Weather: Heavy Rains and Storms	Extensive	Occasional	Negligible	Low	Medium
Severe Weather: High Winds and Tornadoes	–	–	–	–	Low
Tree Mortality	Significant	Highly Likely	Negligible	Medium	High
Wildfire	Extensive	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

L.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile the District's hazards and assess the District's vulnerability separate from that of the Placer County Planning Area as a whole, which has already been assessed in Section 4.3 Hazard Profiles and Vulnerability Assessment in the Base Plan. The hazard profiles in the Base Plan discuss overall impacts to the Placer County Planning Area and describes the hazard problem description, hazard location and extent, magnitude/severity, previous occurrences of hazard events and the likelihood of future occurrences. Hazard profile information specific to the District is included in this Annex. This vulnerability assessment analyzes the property and other assets at risk to hazards ranked of medium or high significance specific to the District. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the Base Plan.

L.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section L.5.3, includes a hazard profile/problem description as to how each medium or high significant hazard (as shown in Table L-3) affects the District and includes information on past hazard occurrences and the likelihood of future hazard occurrence. The intent of this section is to provide jurisdictional specific information on hazards and further describes how the hazards and risks differ across the Placer County Planning Area.

L.5.2. Vulnerability Assessment and Assets at Risk

This section identifies the District's total assets at risk, including values at risk, populations at risk, critical facilities and infrastructure, natural resources, and historic and cultural resources. Growth and development trends are also presented for the District. This data is not hazard specific, but is representative of total assets at risk within the District.

Assets at Risk and Critical Facilities

This section considers the NCSD & FD's assets at risk, with a focus on key District assets such as critical facilities, 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.***

This definition is further refined by separating out three classes of critical facilities:

> ***Class 1 facilities include those facilities that contribute to command, control, communications and computer capabilities associated with managing an incident from initial response through recovery.***

Class 2 facilities include those facilities that house Emergency Services capabilities.

Class 3 facilities are those facilities that enable key utilities and can be used as evacuation centers/shelters/mass prophylaxis sites, etc.

Additional information on the three classes of critical facilities is described further in Section 4.3.1 of the Base Plan.

Table L-4 lists critical facilities and other District assets identified by the District Planning Team as important to protect in the event of a disaster. NCSD & FD's physical assets, valued at over $38 million, consist of the buildings and infrastructure to support the District's operations.

Table L-4 NCSD & FD Critical Facilities, Infrastructure, and Other District Assets

Name of Asset	Facility Type	Address	Replacement Value	Hazard Info
267 Lift Station	Sewer Pump Facility	70 Hwy 267	$1,750,000	Earthquake, Severe Weather: Freeze and Snow
Administrative/Engineering Office	Office Building	900 Northstar Dr	$4,629,535	Earthquake, Severe Weather: Freeze and Snow, Wildfire, Pandemic
Former Administrative Office	Office Building	908 Northstar Dr	$1,780,260	Earthquake, Severe Weather: Freeze and Snow, Wildfire, Pandemic
Tank #1/Res F	903 & 900 Road	903 & 900 Road	$488,988	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Corp Yard Shop Building	Maintenance/Storage	51 Trimont Ln	$1,630,864	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Fuel Enclosure	Fueling	51 Trimont Ln	$157,830	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Tank D Pump Station	Water Pump Facility	Big Springs	$1,210,009	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Tank #2/Res F	Water Storage	903 & 900 Road	$670,779	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Corp Yard Equipment Bays	Equipment Storage	51-C Trimont	$494,517	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Tank #2/Res C	Water Storage	Coyote Fork	$1,735,561	Earthquake, Severe Weather: Freeze and Snow, Wildfire

Name of Asset	Facility Type	Address	Replacement Value	Hazard Info
Northstar Drive Pump Station	Water Pump Facility	914 Northstar Dr	$1,210,009	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Tank #2/Res D	Water Storage	Big Springs	$488,988	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Tank #1/Res C	Water Storage	Coyote Fork	$1,735,561	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Corp Yard Sand Barn	Storage	51 Trimont Ln	$978,512	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Corp Yard Office	Office	49 Trimont Ln	$1,183,691	Earthquake, Severe Weather: Freeze and Snow, Wildfire, Pandemic
TH-2 Well Building	Domestic Well	5999 North Shore Blvd	$1,512,500	Earthquake, Severe Weather: Freeze and Snow
Tank #1/Res D	Water Storage	Big Springs	$488,988	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Tank E	Water Storage	Highlands View	$670,779	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Water Treatment Plant	Water Treatment	9150 Highlands View	$4,173,000	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Indian Hills Lift Station	Sewer Pump Facility	Indian Hills	$745,000	Earthquake, Severe Weather: Freeze and Snow, Wildfire
TH-1 Well Building	Domestic Well	5959 Northshore Blvd	$900,000	Earthquake, Severe Weather: Freeze and Snow
Retreat Lift Station	Sewer Pump Facility	Cross Cut Ct	$530,000	Earthquake, Severe Weather: Freeze and Snow, Wildfire
Station 31	Fire Station	910 Northstar Rd	$4,500,000	Earthquake, Severe Weather: Freeze and Snow, Wildfire, Pandemic
Station 32	Fire Station	9100 Highlands View	$4,500,000	Earthquake, Severe Weather: Freeze and Snow, Wildfire, Pandemic
Total			**$38,165,371.00**	

Source: NCSD & FD

Populations Served

Also potentially at risk should the District be affected by natural hazard events are the populations served by the District. NCSD & FD serves an estimated population of 3,053 residents. In addition to permanent residents, NCSD & FD serves a substantial number of seasonal and part-time residents, hotel guest, short-term rentals, and day visitors. Seasonal influxes in population can vary by up to 20,000 persons.

Natural Resources

NCSD & FD has a variety of natural resources of value to the District. These natural resources parallel that of Placer County as a whole. Information can be found in Section 4.3.1 of the Base Plan.

Historic and Cultural Resources

NCSD & FD has a variety of historic and cultural resources of value to the District. These historic and cultural resources parallel that of Placer County as a whole. Information can be found in Section 4.3.1 of the Base Plan.

Growth and Development Trends

General growth in the District parallels that of the Placer County Planning Area as a whole. Information can be found in Section 4.3.1 of the Base Plan.

The District noted that Mountainside Builders, the main developer at Northstar is not taking on much at the moment. 5-10 new residences are expected in 2021. The District's Zone 4 Water System on the other hand is seeing increased activity in Martis Camp, Lahontan, and Schaffer's Mill.

Development since 2016

No District facilities have been constructed since 2016. The Administration Building was the last facility constructed and that was 2015. The District continues to have preventative maintenance on all facilities, but no major overhauls since 2016. As such, a change in vulnerability is unlikely.

Developers are currently building out the Highlands II Subdivision. 10G has an expected completion date of 2021. The developer has current entitlements that will continue development for the next 20 years and additional properties have been identified for future entitlements.

Future Development

The District has no control over future development in areas the District services. Future development in these areas parallels that of the Placer County Planning Area. More general information on growth and development in Placer County as a whole can be found in "Growth and Development Trends" in Section 4.3.1 Placer County Vulnerability and Assets at Risk of the Base Plan.

L.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table L-3 as high or medium significance hazards. Impacts of past events and vulnerability of the District to specific hazards are further discussed below (see Section 4.1 Hazard Identification in the Base Plan for more detailed information about these hazards and their impacts on the Placer County Planning Area). Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.3 of the Base Plan.

An estimate of the vulnerability of the District to each identified priority hazard, in addition to the estimate of likelihood of future occurrence, is provided in each of the hazard-specific sections that follow. 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.

Depending on the hazard and availability of data for analysis, this hazard specific vulnerability assessment also includes information on values at risk, critical facilities and infrastructure, populations at risk, and future development.

Dam Failure

Likelihood of Future Occurrence–Unlikely
Vulnerability–Medium

Hazard Profile and Problem Description

Dams are manmade structures built for a variety of uses including flood protection, power generation, agriculture, water supply, and recreation. When dams are constructed for flood protection, they are usually engineered to withstand a flood with a computed risk of occurrence. For example, a dam may be designed to contain a flood at a location on a stream that has a certain probability of occurring in any one year. If prolonged periods of rainfall and flooding occur that exceed the design requirements, that structure may be overtopped or fail. Overtopping is the primary cause of earthen dam failure in the United States.

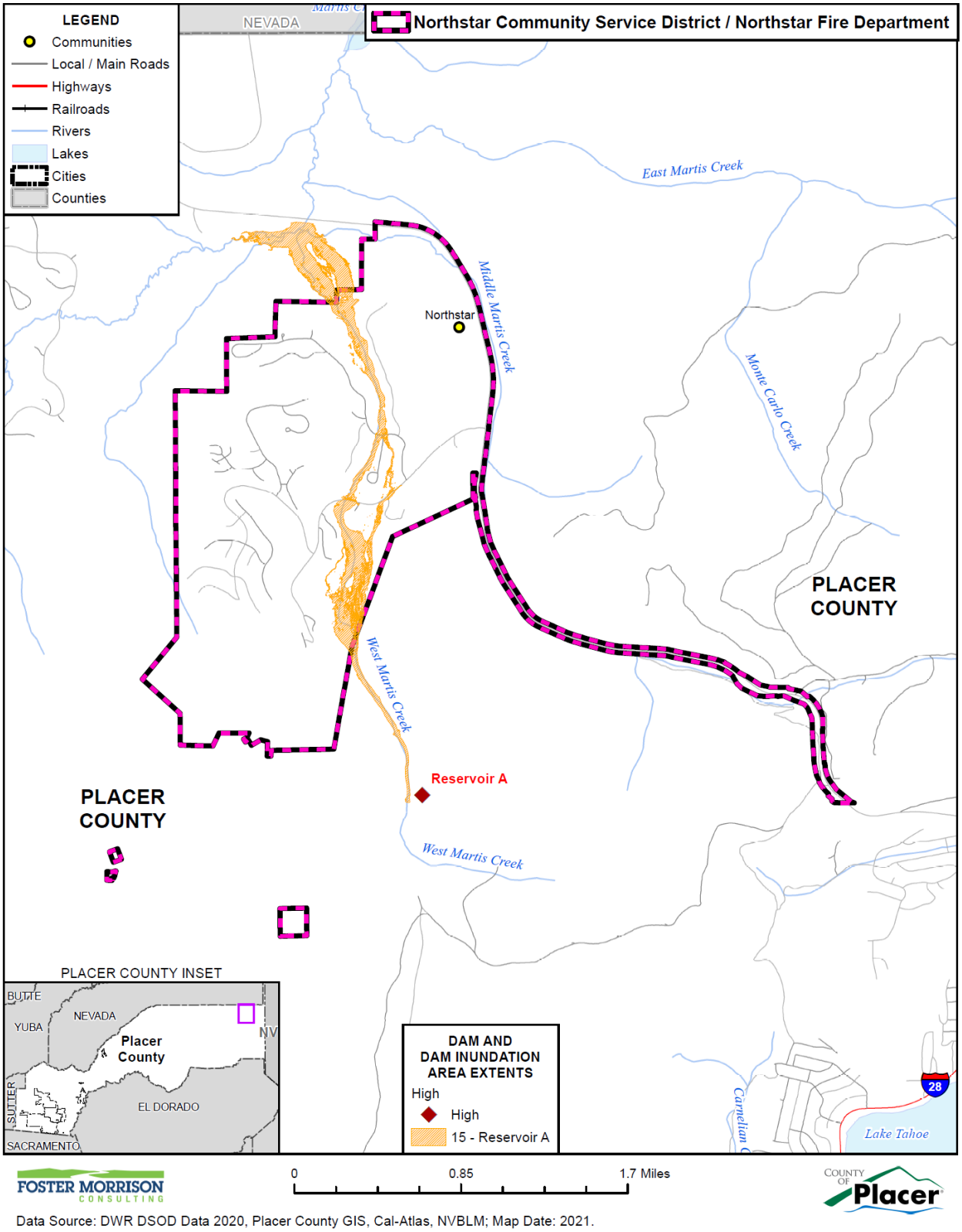
Location and Extent

Dam failure is a natural disaster from two perspectives. First, the inundation from released waters resulting from dam failure is related to naturally occurring floodwaters. Second, a total dam failure would most probably happen as a consequence of the natural disaster triggering the event, such as an earthquake. There is no scale with which to measure dam failure. However, Cal DWR Division of Safety of Dams (DOSD) assigns hazard ratings to dams within the State that provides information on the potential impact should a dam fail. The following two factors are considered when assigning hazard ratings: existing land use and land use controls (zoning) downstream of the dam. Dams are classified in four categories that identify the potential hazard to life and property: Low, Significant, High, and Extremely High. These were discussed in more detail in Section 4.3.9 of the Base Plan.

While a dam may fill slowly with runoff from winter storms, a dam break has a very quick speed of onset. The duration of dam failure is generally not long – only as long as it takes to empty the reservoir of water the dam held back. The District would be affected for as long as the flood waters from the dam failure took to drain downstream.

Dams inside the County that can affect the District can be seen on Figure L-2. The dam in question here is the Reservoir A dam that is owned by the NCSD & FD&FD.

Figure L-2 NCSD & FD – Dam Inundation Areas from Dams Inside the County



Data Source: DWR DSOD Data 2020, Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

The Reservoir A Dam (National ID No. CA01112) is owned by the Northstar Community Services District and has a 'high' hazard classification. The dam is primarily used for water storage and has no critical appurtenant structures. It is located on the north side of Reservoir A. The dam and reservoir are about 6.2 miles southeast of the town of Truckee in Placer county. The height of the earthen dam is 93 ft., while the length is 516 ft. There is a spillway on the north west corner of the dam. The reservoir capacity is 180 acre-feet. There are no upstream or downstream dams within the study area. Jurisdictions affected include the local county road maintenance department, local water purveyor, local county telephone, and PG&E.

Past Occurrences

There has been no federal or state disaster declarations for dam failure in the County. The District noted no other dam failure occurrences that have affected the District.

Vulnerability to and Impacts from Dam Failure

Dam failure flooding would vary by community depending on which dam fails and the nature and extent of the dam failure and associated flooding. Impacts to the District from a dam failure flood could include loss of life and injury, flooding and damage to property and structures, damage to critical facilities and infrastructure, loss of natural resources, and all other flood related impacts. Additionally, mass evacuations and associated economic losses can also be significant.

During dam failure, flow will travel north through West Martis Creek and it will inundate Highlands View Road, the first infrastructure impacted, which has a maximum conveyance of approximately 1,800 CFS. Northstar Drive and Basque Drive are also inundated before reaching State Route 267 (SR 267). Basque Drive has a corrugated metal pipe culvert that can only handle a small portion of peak flow; flood flows will overtop Basque Drive. From Basque Drive, flood flows will travel north through the Northstar Golf Course and the enter the Martis Creek Trail and Wildlife Area. Because of the large storage capacity of the Martis Creek Wildlife Area, only a peak flow of 2,360 cfs will pass through Martis Creek Lake and SR267 will not be overtopped.

Assets at Risk

No District assets (from Table L-4) are at risk from this hazard.

Earthquake

Likelihood of Future Occurrence–Occasional
Vulnerability–Medium

Hazard Profile and Problem Description

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

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 4.3.11 of the Base Plan. Placer County itself is traversed by a series of northwest-trending faults, called the Foothill Fault Zone, that are related to the Sierra Nevada uplift. This was the source of Oroville's 1975 earthquake (and an earlier event in the 1940s). Subsequent research of these events led to the identification and naming of the zone and questions about the siting and design of the proposed Auburn Dam. Earthquakes on nearby fault segments in the zone could be the source of ground shaking in the Placer County Planning Area.

Although portions of western and eastern Placer County are located in a seismically active region, no known faults actually go through any of the cities or towns. However, the Bear Mountain and the Melones faults are situated approximately three to four miles west and east of the City of Auburn respectively. Earthquakes on these two faults would have the greatest potential for damaging buildings in Auburn, especially the unreinforced masonry structures in the older part of the city and homes built before 1960 without adequate anchorage of framing and foundations. Similar lower magnitude but nearby earthquakes are capable of producing comparable damages in other Placer County communities.

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. Seismic shaking maps for the area show Placer County and the District fall within a moderate shake risk.

Past Occurrences

There have be no past federal or state disaster declarations from this hazard. The District noted no past occurrences of earthquakes or that affected the District in any meaningful way.

Vulnerability to and Impacts from Earthquake

The combination of plate tectonics and associated California coastal mountain range building geology generates earthquake as a result of the periodic release of tectonic stresses. Placer County lies in the center of the North American and Pacific tectonic plate activity. There have been earthquakes as a result of this activity in the historic past, and there will continue to be earthquakes in the future of the California north coastal mountain region.

Fault ruptures itself contributes very little to damage unless the structure or system element crosses the active fault; however, liquefaction can occur further from the source of the earthquake. In general, newer

construction is more earthquake resistant than older construction due to enforcement of improved building codes. Manufactured buildings can be very susceptible to damage because their foundation systems are rarely braced for earthquake motions. Locally generated earthquake motions and associated liquefaction, even from very moderate events, tend to be more damaging to smaller buildings, especially those constructed of unreinforced masonry (URM) and soft story buildings. The District noted that there are no URM or soft story buildings in the District.

The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The NCSD & FD is within the less hazardous Zone 3.

Impacts from earthquake in the District will vary depending on the fault that the earthquake occurs on, the depth of the earthquake strike, and the intensity of shaking. Large events could cause damages to infrastructure, critical facilities, residential and commercial properties, and possible injuries or loss of life.

The District has never suffered a severe earthquake. However, if an earthquake were severe enough, there is potential to cause widespread destruction. This destruction would be in the form of damage to businesses, private residences, and critical infrastructure including District owned facilities that provide essential services. Since the community of Northstar is a resort community, the shutdown to businesses for long periods due to an earthquake would cause negative impacts to the economy.

Assets at Risk

All of the District assets (from Table L-4) are at risk from this hazard.

Pandemic

Likelihood of Future Occurrence–Occasional
Vulnerability–Medium

Hazard Profile and Problem Description

According to the World Health Organization (WHO), a disease epidemic occurs when there are more cases of that disease than normal. A pandemic is a worldwide epidemic of a disease. A pandemic may occur when a new virus appears against which the human population has no immunity.

A pandemic occurs when a new virus emerges for which people have little or no immunity, and for which there is no vaccine. This disease spreads easily person-to-person, causes serious illness, and can sweep across the country and around the world in a very short time. The U.S. Centers for Disease Control (CDC) and Prevention has been working closely with other countries and the WHO to strengthen systems to detect outbreaks of that might cause a pandemic and to assist with pandemic planning and preparation. An especially severe pandemic could lead to high levels of illness, death, social disruption, and economic loss.

Location and Extent

During a pandemic, the whole of the District, County, and surrounding region is at risk, as pandemic is a regional, national, and international event. The speed of onset of pandemic is usually short, while the duration is variable, but can last for more than a year as shown in the 1918/1919 Spanish Flu. There is no scientific scale to measure the magnitude of pandemic. Pandemics are usually measured in numbers affected by the pandemic, and by number who die from complications from the pandemic.

Past Occurrences

There has been one state and federal disaster declaration due to pandemic, as shown in Table L-5.

Table L-5 Placer County – State and Federal Pandemic Disaster Declarations 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Pandemic	1	2020	1	2020

Source: Cal OES, FEMA

The 20th century saw three outbreaks of pandemic.

- The 1918-1919 Influenza Pandemic (H1N1)
- The February 1957-1958 Influenza Pandemic (H2N2)
- The 1968 Influenza Pandemic (H3N2)

To date, the 21st century has seen two acknowledged pandemics.

- 2009 Swine Flu (H1N1)
- 2019/2020 COVID 19

In response to the initial outbreak of COVID-19 and subsequent shelter in place orders, District management quickly developed protocols to avoid the spread of disease. Due to the essential nature of the work the District performs, Safety personnel were required to continue to report for duty in person.

Operations staff worked on an adapted, rotating schedule until guidelines were in place to prevent the spread of COVID-19 and protect the health and safety of employees. Administrative staff moved to work from home full time, when possible. Administrative staff with an in-office requirement worked in rotating shifts. All in office staff has continued to adhere to cleaning, physical distancing and hand-washing guidelines.

In order to accommodate the shift from in-office to work from home, new in-house policies and procedures were quickly developed and implemented to allow the work processes to continue in an efficient manner and without disruption.

District Board meetings were adapted to a virtual environment via Zoom and the office was and remains closed to the public.

The evolving nature of the pandemic demanded flexibility and adaptability of staff. Pandemic-related policies have been implemented and updated on a continual basis since the onset of COVID-19 and in accordance with federal, state and local laws. This required dedication and attention to several authorities for information to properly communicate, inform and educate staff.

The rate of infection within the District was negligible and there have been no staff to staff transmissions as of April 2021. The fiscal impacts on the District have been insignificant. The District did not reduce staff or pay throughout the pandemic.

Vulnerability to and Impacts from Pandemic

Pandemics have and will continue to have impacts on human health in the region. A pandemic occurs when a new virus emerges for which there is little or no immunity in the human population; the virus causes serious illness and spreads easily from person-to-person worldwide. There are several strategies that public health officials can use to combat a pandemic. Constant surveillance regarding the current pandemic, use of infection control techniques, and administration of vaccines once they become available. Citizens can help prevent the spread of a pandemic by staying home, or "self-quarantining," if they suspect they are infected. Pandemic does not affect the buildings, critical facilities, and infrastructure in the District. Pandemic can have varying levels of impact to the citizens of the District and greater County, depending on the nature of the pandemic.

Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines. Hospitalizations and deaths can occur, especially to the elderly or those with pre-existing underlying conditions. As seen with Covid-19, multiple businesses were forced to close temporarily (some permanently), and unemployment rose significantly. Supply chains for food and essentials can be interrupted.

Assets at Risk

Pandemics do not affect District facilities, but can affect District personnel who operate District facilities.

Severe Weather: Freeze and Snow

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

According to the NWS and the WRCC, winter snowstorms can include heavy snow, ice, and blizzard conditions. Heavy snow can immobilize a region, stranding commuters, stopping the flow of supplies, and disrupting emergency and medical services. Accumulations of snow can collapse roofs and knock down trees and power lines. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost. The cost of snow removal, damage repair, and business losses can have a tremendous impact on cities and towns.

Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days until the damage can be repaired. Power outages can have a significant impact on communities, especially critical facilities such as public utilities. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians.

Some winter storms are accompanied by strong winds, creating blizzard conditions with blinding wind-driven snow, severe drifting, and dangerous wind chills. Strong winds accompanying these intense storms and cold fronts can knock down trees, utility poles, and power lines. Blowing snow can reduce visibility to only a few feet in areas where there are no trees or buildings. Serious vehicle accidents with injuries and deaths can result. Freezing temperatures can cause significant damage to the agricultural industry.

Location and Extent

Freeze and snow are regional issues, meaning the entire District is at risk to cold weather and freeze events. While there is no scale (i.e. Richter, Enhanced Fujita) to measure the effects of freeze, the WRCC reports that in a typical year, minimum temperatures fall below 32°F on 209.0 days with 0.4 days falling below 0°F in eastern Placer County. Snowfall is measured in depths, and the WRCC reports that average snowfall on the eastern side of the County is 190.7 inches. Freeze and snow have a slow onset and can 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. Snow event can last for hours or days, and the snow stays all winter in the eastern portion of the County, often with significant snow depths.

Past Occurrences

There has been no federal and one state disaster declarations in the County for freeze and snow, as shown on Table L-6.

Table L-6 Placer County – State and Federal Disaster Declarations from Freeze and Snow 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Freeze	1	1972	0	–

Source: Cal OES, FEMA

The District noted that cold and freeze is a regional phenomenon; events that affected the County also affected the District. Those past occurrences were shown in the Base Plan in Section 4.3.3.

Effects to the District from cold and freeze are limited as infrastructure and facilities were constructed with severe mountain environment in mind. Sustained winter power outages of several days have been experienced in the past due to storm activity. A Critical Power Interruption Emergency Response Plan was drafted in February 2020 to better identify and address backup power needs at facilities during extreme weather events.

Vulnerability to and Impacts from Severe Weather: Freeze and Snow

The District experiences temperatures below 32 degrees during the winter months. Freeze can cause injury or loss of life to residents of the District. While it is rare for buildings to be affected directly by freeze, damages to pipes that feed building can be damaged during periods of extreme cold. Freeze and snow can occasionally be accompanied by high winds, which can cause downed trees and power lines, power outages, accidents, and road closures. Transportation networks, communications, and utilities infrastructure are the most vulnerable physical assets to impacts of severe winter weather in the County.

Because the District is located within the Sierras freeze and snow is a normal occurrence. Over the years the District, its property owners and business owners have taken steps as part of normal everyday life to ease the potentially harmful effects of freeze and snow.

Freeze and Snow and Power Shortage/Power Failure

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 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 4.3.2 of the Base Plan.

Assets at Risk

All of the District assets (from Table L-4) are at risk from this hazard. The Critical Power Interruption Emergency Response Plan adequately addresses the hazard.

Tree Mortality

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

One of the many vulnerabilities of drought in Placer County is the increased risk of widespread tree mortality events that pose hazards to people, homes, and community infrastructure, create a regional economic burden to mitigate, and contribute to future fuel loads in forests surrounding communities. During extended drought, tree mortality is driven by a build-up in endemic bark beetle populations and exacerbated by latent populations of a suite of native insects and disease. Non-native forest pests (insects and/or pathogens) can also contribute to tree mortality events.

Location and Extent

Onset of tree mortality events can be relatively fast; however conditions – such as high stand densities – that lead to tree mortality accumulate slowly over time. Duration of tree mortality is lengthy, as once the tree dies, it remains in place until removed by human activity, wildfire, or breakdown of the wood by nature. Many areas in Placer County have seen increases in tree mortality. The County has mapped these areas, and that map was shown in Section 4.3.18 of the Base Plan. Using a color legend, the map provided by CAL FIRE shows a scale of:

- Deep burgundy depicting areas with more than 40 dead trees per acre
- Red depicting 15 - 40 dead trees per acre
- Orange depicting 5 -15 dead trees per acre
- Yellow depicting 5 or less dead trees per acre

In the past decade, mortality has increased in the eastern portion of Placer County. During the 2012-2018 drought, the state of California Tree Mortality Task force designated multiple Tier 1 and Tier 2 High Hazard Zones where tree morality posed an elevated risk to human health, properties, and resource values. A number of Placer County areas were designated during this event and the majority of Placer County watersheds were designated as Tier 2 high hazard zones because of the significant levels of tree mortality, along with numerous Tier 1 High hazard "hot spots". A map of these areas was shown in in Section 4.3.18 of the Base Plan.

Past Occurrences

There have been no state or federal disasters in the County related directly to tree mortality, though it has most likely contributed to the intensity of past wildfires in the County. Those events are shown in the Past Occurrences section of Wildfire below. In 2015, then-Governor Edmund G. Brown Jr. proclaimed a state of emergency due to the extreme hazard of the dead and dying trees. Following the proclamation, 10 counties were determined to be most affected, which included Placer County. Placer County proclaimed a local emergency due to tree mortality conditions on Dec. 8, 2015. The District noted that there has been no direct property damage, there still remains the potential from a falling tree on residential, commercial, or other infrastructure. There was also the loss of 1-12 trees per acre. These trees (Conifers) can be considered merchantable timber for residential and commercial properties. Loss of potential revenue and aesthetic values to the community. Funding has been obtained by the Northstar Fire Department through federal, State of California, Placer County and private funding to slow to tree mortality to a manageable level.

Vulnerability to and Impacts from Tree Mortality

Placer County is unique in that many residential and business areas of the community are in the wildland urban interface/intermix with the forest. Trees in these interface/intermix areas are particularly vulnerable to insect and/or drought driven mortality because of the additional stressors that urban environments impose on trees (i.e. soil compaction, altered hydrology, physical damage, heat islands etc.). This exacerbates the occurrence of tree mortality within the populated settings of the County.

Dead trees are a hazard to the general public and forest visitors, but the risk of injury, death, property damage or infrastructure damages varies depending how the hazard interacts with potential targets. Dead trees within the wildland urban intermix or wildland urban interface or urban areas therefore pose a greater risk to due to their proximity to residents, businesses, and road, power, and communication infrastructure.

Dead trees may fall or deteriorate in their entirety or in part – either mechanism has the potential for injury, death, or inflicting severe damage to targets. As the time since tree mortality increases, so does the deterioration of wood and the potential for tree failure.

The District noted that tree mortality beyond a manageable level will occur until the following is achieved: 1) Stand density levels are at a historic level; 2) Species ratio is brought back to its historical component; and 3) Occurrence increase is dependent on climactic conditions. For example, consecutive drought years increases mortality. Also, tree mortality is dependent on existing species present. By manipulating the forest back to a pine/fir mix will help rectify the issue.

Assets at Risk

None of the District assets (from Table L-4) are at direct risk from this hazard.

Wildfire

Likelihood of Future Occurrence–Likely
Vulnerability–High

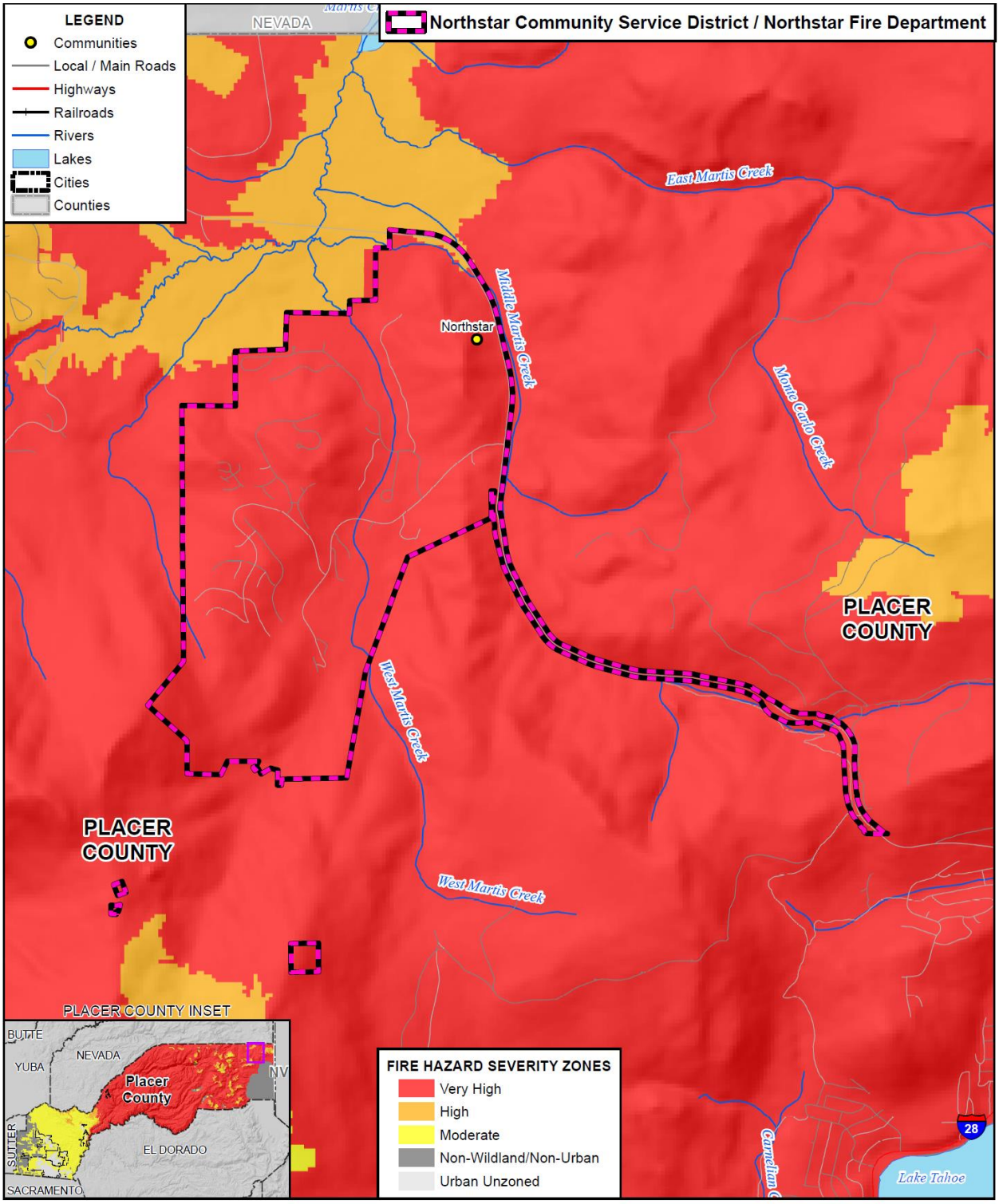
Hazard Profile and Problem Description

Wildland fire and the risk of a conflagration is an ongoing concern for the NCSD & FD. Throughout California, communities are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas and subsequent fire control practices have affected the natural cycle of the ecosystem. Wildland fires affect grass, forest, and brushlands, as well as any structures located within them. 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. While wildfire risk has predominantly been associated with more remote forested areas and wildland urban interface (WUI) areas, significant wildfires can also occur in more populated, urban areas.

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 4.3.19 of the Base Plan, wildfire maps for the NCSD & FD were created. Figure L-3 shows the CAL FIRE FHSZ in the District. As shown on the maps, FHSZs within the District range from High to Very High.

Figure L-3 NCSD & FD – Fire Hazard Severity Zones



Data Source: Cal-Fire (Draft 09/2007 - c31fhszl06_1, Adopted 11/2007 - fhszs06_3_31, Recommended 12/2008 - c31fhszl06_3), Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

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.

Past Occurrences

There has been five state and six federal disaster declarations for Placer County from fire. These can be seen in Table L-7.

Table L-7 Placer County – State and Federal Disaster Declarations Summary 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Fire	5	1961, 1965, 1973, 1987, 2010	6	2002, 2004, 2008, 2009, 2014 (twice)

Source: Cal OES, FEMA

The District Forester's records regarding wildland fire impacts date back to 1967. To his knowledge none of the fire's listed above created a major impact nor damages to the District and neighboring communities.

Vulnerability to and Impacts from Wildfire

Risk and vulnerability to the Placer County Planning Area and the District from wildfire is of significant concern, with some areas of the Planning Area being at greater risk than others as described further in this section. High fuel loads in the Planning Area, combined with a large built environment and population, create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in frequent and potentially catastrophic fires. During the nearly year around fire season, the dry vegetation and hot and sometimes windy weather results in an increase in the number of ignitions. Any fire, once ignited, has the potential to quickly become a large, out-of-control fire. As development continues throughout the County and the District, especially in these interface areas, the risk and vulnerability to wildfires will likely increase.

Potential impacts from wildfire include loss of life and injuries; damage to structures and other improvements, natural and cultural resources, croplands, and loss of recreational opportunities. 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.

Although the physical damages and casualties arising from large 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 to initiate PSPSs 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. More information on power shortage and failure can be found in the Severe Weather: Extreme Heat Section above, as well as in Section 4.3.2 of the Base Plan. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

The District is located in the Sierra Nevada mountain range at the east end of Placer County. The community of Northstar is in a classic Wildland/Urban Interface area (WUI), which adds responsibility and demands to both structural and wildland firefighting. If the District were to experience a major wildland fire the limited emergency response resources would be severely taxed. Northstar is a popular year-round visitor destination, which causes the potential for traffic congestion and could prevent firefighting equipment or medical-emergency personnel from responding in a timely manner. Traffic congestion at peak times of summer could also impact the ability of residents to evacuate in the event of a large scale wildfire.

Public Safety Power Shutoff (PSPS)

A new intentional disruption type of power shortage/failure event has recently occurred in California. In recent years, several wildfires have started 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 energy companies (including PG&E and Liberty Utilities), at the direction of the California Public Utilities Commission (CPUC), are coordinating to prepare all Californians for the threat of wildfires and power outages during times of extreme weather. To help protect customers and communities during extreme weather events, electric power may be shut off for public safety in an effort to prevent a wildfire. This is called a PSPS. More information on PSPS criteria can be found in Section 4.3.2 of the Base Plan.

Assets at Risk

All facilities from Table L-4 except the TH-1 and TH-2 wells are at risk from this hazard.

L.6 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.

L.6.1. Regulatory Mitigation Capabilities

Table L-8 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 NCSD & FD.

Table L-8 NCSD & FD Regulatory Mitigation Capabilities

Plans	Y/N Year	Does the plan/program address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan/General Plan	NA	Placer County Authority
Capital Improvements Plan	N/N 2011	Does not address hazard projects identified within the mitigation strategy.
Economic Development Plan	NA	Placer County Authority
Local Emergency Operations Plan	NA	Placer County Authority
Continuity of Operations Plan	Y/N	Currently in process of being developed.
Transportation Plan	NA	Placer County Authority
Stormwater Management Plan/Program	NA	Placer County Authority
Engineering Studies for Streams	NA	Watershed Council Authority
Community Wildfire Protection Plan	Y/Y 2015	Plan addresses hazards and includes mitigation strategy and actions.
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		
Building Code, Permitting, and Inspections	**Y/N**	**Are codes adequately enforced?**
Building Code	Y	Version/Year: 2013
Building Code Effectiveness Grading Schedule (BCEGS) Score	NA	Score:
Fire department ISO rating:		Rating: 3
Site plan review requirements	Y	Yes
Land Use Planning and Ordinances	**Y/N**	**Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?**
Zoning ordinance	NA	Placer County Authority
Subdivision ordinance	NA	Placer County Authority
Floodplain ordinance	NA	Placer County Authority
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Y	Only wildfire. Yes, it is an effective measure and adequately administered.
Flood insurance rate maps	NA	Placer County Authority
Elevation Certificates	NA	Placer County Authority
Acquisition of land for open space and public recreation uses	NA	Placer County Authority
Erosion or sediment control program	NA	Placer County Authority
Other		

How can these capabilities be expanded and improved to reduce risk?
Regulatory mitigation capabilities are effective in mitigation and loss prevention. Capability expansion and improvement is unnecessary at this time.

Source: NCSD & FD

As indicated above, the District, in conjunction with the County, has several programs, plans, policies, and codes and ordinances that guide hazard mitigation. Some of these are described in more detail below.

Reservoir A Emergency Action Plan (2021)

The purpose of the Reservoir A Dam Emergency Action Plan (EAP) is to reduce the risk of loss of human life or injury and to minimize property damage in the event of a potential or actual emergency situation associated with Reservoir A Dam. These situations include, but are not limited to dam instability, sizable earthquakes, extreme storm events, major spillway releases, overtopping of the dam, outlet system failure, vandalism or sabotage, spillway gate failures, and failure of the dam. This EAP defines the responsibilities and provides procedures to identify and effectively address unusual and unlikely conditions that may endanger the Reservoir A Dam and nearby areas in time to take mitigating actions and notify the appropriate emergency management officials.

Capital Replacement Plan (2018)

With approximately $191 million in assets, the District's water, sewer, solid waste, fire, fuels, snow removal, road maintenance and trails services are very asset intensive businesses. The infrastructure, facilities and equipment comprising these assets are critical in ensuring the delivery of quality service. Comprehensive management of assets is a key goal of the District, and is core to the mission of sustainable, long term delivery of services. Part of the District's asset management strategy is to develop a model forecasting the full lifecycle rehabilitation and replacement costs with a related funding program for its assets with the goal of ensuring consistent service in the most economical manner in balance with generational fairness.

The purpose of this Capital Replacement Plan (CRP), with supporting appendices, is to fully document the District's facilities, equipment and infrastructure capital replacement needs over a modelled period of 100 years, and to provide a detailed financial analysis for each of the District's service funds to assist in setting annual capital reserve account contribution goals.

The District has developed this CRP as a living document to set a foundation for fiscal stewardship. It is primarily derived from the District's GIS based asset management system with a wide array of industry standard metrics and engineering solutions providing the guiding methodology for the model output. This data was used in conjunction with District policies to develop specific funding programs for each service.

Northstar Community Wildfire Protection Plan, 2015 (Being updated in 2021)

The objective of this Community Wildfire Protection Plan (CWPP) is to reduce or eliminate the loss of life, property and resources caused by a wildfire in the Northstar community. This will be accomplished through public input, planning and forest management practices. The first line of defense against a catastrophic wildfire in Northstar is to prevent as many fires as possible from starting or, in the event of a fire, to keep

it as small as possible. The second line of defense is to enforce defensible space requirements around structures and to manage fuels in common and boundary areas by creating firebreaks, safe escape routes and promoting a healthy forest ecosystem. The CWPP puts goals and actions together to reduce wildfire risk to residents in the Northstar community.

Ordinance 26-09 – Wildland Fire Prevention and Defensible Space

Fires pose a serious threat to the preservation of the public peace, health and safety, and are extremely costly. Since fires ignore civil boundaries, it is necessary that cities, counties, special districts, state agencies, and federal agencies work together to minimize the threat of fires and maximize the ability to extinguish them quickly. Preventive measures are therefore needed to insure the preservation of the public peace, health, and safety.

The purpose of this Ordinance is to:

- Classify lands within the District in accordance with whether a high fire hazard is present so that District officials and others with similar wildland fire prevention and suppression responsibility are able to identify measures that will retard the rate of spread and reduce the potential intensity of uncontrolled fires that threaten to destroy natural resources, life or property.
- Require that the measures be implemented in order to accomplish the following:
- ✓ Set maintenance standards
- ✓ Define penalties for violation of this Ordinance

The District hereby specifically and expressly finds that regulations contained herein are reasonably necessary because of local climatic, geological and topographical conditions unique to the Northstar area and are further required to reduce the possibility of a fire originating within the District from spreading to the adjacent Lake Tahoe Basin, an area of national importance and significance.

Future Construction in Wildfire Zones

Due to potential wildfire hazard, developers must follow an established ordinance that dictates that all new construction must have certain "buffer" zones. For example, the developer must construct a 300' buffer zone (implementing fuels management operations) in and around development (both residential and commercial). Additionally, the developer must create a 5' non-combustible buffer zone around developed property.

Ordinance 35-19 is and updated version of the ordinance above. It will be included in the annex packet.

Critical Power Interruption Emergency Response Plan

The District's facilities and water and sewer systems are dependent on electrical power. Although all facilities have been designed to withstand the effects of short duration power losses, severe weather and Public Safety Power Shutoffs (PSPS) present a potential problem in that the power disruptions could last several days. This plan identifies all backup power systems for District facilities and provides considerations for keeping systems operational during extended outages.

L.6.2. Administrative/Technical Mitigation Capabilities

Table L-9 identifies the District department(s) responsible for activities related to mitigation and loss prevention in NCSD & FD.

Table L-9 NCSD & FD's Administrative and Technical Mitigation Capabilities

Administration	Y/N	Describe capability Is coordination effective?
Planning Commission	NA	Placer County
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	The maintenance of clearing drainage systems is the responsibility of Placer County. Northstar Community Services District works closely with Placer County to coordinate this effort.
Mutual aid agreements	Y	Northstar Fire Department is party to several mutual aid agreements.
Other		
Staff	**Y/N FT/PT**	**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official	NA	Placer County responsibility
Floodplain Administrator	NA	
Emergency Manager	NA	
Community Planner	NA	Placer County responsibility
Civil Engineer	Y FT	Staff is trained on regulation and mitigation. There is effective coordination between agencies and staff.
GIS Coordinator	Y FT	Staff is trained on regulation and mitigation. There is effective coordination between agencies and staff.
Other		
Technical		
Warning systems/services (Reverse 911, outdoor warning signals)	Y	NIXLE, DOT Signage, Fire Danger Signs, Reverse 911, District Siren, Website with Emergency Updates/Postings
Hazard data and information	Y	Coordinated with Placer County Environmental Health
Grant writing	Y	Forester and one staff person are responsible for grant writing pertaining to Fuels Reduction Program, and fire operations.
Hazus analysis	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
Administrative and technical mitigation capabilities are effective in mitigation and loss prevention. Capability expansion and improvement is unnecessary at this time. If in the future is becomes necessary, the District will work to expand its capabilities.		

Source: NCSD & FD

L.6.3. Fiscal Mitigation Capabilities

Table L-10 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

Table L-10 NCSD & FD's Fiscal Mitigation Capabilities

Funding Resource	Access/ Eligibility (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	Y	Capital improvement projects are typically projects that replace existing assets. Funding for mitigation projects is at the discretion of the Board of Directors.
Authority to levy taxes for specific purposes	Y	Yes. Measure "E" was used to fund fuels reduction and road improvements.
Fees for water, sewer, gas, or electric services	Y	District enterprise funds include water, sewer, and solid waste. The District is currently researching the potential to allocate a portion of these funds to fuels reduction.
Impact fees for new development	Y	The fire department assesses mitigation fees for new development.
Storm water utility fee	N	
Incur debt through general obligation bonds and/or special tax bonds	Y	Up to this point, the incurring of debt has only been used to help fund the new Admin Building. Depending on the type of mitigation project special tax bonds and general obligation bonds could be utilized.
Incur debt through private activities	N	
Community Development Block Grant	N	
Other federal funding programs	Y	Federal grants have been awarded for past forestry projects that reduce forest fuels to prevent catastrophic wildfires.
State funding programs	Y	Forestry grants that reduce hazardous forest fuels and enhance water sheds.
Other		
How can these capabilities be expanded and improved to reduce risk?		
Forest fuels reduction is looking to potentially increase the parcel tax to help levy funds for additional "on the groundwork and fund a full time Forestry Assistant.		

Source: NCSD & FD

L.6.4. Mitigation Education, Outreach, and Partnerships

Table L-11 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information.

Table L-11 NCSD & FD's Mitigation Education, Outreach, and Partnerships

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	N	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Y	Homeowner's Newsletter - articles highlight fire safety, water conservation, and information important to the community. Annual Homeowner's Meetings presentations are given on fire safety, defensible space, and fuels reduction program. Fire Extinguisher training is offered by District employees multiple times throughout the year for local Annual Fire Prevention/Inspections of Commercial Properties – Inspections are provided within a focus on educating business owners of fire code requirements. District Water Conservation Program - A Conservation Ordinance has been adopted. There are educational efforts to all property owners on the benefits of water conservation, the District has installed smart meters so property owners can monitor water usage, the District has installed a conservation garden to encourage water wise landscape.
Natural disaster or safety related school programs	N	
StormReady certification	N	
Firewise Communities certification	Y	Recognized FireWise community
Public-private partnership initiatives addressing disaster-related issues	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
Firewise is a nationally recognized program which benefits members of a community through fire education and participation. Additionally, Firewise assists in obtaining wildfire insurance/discounts and is beneficial in the grant application process.		

Source: NCSD & FD

L.6.5. Other Mitigation Efforts

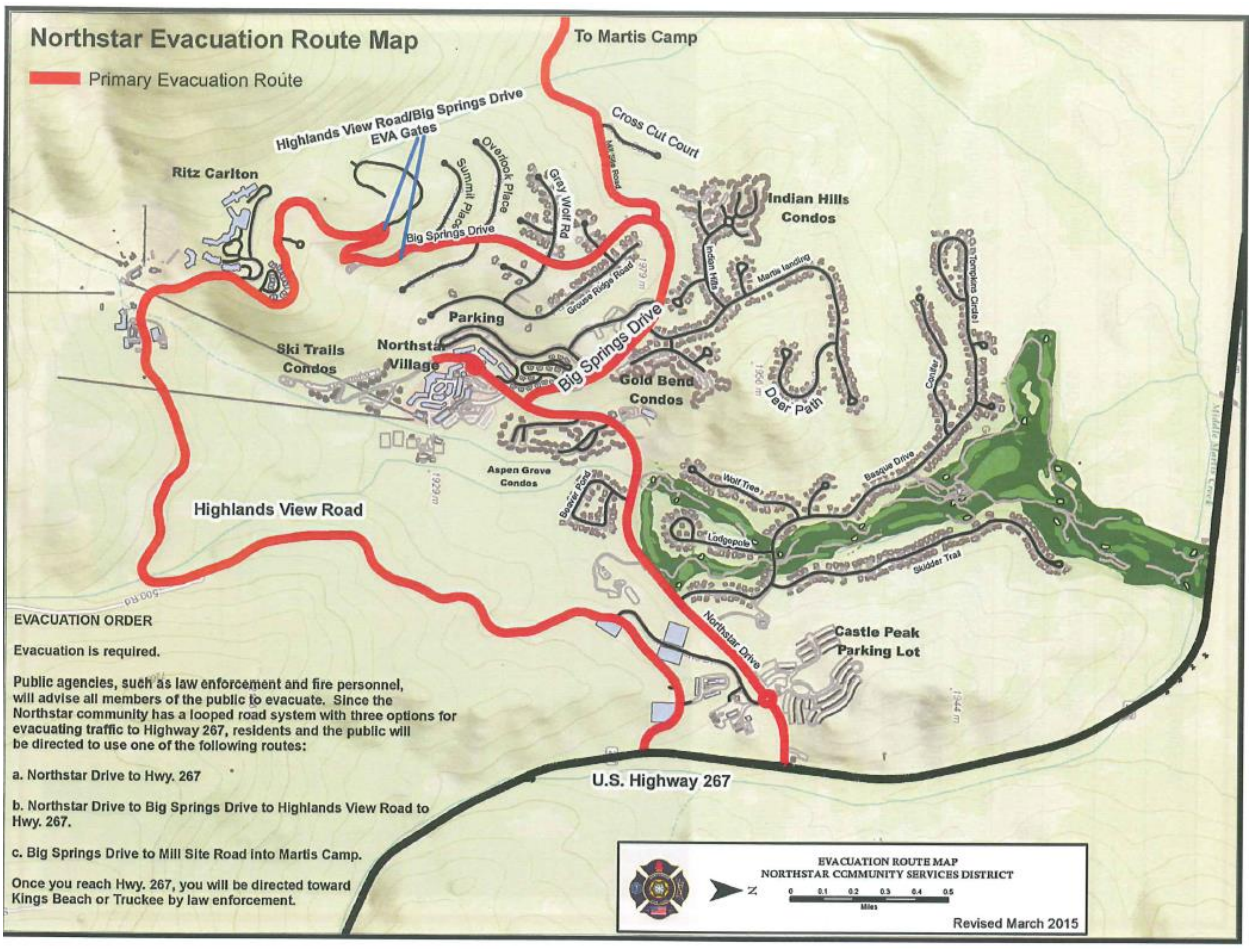
The Northstar Community Services District has many other mitigation efforts. Some of these were captured in the tables above, but are discussed in greater detail below.

- Firewise Community: The District became recognized as a Firewise Community in 2009. Since then, the NFD has continually worked with many of our community leaders towards maintaining such eligibility. The Firewise program is nationally-recognized. The NFD, in conjunction with Northstar Property Owners Association (NPOA), Condominium Association Management Company (CAMCO),

Vail Resorts, and Mountainside Partners are providing resources aimed at the reduction of fuels to create better defensible space within the Northstar area. There are many benefits to becoming a Firewise community; we gain an edge on securing grants and Federal funding for defensible space projects. The program is also recognized by certain insurance companies which offer a discount to property owners who reside within a Firewise community.

- Fuels Reduction Program: A program that is overseen by a full-time Forester that executes fuels management/forest health projects with the emphasis on reducing excess fuels, reduce the potential for insect and disease infestations and restore the forest back to healthy historical standards. The program offers the necessary resources and staffing for such projects. This program was created in order to meet the strategic initiatives found in our District's Community Wildfire Protection Plan (CWPP).
- Defensible Space Program: A program that is overseen by a full-time Fire Prevention Officer that requires all homeowners to maintain their property in compliance with Public Resources Code (PRC) 4291, California Code of Regulations (CCR) 1299 and Northstar Ordinance 35-19 guidelines.
- Fire Hydrant Maintenance Program: A program that seeks to keep all fire hydrants operable to the fullest measure. The program institutes annual inspections and maintenance involving flow/pressure testing, flushing, repairs and re-painting.
- Green Waste Recycling Program: A program created to help homeowners with defensible space compliance. This program is being revamped for 2021. The District has allocated $25,000 annually to reimburse residents for 6-yd^3 green waste dumpster rentals. In addition, 30-yd^3 dumpsters will be provided on Memorial Day, July 4^{th} and Labor Day for residents to dispose of green waste.
- With the ensuing development of the Highlands area, new roads were constructed (i.e. Highlands View Road and Shaffer Mill Road connector) – thus, allowing for additional means of ingress and egress in case of evacuation due to catastrophic events. This is shown in Figure L-4.

Figure L-4 Northstar CSD - Evacuation Routes



Source: Northstar CSD

- Deer Path Water Course Relocation Project. The original water course that day lighted above the Martis Landing homes was relocated to a new channel. The original drainage inlet was removed. A new inlet was installed further downstream, and all water tied into the larger storm water system.
- Wolf Tree Storm Water Extension. The original storm water system day lighted itself at the property line. This was problematic as it would wash out our sewer access road and find a water course through a lower residence on Basque. This storm water drainage was extended, and a culvert installed under the sewer access road. It now day lights above the golf course as a dissipater was installed to encourage sheet flow onto the golf course fairway.
- Easement Access Road Water Bar Maintenance and Replacement Program. Annually, the Utilities Department maintains the water bars on all of our access roads. An assessment of effectiveness is done at the same time. The purpose of the water bars is to encourage sheet flow and dissipate energy. Areas deemed to have unnecessary or ineffective water bars are terminated and areas deemed useful are added.
- Storm Water Drainage Inlet Maintenance. Technically, storm drainage inlets are Placer County's responsibility. Placer County is not always able to get all of our D.I.'s on an annual basis. And, in many areas, this is necessary. The Utilities Department ensures that all D.I.'s within the District boundaries are clean of debris and able to flow storm water in the case of a serious event. Such work is performed using the District-owned Vac-Con truck.
- Storm Events. During a storm event where the precipitation is in the form of rain (not snow), the Utilities Department uses part of its crew to clean D.I. grates to ensure water is flowing into its proper

channels. In some instances, water must be diverted to avoid it cutting its own course in a less desirable path. Equipment used for this task includes simple hand tools such as: shovels and rakes. However, the Vac-Con truck, backhoe, loaders or graders can be used when deemed necessary.

L.7 Mitigation Strategy

L.7.1. Mitigation Goals and Objectives

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

L.7.2. Mitigation Actions

The planning team for the NCSD & FD 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, estimated cost, and timeline are also included. The following hazards were considered a priority for purposes of mitigation action planning:

- Dam Failure
- Earthquake
- Pandemic
- Severe Weather: Freeze and Snow
- Tree Mortality
- Wildfire

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 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.

Multi-Hazard Actions

Action 1. Tree Mortality

Hazards Addressed: Tree Mortality

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

Issue/Background: The Northstar Fire Department's Forest Fuels Management Department has been working towards reducing tree mortality within and outside the District boundary. Tree mortality has accelerated from drought cycles, climate change, insects, and disease. Tree mortality has increased forest fuels accumulations and created a public safety/infrastructure hazard. Tree mortality can be identified as dead, dying, diseased or pest infected. In the last 10-years tree mortality has increased to a level that must be mitigated before tree mortality becomes at an epidemic level.

Project Description: The Forest Fuels Management tracks and identifies tree mortality on a year-round schedule. Once a tree is identified for removal it is prioritized based on the severity of mortality and the hazard it possesses. Tree mortality used to address in the spring and fall months with a fixed budget. Now tree mortality must be addressed year-round.

Other Alternatives: The are no alternatives being that this is a priority public safety/forest health project.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Community Wildfire Protection Plan, Forest Fuels Modeling, Field Reconnaissance

Responsible Agency/ Department/Partners: Northstar Fire Department/Forest Fuels Management

Cost Estimate: Has increased from $25,000 annually to an estimated $100,000.

Benefits (Losses Avoided): Public safety, structure protection, and protection of infrastructure

Potential Funding: District and grant funding

Timeline: 7-years to be in a maintenance mode

Project Priority (H, M, L): High

Action 2. Wildfire Mitigation

Hazards Addressed: Wildfire

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

Issue/Background: The Northstar Fire Department's Forest Fuels Management Department has been reducing hazardous forest fuels within and outside the Northstar Community Services District (NCSD & FD) boundary since the inception of the program in 2008. To date the Forest Fuels Management program has treated a total of 1,458 acres within and outside the Northstar Community Services District Boundary. Project areas have received one or more treatments with the intention of having the entire NCSD & FD boundary in a "Maintenance Mode". A total of 1.7 million dollars has been applied towards treatment through district, State of California, federal and Placer County funding.

The goal is to treat forested acres withing and 300' outside the district boundary to mitigate wildfire behavior to a level that firefighting can make a defensive stand, protect structures, safely evacuate a community and protect human lives.

Prioritization of project areas is guided by the Community Wildfire Protection Plan (CWPP), forest fuels modeling and field work. The main priority for forest fuels reduction is enhancing the main, secondary, and tertiary evacuation routes.

To reach the goal it is estimated that it will take another 7-years and adequate funding to accomplish this goal.

Project Description: This plan identifies prioritization of treatment areas for Forest Fuels Reduction based on guidance of the Community Wildfire Protection Plan.

Other Alternatives: The are no alternatives being that this is a priority public safety project.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Community Wildfire Protection Plan, Forest Fuels Modeling, Field Reconnaissance

Responsible Agency/ Department/Partners: Northstar Fire Department/Forest Fuels Management

Cost Estimate: $2,100,000

Benefits (Losses Avoided): Public safety, structure protection, and protection of infrastructure

Potential Funding: District and grant funding

Timeline: 7-years to be in a maintenance mode

Project Priority (H, M, L): High

Action 3. Critical Power Interruption Emergency Response Plan

Hazards Addressed: Severe Weather: Freeze and Snow; Wildfire, Pandemic, Earthquake

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

Issue/Background: The District's facilities and water and sewer systems are dependent on electrical power. Although all facilities have been designed to withstand the effects of short duration power losses, Public Safety Power Shutoffs (PSPS) present a potential problem in that the power disruptions could last several days. Liberty Utilities began implementing PSPSs in summer 2019 to protect public safety by reducing the threat of catastrophic wildfire when gusty winds and dry conditions are forecasted.

Public Safety Power Shutoffs have the potential to occur with regularity during the fire season (May through November). An analysis of the District's resistance to these events is necessary to identify potential power backup deficiencies as well as to plan for specific operational considerations to implement during the events. Sustained winter power outages of several days have also been experienced in the past due to storm activity, and further preparation for these disturbances is desired.

Project Description: This plan identifies all backup power systems for District facilities and provides considerations for keeping systems operational during extended outages. The District continues to look for additional backup power sources.

Other Alternatives: No alternatives identified.

Existing Planning Mechanism(s) through which Action Will Be Implemented: N/A

Responsible Agency/ Department/Partners: NCSD & FD

C**ost Estimate**: Work to prepare plan was performed in-house at no outside costs.

Benefits (Losses Avoided): By identifying critical operational considerations for facilities with backup power, NCSD & FD is better equipped to mitigate the risk of extended power outages incurred during severe weather.

Potential Funding: Internal labor funded via Engineering allocation for district funds.

Timeline: Plan Completed February 2020. Implementation of this Plan will occur over the next few years.

Project Priority (H, M, L): High

Action 4. Emergency Action Plan – Reservoir A Dam

Hazards Addressed: Dam Failure

Goals Addressed: 1, 2, 3, 4, 5, 7

Issue/Background: The purpose of the Reservoir A Dam Emergency Action Plan (EAP) is to reduce the risk of loss of human life or injury and to minimize property damage in the event of a potential or actual emergency situation associated with Reservoir A Dam.

These situations include, but are not limited to dam instability, sizable earthquakes, extreme storm events, major spillway releases, overtopping of the dam, outlet system failure, vandalism or sabotage, spillway gate failures, and failure of the dam.

Project Description: The EAP defines the responsibilities and provides procedures to identify and effectively address unusual and unlikely conditions that may endanger the Reservoir A Dam and nearby areas in time to take mitigating actions and notify the appropriate emergency management officials.

The Department of Water Resources (DWR), Division of Safety of Dams (DSOD) has rated the Reservoir A Dam as "High" based on hazard classification. Because of its hazard classification, Northstar Community Services District developed the EAP in accordance with the requirements listed in California Water Code Sections 6160 and 6161 and Government Code Section 8589.5, following FEMA's Federal Guidelines for Dam Safety: Emergency Action Planning for Dams (FEMA 64/July 2013).

Other Alternatives: No alternatives identified.

Existing Planning Mechanism(s) through which Action Will Be Implemented: N/A

Responsible Agency/ Department/Partners: NCSD & FD

Cost Estimate: Work to prepare the EAP and corresponding Inundation Mapping was recently completed for $26,528. The EAP will be refined, updated, implemented, and communicated to others in the next 5 years.

Benefits (Losses Avoided): By identifying affected areas, NCSD & FD is better equipped to mitigate the risk of dam failure.

Potential Funding: Funded via the District's water fund and in partnership with Vail Resorts.

Timeline: Implementation, communication, and updates will occur during the next 5 years

Project Priority (H, M, L): High