



# Annex K Northstar Community Services District/Fire Department

## K.1 Introduction

This is a new participating jurisdiction to the Local Hazard Mitigation Plan process.

This Annex details the hazard mitigation planning elements specific to the Northstar Community Services District/Fire Department (Northstar CSD/FD), a participating jurisdiction to the 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 the Northstar CSD/FD, with a focus on providing additional details on the risk assessment and mitigation strategy for this special district.

## K.2 Planning Process

As described above, the District followed the planning process detailed in Section 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 K-1. Additional details on plan participation and District representatives are included in Appendix A.

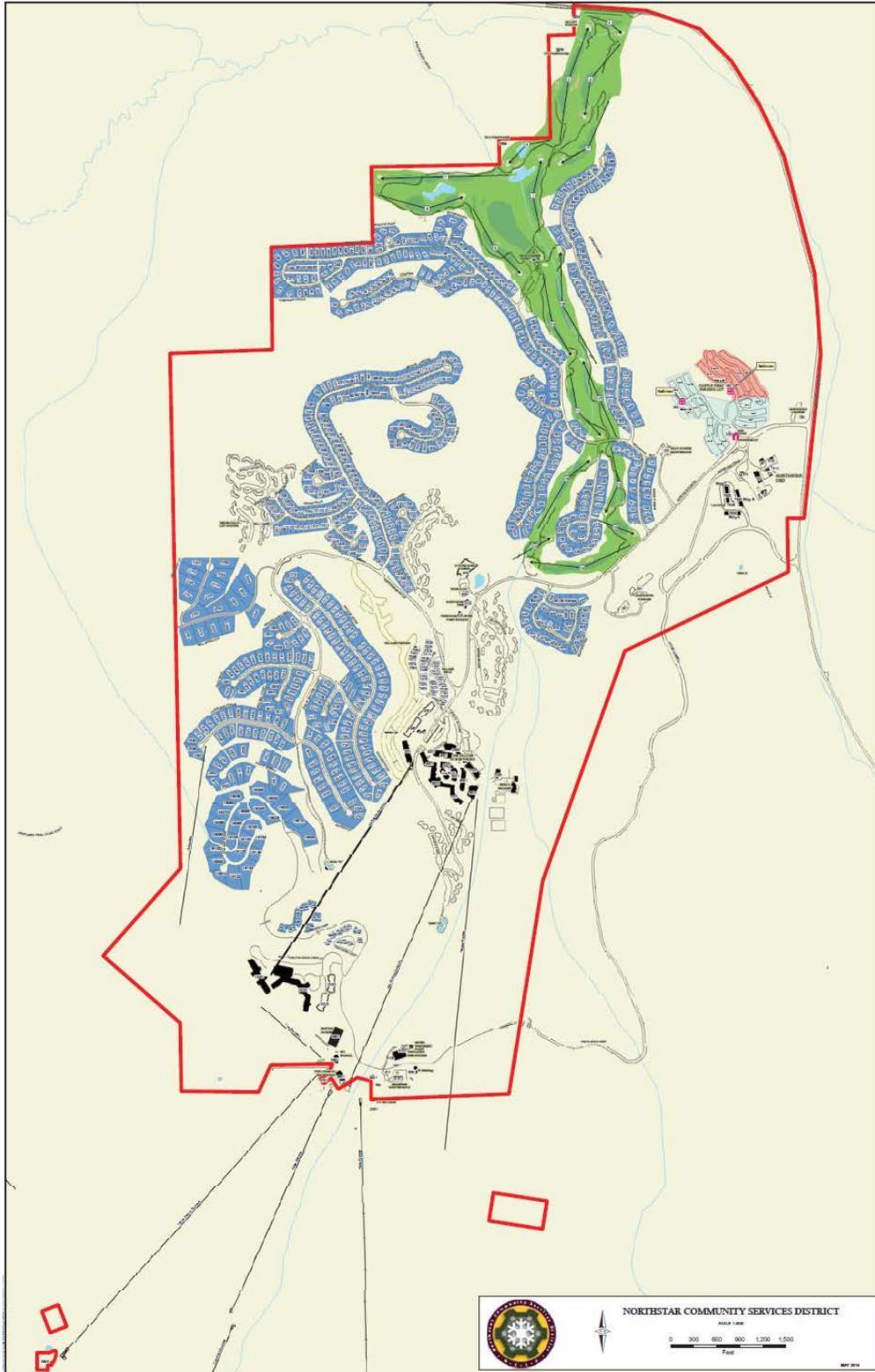
*Table K-1 District Planning Team*

Name	Position/Title	How Participated
Mark Shadowens	Fire Chief	Attended meetings. Provided input on past hazards. Filled out hazard ID table. Provided information on capabilities. Provided maps. Provided information on past and future mitigation actions. Reviewed and provided information and edits to Annex.
Jason Gibeaut	Fire Captain	Provided information on capabilities, attended meetings, completed tables for critical facilities and infrastructure, completed mitigation action worksheets.
Matt Ryan	Utilities Manager	Attended meetings, provided information related to the completion of tables for critical facilities and infrastructure, reviewed mitigation action worksheets provided maps on past problematic flood areas.

## K.3 District Profile

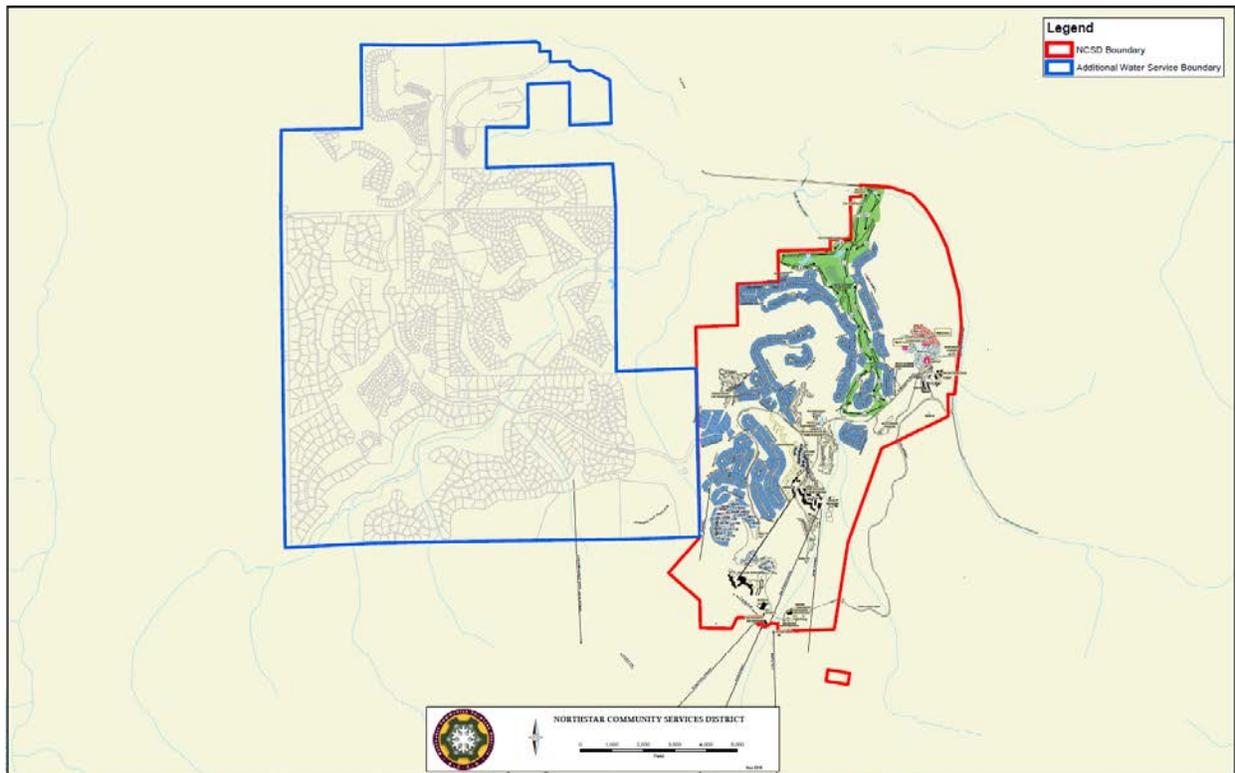
The District service area is illustrated in Figure K-1 and Figure K-2.

Figure K-1 Northstar CSD/FD Service Area



Source: Northstar CSD/FD

Figure K-2 Northstar CSD Water Service Areas



Source: Northstar CSD/FD

### K.3.1. District Information and Background

In 1972, the Northstar Fire Department was formed as a Placer County Services Area governed by the Placer County Board of Supervisors. In 1991, the Northstar Community Services District was formed as an independent district within Placer County; a five-member board governs the District. The five board members set district policy and a general manager manages the District. The District provides fire protection, water, sewer, road maintenance, snow removal and recreational services.

## K.4 Hazard Identification and Summary

The District's planning team identified the hazards that affect the District and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to the District (see Table K-2).

Table K-2 Northstar CSD/FD Hazard Identification Table

Hazard	Geographic Extent	Probability of Future Occurrences	Magnitude/Severity	Significance
Agricultural Hazards	Limited	Unlikely	Negligible	Low
Avalanche	Significant	Unlikely	Negligible	Low
Dam Failure	Limited	Unlikely	Limited	Medium
Drought and Water Shortage	Extensive	Occasional	Limited	Medium
Earthquake	Extensive	Occasional	Limited	Medium
Flood: 100/500 year	Significant	Occasional	Limited	Medium
Flood: Localized Stormwater Flooding	Significant	Occasional	Limited	Medium
Landslides and Debris Flows	Limited	Unlikely	Negligible	Low
Levee Failure	Limited	Unlikely	Negligible	Low
Seiche (Lake Tsunami)	Limited	Unlikely	Negligible	Low
Severe Weather: Extreme Heat	Extensive	Unlikely	Negligible	Low
Severe Weather: Freeze and Snow	Extensive	Highly-likely	Critical	High
Severe Weather: Fog and Freezing Fog	Significant	Unlikely	Negligible	Low
Severe Weather: Heavy Rains and Storms (Thunderstorms/Hail, Lightning/Wind/Tornadoes)	Extensive	Occasional	Limited	Medium
Soil Bank Erosion	Significant	Occasional	Limited	Low
Subsidence	Significant	Unlikely	Negligible	Low
Wildfire	Extensive	Likely	Catastrophic	High
Hazardous Materials Transport	Significant	Unlikely	Critical	Medium
<b>Geographic Extent</b> Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area		<b>Magnitude/Severity</b> 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		
<b>Probability of Future Occurrences</b> 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.		<b>Significance</b> Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact		

### K.5 Vulnerability Assessment

The intent of this section is to assess the District’s vulnerability separate from that of the planning area as a whole, which has already been assessed in Section 4.3 Vulnerability Assessment in the main plan. This

vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the main plan.

### K.5.1. Assets at Risk

This section considers the District’s assets at risk, specifically critical facilities and infrastructure, natural resources, and growth and development trends. Table K-3 lists particular critical facilities and other The District’s physical assets consist of critical infrastructure for supplying essential services to the community. In total, the District’s physical assets are worth approximately \$17.4 million dollars.

*Table K-3 Northstar CSD/FD’s Critical Facilities, Infrastructure, and Other District Assets*

Name of Asset	Facility Type	Address	Replacement Value	Hazard Info
267 Lift Station	Sewer Lift	Sawmill Fort Road	\$1,500,000	Multiple Hazards
Tank #1	Water Storage	Highlands	\$460,745	Multiple Hazards
Office/Garage	Office/Storage	49 Trimont Ln	\$975,000	Multiple Hazards
Fuel Enclosure	Fueling	51 Trimont Ln	\$50,000	Multiple Hazards
Pump House/Tank	Water Storage	Big Springs	\$750,000	Multiple Hazards
Tank F #2	Water Storage	903 & 900 Road	\$633,523	Multiple Hazards
Equipment Bay	Equipment Storage	51-C Trimont	\$470,000	Multiple Hazards
Tank #2/Res C	Water Storage	Coyote Fork	\$1,645,516	Multiple Hazards
Firehouse Pump	Water Lift	914 Northstar Dr	\$750,000	Multiple Hazards
Tank #2/Res D	Water Storage	Big Springs	\$460,745	Multiple Hazards
Tank #1/Res C	Water Storage	Coyote Fork	\$1,645,516	Multiple Hazards
Sand Barn/Storage	Storage	51 Trimont Ln	\$915,000	Multiple Hazards
Maintenance Building	Repair and storage	51 Trimont Ln	\$1,350,000	Multiple Hazards
TH-2 Well Building	Water treatment	Sawmill Fort Road	\$225,000	Multiple Hazards
Tank #1/Res D	Water Storage	Big Springs	\$460,745	Multiple Hazards
Tank E	Water Storage	Highlands View	\$633,523	Multiple Hazards
Water Plant	Treatment	9150 Highlands View	\$2,700,000	Multiple Hazards
Sewer Pump Station	Sewer Lift	Indian Hills	\$600,000	Multiple Hazards
TH-1 Well Building	Water treatment	Sawmill Flat Rd	\$225,000	Multiple Hazards
Station 31	Fire Station	910 Northstar Rd	\$4,500,000	Multiple Hazards
Station 32	Fire Station	9100 Highlands View	\$4,500,000	Multiple Hazards

Source: Northstar CSD/FD

### *Growth and Development Trends*

Development started in the Northstar area in the early 1970’s, with the first homes completed in 1972. Development has had both positive and negative effects on the forest itself and on the potential for wildfire. The potential for the increase of fires has been further intensified by having an increased amount of people

recreating in the forest. In addition, with the introduction of residential and commercial property within forested areas, structure protection has taken a priority over fire suppression. This allows wildland fires to grow in intensity until enough firefighting resources can arrive to start suppressing the actual wildland fire. On the positive side of development, the construction of roads has increased access within the forest and the availability of water for fighting fire has been expanded. Early detection of fire has improved with people present in the forest and with cell phone technology. With adequate funding, agencies also have the ability to manage forest fuels properly and to provide for a healthy fire resistant forest ecosystem.

In 1999, the year of the first Fuels Management Plan, the total built square footage, including commercial buildings, comprised of 2,320,857 square feet. For 2015, that number has nearly doubled in size.

Developers are currently building out the Highlands II Subdivision. 9A and 10C have expected completion dates of 2015 and 2016. 10G has an expected completion date of 2017. The developer has current entitlements that will continue development for the next 20 years and additional properties have been identified for future entitlements.

All areas “under construction” and designated for “future construction” are impacted by the potential wildfire hazard.

## **K.5.2. Estimating Potential Losses**

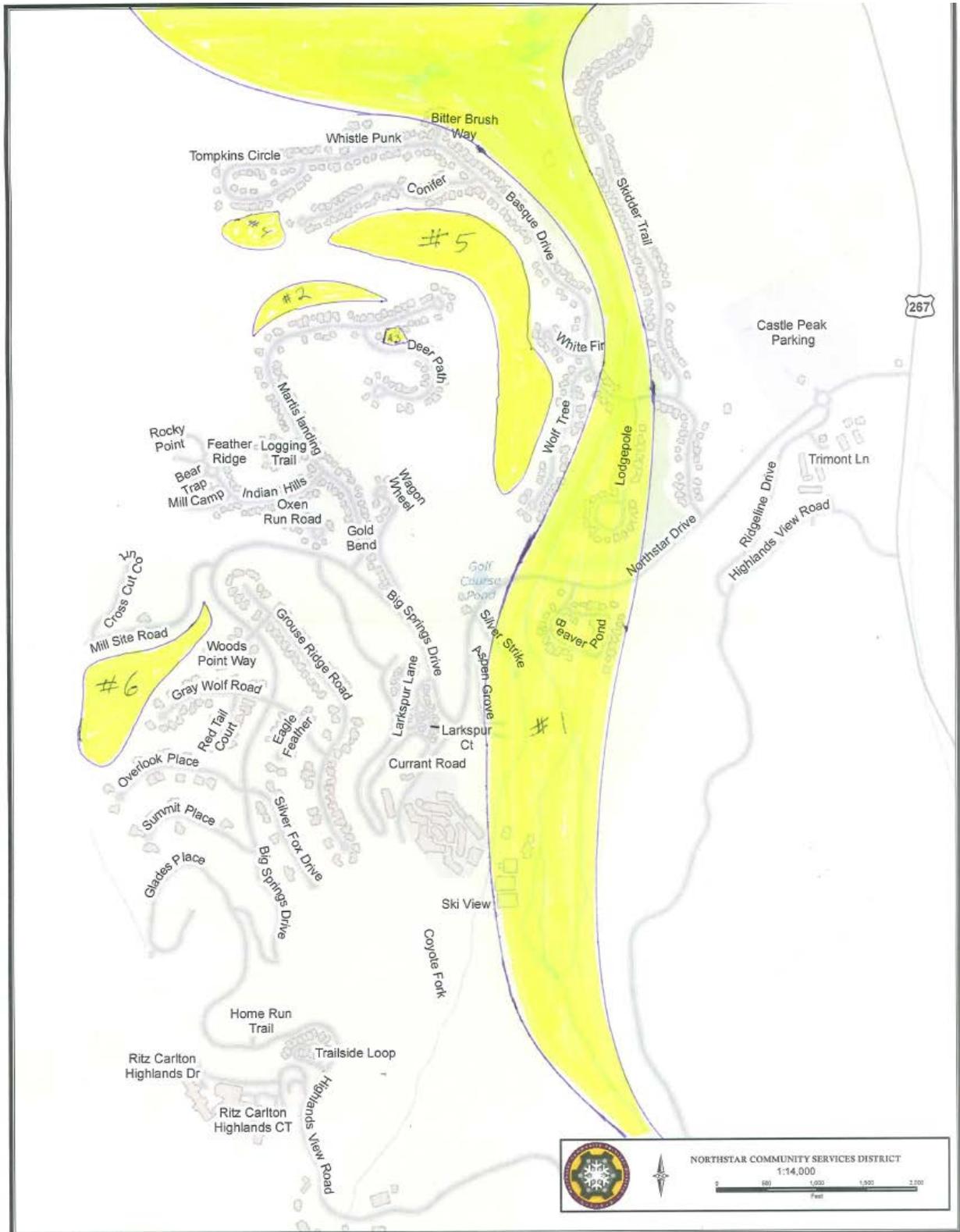
This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table K-2 as high or medium significance hazards. Impacts of past events and vulnerability of the District to specific hazards are further discussed below (see Section 4.1 Hazard Identification for more detailed information about these hazards and their impacts on the Placer County planning area). Methodologies for calculating loss estimates are the same as those described in Section 4.3 of the base plan. In general, the most vulnerable structures are those located within the floodplain, in the wildland urban interface, other priority hazard areas, unreinforced masonry buildings, and buildings built prior to the introduction of modern building codes.

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 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.

While there are no GIS mapping efforts available to support hazard analysis on the District, the District did create a map of past problem areas. This is shown in Figure K-3. These areas are referred to in the vulnerability text below.

Figure K-3 Northstar CSD Hazard Areas



Source: Northstar CSD

## *Dam Failure*

**Likelihood of Future Occurrence**–Unlikely

**Vulnerability**–Medium

Figure K-3 is broken out into sections. Section #1 was taken from an inundation study for Reservoir "A" and the effects on Martis Creek West in the event of complete dam failure, Martis Creek West is also a main focus for flooding during rain events to a lesser extent. Streets affected by rain event flooding include the crossings with Northstar Drive, and Basque Drive. Other areas of past flooding problems are also identified on Figure K-3.

## *Drought and Water Shortage*

**Likelihood of Future Occurrence**–Occasional

**Vulnerability**–Medium

The District has a robust water supply that includes ample water storage and redundancy in its supply systems. Although the District is in a very good position to survive a water shortage as a result of drought the District also recognizes the importance of water conservation measures. In 2015 the District completed a new rate study that was adopted by the Board of Directors which levies penalties for water overages, the District has also been pro-active in promoting water conservation efforts to all businesses and residential users.

## *Earthquake*

**Likelihood of Future Occurrence**–Occasional

**Vulnerability**–Medium

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.

## *Flood: 100/500 year*

**Likelihood of Future Occurrence**–Occasional

**Vulnerability**–Medium

Certain areas of the District are at risk to flooding. On Figure K-3, section #4 indicates an area affected by flood. The effects above Thompkins Circle tend to be greater. If the drainage inlet becomes inundated with debris or is unmaintained flooding can occur in the common areas.

The HMPC noted a flooding event that occurred in the community of Northstar. In the winter of 2014, a rain on snow flood event caused rapid melting of the snow, which led to minor flooding. Minor damage to

a few residential structures that only required clean up. Some minor damage to dirt roads, culverts etc. Some paved roads were undercut and required repair. This fell under federal disaster declaration DR-1628.

*Flood: Localized Stormwater Flooding*

**Likelihood of Future Occurrence**–Occasional

**Vulnerability**–Medium

Figure K-3 is broken out into sections. Section #3 affects a small swath of land behind the downhill side of Deerpath and a few homes on the uphill side of Martis. This area has traditionally been a problem but most of the storm water that used to affect this area has been redirected. The District sees localized flooding affect a few other streets in the area. Locations and problems can be found on Table K-4.

*Table K-4 Northstar CSD – Localized Flooding Areas*

Road Name	Flooding	Pavement Deterioration	Washouts	High Water/ Creek Crossing	Landslides/ Mudslides	Debris	Downed Trees
Northstar Dr	X		X	X		X	X
Basque Dr	X	X	X	X		X	X
Martis Landing	X		X		X	X	X
Deer Path	X		X		X		
Thompkins Circle	X		X			X	X
Conifer	X		X		X	X	X
White Fir	X		X		X	X	X
Wolf Tree	X		X		X	X	X
Mill Site Road	X		X		X	X	X

Source: Northstar CSD

*Severe Weather: Freeze and Snow*

**Likelihood of Future Occurrence**–Highly likely

**Vulnerability**–High

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.

## *Severe Weather: Heavy Rains and Storms (Thunderstorms/Hail, Lightning/Wind/Tornadoes)*

**Likelihood of Future Occurrence**–Occasional

**Vulnerability**–Medium

Northstar and its surroundings can experience in excess of 200 inches of snow with annual storms that bring rain, ice and snow. The summers are typically warm and dry with thunderstorms that cause lightning. The District can be affected by heavy rains and storms. Since the physical area of the District is not large, heavy rains often affect all of the District at the same time. Because the District is located in an alpine climate severe weather is often expected and planned for. The last couple of severe weather events that the District has experienced have been rain on snow events that are difficult to manage. Rain on snow events are difficult to predict and can severely tax District resources when trying to mitigate the negative impacts. On Figure K-3, all highlighted sections can be affected by heavy rains.

### *Wildfire*

**Likelihood of Future Occurrence**–Likely

**Vulnerability**–High

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.

### *Hazardous Materials Transport*

**Likelihood of Future Occurrence**–Unlikely

**Vulnerability**–Medium

Large quantities of hazardous materials do not get routed through Northstar. Northstar does not have rail lines that run through the community, and the community does not have a major highway that runs through it. Highway 267 is adjacent to the community but it simply connects to Truckee and Kings Beach and is not a major route for hazardous material transport.

## **K.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 four sections: regulatory mitigation capabilities; administrative and technical mitigation capabilities; fiscal mitigation capabilities; and mitigation education, outreach, and partnerships.

## K.6.1. Regulatory Mitigation Capabilities

Table K-5 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 District.

*Table K-5 Northstar CSD/FD's 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	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)		
<b>Building Code, Permitting, and Inspections</b>	<b>Y/N</b>	<b>Are codes adequately enforced?</b>
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
<b>Land Use Planning and Ordinances</b>	<b>Y/N</b>	<b>Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?</b>
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?		

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.

### *Northstar Community Wildfire Protection Plan, 2015*

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.

### K.6.2. Administrative/Technical Mitigation Capabilities

In 1991, the Northstar Community Services District was formed as an independent district within Placer County; a five-member board governs the district. The five board members set district policy and a general manager manages the district. Table K-6 identifies the personnel responsible for activities related to mitigation and loss prevention in the District.

*Table K-6 Northstar CSD’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	Y/N	Describe capability Has capability been used to assess/mitigate risk in the past?
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 is responsible for grant writing pertaining to Fuels Reduction Program, and fire operations.
Hazard analysis	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		

### K.6.3. Fiscal Mitigation Capabilities

Table K-7 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

*Table K-7 Northstar CSD'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 are 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	
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?		

## K.6.4. Mitigation Outreach and Partnerships

Table K-8 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. More information can be found below the table.

*Table K-8 Northstar CSD/FD's Mitigation Education, Outreach, and Partnerships*

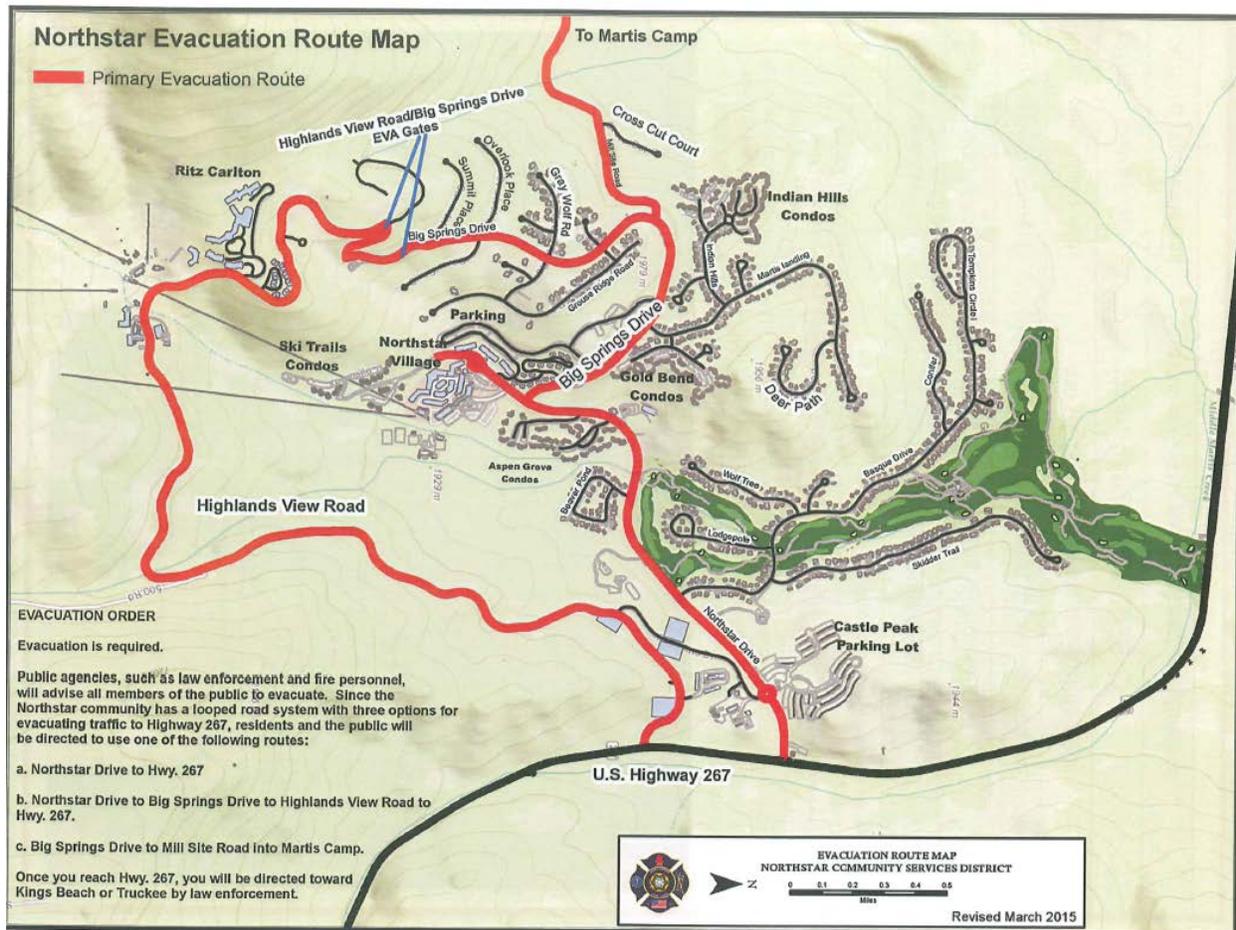
Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access 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		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		

## K.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 26-09 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 allows homeowners and their contractors to dispose of green waste by either leaving it on the curb in front of their property for NCSO personnel to collect or by taking the material directly to the green waste recycling site. Material placed at the recycling will be ground into woodchips and used for erosion control projects. This program was established back in 2007 with a Prop 40 grant. Since its implementation, approximately 15,000 cubic yards of material has been recycled.
- 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 K-4.

Figure K-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.

## K.7 Mitigation Strategy

### K.7.1. Mitigation Goals and Objectives

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

### K.7.2. Mitigation Actions

The planning team for the District identified and prioritized the following mitigation action 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, partners, potential funding, estimated cost, and schedule are included.

#### *Action 1. Martis Landing Drainage Swales and Catch Basins*

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**Hazards Addressed:** Flooding

**Issue/Background:** The District experiences flooding on the backside of Martis Landing during heavy rain storms. In order to correct this problem, drainage swales, water bars and catch basins could be constructed in order to direct and catch the run-off. The run off comes from common area property and water run-off is not the responsibility of the NCSD. There is some opportunity to incorporate water bars, and drainage swales to a minor extent during the forest thinning fuels reduction process that will occur in future years. If larger scale work needs to be completed an engineer would have to design systems to divert sheet flow and contain water.

**Other Alternatives:** No other alternatives

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** No planning mechanism.

**Responsible Office/Partners:** Northstar Utilities Department/Northstar Fire Department

**Project Priority:** Medium

**Cost Estimate:** If a design Engineer is utilized the price for design and construction could cost upward of \$100,000. Some minor work could be completed in conjunction with fuels management projects that could be implemented for \$5,000 to \$10,000.

**Benefits (Losses Avoided):** Benefits: Reducing flooding and damage to homeowners' and District's property.

**Potential Funding:** Grant Funding

**Timeline:** Ongoing

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**Action 2. *Continue Easement Access Road Water Bar Maintenance and Replacement Program***

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**Hazards Addressed:** Flooding

**Issue/Background:** 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.

**Other Alternatives:** Placer County were to cover such mitigation work on a routine basis

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** No planning mechanism.

**Responsible Office/Partners:** Northstar Utilities Department

**Project Priority:** Medium

**Cost Estimate:** We estimate the District spends about \$5,000 on this project annually. Most of the cost is in equipment and personnel; fuel is minimal. The cost to have excess material removed from the D.I.'s is technically the county's responsibility and any material we remove is still disposed of by the county.

**Benefits (Losses Avoided):** Benefits: Reducing flooding and damage to homeowners' and District's property.

**Potential Funding:** District Funding

**Timeline:** Ongoing

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**Action 3. *Fuels Reduction @ Sawmill Reservoir***

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**Hazards Addressed:** Wildland Fire

**Issue/Background:** Northstar CSD has 1 reservoir (Sawmill Reservoir) located within its District. With the threat of wildfire, this reservoir could be vital in providing a valuable water source for firefighting aircraft helping fight potential future wildfires. However, in order for it to be fully functional, trees will need to be cleared in and around the reservoir to allow aircraft to dip and collect water for airdrops.

**Other Alternatives:** None

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Northstar Fire Department in cooperation with CALFIRE will work in collaboration to plan project.

**Responsible Office/Partners:** Northstar Fire Department

**Project Priority:** Medium

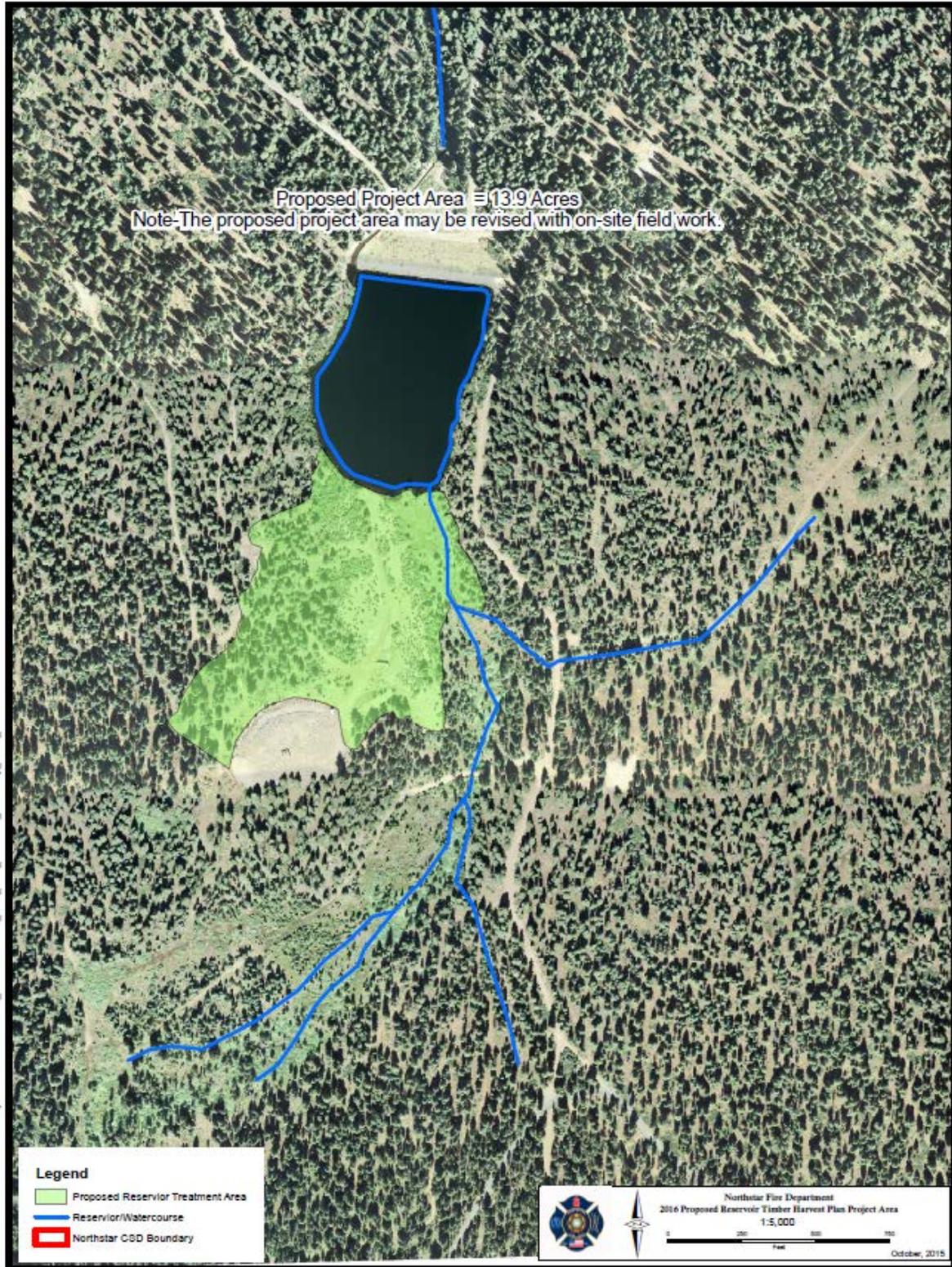
**Cost Estimate:** Cost is approximately \$20,000.

**Benefits (Losses Avoided):** Sawmill Reservoir would allow for helicopter resources to pull water from the reservoir in order to fight a wildland fire at Northstar.

**Potential Funding:** Northstar Fire Department annual budget or grant funded.

**Timeline:** 2016-2017

Figure K-5 Sawmill Reservoir



#### **Action 4. Fuels Reduction Program**

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##### **Hazards Addressed: Wildfire**

- **Issue/Background:** Continue our Fuels Reduction Program (see Priority No. 1 – Complete fuels management work in the area identified as Porcupine Hill which lies in the northeast portion of the district along U.S. Highway 267 and the Northstar Golf Course. Ongoing work has focused on establishing a 300’ buffer zone from the highway first and to eventually treat the entire property between highway 267, Basque and Skidder Trail.
- Priority No. 2 – Create a shaded fuel break in the eastern portion of the district boundary from the residential area of Beaver Pond moving north towards U.S. Highway 267. Past project work has strengthened the eastern boundary and this remaining portion will create a sustainable fuel break between the district boundary and Northstar Drive.
- Priority No. 3 – In the south portion of the district lies 90+ acres of forested land that requires fuels treatment beginning above the Northstar Village to the top of Highland View Road. The Big Springs Gondola which travels from the Northstar Village to Mid Mountain lies within this priority area.
- Priority No. 4 – Create a 500’ buffer zone south of the Northstar Property Owners Association, (NPOA) Recreation Center and east of the Ski Trails Condominium Association Complex. Future work in the Northstar Fire Department’s Management Plan will work beyond the 500’ buffer zone.
- Priority No. 5 – Work in a partnership with the United States Army Corps of Engineers on a fuels management project on their property located in the northwest corner of the district. Fuels reduction has been completed on the district side; however extensive work on the neighboring property is needed.
- Priority No. 6 – To continue strategically removing dead, diseased and dying trees within the CWPP area to promote forest and watershed health and to identify and perform maintenance where needed. The CWPP area extends 1.5 miles in any direction from any developed area.

Figure K-6). (The following mitigation efforts are proposed for future fuels reduction and can be found in our current CWPP):

- Priority No. 1 – Complete fuels management work in the area identified as Porcupine Hill which lies in the northeast portion of the district along U.S. Highway 267 and the Northstar Golf Course. Ongoing work has focused on establishing a 300’ buffer zone from the highway first and to eventually treat the entire property between highway 267, Basque and Skidder Trail.
- Priority No. 2 – Create a shaded fuel break in the eastern portion of the district boundary from the residential area of Beaver Pond moving north towards U.S. Highway 267. Past project work has strengthened the eastern boundary and this remaining portion will create a sustainable fuel break between the district boundary and Northstar Drive.
- Priority No. 3 – In the south portion of the district lies 90+ acres of forested land that requires fuels treatment beginning above the Northstar Village to the top of Highland View Road. The Big Springs Gondola which travels from the Northstar Village to Mid Mountain lies within this priority area.
- Priority No. 4 – Create a 500’ buffer zone south of the Northstar Property Owners Association, (NPOA) Recreation Center and east of the Ski Trails Condominium Association Complex. Future work in the Northstar Fire Department’s Management Plan will work beyond the 500’ buffer zone.
- Priority No. 5 – Work in a partnership with the United States Army Corps of Engineers on a fuels management project on their property located in the northwest corner of the district. Fuels reduction has been completed on the district side; however extensive work on the neighboring property is needed.
- Priority No. 6 – To continue strategically removing dead, diseased and dying trees within the CWPP area to promote forest and watershed health and to identify and perform maintenance where needed. The CWPP area extends 1.5 miles in any direction from any developed area.

*Figure K-6 Fuels Reduction Before and After*



**Other Alternatives:** None.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** 2015 Northstar Community Wildfire Protection Plan (CWPP) \*Note-This document is updated every 2-3 years and is an ongoing document.

**Responsible Office/Partners:** Northstar Fire Department

**Project Priority:** Highest

**Cost Estimate:** Cost estimates are based per priority within the updated 2015 Northstar CWPP.

- Priority 1: Approximately 66-acres remain a priority for treatment. Current estimates are \$95,000 to complete the Porcupine Hill project area. Potential logging with subsidized revenue to pay for mastication is currently being studied.
- Priority 2: Fuels reduction work in the eastern portion of the District boundary range from initial treatment to needed maintenance work. Future developments could help strengthen fuels management of this eastern boundary and scheduling with developers is being planned. The current estimate of treatment of the eastern District boundary is \$75,000
- Priority 3: Several attempts to treat this area with federal and state funding has not been successful grant funding has been difficult to obtain. An initial estimate to treat priority three area was \$162,000 However, continued advanced conifer tree mortality in the past two years has increased that estimate to \$200,000 Investigations in tree harvesting to help subsidizing these costs are currently being investigated.
- Priority 4. Creating a 500' buffer zone from the Northstar Property Owners Association would approximately cover 8.54 acres of land to create a formidable buffer zone. This work would require a combination of pile burning and chipping on difficult topography and would require multiple treatments to reach a desired level. Current estimates are \$17,000 to complete a series of treatments.
- Priority 5 – All planned project work adjacent to the United States Army Corps property has been completed and is now considered to be in a “Maintenance Mode”. Cost estimates are \$10,000 to maintain brush every 4-6 years and \$15,000 to maintain existing trees every 8-10 years. Future timber harvesting could help subsidize these costs.

- Priority 6 – Strategically removing fire hazard trees within the District will be an ongoing task and differs annually depending on tree mortality rates and where the trees are located for removal. Typically fire hazard trees are removed during a one to three day event in the spring and in the fall. Trees are removed in combination of hauling and or chipping. The average cost for two sessions is \$4,500

**Benefits (Losses Avoided):** Benefits to this work are statistically reducing a catastrophic wildfire event from occurring within or outside the District, thus causing a financial loss in residential, commercial structures and a resort driven economy.

Long term costs in prevention outweigh the costs of suppression and provide a long term benefit of a healthy diverse forest creating long term revenue in timber products.

**Potential Funding:** Mechanisms of funding range from federal, state and county grant funding. Internal funding is from Measure E which is a special initiative that allows a minimum amount of tax funds to be spent on fuels reduction projects. Measure E provides “in kind” costs to grant matching requirements.

**Timeline:** Ongoing

#### ***Action 5. Storm Water Drainage Inlet Maintenance***

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**Hazards Addressed:** Flooding

**Issue/Background:** Technically, storm water 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 Dept. ensures that all D.I.s with 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.

**Other Alternatives:** Placer County were to cover such mitigation work on a routine basis

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** No planning mechanism.

**Responsible Office/Partners:** Northstar Utilities Department

**Project Priority:** Medium

**Cost Estimate:** It is estimated that NCSD spends about \$10,000 per year on DI maintenance from debris removal from the catch basins to debris removal (mainly pine needles) during rain events to ensure their continued flow.

**Benefits (Losses Avoided):** Benefits: Reducing flooding and damage to homeowners’ and District’s property.

**Potential Funding:** District Funding

**Timeline:** Ongoing

## *Action 6. Siphon Line*

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**Hazards Addressed:** Seismic Hazard

**Issue/Background:** The District maintains a large sewer line that runs along highway 267 within the Martis Valley. If this line were to break, the valley and its habitat would be greatly affected by the unobstructed raw sewage. A 12” lay flat hose on reels would allow the Utilities Dept. to bypass the broken section of sewage line through the clean-outs while attempting to repair the broken pipe.

**Other Alternatives:** Our current alternative is the lines are redundant, meaning we have 2 lines, if one sewer line were to break we can switch to the other line without interruption to the service. If both lines were to break a jumper line is one method of allowing us to continue to provide transfer of sewer without an interruption until the broken pipe can be repaired.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Current mechanism would be to obtain equipment from other local agencies who own this equipment. The downside to obtaining this equipment from another jurisdiction would be the time associated with traveling to the other jurisdiction and returning to our District.

**Responsible Office/Partners:** Northstar Utilities Department

**Project Priority:** Highest

**Cost Estimate:** = \$25,000

**Benefits (Losses Avoided):** The ability to quickly divert or bypass a break in the raw sewage line thus keeping a limited amount of raw sewage from leaking while trying to mitigate or repair a broken line.

**Losses Avoided:** Raw sewage leakage hazard that would have an environmental impact. The greater the leakage, the greater cost in mitigating or cleaning-up the environmental impact.

**Potential Funding:** The District has talked about purchasing the lay flat hose and it has been denied in past budgets.

**Timeline:** 2017-2018

## *Action 7. Provide Power from Mobile Generator*

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**Hazards Addressed:** Emergency Services

**Issue/Background:** If power were lost due to a catastrophic event, the District–owned infrastructure would be greatly affected since many of the buildings do not have back-up power capabilities. With a mobile generator, the District would be able to provide power to certain buildings during a crisis. For example, if one of our well pumps lost power, a mobile generator would allow for the tank to still operate and, thus, provide a water supply crucial to the community.

**Other Alternatives:** None

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** None at this time.

**Responsible Office/Partners:** Northstar Utilities Department

**Project Priority:** Medium to High

**Cost Estimate:** \$200,000

**Benefits (Losses Avoided):** Provide power during a time of crisis that will allow for critical infrastructure to still operate. Without power to generate continuous water supply, domestic water supply would be affected and the fire department could be impacted by lack of water or pressure to fight fire. Without power, data centers and IT capabilities that provide crucial water storage data to technicians would be limited.

**Potential Funding:** Unknown

**Timeline:** Unknown

#### ***Action 8. Green Waste Recycling Program***

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**Hazards Addressed:** Wildfire

**Issue/Background:** Continue our Green Waste Recycling Program which was created to help or encourage homeowners with defensible space compliance. This program allows homeowners and their contractors to dispose of green waste by either leaving it on the curb in front of their property for NCS D personnel to collect or by taking the material directly to the green waste recycling site. Material placed at the recycling yard will be ground into woodchips and used for erosion control projects. This program was established back in 2007 with a Prop 40 grant. Since its implementation approximately 15,000 cubic yards of material has been recycled.

**Other Alternatives:** If the Green Waste Recycling Program was abandoned, homeowners would only have the following 2 options: 1) Hire a contractor to remove and dispose of the green waste to the nearest landfill. 2) Dispose of the green waste themselves at the nearest landfill.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Funding will need to be acquired through grants or other means to continue this program. Additionally we will need to find a proper facility that can guarantee they will take excess woodchips above what the resort can take and use for erosion control projects.

**Responsible Office/Partners:** Northstar Fire Department

**Project Priority:** High

**Cost Estimate:** The cost estimate of this program is about \$60,000 annually.

**Benefits (Losses Avoided):** Benefits: Offers an incentive to homeowners to be compliant with Defensible Space. The more homeowners that are compliant the greater reduction of wildland fire threat to the community. Losses: If a destructive wildfire moved through the community there would be hundreds of

millions of dollars in property and economic damage. In addition there would be substantial losses to the environment.

**Potential Funding:** Federal Grant

**Timeline:** Year by year.

***Action 9.** Enhance our current Defensible Space Program by seeking funding to hire a part-time employee to assist the Fire Prevention Department in running this program.*

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**Hazards Addressed:** Wildfire

**Issue/Background:** Properly-maintained defensible space provides firefighters with a safer working environment (see Figure K-7), allowing them to protect structures from encroaching wildfire, and minimizes the chances for a structure fire escaping into surrounding wildlands. Residential defensible space inspections are essential to a good community fuels reduction program. Research and experience has shown that reduction of fuels around structures is crucial to their chance for survival during a wildfire.

The current program is overseen by a full-time Fire Prevention Officer that requires homeowners to maintain their property in compliance with Public Resources Code (PRC) 4291, California Code of Regulations (CCR) 1299 and Northstar Ordinance 26-09 guidelines. In the past, the position of an inspector was grant funded. However, that funding has expired.

*Figure K-7 Defensible Space Before and After*



**Other Alternatives:** None.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Northstar Community Service District / Fire Department Plan; Northstar Community Services District Annual Budget

**Responsible Office/Partners:** Northstar Fire Department

**Project Priority:** High

**Cost Estimate:** The cost to hire a full time seasonal employee is about \$25,000 per year.

**Benefits (Losses Avoided):** The benefit to having this program is the potential to reduce the overall fire loss to the community. Northstar is a resort community that relies heavily on tourists visiting the area. If a large fire were to take place in the community not only would it be devastating to the local residents it would have a large impact on the economy driven by tourism.

**Potential Funding:** Federal or State grants

**Timeline:** Beginning Summer of 2016.

**Action 10. District Water Conservation Program**

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**Hazards Addressed:** Drought

**Issue/Background:** Due to the drought, Northstar CSD is concerned about its current and future water supplies. In order to curb the use of water by the constituents of Northstar, the District has instituted a District Water Conservation Program. This program has established a concerted effort in meter detection installation and tracking. Additionally, there are incentives for the homeowners to conserve water – i.e. high efficiency toilets rebate program, washing machine rebate program, and higher water rates for users that go over their monthly allotment of water. There are also fines that can be levied for not following water conservation rules.

**Other Alternatives:** None

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** State mandates and District ordinances

**Responsible Office/Partners:** Northstar Utilities Department

**Project Priority:** Medium to High

**Cost Estimate:** \$15,000 - \$30,000 annually.

**Benefits (Losses Avoided):** Benefits: The conservation of water for various means and purposes – necessary for the District to function annually.

**Potential Funding:** District funding.

**Timeline:** Ongoing